

# Chapter 1 Proposed Project

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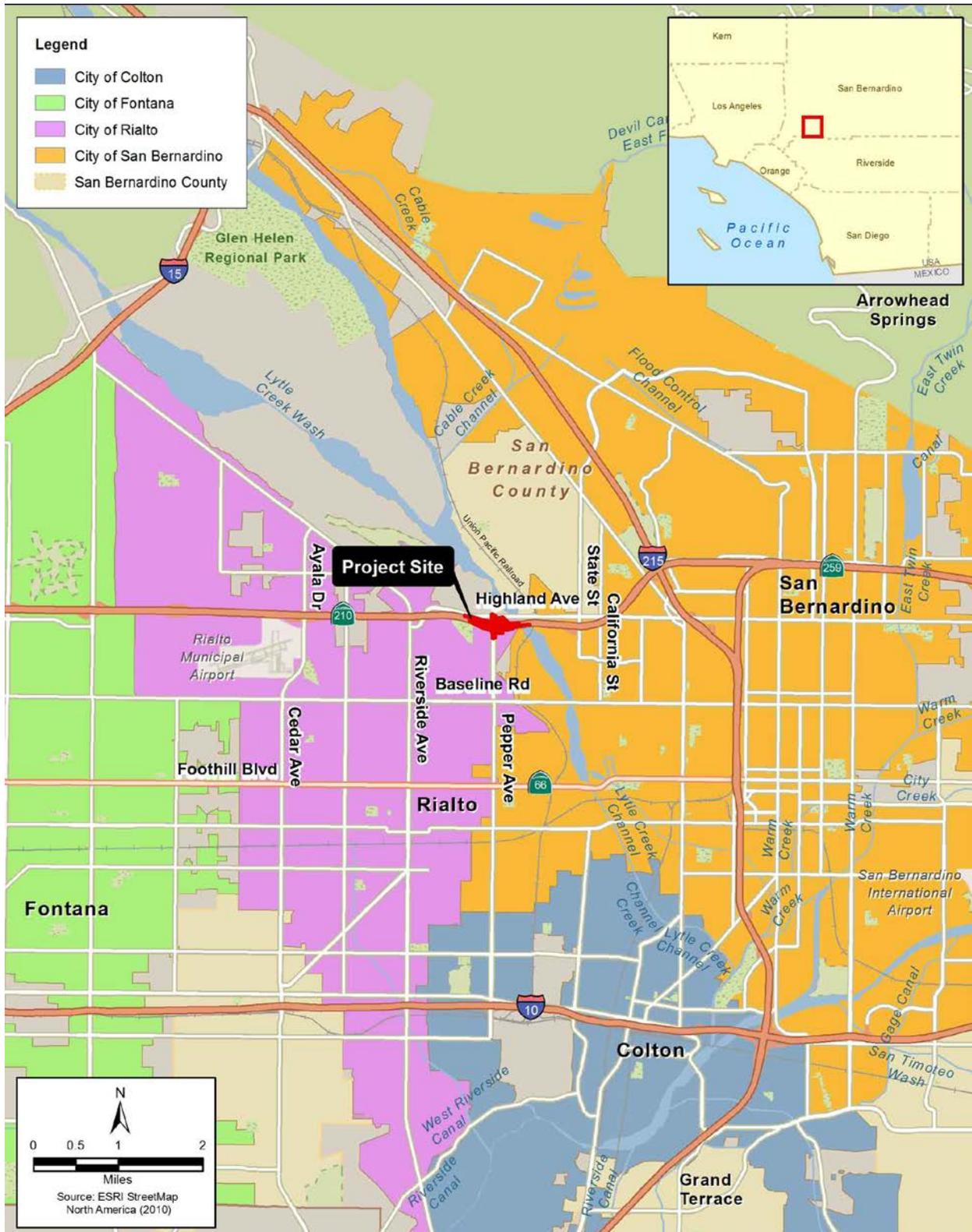
## 1.1 Introduction

The California Department of Transportation (Caltrans) is the lead agency under the National Environmental Policy Act (NEPA). Caltrans is also the lead agency under the California Environmental Quality Act (CEQA). San Bernardino Associated Governments (SANBAG), in cooperation with Caltrans and the City of Rialto (City), proposes to construct a new tight diamond interchange along State Route (SR) 210 at Pepper Avenue (between post mile [PM] 19.3 and PM 20.1) in portions of the Cities of Rialto and San Bernardino, and unincorporated San Bernardino County, California. The total length of the project on SR-210 is approximately 0.8 mile. Figures 1-1 and 1-2 on pages 1-2 and 1-3 show the project vicinity and location.

The proposed SR-210/Pepper Avenue New Interchange Project (proposed project) is included in the 2013 Federal Transportation Improvement Program (2013 FTIP), including Amendments 1-16, as project ID 20110110. It is also included in Amendment No. 1 to the Southern California Association of Governments (SCAG) 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (2012-2035 RTP) as project ID 4M1007. The total construction cost of the proposed Build Alternative (Alternative 1 [Tight Diamond Interchange]) is estimated at approximately \$21.08 million. The project is fully funded from Measure I half-cent sales tax collected in San Bernardino County for transportation improvements.

The proposed project is located along a portion of SR-210 within the jurisdictional limits of the cities of Rialto and San Bernardino, and unincorporated San Bernardino County (Figures 1-1 and 1-2). The interchange immediately to the west is Riverside Avenue and to the east is State Street/University Parkway. Riverside Avenue is a four-lane divided roadway that runs north and south. Riverside Avenue provides access to the first interchange west of Pepper Avenue and also crosses the freeway. State Street is a two-lane undivided north-south roadway. The street provides access to SR-210 east of Pepper Avenue as well as north and south access across the freeway.

Between Winchester Drive and approximately 800 feet south of Highland Avenue, the City of Rialto constructed an extension of Pepper Avenue. The Pepper Avenue Extension Project extends Pepper Avenue as a four-lane roadway from Winchester Drive to a point approximately 1,300 feet south of Highland Avenue. From that point, the Pepper Avenue Extension continues as a two-lane roadway, where it terminates approximately 800 feet south of Highland Avenue. For the remaining distance to the planned intersection with Highland Avenue, Pepper Avenue has been constructed as a two-lane roadway (one lane in each direction) by the City of Rialto's Pepper Avenue Gap Closure project. The two-lane segment of Pepper Avenue will be maintained as a two-lane facility until the proposed SR-210/Pepper Avenue New Interchange project is constructed. Both the Pepper Avenue Extension Project and the Pepper Avenue Gap Closure Project are scheduled to be completed by May 2014. State right of way associated with the proposed new interchange extends south along Pepper Avenue approximately 500 feet south of the proposed eastbound (EB) SR-210 ramps intersection with Pepper Avenue. As part of the new interchange project, the two-lane portion of Pepper Avenue would be widened to four lanes, completing Pepper Avenue as a four-lane roadway all the way to its terminus at the Highland Avenue intersection.



**Figure 1-1**  
**Project Vicinity Map**



Figure 1-2  
Project Location Map

## BACKGROUND

The Pepper Avenue interchange was originally identified as a part of the SR-210 Extension Project, which was constructed in 11 segments. The complete length of the SR-210 Extension Project was 28.2 miles, between the interchange at Route 66 (Foothill Boulevard) in La Verne and Interstate (I)-215 in San Bernardino. Construction of the first six miles of the SR-210 Extension Project began in 1997. Preliminary engineering was previously completed, and final design was initiated, for the proposed interchange under the SR-210 Extension Project. In mid-2003, the planned new Pepper Avenue interchange was removed from the SR-210 Extension Project due to a “sufficient utility” requirement for new interchanges; Pepper Avenue had not yet been connected to Highland Avenue or to the ramp termini points at the proposed interchange location. Between November 2004 and July 2007, Segment 10 of the SR-210 Extension Project was constructed in the area where Pepper Avenue was planned to intersect with Highland Avenue. In conjunction with the construction of Segment 10, some grading was performed and partial right of way was preserved for a future diamond configuration interchange in the area where Pepper Avenue was planned to be constructed.

A SR-210/Pepper Avenue interchange is identified and shown as a planned future interchange in the City of Rialto 2010 General Plan. Pepper Avenue is also shown as a north/south truck route in the City’s General Plan. Pepper Avenue is identified as a Major Arterial roadway to Highland Avenue in the City of Rialto 2010 General Plan Circulation Element, Street Classification plan. Major Arterials are defined by the City as roadways that link freeways with local streets.

Environmental review of the Pepper Avenue Extension Project was completed in September 2011. However, the Pepper Avenue Extension Project did not connect with Highland Avenue. Recognizing the need to connect Pepper Avenue with Highland Avenue, the City of Rialto coordinated with SANBAG and identified the Pepper Avenue Gap Closure Project as an interim solution until the SR-210/Pepper Avenue New Interchange project is completed.<sup>1</sup> SANBAG has been in communications with the City of Rialto for the coordination of the design of the Pepper Avenue interchange consistent with the Pepper Avenue Extension and Gap Closure Projects. In March 2013, a cooperative agreement between the City of Rialto and SANBAG was approved for the two-lane extension of Pepper Avenue to provide interim access to Highland Avenue.

