

# Chapter 1 Proposed Project

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Changes have been made to this Environmental Document since the public circulation of the Draft Initial Study with Proposed Negative Declaration/ Environmental Assessment (Draft IS/EA) between November 27, 2013, and December 30, 2013. Public and agency comments received during the circulation of the Draft IS/EA and the related Open Forum Public Hearing, which was held on December 12, 2013, during the public circulation period, resulted in refinements that have been incorporated into this Initial Study with Negative Declaration/ Environmental Assessment with Finding of No Significant Impact (IS/EA). A vertical line in the outside margin indicates changes in the adjacent part of this IS/EA in relation to the corresponding part in the Draft IS/EA.

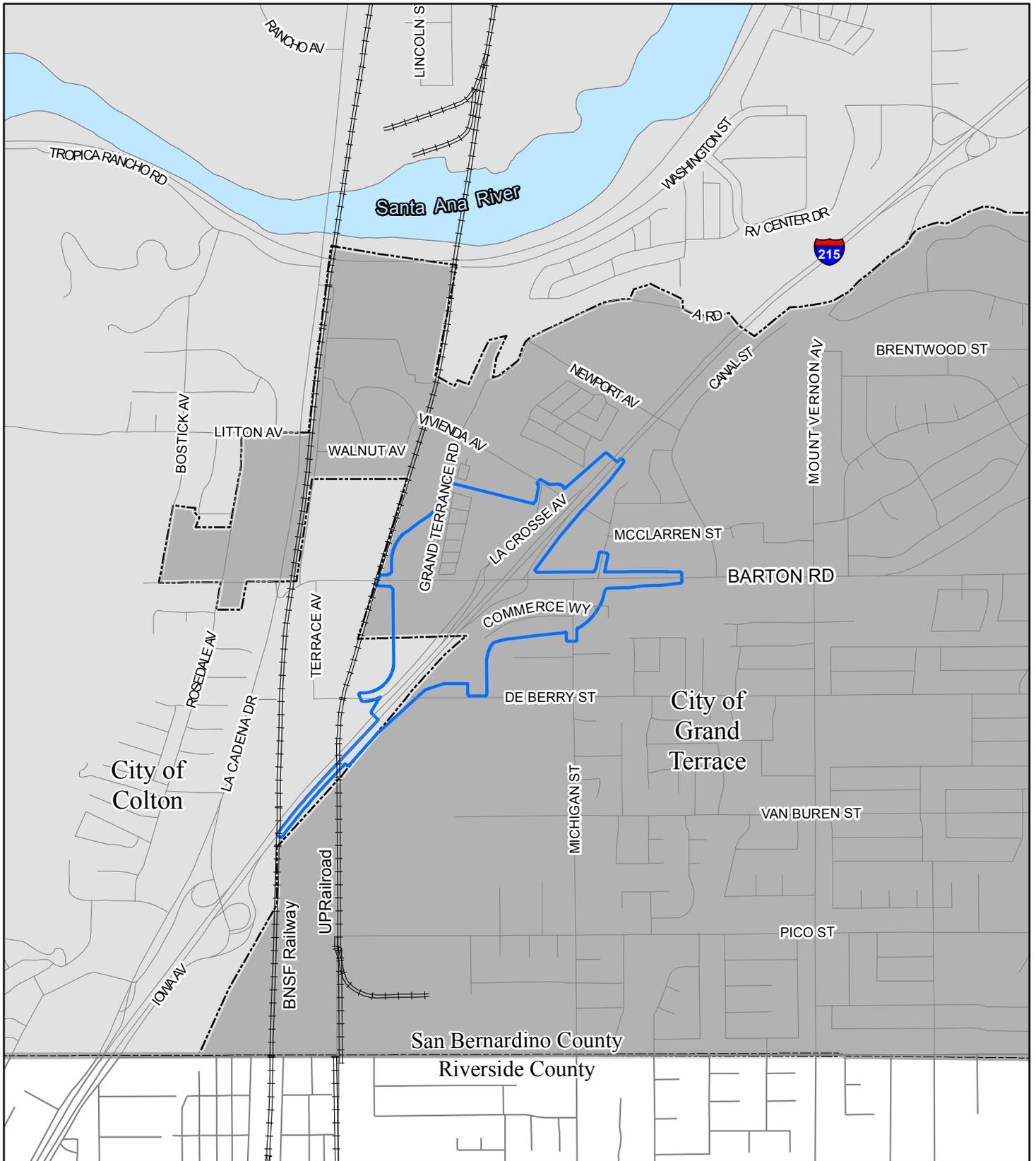
## 1.1 Introduction

The California Department of Transportation (Caltrans) is the lead agency under the National Environmental Policy Act (NEPA), and the California Environmental Quality Act (CEQA).

The San Bernardino Associated Governments (SANBAG) in cooperation with Caltrans, the City of Grand Terrace, and the City of Colton, proposes to improve the Interstate 215 (I-215)/Barton Road interchange (Project). The Project is located in the City of Grand Terrace and partially in the City of Colton in San Bernardino County. On Barton Road, the Project construction limits extend from approximately 0.3 mile (mi) west of I-215 to 0.4 mi east of I-215. The Project construction limits on I-215 extend from approximately 0.7 mi south of Barton Road to 0.4 mi north of Barton Road. Figure 1.1 shows the Project location and Figure 1.2 shows the Project vicinity.

The Project is included in the list of financially constrained projects in Amendment 1 of the Southern California Association of Governments' (SCAG's) 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (2012-2035 RTP/SCS). The Project is also included in the most current version of SCAG's 2013 Federal Transportation Improvement Program (2013 FTIP), with Amendments. The Project's schedule and description are consistent with information regarding the Project associated with Amendment #1 to SCAG's 2012-2035 RTP/SCS and Amendment #13-04 to SCAG's 2013 FTIP.

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LEGEND

- Project Area
- City of Colton
- City of Grand Terrace



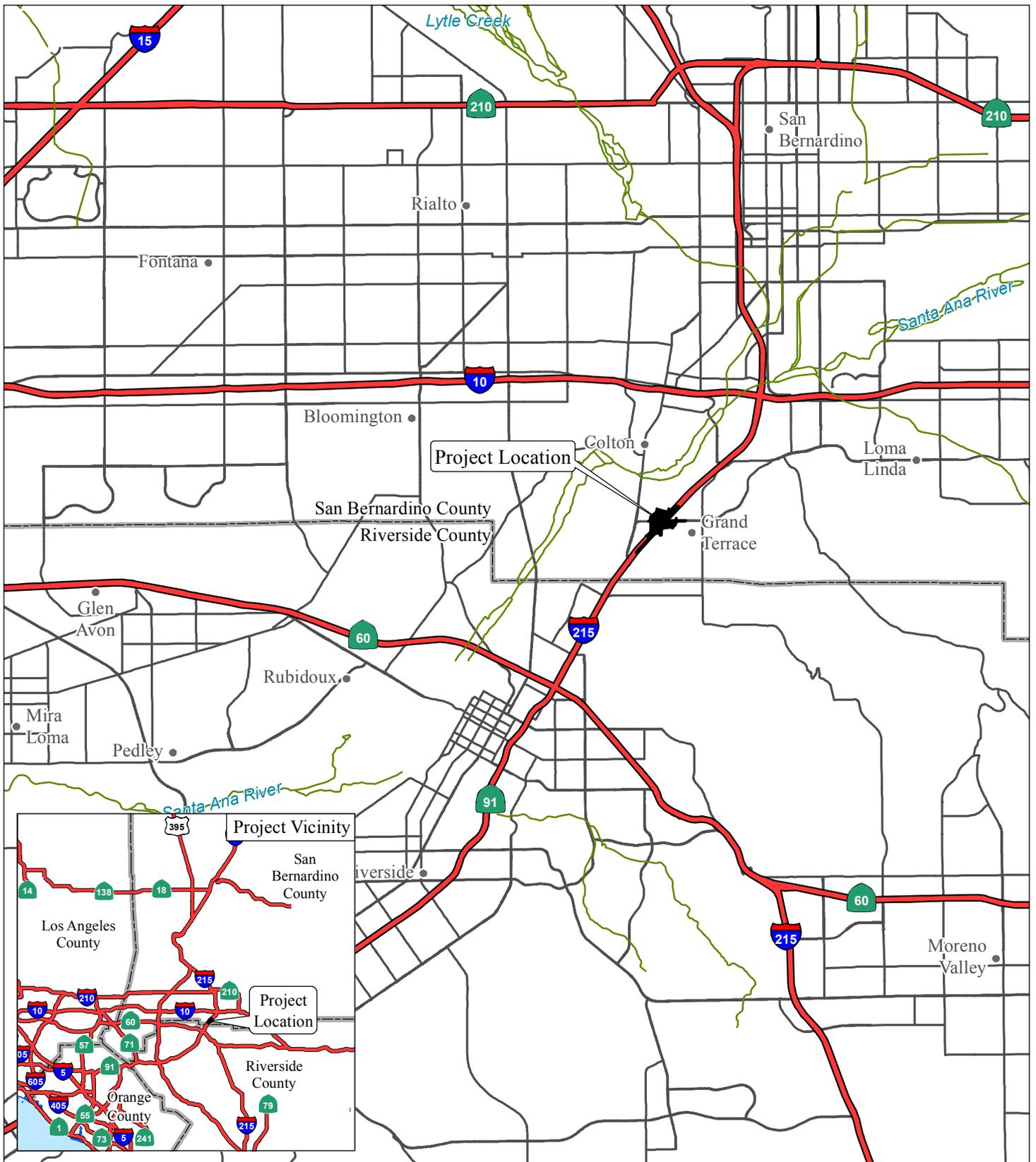
SOURCE: Thomas Brothers (2010)