In 2000, pursuant to consultation with United States Fish and Wildlife Service (USFWS), Caltrans purchased 130 credits<sup>2</sup> from the Vulcan Materials Cajon Creek Habitat conservation Management Area to offset impacts to 115 acres of suitable San Bernardino Kangaroo Rat (SBKR) habitat (including designated Critical Habitat) associated with the construction of the SR-210 Extension Project. Approximately 29.2 acres of the total 115 acres mitigated for under the SR-210 Extension Project occur within the limits of the proposed project; thus, approximately 29.2 acres of the total 41.2 acres of SBKR Critical Habitat within the proposed SR-210/Pepper Avenue new interchange project have already been fully mitigated.

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<sup>1</sup> City of Rialto. Rialto City Council Meeting Minutes. January 22, 2013.

<sup>2</sup> Credits represent a value that corresponds to existing or created resource or habitat area within established mitigation banks. For the Vulcan Materials Cajon Creek Habitat conservation Management Area (mitigation bank), one credit corresponds to one acre of San Bernardino Kangaroo Rat (SBKR) habitat.

## 1.2 Purpose and Need

The purpose of the proposed SR-210/Pepper Avenue Interchange project is as follows:

- Provide improved connectivity to the regional transportation system from the local transportation network.
- Help achieve the goals of the existing local planning documents regarding access to the regional transportation system.

### TRANSPORTATION DEMAND

According to SCAG projections made in conjunction with the 2012 RTP, the project region is poised for continued growth in the coming decades. The following populated areas surrounding the project site are in varying stages of development, with planned land uses that include residential and commercial: the City of Rialto to the west and south, and the City of San Bernardino to the east. Table 1-1 shows the current (2010) and projected (2035) population rates for the County of San Bernardino, and for the cities of Rialto and San Bernardino. It also shows that the overall County is expected to grow more quickly than the cities of Rialto and San Bernardino. The populations of the cities of Rialto and San Bernardino are also anticipated to increase considerably, by 25.8% and 24%, respectively by 2035.

**Table 1-1. Regional and Local Population Projections**

Geographic Area	2010 Population <sup>1</sup>	Projected 2035 Population <sup>2</sup>	Projected Increase (2010 to 2035)
County of San Bernardino	2,023,452	2,750,000	35.9%
City of Rialto	99,501	125,200	25.8%
City of San Bernardino	210,100	261,400	24%

Sources:  
<sup>1</sup>U.S. Census Bureau, 2007-2011 American Community Survey, Table B01001.  
<sup>2</sup>Southern California Association of Governments, 2012 Draft RTP Forecast. Available: <http://www.scag.ca.gov/Documents/2012AdoptedGrowthForecastPDF.pdf>

The project site itself is unpopulated (vacant) and located primarily within existing State right of way. Land uses immediately adjacent to the project site to the north and west are developed with park and industrial uses. Adjacent land uses to the east and south are currently undeveloped, urban vacant areas that are zoned as flood/waterway (east) and commercial and residential uses (south). Beyond the immediate project vicinity, residential and commercial land uses are planned as indicated in the local General Plans, and other local development proposals are in varying stages of progress. A description of these development proposals are provided in Table 2-1 on Page 2-9 in Section 2.1 (Land Use).

According the 2010 City of Rialto General Plan, the anticipated level and pattern of development will generate demand for travel throughout Rialto, generating need for accommodation by the roadway system, public transportation, and non-motorized forms of transportation. In addition, Rialto's increasing prominence as a logistics hub will create a demand for goods movement throughout the City that must be accommodated by commercial vehicles and railroads.<sup>3</sup>

<sup>3</sup> City of Rialto, *Rialto General Plan*, Page 4-1. December 2010.

For the northeast portion of Rialto located south of SR-210, access to SR-210 is limited to the Riverside Avenue and State Street/University Avenue interchanges, affecting local traffic access to the regional transportation network and regional connectivity to the local transportation network. Additionally, Lytle Creek, a tributary of the Santa Ana River, runs adjacent to the eastern portion of Rialto, which impacts east west travel options for traffic north of Baseline Road with respect to accessing SR-210 whether via Riverside Avenue or via State Street. According to the August 20, 2013 *Supplemental Traffic Impact Analysis* prepared for the proposed project, projected traffic conditions indicate increased traffic volumes at all on-ramps and off-ramps, and increased delays at most of the ramp areas associated with the SR-210/Riverside Avenue and SR-210 State Street interchanges in the design horizon year of the proposed project, 2036.

The following seven project area intersections were studied in the March 2012 *Traffic Impact Analysis* (approved March 28, 2012) and August 2013 *Supplemental Traffic Impact Analysis* (approved September 19, 2013):<sup>4</sup>

- Riverside Avenue and SR-210 westbound ramps
- Riverside Avenue and SR-210 eastbound ramps
- Pepper Avenue and Highland Avenue
- Pepper Avenue and SR-210 westbound ramps
- Pepper Avenue and SR-210 eastbound ramps
- State Street/University Parkway and SR-210 westbound ramps
- State Street/University Parkway and SR-210 eastbound ramps

Intersection traffic volumes during the morning (AM) and afternoon (PM) peak hour periods are presented in Table 1-2. Intersection levels of service and vehicle delays during the AM and PM peak hour periods are presented in Tables 1-3 and 1-4, respectively. Level of service (LOS<sup>5</sup>) definitions for signalized and non-signalized intersections are provided in Figures 1-3 and 1-4, respectively.

According to the projections presented in Table 1-2, traffic volumes would continue to increase at the Riverside Avenue and State Street intersections with SR-210, and Pepper Avenue intersection with Highland Avenue, during both the Opening Year (2016) and Design Horizon Year (2036).

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<sup>4</sup> The 2013 Supplemental Traffic Impact Analysis included study of Pepper Avenue, based upon the City of Rialto's projects being completed. Section 2.5 in Chapter 2 of this Environmental Document incorporates this information.

<sup>5</sup> Roadway capacity is generally determined by the number of vehicles that can reasonably pass over a given section of roadway in a given period of time. The Highway Capacity Manual, prepared by the National Transportation Research Board, identifies travel speed, freedom to maneuver, and proximity to other vehicles as important factors in determining the LOS on a roadway. The ability of a highway to accommodate traffic is typically measured in terms of LOS. Traffic flow is classified by LOS, ranging from LOS A (free-flow traffic with low volumes and high speeds) to LOS F (traffic volume exceeds design capacity with forced flow and substantial delays). The LOS for signalized and unsignalized intersections is based on delay time per vehicle.

**Table 1-2. Intersection Traffic Volumes without the Project (Baseline, Opening, and Design Horizon Years)**

Intersection	Traffic Volumes (Vehicles per Hour)					
	Baseline (2011) <sup>1</sup>		Opening (2016)		Design Horizon (2036)	
	AM	PM	AM	PM	AM	PM
Riverside Avenue and SR-210 WB Ramps	2686	2459	2827	2726	3492	3759
Riverside Avenue and SR-210 EB Ramps	3177	3128	3293	3336	3880	4052
Pepper Avenue and Highland Avenue <sup>2</sup>	561	624	636	720	879	1046
Pepper Avenue and SR-210 WB Ramps	-	-	-	-	-	-
Pepper Avenue and SR-210 EB Ramps	-	-	-	-	-	-
State Street/University Parkway and SR-210 WB Ramps	1738	1638	1840	1851	2315	2845
State Street/University Parkway and SR-210 EB Ramps	1618	1619	1757	1762	2563	2340

WB = westbound  
EB = eastbound  
- = intersection not constructed  
Source: August 2013 *Supplemental Traffic Impact Analysis*  
<sup>1</sup>Note: Baseline existing traffic volumes reflect adjusted mainline ADT count.  
<sup>2</sup>Intersection did not exist at the time turning movement counts were collected in 2011; baseline traffic volumes based on AM and PM counts at the approximate location of the future Pepper Avenue intersection with Highland Avenue. New intersection anticipated to be complete May 2014.