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FIGURE 1.1

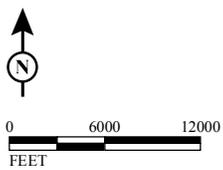
*I-215/Barton Road Interchange Improvement Project*  
**Project Location**

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LEGEND  
 ■ Project Area

FIGURE 1.2



SOURCE: ESRI (2008)

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*I-215/Barton Road Interchange Improvement Project*

Project Vicinity

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The planned funding sources, based on the SANBAG 10-Year Delivery Plan and the Project cost, are shown in Table 1.A. The summary of the estimated Project cost below is for the identified Preferred Alternative for the Project, Modified Alternative 7, as the Project nears completion of the Project Approval/Environmental Document (PA/ED) phase:

**Table 1.A Funding Sources and Project Cost**

Phase	Funding Source				Project Cost
	RIP	Measure I	STP	Private	
Final Design		\$2,183,000		\$2,481,000	\$3,596,000
Right of Way	\$17,400,000	\$3,436,000	\$1,500,000	\$0	\$18,617,000
Construction	\$22,611,000	\$18,551,000	\$10,632,000	\$0	\$40,273,000
<b>TOTAL</b>	<b>\$40,011,000</b>	<b>\$24,170,000</b>	<b>\$12,132,000</b>	<b>\$2,481,000</b>	<b>\$62,486,000</b>

Measure I = San Bernardino County sales tax  
RIP = Regional Improvement Program  
STP = Surface Transportation Program

The anticipated start of construction is mid-2016 (calendar year), and completion is anticipated in mid-2018 (calendar year).

Following the Project's completion of the Environmental Document and Project Approval phase, it is being planned for project development to proceed utilizing the Construction Manager/General Contractor (CM/GC) contract process, which was authorized through California legislation in 2013. The CM/GC or CM at Risk project delivery method will allow Caltrans to contract with a construction manager during the design process to provide assistance to the design team, including advice regarding scheduling, pricing, phasing, and other matters that would help Caltrans design a more constructible project. The Federal Highway Administration (FHWA) has found several benefits to this procurement method and has approved its use in California.

### 1.1.1 Existing Facility

I-215 is a major north-south freeway facility extending approximately 55 mi from the southern junction of Interstate 15 (I-15) in the City of Murrieta in Riverside County and terminating at the northern junction with I-15 in Devore in San Bernardino County. It provides an alternative route to I-15. The portion of I-215 within the Project limits currently provides three through lanes in each direction and a paved median. The I-215/Barton Road interchange is a compact diamond interchange with single-lane on- and off-ramps. The off-ramps expand to two lanes at the street intersections to accommodate turning traffic. The southbound off-ramp merges onto a

local street (La Crosse Avenue) before intersecting Barton Road. The northbound and southbound ramp intersections are spaced approximately 350 feet (ft) apart. The existing overcrossing is a single lane in each direction with back-to-back left-turn pockets for the on-ramps.

Barton Road is an east-west primary arterial in the County of San Bernardino extending from La Cadena Drive in the City of Colton to east of San Mateo Street in the City of Redlands. Within the Project limits, Barton Road is a two-lane roadway west of I-215. East of I-215, Barton Road is a four-lane facility with turn lanes at various intersections. The following intersections are within the Project limits at Barton Road:

- Grand Terrace Road (unsignalized T-intersection)
- Southbound ramps and La Crosse Avenue intersection (signalized)
- Northbound ramps intersection (signalized)
- Michigan Avenue intersection (signalized T-intersection)
- Vivienda Avenue intersection (unsignalized T-intersection)

### **1.1.2 Relationship to other Freeway Projects**

The Project limits of the I-215/Barton Road Interchange Improvement Project overlap or are adjacent to the project limits of four other planned projects along I-215. The traffic, air quality, and noise modeling for the Project considers these other four planned transportation projects along I-215 as applicable. The anticipated schedule for the Project includes completion of the environmental document in early 2014, final design and right of way acquisition from early 2014 to mid-2016, and construction from mid-2016 to mid-2018. A brief description of each of the four projects is listed below.

- I-215 Bi-County Improvement Project. This project would add a general-purpose lane in each direction on I-215 and would include auxiliary lanes between State Route 60 (SR-60) in the City of Riverside and Orange Show Road in the City of San Bernardino. This project has not been programmed but is planned for completion prior to 2040.

The I-215/Barton Road Interchange Improvement Project is being designed to accommodate the I-215 Bi-County Improvement Project, which partially overlaps with the Project.

- I-215 Bi-County High-Occupancy Vehicle (HOV) Lane Gap Closure Project. This project will add an HOV lane in each direction on I-215 between SR-60 in the City of Riverside and Orange Show Road in the City of San Bernardino. This project was approved in April 2011, and construction is programmed to be completed by 2015; this project will be completed before the I-215/Barton Road Interchange Improvement Project.

The Project has been designed to be consistent with the I-215 Bi-County HOV Lane Gap Closure Project, which partially overlaps with the Project. The I-215 Bi-County HOV Lane Gap Closure Project is currently under construction; therefore, the existing condition, as noted throughout Chapter 2 of this document accounts for the current construction activities associated with this project. Furthermore, the No Build Alternative analyses accounts for the permanent impacts and improvements associated with the I-215 Bi-County HOV Lane Gap Closure Project. The I-215 Bi-County HOV Lane Gap Closure Project is anticipated to be open to traffic in late 2015.

- I-215/Mount Vernon Avenue-Washington Street Interchange Improvement Project. This project would reconstruct interchange ramps and local roadways and add auxiliary lanes. While this project is in the project study phase, it does not overlap the footprint of the I-215/Barton Road Interchange Improvement Project. At this time, construction is planned to be completed by 2020 and, therefore, would not be completed before the I-215/Barton Road Interchange Improvement Project.

The Project would not affect the design of the I-215/Mount Vernon Avenue-Washington Street Interchange Improvement Project.