**Table 1-3. Intersection Levels of Service and Vehicle Delays without the Project (Baseline, Opening, and Design Horizon Years) – AM Peak Hour**

Intersection	AM Peak Hour Level of Service (LOS) and Vehicle Delays					
	Baseline (2011)		Opening (2016)		Design Horizon (2036)	
	LOS AM Peak Hour	Vehicle Delay (seconds)	LOS AM Peak Hour	Vehicle Delay (seconds)	LOS AM Peak Hour	Vehicle Delay (seconds)
Riverside Avenue and SR-210 WB ramps	B	18.4	B	19.5	C	24.6
Riverside Avenue and SR-210 EB ramps	B	15.9	B	16.1	B	19.2
Pepper Avenue and Highland Avenue	A <sup>1</sup>	0.3	A	9.7	A	9.2
Pepper Avenue and SR-210 WB Ramps	-	-	-	-	-	-
Pepper Avenue and SR-210 EB Ramps	-	-	-	-	-	-
State Street/University Parkway and SR-210 WB ramps	B	11.3	B	11.4	B	13.1
State Street/University Parkway and SR-210 EB ramps	B	18.5	B	18.2	B	15.7

<sup>1</sup>: Existing non-signalized intersection. Intersection did not exist at the time turning movement counts were collected in 2011; baseline traffic information based on AM and PM counts at the approximate location of the future Pepper Avenue intersection with Highland Avenue. New intersection anticipated to be complete May 2014.  
WB = westbound  
EB = eastbound  
- = intersection not constructed  
Source: August 2013 *Supplemental Traffic Impact Analysis*

**Table 1-4. Intersection Levels of Service and Vehicle Delay without the Project (Baseline, Opening, and Design Horizon Years) – PM Peak Hour**

Intersection	PM Peak Hour Level of Service (LOS) and Vehicle Delays					
	Baseline (2011)		Opening (2016)		Design Horizon (2036)	
	LOS PM Peak Hour	Vehicle Delay (seconds)	LOS PM Peak Hour	Vehicle Delay (seconds)	LOS PM Peak Hour	Vehicle Delay (seconds)
Riverside Avenue and SR-210 WB ramps	B	13.9	B	15.6	C	26.5
Riverside Avenue and SR-210 EB ramps	B	13.0	B	14.1	C	20.1
Pepper Avenue and Highland Avenue	A <sup>1</sup>	0.2	A	9.6	A	9.1
Pepper Avenue and SR-210 WB Ramps	-	-	-	-	-	-
Pepper Avenue and SR-210 EB Ramps	-	-	-	-	-	-
State Street/University Parkway and SR-210 WB ramps	B	11.3	B	11.6	B	15.7
State Street/University Parkway and SR-210 EB ramps	C	20.6	B	17.4	C	20.7

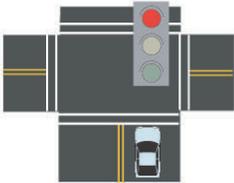
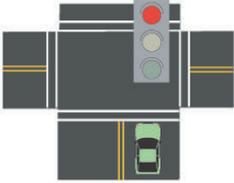
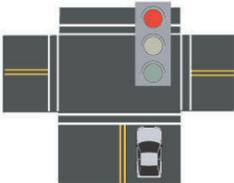
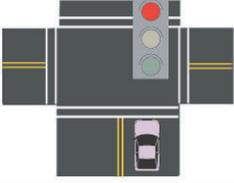
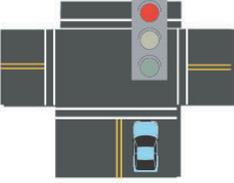
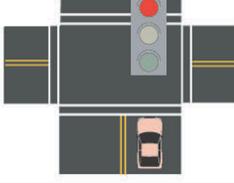
<sup>1</sup>: Existing non-signalized intersection. Intersection did not exist at the time turning movement counts were collected in 2011; baseline traffic information based on AM and PM counts at the approximate location of the future Pepper Avenue intersection with Highland Avenue. New intersection anticipated to be complete May 2014.  
WB = westbound  
EB = eastbound  
- = intersection not constructed  
Source: August 2013 *Supplemental Traffic Impact Analysis*

Tables 1-3 and 1-4 indicate that all five existing intersections in Year 2036 are predicted to operate at an acceptable LOS (i.e., LOS A through C) during both the AM and PM peak hours. However, increased vehicle delays are predicted to occur at the Riverside Avenue/SR-210 ramp areas in Years 2016 and 2036 during both the AM and PM peak hours. Increased vehicle delays are also predicted to occur at the State Street/SR-210 westbound (WB) ramp areas in Years 2016 and 2036 during both the AM and PM peak hours. The most notable increased delays are predicted to occur at the Riverside Avenue/SR-210 WB ramps; by Year 2036, delays at this intersection are predicted to increase an additional 12.6 seconds during the PM peak hour and 6.2 seconds during the AM peak hour (see Tables 1-3 and 1-4). Table 1-4 indicates delays at the Riverside Avenue/SR-210 eastbound (EB) ramps are also predicted to result in an additional delay of 7.1 seconds during the PM peak hour by Year 2036.

Tables 1-5 and 1-6 provide a comparison of the delays projected at intersection ramp areas under Without Project and under With Project conditions for Opening Year (2016) and Design Horizon Year (2036), respectively. In Opening Year (2016), the proposed project is anticipated to reduce projected vehicle delays at the Riverside Avenue/SR-210 WB ramps by 8.7% during the AM peak hour, and by 5.8% during the PM peak hour, when compared to Without Project conditions. A reduction in vehicle delay at the Riverside Avenue/SR-210 EB ramps is also anticipated during AM and PM peak hours with the proposed project. Projected vehicle delays at the State Street/University Parkway and SR-210 EB ramps are anticipated to increase by 2.2% during the AM peak hour, and by 6.3% during the PM peak hour, when compared to Without Project conditions in Opening Year (2016). However, vehicle delays at the State Street/University Parkway and SR-210 WB ramps are anticipated to be reduced by 2.6% during the AM peak hour, and by 3.5% during the PM peak hour, when compared to Without Project conditions.

# LEVELS OF SERVICE

for Intersections with Traffic Signals

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

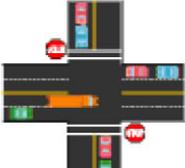
- Factors Affecting LOS of Signalized Intersections**
- Traffic Signal Conditions:**
- Signal Coordination
  - Cycle Length
  - Protected left turn
  - Timing
  - Pre-timed or traffic activated signal
  - Etc.
- Geometric Conditions:**
- Left- and right-turn lanes
  - Number of lanes
  - Etc.
- Traffic Conditions:**
- Percent of truck traffic
  - Number of pedestrians
  - Etc.

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

**Figure 1-3**  
**LOS for Signalized Intersections**

# LEVELS OF SERVICE

for Unsignalized Intersections

Level of Service	Flow Conditions	Delay per Vehicle (seconds)	Technical Descriptions
<b>A</b>		<10	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. <b>Very short delay</b>
<b>B</b>		10-15	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. <b>No delays</b>
<b>C</b>		15-25	Stable traffic flow, but less freedom to select speed, change lanes or pass. <b>Minimal delays</b>
<b>D</b>		25-35	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. <b>Minimal delays</b>
<b>E</b>		35-50	Unstable traffic flow. Speeds change quickly and maneuverability is low. <b>Significant delays</b>
<b>F</b>		>50	Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. <b>Considerable delays</b>

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1

Figure 1-4  
LOS for Non-Signalized Intersections

**Table 1-5. Intersection Vehicle Delays With Project and Without the Project – Opening Year**

Intersection	AM and PM Peak Hour Vehicle Delays – 2016							
	Without Project (2016) Vehicle Delay (sec)		With Project (2016) Vehicle Delay (sec)		Without Project and With Project 2016 Comparison			
					Change in Vehicle Delay (seconds)		Change in Vehicle Delay (percent)	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Riverside Avenue and SR-210 WB ramps	19.5	15.6	17.8	14.7	-1.7	-0.9	-8.7%	-5.8%
Riverside Avenue and SR-210 EB ramps	16.1	14.1	16.0	13.9	-0.1	-0.2	-0.6%	-1.4%
Pepper Avenue and Highland Avenue	9.7 <sup>1</sup>	9.6	15.3	14.6	5.6	5.0	57.7%	52.1%
Pepper Avenue and SR-210 WB Ramps	-	-	12.4	15.8	NA	NA	NA	NA
Pepper Avenue and SR-210 EB Ramps	-	-	9.3	10.5	NA	NA	NA	NA
State Street/University Parkway and SR-210 WB ramps	11.4	11.6	11.1	11.2	-0.3	-0.4	-2.6%	-3.5%
State Street/University Parkway and SR-210 EB ramps	18.2	17.4	18.6	18.5	0.4	1.1	2.2%	6.3%

<sup>1</sup>: Existing non-signalized intersection  
 WB = westbound  
 EB = eastbound  
 - = intersection not constructed  
 NA = Not applicable; new intersection introduced under With Project conditions  
 Source: August 2013 *Supplemental Traffic Impact Analysis*

**Table 1-6. Intersection Vehicle Delays With Project and Without the Project – Design Horizon Year**

Intersection	AM and PM Peak Hour Vehicle Delays – 2036							
	Without Project (2036) Vehicle Delay (sec)		With Project (2036) Vehicle Delay (sec)		Without Project and With Project 2036 Comparison			
					Change in Vehicle Delay (seconds)		Change in Vehicle Delay (percent)	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Riverside Avenue and SR-210 WB ramps	24.6	26.5	17.8	14.8	-6.8	-11.7	-27.6%	-44.2%
Riverside Avenue and SR-210 EB ramps	19.2	20.1	16.3	15.4	-2.9	-4.7	-15.1%	-23.4%
Pepper Avenue and Highland Avenue	9.2	9.1	17.9	19.4	8.7	10.3	94.6%	113.2%
Pepper Avenue and SR-210 WB Ramps	-	-	15.8	19.29	NA	NA	NA	NA
Pepper Avenue and SR-210 EB Ramps	-	-	12.2	16.6	NA	NA	NA	NA
State Street/University Parkway and SR-210 WB ramps	13.1	15.7	11.6	14.5	-1.5	-1.2	-11.5%	-7.6%
State Street/University Parkway and SR-210 EB ramps	15.7	20.7	16.2	21.3	0.5	0.6	3.2%	2.9%

WB = westbound  
 EB = eastbound  
 - = intersection not constructed  
 NA = Not applicable; new intersection introduced under With Project conditions  
 Source: August 2013 *Supplemental Traffic Impact Analysis*

In Design Horizon Year (2036), the proposed project is anticipated to reduce projected vehicle delays at the Riverside Avenue/SR-210 WB ramps by 27.6% during the AM peak hour, and by

44.2% during the PM peak hour, when compared to Without Project conditions. A reduction in vehicle delay is also anticipated at the Riverside Avenue/SR-210 EB ramps with the proposed project, with a 15.1% reduction in delay during the AM peak hour, and 23.4% reduction in delay during the PM peak hour. Projected vehicle delays at the State Street/University Parkway and SR-210 EB ramps are anticipated to increase by 3.2% during the AM peak hour, and by 2.9% during the PM peak hour, when compared to Without Project conditions in Design Horizon Year (2036). However, vehicle delays at the State Street/University Parkway and SR-210 WB ramps are anticipated to be reduced by 11.5% during the AM peak hour, and by 7.6% during the PM peak hour, when compared to Without Project conditions.

As shown in Table 1-4, delays at the Riverside Avenue/SR-210 and State Street/University Parkway and SR-210 ramp intersection areas are anticipated to increase between Baseline Year (2011) and the Design Horizon Year (2036) without the proposed project. Tables 1-5 and 1-6 indicate that with the proposed project, vehicle days would be reduced at the Riverside Avenue/SR-210 EB and WB ramps, and the State Street/University Parkway and SR-210 WB ramps, in Opening Year (2016) and Design Horizon Year (2036). These reductions in vehicle delays would allow traffic to flow more efficiently, thereby improving congested conditions at these ramp intersection areas.

The projected increases in vehicle delays at the Riverside Avenue/SR-210 and State Street/SR-210 intersections indicate need for transportation improvements to alleviate or minimize future delays in this area. The implementation of the planned transportation improvements identified in the local planning documents for the cities of Rialto and San Bernardino, and County of San Bernardino, and the regional 2012-2035 RTP, serves to accommodate local and regional demand for new and expanded transportation infrastructure and services both regionally and within the project area. The future Pepper Avenue/SR-210 Interchange is identified in the City of Rialto General Plan, the 2007 San Bernardino County Congestion Management Program (CMP), and the 2012-2035 RTP.

Traffic Accident Surveillance and Analysis System (TASAS) accident data was obtained from Caltrans District 8 for the 36-month period from October 1, 2008, through September 30, 2011, for the portion of SR-210 where the proposed project will be located, and is summarized below in Table 1-7. The data indicates the actual accident rates to be lower than the average rates for fatal, fatal plus injury, and total accidents. No high collision frequency spot locations were found within the limits of the proposed project.

**Table 1-7: SR-210 TASAS DATA**

SR-210 Accident Data - 10/1/08 - 9/30/11									
Eastbound SR-210 from PM 19.300 to 20.101									
Actual No. of Accidents				Actual Rate			Average Rate		
Total	Fatal	Injury	PDO	Fat	F+I	Tot	Fat	F+I	Tot
9	0	4	5	0.000	0.09	0.19	0.003	0.16	0.50
Westbound SR-210 from PM 19.300 to 10.101									
Actual No. of Accidents				Actual Rate			Average Rate		
Total	Fatal	Injury	PDO	Fat	F+I	Tot	Fat	F+I	Tot
3	0	2	1	0.000	0.04	0.06	0.003	0.16	0.50
PDO = property damage only									
Source: Caltrans									

## SOCIAL DEMANDS

As indicated in Table 1-1 on page 1-5, continued growth in the region and project area is projected through 2035. According to the County of San Bernardino General Plan, trends indicate that growth will continue to occur due to the area's position as one of the Southern California regions that still has large amounts of undeveloped land along its transportation corridors. As indicated, the cities of Rialto and San Bernardino are also expected to grow in the coming years. Per the SCAG 2014-2021 Regional Housing Needs Assessment Allocation Plan, in order to keep up with projected population growth the City of Rialto is expected to be responsible for providing over 2,700 new units between 2013 and 2021, and during the same time period the City of San Bernardino is expected to be responsible for providing approximately 4,400 new housing units.

General Plans for the cities of Rialto and San Bernardino, and for the County of San Bernardino, include goals and policies developed to accommodate the transportation needs related to projected population increases and housing demands.

Key transportation and land use goals and policies specific to the proposed project for the City of Rialto are as follows:

- **Goal 4-1:** Provide transportation improvements to reduce traffic congestion associated with regional and local trip increases.
  - **Policy 4-1.6:** Coordinate with the California Department of Transportation, San Bernardino Association of Governments, and neighboring jurisdictions to accommodate growing volumes of east/west traffic. This plan envisions Riverside Avenue, Base Line Road, and Foothill Boulevard becoming six-lane arterials.
  - **Policy 4-1.9:** Work with Caltrans to improve coordination of traffic signals at freeway interchanges with those on City streets.
  - **Policy 4-1.10:** Complete Pepper Avenue to connect to the SR-210 freeway and Highland Avenue.
- **Goal 4-10:** Provide a circulation system that supports Rialto's position as a logistics hub.

Key transportation goals and policies specific to the proposed project for the City of San Bernardino are as follows:

- **Policy 2.3.6:** Circulation system improvements shall continue to be pursued that facilitate connectivity across freeway and rail corridors.
- **Goal 6.4:** Minimize the impact of roadways on adjacent land uses and ensure compatibility between land uses and highway facilities to the extent possible.
  - **Policy 6.4.3:** Continue to participate in forums involving the various governmental agencies such as Caltrans, SANBAG, SCAG, and the County that are intended to evaluate and propose solutions to regional transportation problems.

Key transportation and land use goals and policies specific to the proposed project for the County of San Bernardino are as follows:

- **Goal CI 1:** The County will provide a transportation system, including public transit, which is safe, functional, and convenient; meets the public’s needs; and enhances the lifestyles of County residents.
- **Goal CI 2:** The County’s comprehensive transportation system will operate at regional, countywide, community, and neighborhood scales to provide connectors between communities and mobility between jobs, residences, and recreational opportunities.

Development in the area immediately surrounding the project location is constrained by the presence of Lytle Creek and a shortage of available undeveloped land. Growth in the area will occur primarily through infill and expansion of development to the west of Lytle Creek. Table 2-1 in Section 2.1 (Land Use) describes currently proposed projects that would be developed near the project site. Figures 2-2a through 2-2c on Pages 2-11 through 2-15 in Section 2.1 show the locations of these projects as well as the planned land uses for the City of Rialto, City of San Bernardino, and San Bernardino County, respectively.

The newly extended Pepper Avenue establishing an operational intersection with Highland Avenue introduced a new access to an approximately 130-acres of undeveloped area located immediately south of the interchange and north of Shirley Bright Road, facilitating development of this area. The extension of Pepper Avenue under the City’s Pepper Avenue Extension and Gap Closure projects is essential for future development of the approximately 130-acres of undeveloped area. Construction of the proposed new interchange along SR-210 at Pepper Avenue will result in close proximity to a direct connection to SR-210 via Pepper Avenue, providing in turn, improved connectivity to Interstate (I-) 215 and I-15 via SR-210, for existing and future land uses to the south of SR-210 and west of Lytle Creek. A new interchange would meet the project purpose by providing interconnectivity to the regional transportation system from the local transportation network.

## **MODAL RELATIONSHIPS AND SYSTEM LINKAGES**

SR-210 connects to I-215 and I-15, two facilities that are designated as regionally significant for their transportation of goods and people. I-15, a major transcontinental highway connecting California, Nevada, Arizona, Utah, Idaho, and Montana, was designated as a “Corridor of the Future” by the U.S. Department of Transportation in 2007. Caltrans’ 1998 *Interregional Transportation Strategic Plan* identifies I-215 as part of the Intermodal Corridors of Economic Significance (ICES) system of routes, which are significant transportation arteries that provide access to airports, major ports, interstate and intrastate highway systems, and railway systems.