- I-215/Newport Avenue Overcrossing Project. A separate stand-alone State Highway Operation and Protection Program (SHOPP) project was developed through completion of the Project Approval & Environmental Document phase to replace this overcrossing with a structure providing higher clearance over I-215, however, subsequently the replacement of the Newport Avenue Overcrossing was incorporated into part of the I-215 Bi-County HOV Lane Gap Closure Project, which is currently under construction and as indicated above, anticipated to be open to traffic in late 2015. The Newport Avenue Overcrossing has already been removed. The new structure has been designed to accommodate the I-215/Barton Road IC Improvement Project. The Newport Avenue Overcrossing is planned to be open in mid-2014.

The I-215/Barton Road Interchange Improvement Project accounts for the following improvements that are part of the I-215 Bi-County HOV Lane Gap Closure Project: reconstruction of the BNSF Railway two-track bridge over the freeway between the Iowa Avenue/La Cadena Drive interchange and the Barton Road interchange to provide adequate vertical clearance with the widened freeway (between SR-60 and Orange Show Road).

## **1.2 Purpose and Need**

### **1.2.1 Purpose**

The purpose of the Project is to improve the operation, increase the capacity, and reduce the existing and future congestion at the I-215/Barton Road interchange, and improve access to facilities served by the interchange.

### **1.2.2 Need**

Based on traffic projections and the existing and planned land uses in the vicinity, the facility is forecast to degrade to level of service (LOS) F (breakdown condition) by 2040 without improvements.

#### **1.2.2.1 Capacity, Transportation Demand, and Safety**

To determine existing traffic demand versus capacity in a study area, traffic counts are recorded for passenger cars, two-axle trucks, three-axle trucks, and four-axle trucks. Trucks are factored into Passenger Car Equivalents (PCEs) that convert traffic volumes to an equivalent number of passenger cars based on the type of truck.

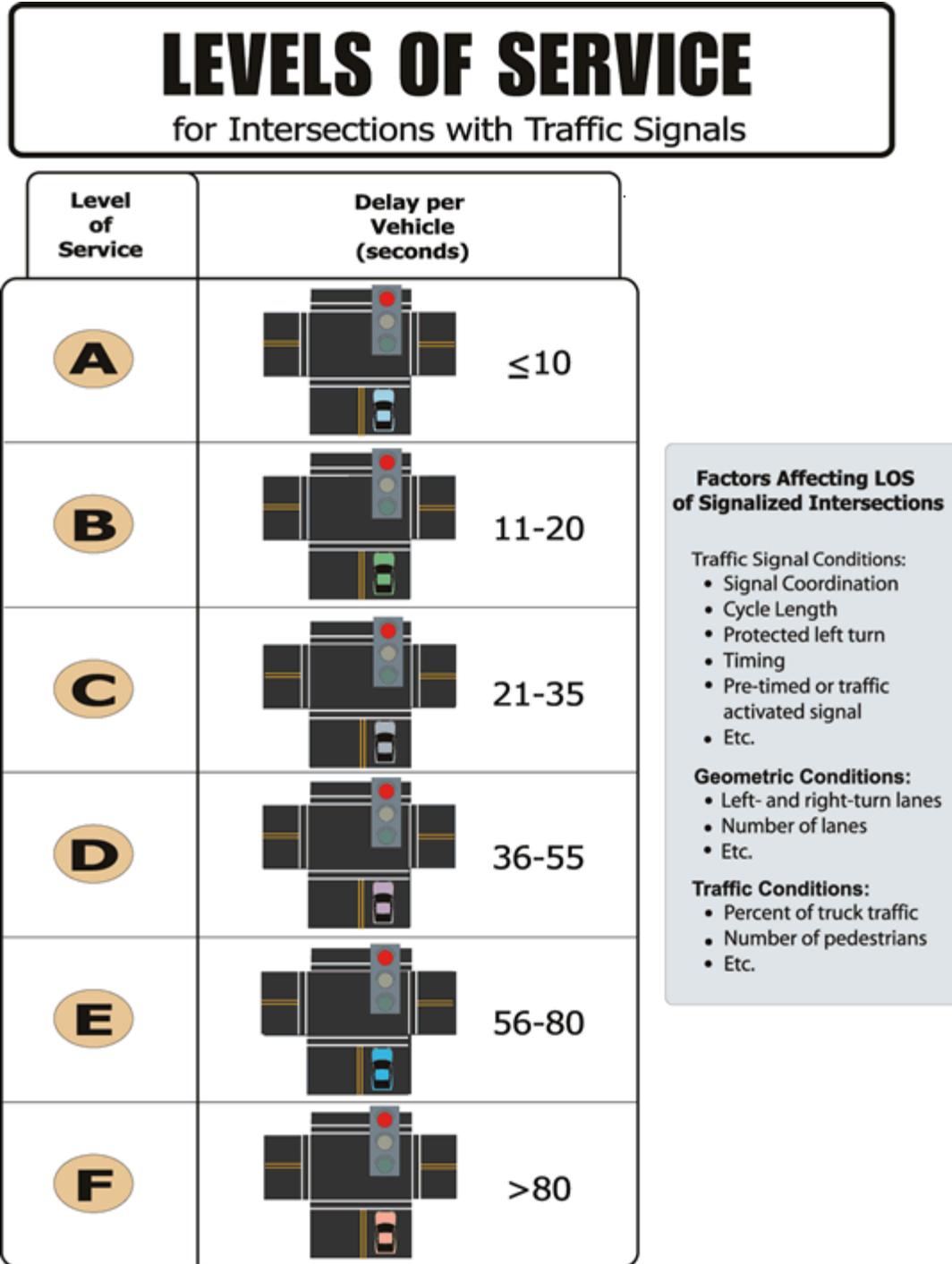
Based on traffic forecasts, the daily and peak-hour number of vehicles at the study area freeway segments and intersections are projected to increase over time, which will increase traffic congestion in the Project area under the existing lane and ramp configurations. Both freeway and local intersection traffic flow can be defined in terms of LOS. For both freeways and intersections, there are six LOS, ranging from LOS A to LOS F. On freeways, LOS A represents free traffic flow with low volumes and high speeds, resulting in low densities, while LOS F represents traffic volumes that exceed capacity and result in forced flow operations at low speeds, resulting in high densities, as shown in Figure 1.3. As shown in Figure 1.4, LOS at signalized intersections is calculated using the time (delay) that vehicles wait to pass through an intersection. The delay is measured in seconds for each movement at an intersection (e.g., through movement, right-turn, and left-turn). These individual delays are averaged to provide the LOS for the intersection as a whole.

# LEVELS OF SERVICE

## for Freeways

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

Figure 1.3 Levels of Service for Freeways



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

**Figure 1.4 Levels of Service for Intersections with Traffic Signals**

The demand for interchange access is represented in traffic volumes. Traffic projections for 2040, the identified design horizon year for the Project, indicate that the peak-hour volumes on I-215 will double in most segments, as shown in Table 1.B, although only one mainline freeway segment would operate at LOS F in 2040 (Table 1.E). The 2009 (existing condition) Barton Road interchange ramp volumes are forecast to double by 2040 as shown in Table 1.C. As discussed in the *Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis* (December 2011), the freeway main line and ramp merge/diverge areas are similar in each of the alternatives; freeway mainline and ramp volumes for all of the alternatives (No Build and all of the studied Build Alternatives, including the Preferred Alternative for the Project, Modified Alternative 7) are the same.

As shown in Table 1.D, the study area intersections operate at satisfactory LOS during the AM and PM peak hours in the existing condition (2009). Without improvements (No Build condition), the Barton Road/Grand Terrace Road intersection would operate at unsatisfactory LOS during the AM and PM peak hours in 2016. In addition, the Barton Road/I-215 southbound ramps intersection would operate at unsatisfactory LOS during the PM peak hour in 2016. Because of the projected demand, without improvements, by 2040 all seven study area intersections would operate at an unsatisfactory LOS (LOS F) during both the AM and PM peak hours, with the exception of Barton Road/La Cadena Drive during the AM peak hour, which would operate at LOS C.

**Table 1.B Existing (2009) and Future (2016 and 2040) Freeway Mainline Volumes**

Freeway Segment Between	Direction	Existing Volumes		2016* Volumes		2040 Volumes	
		2009 AM Peak Hour	2009 PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Washington Street and Barton Road	Northbound	4,881	5,677	6,089	6,975	10,188	11,402
	Southbound	6,069	5,276	6,926	6,372	9,863	10,128
Barton Road and Iowa Avenue	Northbound	4,876	5,685	5,987	6,979	9,798	11,416
	Southbound	6,198	5,346	7,144	6,487	10,207	10,122

Source: *Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis* (December 2011).

\* A *Traffic Volume Comparison Memorandum* (November 2013), prepared to address whether previously approved 2016 traffic volumes (in conjunction with when 2016 was the planned Opening Year for the Project) are appropriate for use as the basis for traffic analysis for the Project's revised planned opening year changing to 2018, concluded:

Based on the traffic count comparison conducted in June of 2012, traffic volumes were slightly lower than those collected in 2009. The decrease in the existing volumes would be offset by the Project's revised opening year of 2018. Therefore, the "opening" year 2016 volumes in the Traffic Operations Analysis are appropriate to use as the updated 2018 opening year volumes.

**Table 1.C Existing (2009) and Future (2016 and 2040) Freeway Ramp Volumes**

Ramp	2009 Volumes		2016* Volumes		2040 Volumes	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Barton Road Northbound On-Ramp	370	406	544	549	1,095	922
Barton Road Northbound Off-Ramp	365	414	442	553	706	935
Barton Road Southbound On-Ramp	462	431	639	618	1,047	883
Barton Road Southbound Off-Ramp	333	361	421	503	703	890

Source: Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis (December 2011).

\* See note included at bottom of Table 1.B above, on page 1-13.

**Table 1.D Existing (2009) and Future No Build (2016 and 2040) Intersection Levels of Service**

Freeway Segment Between	2009		2016*		2040	
	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
Barton Road/La Cadena Drive	B	B	B	C	C	F
Barton Road/Grand Terrace Road	B	C	F	F	F	F
Barton Road/La Crosse Avenue	B	B	B	C	F	F
Barton Road/I-215 Southbound Ramps	B	C	C	F	F	F
Barton Road/I-215 Northbound Ramps	B	B	B	C	F	F
Barton Road/Michigan Street	B	B	B	B	F	F
Barton Road/Vivienda Avenue	B	B	C	C	F	F

Source: Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis (December 2011).

\* See note included at bottom of Table 1.B above, on page 1-13.

**Table 1.E Existing (2009) and Future No Build (2016 and 2040)  
Mainline Levels of Service**

Freeway Segment Between	2009		2016*		2040	
	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
<b>Northbound</b>						
Iowa Avenue On-Ramp to Barton Road Off-Ramp	D	E	D	E	D	E
Barton Road Off-Ramp to Barton Road On-Ramp	D	D	D	D	E	F
Barton Road On-Ramp to Washington Street Off-Ramp	D	E	D	E	D	E
<b>Southbound</b>						
Washington Street On-Ramp to Barton Road Off-Ramp	E	D	E	D	D	D
Barton Road Off-Ramp to Barton Road On-Ramp	E	D	D	D	E	E
Barton Road On-Ramp to La Cadena Drive Off-Ramp	E	D	E	D	D	D

Source: *Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis* (December 2011).

\* See note included at bottom of Table 1.B above, on page 1-13.

Freeway ramp LOS is satisfactory in 2016 and 2040 (Table 1.F). The ramp LOS improves in the 2040 No Build condition because the I-215 Bi-County Improvement Project would have been completed and the off-ramps in the study area would have been widened to two lanes. However, additional capacity is needed at the interchange to accommodate projected traffic volumes and improve LOS at the study area intersections.

**Table 1.F Existing (2009) and Future No Build (2016 and 2040)  
Freeway Ramp LOS**

Ramp	2009		2016*		2040	
	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
<b>Northbound</b>						
Iowa Avenue Off-Ramp	C	D	D	D	A	A
Iowa Avenue On-Ramp	D	D	D	E	C	D
Barton Road Off-Ramp	D	D	D	E	A	A
Barton Road On-Ramp	C	D	D	D	C	B
Mt. Vernon Avenue Off-Ramp	D	D	D	E	NA	NA
Mt. Vernon Avenue On-Ramp	D	D	D	D	NA	NA
Washington Street Off Ramp	NA	NA	NA	NA	B	B
<b>Southbound</b>						
Washington Street Off-Ramp	F	E	E	E	B	B
Washington Street On-Ramp	D	D	D	D	B	C
Barton Road Off-Ramp	E	D	E	D	A	A
Barton Road On-Ramp	D	D	D	D	C	B
La Cadena Drive Off-Ramp	E	D	E	D	B	B
La Cadena Drive On-Ramp	D	C	D	D	C	B

Source: *Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis* (December 2011).

\* See note included at bottom of Table 1.B above, on page 1-13.

Traffic Accident Surveillance and Analysis System (TASAS)-Transportation System Network (TSN) data were provided by Caltrans District 8 and are shown in Table 1.G. The data includes accidents that occurred on the I-215 freeway from Post Mile 0.58 to Post Mile 1.66 and the interchange ramp areas over a period of 3 years (October 1, 2008 to September 30, 2011).

**Table 1.G TASAS Accident Rate from 10/01/08 to 09/30/11**

Location	Actual			Statewide Average for Similar Facilities		
	Fatal	F+I*	Total	Fatal	F+I*	Total
<b>Northbound</b>						
Barton Road Off-Ramp	0.000	0.37	1.28	0.003	0.35	1.01
Barton Road On-Ramp	0.000	0.15	0.29	0.002	0.22	0.63
Mainline	0.011	0.23	0.70	0.005	0.33	1.06
<b>Southbound</b>						
Barton Road Off-Ramp	0.000	0.00	0.00	0.001	0.17	0.54
Barton Road On-Ramp	0.000	0.00	0.55	0.002	0.22	0.75
I-215 Mainline	0.000	0.26	0.88	0.005	0.33	1.06

Source: California Department of Transportation, TASAS-TSN (October 1, 2008–September 30, 2011).

\* F+I = Fatal+Injury

Accident rates for mainline expressed as: number of accidents/million vehicle miles

Accident rates for ramps expressed as: number of accidents/million vehicles

The accident rate data for the I-215 Barton Road interchange and I-215 near the interchange indicate that the total accident rate and F+I accident rate are lower than the statewide average rate at each ramp with one exception, the northbound exit ramp. At this location, the total accident rate per million vehicle miles is 1.28 as compared to a statewide average of 1.01 and the fatal plus injury (F+I) accident rate is 0.37 as compared to a statewide average of 0.35 during the 3-year period between 2008 and 2011. The table also indicates that the actual Fatal accident rate for the northbound mainline is higher than the statewide average. Modified Alternative 7 would provide a longer tangent as vehicles exit the freeway, which would provide more distance for motorists to reduce speed before entering a curve or nearing the intersection.

No accident data for Barton Road is available either from the City of Grand Terrace Public Works or the San Bernardino County Sheriff’s Department. The increased capacity of the interchange and Barton Road, in particular at the ramp intersections, is expected to relieve the existing congestion, thus reducing congestion-related accidents. The features in this document are not anticipated to have an adverse effect on the safety of this facility.