The nearest commercial airport to the project area is Ontario International Airport (ONT), located approximately 14 miles west of the project area in San Bernardino County. The airport provides both cargo services and commuter air travel services. More than 70% of the cargo is attributed to United Parcel Service; other major freight carriers include FedEx, Ameriflight and Empire Airways. The proposed project is 72.8 miles from the Port of Los Angeles, 71.1 miles from the Port of Long Beach, and 111 miles from the Port of San Diego. After docking, goods

are transported by truck if the distance is less than 500 miles or by train for longer distances. According to the *Alameda Corridor - East Trade Plan*<sup>6</sup> 90% of port traffic to and from points outside the region crosses the Inland Empire. This freight traffic is projected to nearly triple in the next 20 years because of tremendous growth in international trade through the ports.

Within the Inland Empire (generally defined by the U.S. Census Bureau as the Riverside-San Bernardino-Ontario metropolitan area), specifically the major east-west routes of I-10, SR-60 and SR-210 that connect between the I-15 and I-215 corridors, future truck volumes are similarly anticipated to increase. SCAG projections indicate that by 2020, east-west truck traffic along the SR-210, I-10 and SR-60 corridors can grow by as much as an additional 60,000 daily trucks, exhibiting the highest growth in truck traffic of any corridor in the six-county SCAG region.<sup>7</sup> Existing truck traffic patterns indicate that within the Inland Empire region, 23% of all heavy truck trips originate within the Inland Empire, and trucks (originating both regionally and externally) are expected to use SR-210 to access the I-10 through San Bernardino and Highland.

Two operational rail corridors traverse Rialto: Union Pacific Railroad (UPRR) and Burlington Northern Santa Fe Railway (BNSF). UPRR is a Class I freight railroad<sup>8</sup> that parallels the I-10 freeway and primarily transports large volumes of rail freight between the ports of Los Angeles and Long Beach and the Colton Crossing rail hub, just east of Rialto. East of the project site, UPRR extends north from Colton along the Mojave Subdivision main line on the east side of Cajon Wash/Lytle Creek and crosses SR-210 above grade, east of the project site; from this point, UPRR continues to Palmdale, Bakersfield, Northern California, and Pacific Northwest points.<sup>9</sup> The Colton Crossing hub is located just south of I-10, between Pepper Avenue and I-215, approximately six miles southeast of the proposed project site.

BNSF, also a Class I freight railroad, utilizes rail corridors located to the south and east of the project; the corridor to the south is owned by the Southern California Regional Rail Authority, which operates Metrolink. The Rialto Metrolink Station, for passenger rail service, is located approximately 3 miles southwest of the project site. The BNSF corridor east of the project, Cajon Subdivision, carries passenger and freight between San Bernardino and Silverwood.

Public transit nearest to the project area are two bus lines operated by Omnitrans: Route 10 that travels along Baseline Road and Route 22 that travels along Riverside Avenue. Routes 10 and 22 are each located approximately one mile from the project site.

According to the City of Rialto General Plan (adopted December 14, 2010), due to its location and access to SR-210, I-10, rail lines, and airports, the City is attractive to goods movement businesses. Truck routes have been designated in the City to accommodate the large volumes of truck traffic associated with goods movement. Caltrans has designated two truck route classes based on California legislation: National Network (NN) and Terminal Access (TA) routes. The truck routes in Rialto are defined as TA routes. These routes are portions of state routes or local

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<sup>6</sup> SANBAG. *Alameda Corridor - East Trade Plan*. April 2001.

<sup>7</sup> SANBAG and Meyer, Mohaddes Associates. *Subregional Freight Movement Truck Access Study*. July 2004.

<sup>8</sup> Class I railroads have an annual operating revenue exceeding \$258.5 million. County of San Bernardino 2007 General Plan, Adopted March 13, 2007.

<sup>9</sup> SANBAG. *2011 Regional Rail Simulation Study, SCAG Comprehensive Regional Goods Movement Plan and Implementation Strategy*, Technical Appendix. November 2011.

roads that can accommodate Surface Transportation Assistance Act (STAA) standard trucks. TA routes allow STAA trucks to: (1) travel between NN routes, (2) reach a truck's operating facility, or (3) reach a facility where freight originates, terminates, or is handled in the transportation process.

Within Rialto, Pepper Avenue is designated as a truck route. Pepper Avenue currently does not connect to SR-210, which hinders the ability of the route to accommodate the truck traffic and to meet the defined requirements of TA routes. At the time of field observations, the connection of Pepper Avenue to Highland Avenue was not yet completed; thus, truck traffic along this segment of the truck route was not documented. Once operational, this segment of Pepper Avenue is anticipated to accommodate trucks traveling between Highland Avenue and intersecting roadways south of SR-210.

Within the City of Rialto the next closest north/south designated truck route in relation to SR-210 is the SR-210/Ayala Drive interchange, located approximately 2.5 miles to the west (Ayala Drive becomes Cedar Avenue approximately 1 mile south of SR-210 at the Ayala Drive-Cedar Avenue/Base Line Road intersection, and Cedar Avenue extends south all the way to Interstate 10 (I-10), as does Pepper Avenue).

This results in a less direct access route between SR-210 and I-10 for travelers in Rialto as trucks and other traffic have to follow a more circuitous route to travel between these facilities, increasing the miles travelled for traffic heading east on SR-210 (see Figure 1-1). The proposed project would provide access for trucks traveling along the Pepper Avenue TA route to SR-210, contributing to efficient goods movement with access to a connection between I-215 and I-15. The proposed project would also facilitate a connection for regional truck traffic between SR-210 and I-10 via Pepper Avenue. Through these linkages to the regional transportation system, it is anticipated that the proposed project would contribute to more efficient goods movement; this result would be consistent with local planning goals for increased access to the regional transportation network.

## **AIR QUALITY IMPROVEMENTS**

The following transportation control measure is anticipated to improve air quality and is included as part of the proposed project.

- Ramp metering would be included for the two new on-ramps within the project limits.

A park and ride facility is not included within this interchange project. There is no available right of way to construct a park and ride facility and providing for one is not included in the scope of this interchange project.

## **INDEPENDENT UTILITY AND LOGICAL TERMINI**

Federal Highway Administration (FHWA) regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that a proposed project:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope;

- Have independent utility or independent significance (be usable and require a reasonable expenditure even if no additional transportation improvements in the area are made); and
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Logical termini are expected to encompass an entire project. Cutting a larger project into smaller projects may be considered “improper segmentation” under NEPA. A project must have independent utility; that is, a project must be able to function on its own, without further construction of an adjoining segment.

The proposed project will construct a new full-access interchange on SR-210 at the City of Rialto’s Pepper Avenue, approximately one mile to the east of the existing SR-210/Riverside Avenue interchange, and approximately one mile to the west of the existing SR-210/State Street-University Parkway interchange, providing improved connectivity to the state highway system from the City’s local circulation system, consistent with the Circulation Element of the City’s 2010 General Plan. The proposed project will also expand an existing portion of Pepper Avenue that is a two-lane facility, to match the City of Rialto’s existing four-lane extension of Pepper Avenue, from where the four-lane portion of Pepper Avenue currently drops to two lanes to Pepper Avenue’s terminus at the Highland Avenue/Pepper Avenue “T” intersection.

The proposed project has been designed so that it would: (1) connect logical termini and be of sufficient length to address environmental matters on a broad scope, (2) have independent utility or independent significance (be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made), and (3) not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

### 1.3 Project Description

The proposed project is located in San Bernardino County, along SR-210, within the jurisdictional limits of the Cities of Rialto and San Bernardino (Figures 1-1 and 1-2). The interchange immediately to the west is Riverside Avenue and to the east is State Street/University Parkway. The purpose of the proposed project is to: (1) provide improved connectivity to the regional transportation system from the local transportation network, and (2) help achieve the goals of the existing local planning documents regarding access to the regional transportation system.

For the proposed project, a Build Alternative and a No-Build Alternative are being considered.

#### ALTERNATIVES

##### Alternative 1 (Build Alternative [Tight Diamond Interchange])

Alternative 1 (Build Alternative) would construct a new tight diamond interchange along SR-210 at Pepper Avenue (Figure 1-5, Sheets 1 through 3). The project would provide freeway access ramps at each of the four quadrants of the interchange. The eastbound and westbound off-ramps would widen from one lane where the ramps diverge from SR-210 to two lanes at the intersection with Pepper Avenue, where a dedicated left-turn lane and a dedicated right-turn lane would be provided. The EB and WB on-ramps would each include two lanes at the intersection with Pepper Avenue and would taper to one lane prior to merging onto SR-210. At the ramp intersections with Pepper Avenue, traffic signals would be installed. A traffic signal would also be installed at the Pepper Avenue/Highland Avenue intersection.