### 1.2.2.2 Levels of Service

Because there are four other planned freeway projects in the Project vicinity that are multijurisdictional and that influence the traffic results in 2016 and/or 2040, the Project Development Team (PDT) agreed on a common set of analysis parameters for the traffic study. These LOS parameters and standards are as follows:

- Capacity of a mixed-flow lane: 2,300 vehicles per hour
- Capacity of a high occupancy vehicle lane: 1,600 vehicles per hour
- Lost time per signal phase: 2 seconds
- Minimum green time per signal phase: 7 seconds
- Minimum LOS standard for freeways: LOS E
- Minimum LOS standard for intersections: LOS D

Based on vehicle classification counts conducted at the Barton Road interchange, the following truck percentages were used in the LOS analysis:

- Percentage of trucks during the AM peak hour: 7 percent
- Percentage of trucks during the PM peak hour: 4 percent

### 1.2.2.3 Roadway Deficiencies

The existing I-215 southbound off-ramp at Barton Road is nonstandard per the Caltrans *Highway Design Manual* (6<sup>th</sup> Edition) because it intersects and merges with a local street (La Crosse Avenue) before reaching Barton Road. In addition, the left-turn lane on westbound Barton Road at the I-215 southbound on-ramp does not have sufficient vehicle capacity during the AM and PM peak hours, as shown in Table 1.H.

This prevents left-turning and through traffic from moving through the interchange. As a result, although the Barton Road/southbound ramps intersection currently operates at LOS B and C in the AM and PM peak hours, respectively (Table 1.D), because turning movement delays are averaged to calculate LOS, delays at this intersection are excessive due to the long queue of vehicles waiting to turn left and also blocking the through lane. In 2016, the AM peak hour queue length will more than double (four times existing capacity) and will increase more in 2040 without interchange improvements. Additional turn-pocket capacity is needed in order to reduce excessive delays at the interchange.

**Table 1.H Existing (2009) and Future No Build (2016 and 2040) Intersection Queue Lengths**

Intersection	2009				2016*				2040			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Space Provided (ft)	Queue Length 95th Percentile (ft)	Space Provided (ft)	Queue Length 95th Percentile (ft)	Space Provided (ft)	Queue Length 95th Percentile (ft)	Space Provided (ft)	Queue Length 95th Percentile (ft)	Space Provided (ft)	Queue Length 95th Percentile (ft)	Space Provided (ft)	Queue Length 95th Percentile (ft)
Barton Road/I-215 Southbound Ramps – Westbound left-turn lane	120	213	120	297	120	478	120	231	120	491	120	252

Source: Interstate 215/Barton Road Interchange Improvement Project Traffic Operations Analysis (December 2011).

\* See note included at bottom of Table 1.B above, on page 1-13.

#### **1.2.2.4 Social Demand and Economic Development**

The I-215/Barton Road interchange is the primary regional access for the City of Grand Terrace. It also serves the southwestern portion of the City of Colton and provides direct access to the City of Loma Linda. The build out of the interchange area in accordance with the City of Grand Terrace General Plan and the Barton Road Specific Plan will result in increased traffic congestion on the freeway and the local street networks leading to the interchange. Reconstruction of the interchange is needed to relieve additional congestion.

#### **1.2.2.5 Modal Interrelationships and System Linkages**

The I-215/Barton Road interchange, in combination with the I-215/Mount Vernon Avenue/Washington Street interchange, provides regional access to the Cities of Colton, and Grand Terrace, as well as Loma Linda Hospital, the Pettis Veteran's Administration (VA) Hospital, and Loma Linda University. Interstate 10 (I-10), a major interstate freeway, connects to I-215 approximately 2 mi north of Barton Road. I-215 provides a regional connection between Los Angeles, Orange, Riverside, and San Bernardino Counties through its interchanges with SR-60 and State Route 91 (SR-91). State Route 210 (SR-210) provides a connection to foothill and mountain highways.

The Project site and its vicinity are served by Omnitrans and the Riverside Transit Agency (RTA). Omnitrans and the RTA provide extensive fixed-route bus systems that include bus routes in the interchange area. Omnitrans Route 325, which starts at the corner of Barton Road and Michigan Avenue within the Project area, runs east along Barton Road, and connects Grand Terrace residents to locations such as the Grand Terrace Senior Center, Loma Linda Hospital, City Hall, and the VA Hospital. Omnitrans Route 19 connects to Route 325 near Washington Street and provides access to areas west of I-215, including the City of Colton and the Fontana Metrolink Station. RTA Route 14 connects downtown Riverside with Omnitrans Route 325 at Michigan Avenue and Center Street near the Highgrove Library.

Ontario International Airport is a full-service airport with commercial jet service to major U.S. cities and through service to many international destinations. Located in the City of Ontario, the airport is less than 0.5 mi south of I-10 and approximately 2.5 mi west of I-15. The airport is the center of a developing freight movement system that includes the airport, two railroads, four major freeways, and an expanding

network of freight forwarders. In 2011, 4.5 million passengers used the airport and 419,523 tons of air freight were shipped.<sup>1</sup>

According to the 2010 U.S. Census, most of the employed labor force in the City of Grand Terrace and the City of Colton work outside of their respective city of residence. Of the workers over the age of 16 years, 2.7 percent of Grand Terrace residents and 2.6 percent of Colton residents utilize public transportation to get to work. Approximately 92 percent of Grand Terrace and Colton residents use an automobile to get to work.

### **1.2.2.6 Air Quality Improvements**

The I-215/Barton Road interchange on- and off-ramps currently are not metered. In addition, the bicycle lane on the south side of Barton Road ends east of Michigan Avenue. The City of Grand Terrace General Plan Circulation Element shows a planned bicycle lane on Barton Road from west of Michigan Avenue to the western city limits. The planned bicycle lane would improve connectivity between Grand Terrace Elementary School and the Towne Plaza shopping area and the western end of the city for bicyclists.

### **1.2.3 Independent Utility and Logical Termini**

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.

The Project limits include the portion of I-215 where the reconstructed ramps and auxiliary lanes meet the mainline, and the local streets associated with maintaining the adjacent local transportation network. This area is large enough to appropriately address the potential environmental impacts of the Project. In addition, the Project can meet the identified need for congestion relief and ramp improvements as an

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<sup>1</sup> [http://www.lawa.org/welcome\\_ont.aspx?id=88](http://www.lawa.org/welcome_ont.aspx?id=88) (accessed August 28, 2012).

independent project and is not dependent on any other projects to meet the identified purpose for the interchange improvements.

The preliminary design of the Project avoids potential conflicts with the other foreseeable transportation improvements in the area. For example, the Barton Road bridge will be long enough to accommodate the HOV lanes and the future I-215 widening planned under the I-215 Bi-County Improvement Project. Therefore, the Project can be constructed independently of the other transportation improvements in the area, and conversely, the other transportation projects are not dependent on the I-215/Barton Road interchange improvements for implementation.

### **1.3 Project Description**

This section describes the proposed action and the design alternatives that were developed to meet the identified need through accomplishing the defined purposes while avoiding or minimizing environmental impacts.

The Project is located in the City of Grand Terrace, and partially in the City of Colton in San Bernardino County, California. Within the limits of the Project, I-215 currently provides three lanes in each direction. Barton Road is a two-lane roadway west of I-215 and a four-lane facility with turn lanes at various intersections east of I-215. Barton Road provides four ramps that connect to I-215: southbound on- and off-ramps, and northbound on- and off-ramps.

The purpose of the Project is to improve the operation, increase the capacity, and reduce the existing and future congestion at the I-215/Barton Road interchange, and improve access to facilities served by the interchange. The Project would replace the existing Barton Road overcrossing, reconstruct and widen Barton Road, realign the existing on- and off-ramps to enhance turning maneuverability and storage capacity, improve local roadways, and modify traffic signals.

### **1.4 Project Alternatives**

Four alternatives are being analyzed in this document: the No Build Alternative (Alternative 1) and three Build Alternatives (Alternatives 3, 6, and Modified Alternative 7).<sup>1</sup> For Build Alternatives to be considered feasible, they must meet the

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<sup>1</sup> Alternatives 2, 4, 5, and 7 were considered but rejected; refer to discussion in Section 1.5.

Project's purpose and need while not causing other operational deficiencies at the interchange ramps, on the I-215 mainline, or at local intersections. In addition to meeting purpose and need, the selection criteria for alternatives included minimization of right of way acquisition and displacements, cost, and minimization of nonstandard features.

#### **1.4.1 Build Alternatives**

##### **1.4.1.1 Alternative 3 (Partial Cloverleaf Interchange)**

Alternative 3 would provide a conventional partial cloverleaf interchange with the northbound on- and off-ramps on the southern side of Barton Road and the southbound on and off-ramps on the northern side. This alternative would widen Barton Road from one through lane to two through lanes in each direction between Grand Terrace Avenue on the west and Commerce Center Drive on the east. The existing overcrossing would be replaced with a new structure with four through lanes and right-turn lanes at the on-ramps.

The conceptual design for Alternative 3 is shown in Figure 1.5, which follows.

##### **1.4.1.2 Alternative 6 (Modified Cloverleaf Interchange)**

Alternative 6 proposes a modified cloverleaf interchange with the southbound on- and off-ramps directly connected to Barton Road; the northbound on- and off-ramps would be constructed to an extension of Commerce Way, which would be realigned to connect to Barton Road at the location of the existing Vivienda Avenue intersection to the east. Barton Road would be widened to two through lanes in each direction between Grand Terrace Avenue on the west and Commerce Center Drive on the east. The existing overcrossing would be replaced with a new structure with four through lanes, right-turn lanes at the on-ramps, a median, and a left-turn lane to Vivienda Avenue.

The conceptual design for Alternative 6 is shown in Figure 1.6, which follows.

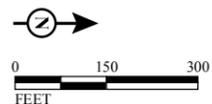
##### **1.4.1.3 Modified Alternative 7 (Modified Cloverleaf/Diamond Interchange) (Preferred Alternative)**

Modified Alternative 7 would provide a tight diamond configuration for the northbound ramps. The southbound ramps have a similar configuration to that under Alternative 6, except with a roundabout at the southbound ramp intersection with Barton Road/La Crosse Avenue. The planned roundabout would have two lanes in the east-west direction and one lane in the north-south direction. Barton Road would be



LEGEND

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|--|--|--|
|  Alternative 3                |  Proposed Retaining Wall                                    |  City Boundary              |
|  Proposed Right of Way        |  Proposed Sound Barrier                                     |  Grand Terrace Fitness Park |
|  Temporary Construction Limit |  I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier |  |
|  Limits of Construction       |  |  |



SOURCE: Microsoft (5/2010); San Bernardino Cnty. (3/08, 9/2013); AECOM (5/2011); OPC (7/1/2013)  
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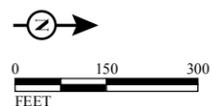
FIGURE I.5  
 Sheet 1 of 3

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LEGEND

- Alternative 3
- Proposed Right of Way
- Temporary Construction Limit
- Limits of Construction
- Proposed Retaining Wall
- Proposed Sound Barrier
- I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier
- City Boundary
- Grand Terrace Fitness Park

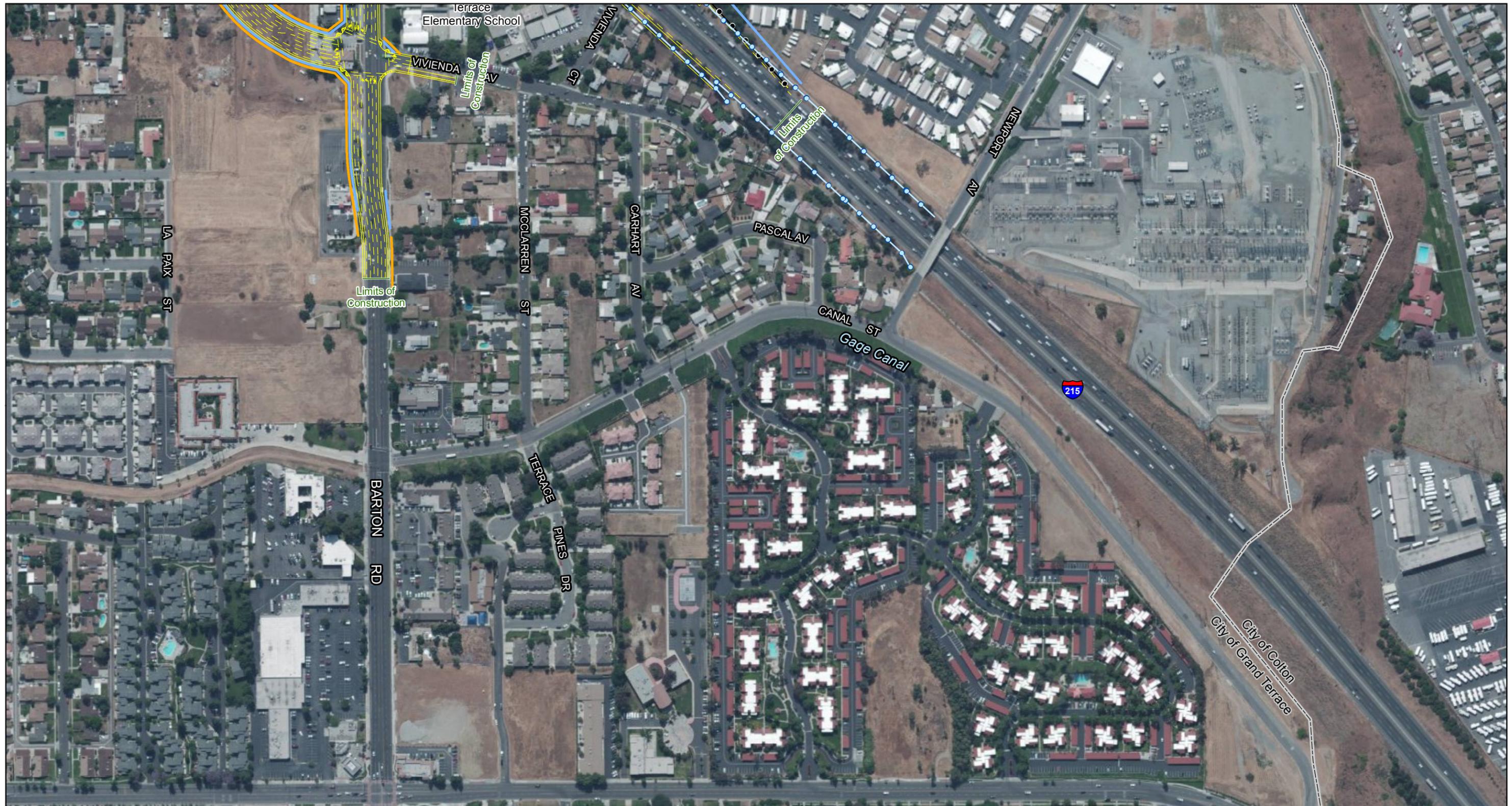


SOURCE: Microsoft (5/2010); San Bernardino Cnty. (3/08, 9/2013); AECOM (5/2011); OPC (7/1/2013)  
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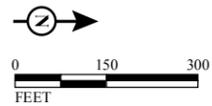
FIGURE I.5  
 Sheet 2 of 3

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|  Alternative 3                |  Proposed Retaining Wall                                    |  City Boundary              |
|  Proposed Right of Way        |  Proposed Sound Barrier                                     |  Grand Terrace Fitness Park |
|  Temporary Construction Limit |  I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier |  |
|  Limits of Construction       |  |  |



SOURCE: Microsoft (5/2010); San Bernardino Cnty. (3/08, 9/2013); AECOM (5/2011); OPC (7/1/2013)  
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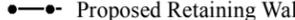
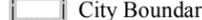
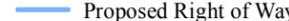
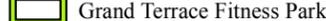
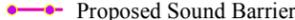
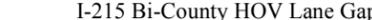


FIGURE I.5  
 Sheet 3 of 3

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LEGEND

- |   |   |  |
|---|---|--|
|  Alternative 6                   |  Proposed Retaining Wall                                    |  City Boundary                  |
|  Proposed Right of Way           |  Potential Sound Barrier                                    |  Grand Terrace Fitness Park     |
|  Temporary Construction Easement |  Proposed Sound Barrier                                     |  Existing Caltrans Right of Way |
|  Limits of Construction          |  I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier |  |