Pepper Avenue would be widened from two to four through lanes from Highland Avenue to south of the intersection of Pepper Avenue and the EB ramps; a distance of approximately 1,300 feet. This portion of Pepper Avenue would ultimately consist of two 12-foot through lanes in each direction with an 8-foot shoulder, curb and gutter, a 6.5-foot planted buffer, and a 5-foot sidewalk on both sides of the roadway (i.e., next to the 6.5-foot parkway northbound and southbound from the freeway), except within the undercrossing where the sidewalk would be 6.5 feet wide. A dedicated 12-foot left-turn lane from northbound Pepper Avenue to the westbound on-ramp and from southbound Pepper Avenue to the EB on-ramp would also be constructed. The south end of the interchange project would match the four-lane portion of the Pepper Avenue Extension project that was recently constructed by the City of Rialto.

Two retaining walls would be constructed along Pepper Avenue beneath the undercrossing structures at the abutment slopes of the structure. They are anticipated to each be approximately 400 feet long with a 10-foot design height. The retaining walls would include aesthetic design treatments and features consistent with the State Route 210 Corridor Master Plan. Utilities would be adjusted or relocated, as needed, to accommodate the new interchange. Best Management Practices (BMP) features, that would include modifications to existing, or the installation of new, water quality control features, would also be included as part of the project. This is anticipated to include two additional detention/infiltration basins, which would adjoin the southeast corner of the interchange adjacent to the proposed EB on-ramp and the northeast corner of the interchange adjacent to the proposed westbound off-ramp. The detention/infiltration basins would be designed and planted so that they would blend into the existing sage scrub landscape. Context-

appropriate landscaping and any necessary irrigation would be installed as appropriate. At a minimum, installation of native hydroseed planting would be done where the project requires the removal of the existing native scrub vegetation. Also, to the fullest extent practicable, water quality-related BMPs would be designed to convey both stormwater quantity flows and peak flows.

Alternative 1 (Build Alternative) would require approximately 1.52 acres of permanent right of way acquisition, and approximately 0.62 acre of temporary construction easements, on undeveloped lands.

The total construction cost of Alternative 1 (Build Alternative) is estimated at approximately \$21.08 million. This estimate includes all construction, right of way, and utility costs.

### **Transportation System Management (TSM) and Transportation Demand Management (TDM) Alternatives**

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 Alternative 1 (Build Alternative) for this project:

- Ramp metering would be included for the two new on-ramps within the project limits.
- On-ramps would include High Occupancy Vehicle (HOV) bypass lanes.

Transportation Demand Management (TDM) focuses on regional strategies for reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. It facilitates higher vehicle occupancy or reduces traffic congestion by expanding the traveler's transportation choice in terms of travel method, travel time, travel route, travel costs, and the quality and convenience of the travel experience. Typical activity within this component is providing contract funds to regional agencies that are actively promoting ridesharing, maintaining rideshare databases, and providing limited rideshare services to employers and individuals. No TDM strategies are proposed as part of the proposed project.

### **Alternative 2 (No-Build Alternative)**

Under Alternative 2 (No-Build Alternative), no interchange would be constructed along SR-210 at Pepper Avenue (see Figure 1-6). This alternative does not meet the project purpose and need; however, it would not preclude the construction of future improvements, nor prevent completion of the Pepper Avenue Extension project currently under construction. Under Alternative 2 (No-Build Alternative), the four-lane portion of the Pepper Avenue Extension project would be completed; however, the 1,300-foot, two-lane gap closure portion of Pepper Avenue beneath SR-210, connecting Pepper Avenue with Highland Avenue, would operate as a two-lane facility and not be widened to four lanes to connect to the four-lane portion of the Pepper Avenue Extension project. Alternative 2 (No-Build Alternative) provides a baseline for comparing the impacts with the other alternative. It is used to compare the relative impacts and benefits of the proposed project improvements, but would not meet the purpose and need. Trucks and other traffic would continue to use the designated north/south truck route of Cedar Avenue/Ayala Drive.

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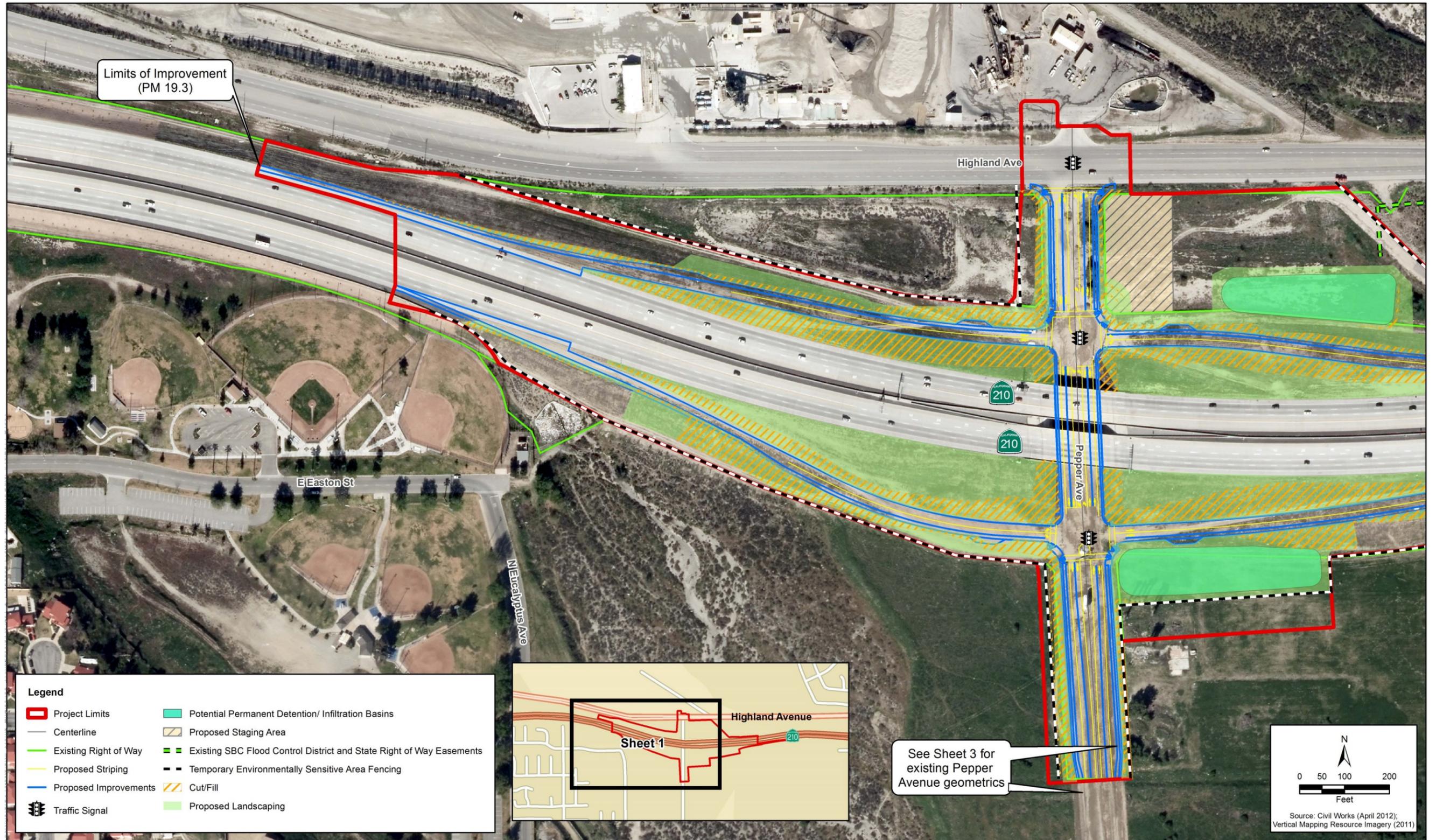


Figure 1-5  
Alternative 1 (Build Alternative) Tight Diamond Interchange, Sheet 1