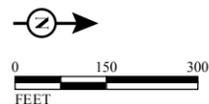


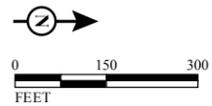
FIGURE I.6  
Sheet 1 of 3

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LEGEND

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|---------------------------------|--|--------------------------------|
| Alternative 6                   | Proposed Retaining Wall                                    | City Boundary                  |
| Proposed Right of Way           | Potential Sound Barrier                                    | Grand Terrace Fitness Park     |
| Temporary Construction Easement | Proposed Sound Barrier                                     | Existing Caltrans Right of Way |
| Limits of Construction          | I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier |                                |

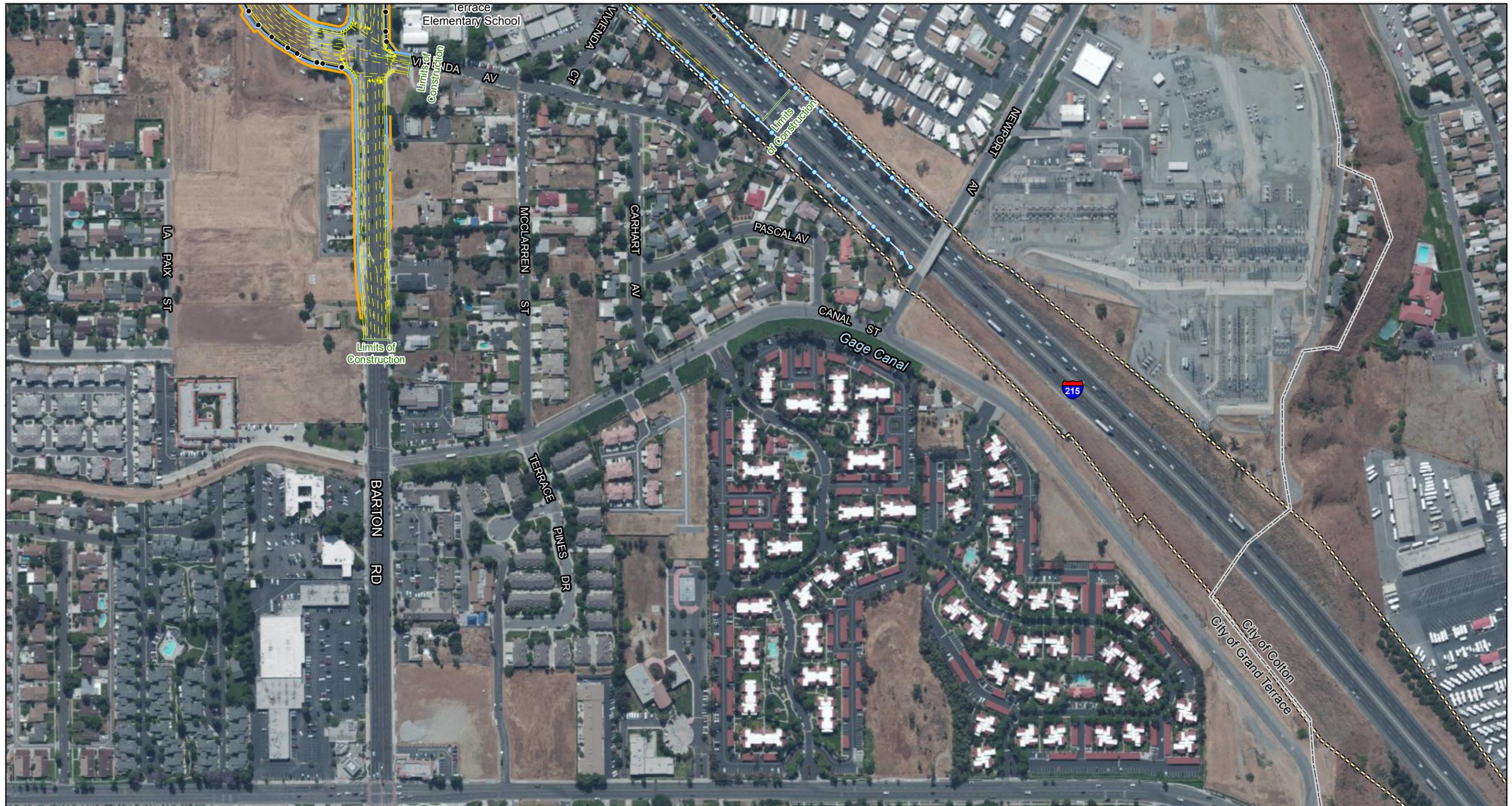


SOURCE: Microsoft (5/2010); San Bernardino Cnty. (3/08, 9/2013); AECOM (11/2011); OPC (7/1/2013)  
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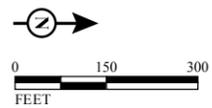
FIGURE I.6  
 Sheet 2 of 3

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LEGEND

- |                                 |  |                                |
|---------------------------------|--|--------------------------------|
| Alternative 6                   | Proposed Retaining Wall                                    | City Boundary                  |
| Proposed Right of Way           | Potential Sound Barrier                                    | Grand Terrace Fitness Park     |
| Temporary Construction Easement | Proposed Sound Barrier                                     | Existing Caltrans Right of Way |
| Limits of Construction          | I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier |                                |



SOURCE: Microsoft (5/2010); San Bernardino Cnty. (3/08, 9/2013); AECOM (11/2011); OPC (7/1/2013)  
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FIGURE 1.6  
 Sheet 3 of 3

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widened to two through lanes in each direction between Grand Terrace Avenue on the west and Commerce Center Drive on the east. The existing overcrossing would be replaced with a new structure with four through lanes and a left-turn lane to the northbound on-ramp.

The conceptual design for Modified Alternative 7 is shown in Figure 1.7, which follows.

#### **1.4.2 Common Design Features of the Build Alternatives**

The following improvements are included in all three Build Alternatives:

- The existing ramps would be removed.
- The Barton Road Overcrossing would be reconstructed.
- New northbound and southbound on- and off-ramps would be constructed.
- Barton Road would be widened to four through lanes approximately between Grand Terrace Road and Vivienda Avenue.
- A new two-lane road between La Crosse Avenue and Grand Terrace Road would be constructed parallel to Vivienda Avenue.
- A portion of the I-215 Bi-County HOV Lane Gap Closure Project sound barrier in the northwest quadrant would be modified to accommodate the new southbound off-ramp.
- Standard sidewalks and a Class II bicycle lane would be provided on both sides of Barton Road within the Project limits.
- Bioswales would be constructed to treat storm water runoff.
- New landscaping would be provided consistent with the I-215 Bi-County Aesthetic Concept.
- Utilities would be relocated or protected in-place during construction.
- Drainage facilities would be modified consistent with other Project improvements.

#### **1.4.3 Construction Staging for the Build Alternatives**

Based on preliminary engineering, it is planned that the Barton Road overcrossing would stay at its existing alignment. Accordingly, it is planned that the new structure would be built in two stages. This staging concept will be reviewed for improvements and modifications in conjunction with the CM/GC process, discussed earlier in Section 1.1.