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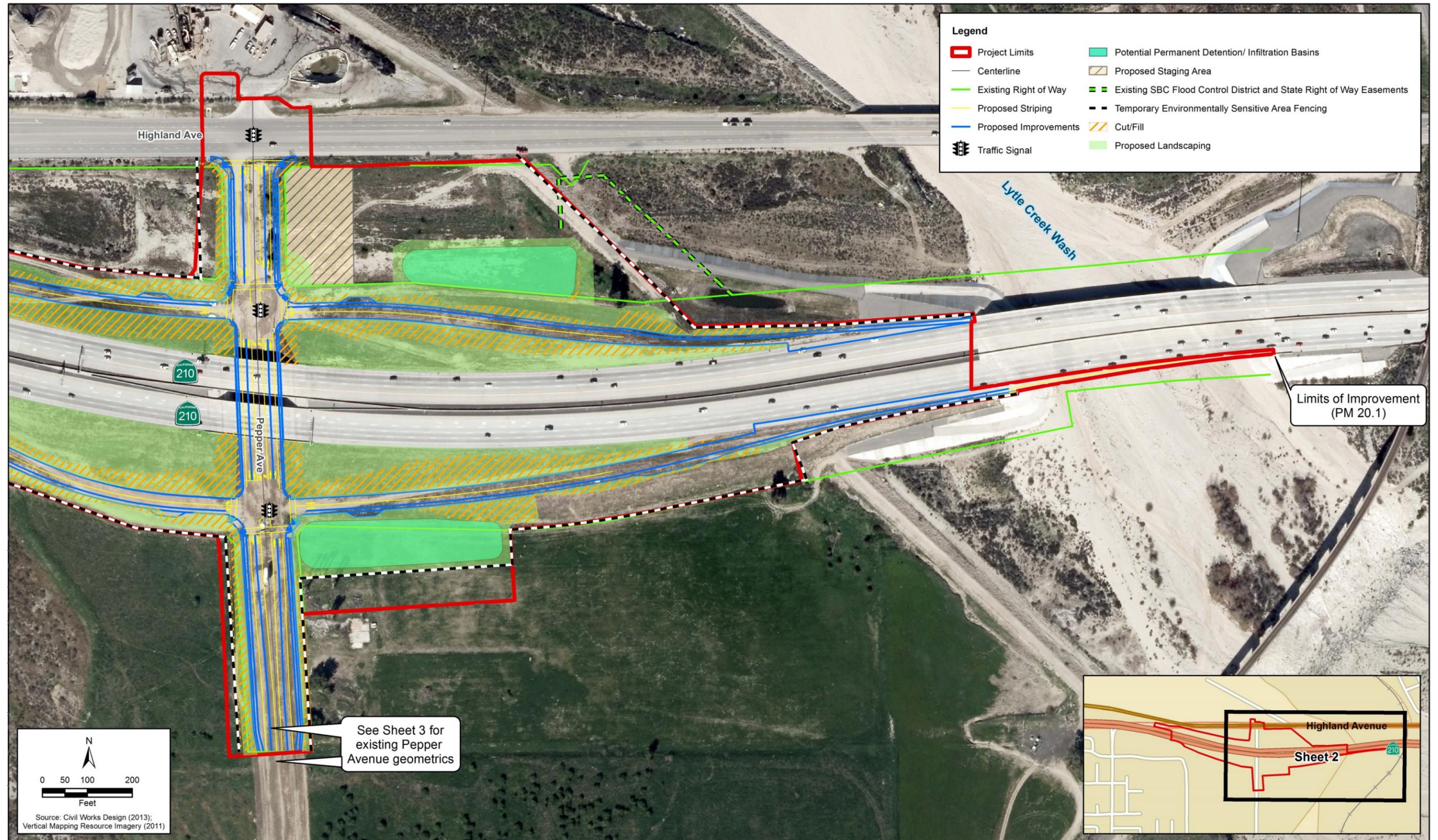


Figure 1-5  
Alternative 1 (Build Alternative) Tight Diamond Interchange, Sheet 2

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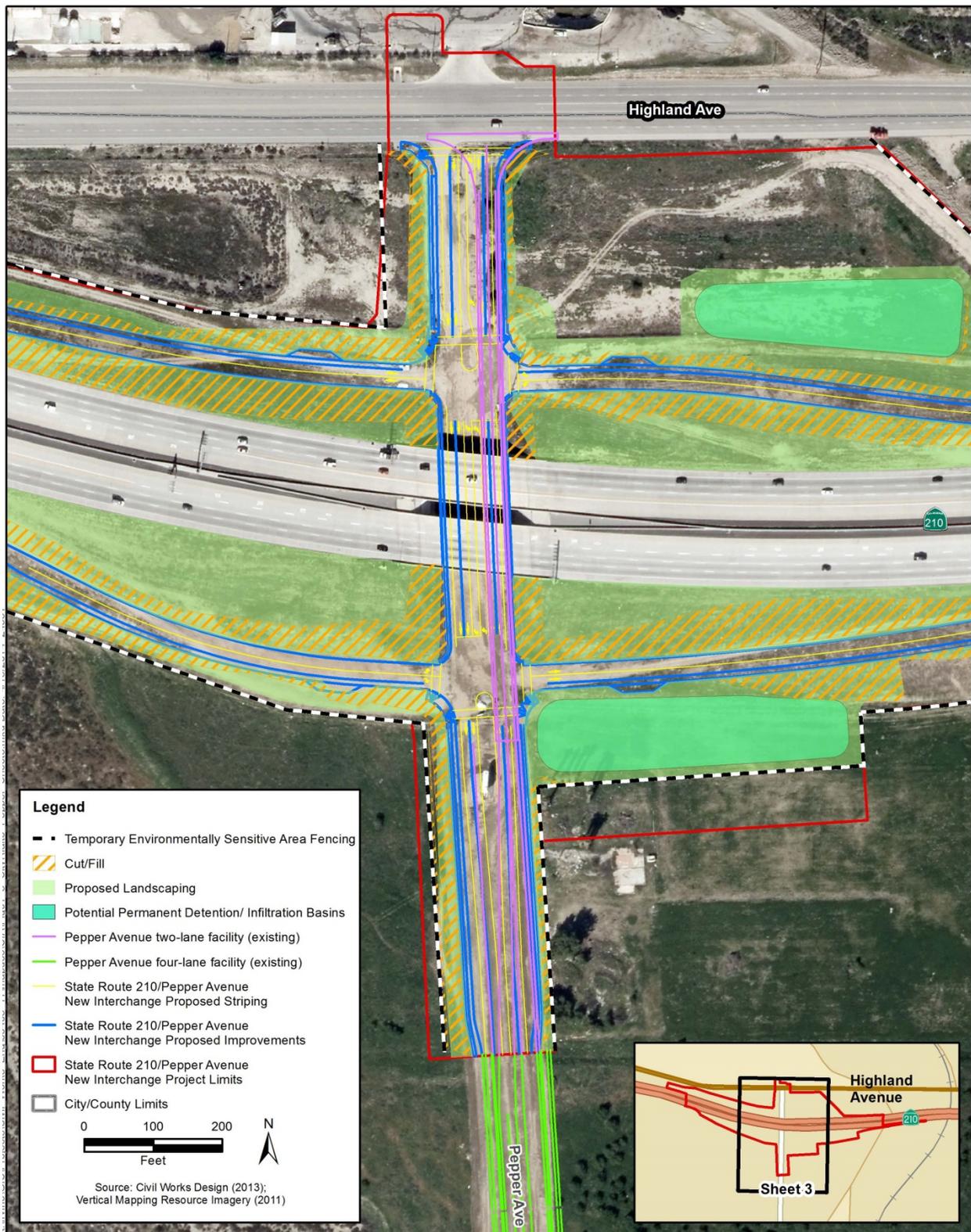


Figure 1-5  
Alternative 1 (Build Alternative) Tight Diamond Interchange, Sheet 3

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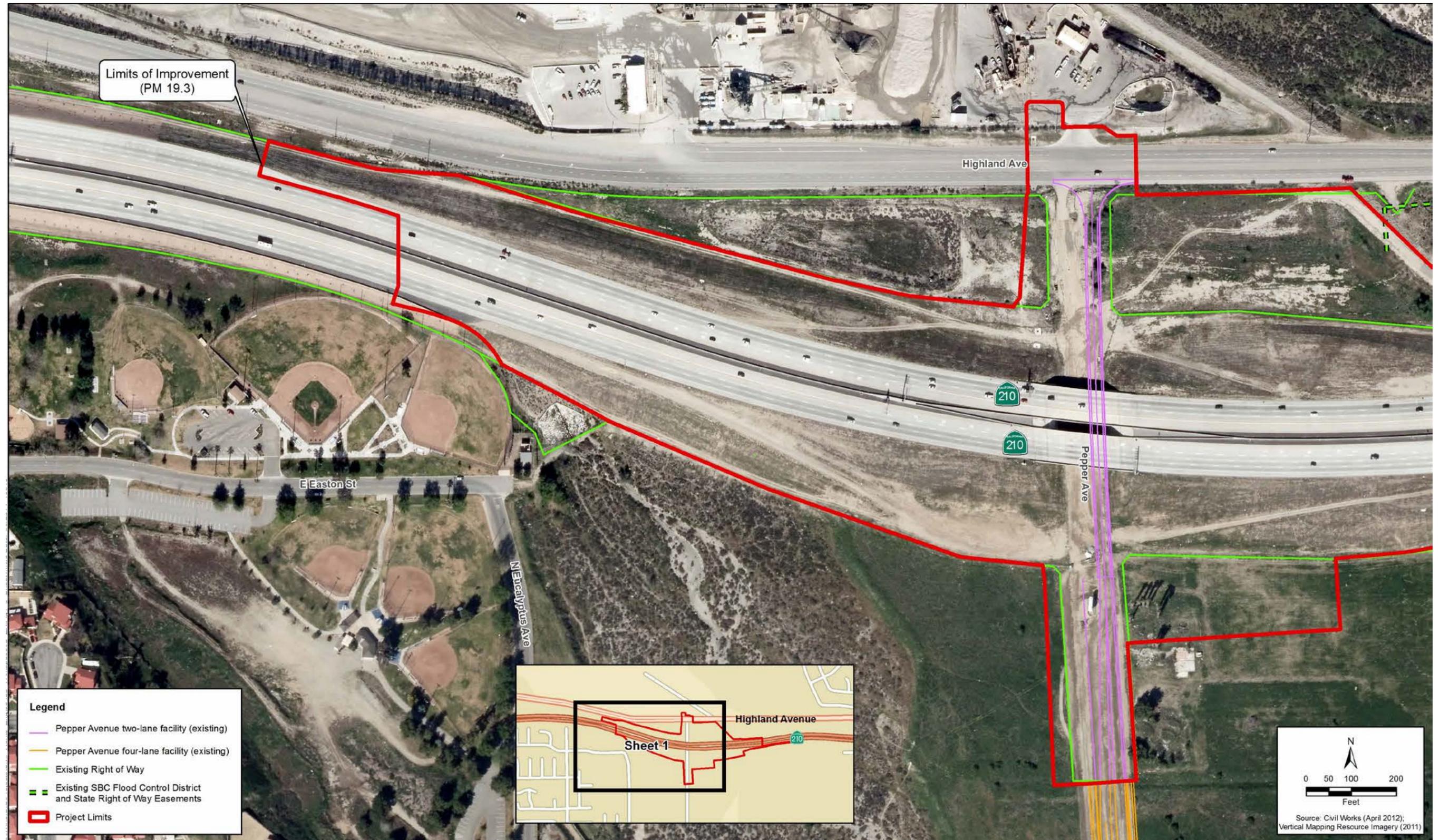


Figure 1-6  
Alternative 2 (No-Build Alternative) Sheet 1

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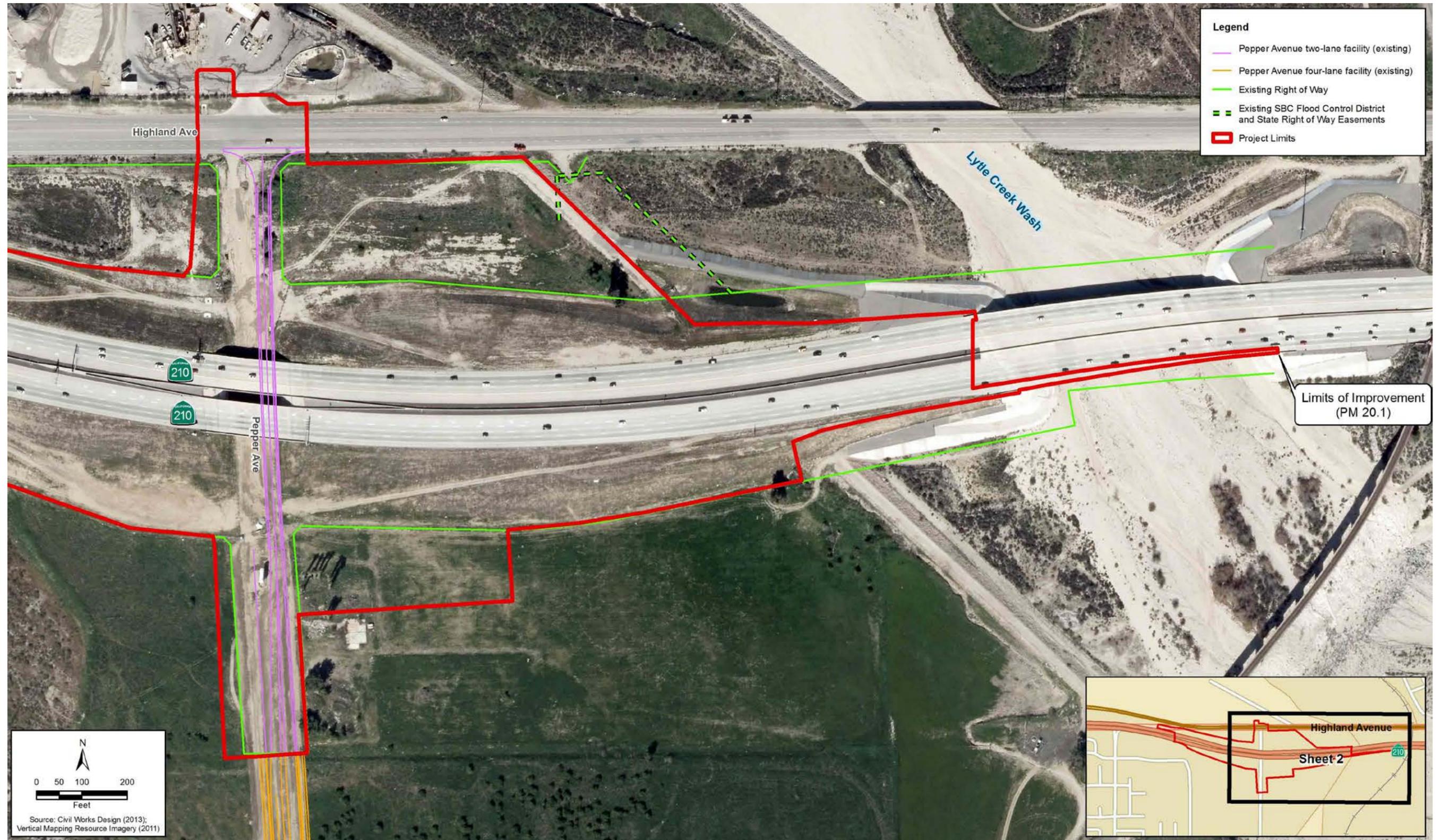


Figure 1-6  
Alternative 2 (No-Build Alternative) Sheet 2

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## CRITERIA FOR IDENTIFICATION OF A PREFERRED ALTERNATIVE

The potential impacts of the project on the community and sensitive biological resources in the project area, and the overall cost of the project in conjunction with satisfying the purpose and need for the project, will be considered by the Project Development Team (PDT) in the final identification of the preferred alternative. The benefits and impacts of Alternative 1 and Alternative 2 will also be compared and considered in the selection of the preferred alternative for the project. This process will occur following public circulation of the Draft Initial Study/Environmental Assessment prepared for this project.

After the public circulation period, all comments will be considered, and the PDT will identify a preferred alternative and Caltrans will make the final determination of the project's effect on the environment. Under the California Environmental Quality Act (CEQA), if no unmitigable significant adverse impacts are identified, Caltrans will prepare a Negative Declaration (ND) or Mitigated ND. Similarly, if Caltrans determines the action does not significantly impact the environment, Caltrans, as assigned by the Federal Highway Administration (FHWA), will issue a Finding of No Significant Impact (FONSI) in accordance with the National Environmental Policy Act (NEPA).

## ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION

No alternatives other than Alternatives 1 and 2 have been considered for the proposed project.

## 1.4 Permits and Approvals Needed

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

**Table 1-8. Permits and Approvals Needed**

Agency	Permit/Approval	Status
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	Application to be submitted after approval of Environmental Document
United States Fish and Wildlife Service	Section 7 Consultation	Letter of Concurrence to be obtained prior to approval of the Environmental Document
Santa Ana Regional Water Quality Control Board	Porter-Cologne and Clean Water Act Section 401 Water Quality Certification	Application to be submitted after approval of Environmental Document
United States Army Corps of Engineers	Clean Water Act Section 404 Nationwide Permit	Permit application to be submitted after approval of Environmental Document
State Water Resources Control Board	Clean Water Act Section 402—National Pollutant Discharge Elimination System (NPDES)	A Notice of Intent to comply with Construction General Permit, NPDES No. CAS000002 California Department of Transportation MS4 Permit, NPDES CAS000003, and the Municipal Separate Storm Sewer Systems (MS4) Permit (Order No. R8-2010-0036), and any other applicable permit(s), will be filed prior to start of construction

**Table 1-8. Permits and Approvals Needed Continued**

<b>Agency</b>	<b>Permit/Approval</b>	<b>Status</b>
Federal Highway Administration	Air Quality Conformity Analysis Determination	Determination to be obtained prior to approval of Environmental Document
City of Rialto	Freeway Agreement Modification	Modification to be obtained following Environmental Document project approval