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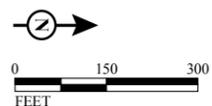


LEGEND

- Modified Alternative 7
- Proposed Right of Way
- Temporary Construction Easement
- Limits of Construction

- Proposed Retaining Wall
- Planned Sound Barrier
- I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier

- City Boundary
- Grand Terrace Fitness Park
- Existing Caltrans Right of Way



SOURCE: Microsoft (5/2010); San Bernardino Cnty. (3/2008, 9/2013); AECOM (4/2013)  
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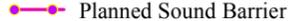
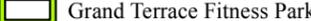
FIGURE 1.7  
 Sheet 2 of 3

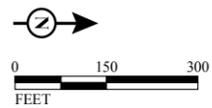
I-215/Barton Road Interchange Improvement Project  
 Modified Alternative 7 (Preferred Alternative)

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LEGEND

- |   |   |  |
|---|---|--|
|  Modified Alternative 7          |  Proposed Retaining Wall                                    |  City Boundary                  |
|  Proposed Right of Way           |  Planned Sound Barrier                                      |  Grand Terrace Fitness Park     |
|  Temporary Construction Easement |  I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier |  Existing Caltrans Right of Way |
|  Limits of Construction          |   |  |



SOURCE: Microsoft (5/2010); San Bernardino Cnty. (3/2008, 9/2013); AECOM (4/2013)  
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FIGURE I.7  
 Sheet 3 of 3

I-215/Barton Road Interchange Improvement Project  
 Modified Alternative 7 (Preferred Alternative)

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Based on preliminary engineering, the first stage would include:

- Demolition of half of the existing structure
- Construction of half of the new structure while maintaining one lane of traffic in each direction on the remaining half of the existing structure
- Construction of the ramps, northbound auxiliary lane, and retaining walls
- Improvements to local streets

Based on preliminary engineering, the second stage would include:

- Demolition of the second half of the overcrossing structure
- Construction of the remaining half of the overcrossing structure
- Traffic signal work
- Intersection modifications/improvements
- Completion of the reconstructed bridge connection to each end of Barton Road

During each stage, a single 5 ft wide sidewalk would be provided for temporary pedestrian access on Barton Road.

Temporary nighttime closures of mainline lanes and ramps may be required during construction. During ramp closures at Barton Road, the I-215/Iowa Avenue/La Cadena Drive and I-215/Mount Vernon Avenue/Washington Street interchanges would be available as alternate access points to and from the I-215 mainline. La Cadena Drive and Mount Vernon Avenue would provide north-south access to Barton Road in the Project vicinity.

#### **1.4.4 Unique Features of Build Alternatives**

##### **1.4.4.1 Alternative 3 (Partial Cloverleaf Interchange)**

Alternative 3 includes the components listed below.

- The new southbound off-ramp would make a new connection at Barton Road with one right-turn lane, one shared right-/left-turn lane, and one left-turn lane.
- The new southbound loop on-ramp would provide three lanes at Barton Road. This would accommodate the dual left-turn lanes on eastbound Barton Road and the right-turn lane on westbound Barton Road.
- The new northbound off-ramp would provide three lanes (two right-turn lanes and one left-turn lane) at the Barton Road intersection.

- The new northbound loop on-ramp would provide three lanes at the Barton Road intersection. This would accommodate the dual left-turn lanes on westbound Barton Road and the right-turn lane on eastbound Barton Road.
- Most of La Crosse Avenue north of Barton road would be removed and all of La Crosse Avenue south of Barton Road would be removed.
- The intersection of Michigan Avenue at Barton Road would be eliminated; Michigan Avenue would form a T-intersection with Commerce Way.
- Grand Terrace Road would be extended southwest of Barton Road to tie into East De Berry Street.
- The concrete channel parallel to the existing northbound off-ramp (Drainage C on Figure 2.15.2) would be enclosed.
- The segment of Vivienda Avenue west of I-215 would be converted into a cul-de-sac.
- Grand Terrace Road and the Grand Terrace Road/Barton Road intersection would be realigned to allow adequate distance between the ramps and the local intersection.
- Traffic signal modifications would be made at the Barton Road/Grand Terrace Road/De Berry Street, I-215 northbound ramps/Barton Road, I-215 southbound ramps/Barton Road, and Commerce Way/Vivienda Avenue/Barton Road intersections.

#### **1.4.4.2 Alternative 6 (Modified Cloverleaf Interchange)**

Alternative 6 includes the components listed below:

- The new southbound loop on-ramp would provide two lanes at Barton Road. This would accommodate one left-turn lane on eastbound Barton Road and a right-turn lane on westbound Barton Road.
- The new southbound off-ramp would make a new connection at Barton Road with one right-turn lane, one left-turn lane, and one shared right-/left-turn lane.
- The new northbound off-ramp would tie in to Commerce Way and provide for dual left-turn lanes and a single right-turn lane.
- The new northbound hook on-ramp would be provided in the southeast quadrant. The access to the ramp would be through the extension of Commerce Way.
- Most of La Crosse Avenue north of Barton Road would be removed.
- La Crosse Avenue south of Barton Road would be reconfigured to a right-in/right-out layout at the Barton Road/La Crosse Avenue intersection.

- A bridge would be constructed over the Riverside Canal on the northbound off-ramp to span the canal.
- Commerce Way would be reconfigured to intersect with Barton Road at Vivienda Avenue.
- The intersection of Michigan Avenue at Barton Road would be eliminated; Michigan Avenue would form a T-intersection with Commerce Way.
- Traffic signal modifications would be made at the Barton Road/Grand Terrace Road, I-215 northbound ramps/Commerce Way, I-215 southbound ramps/Barton Road and Commerce Way/Vivienda Avenue/Barton Road intersections.

#### **1.4.4.3 Modified Alternative 7 (Modified Cloverleaf/Diamond Interchange) (Preferred Alternative)**

Modified Alternative 7 includes the components listed below.

- The new southbound on- and off-ramps would intersect Barton Road and La Crosse Avenue south of Barton Road in a roundabout configuration with no traffic signals.
- The southbound off-ramp would have a right-turn bypass lane onto westbound Barton Road.
- The new northbound off-ramp would terminate at Barton Road with one left-turn lane, one shared through/right-turn lane, and one dedicated right-turn lane.
- The new northbound on-ramp would have two lanes at the Barton Road intersection. This would accommodate one left-turn lane on eastbound Barton Road and a right-turn lane on westbound Barton Road.
- The concrete channel parallel to the existing northbound off-ramp (Drainage C on Figure 2.15.3) would be enclosed.
- Commerce Way would be reconfigured to intersect with Barton Road at Vivienda Avenue.
- The intersection of Michigan Avenue at Barton Road would be eliminated; Michigan Avenue would form a T-intersection with Commerce Way.
- Traffic signal modifications would be made at the Barton Road/Grand Terrace Road, I-215 northbound ramps/Barton Road, and Commerce Way/Vivienda Avenue/Barton Road intersections.

#### **1.4.5 Nonstandard Mandatory and Advisory Design Features**

The Caltrans HDM establishes certain advisory and mandatory design standards. Exceptions to these standards are sometimes necessary, particularly when

reconstructing an existing interchange. Such exceptions are called nonstandard features.

Exceptions to the advisory and mandatory design standards will be required for all Build Alternatives. The planned Nonstandard Mandatory and Advisory Design Features are summarized and are listed in Tables 1.I and 1.J. In addition to the design exceptions listed in the tables, all of the Build Alternatives may require an exception to the minimum width of traffic opening during construction due to falsework. This exception would be addressed during final design.

**Table 1.I Mandatory Design Exceptions**

Exception	Alt 3	Alt 6	Modified Alt 7 (Preferred Alternative)
Interchange spacing between La Cadena Drive/Iowa Avenue interchange and Barton Road interchange	X	X	X
Intersection spacing between Grand Terrace Road and southbound off-ramp		X	X
Superelevation Rate: a. Northbound on-ramp b. Northbound off-ramp			X
Access Control: La Crosse Avenue is a local road that is presently situated on the opposite side of the intersection of the southbound on- and off-ramps with Barton Road. Access rights cannot be acquired on the opposite side of the ramp terminals due to location of this road.		X	

Sources: *Draft Project Report* (November 2013), *Project Report* (March 2014).

**Table 1.J Advisory Design Exceptions**

Exception	Alt 3	Alt 6	Modified Alt 7 (Preferred Alternative)
Curb Ramp at northeast corner at the northbound ramp intersection			X
Curb Ramps at southbound and northbound ramp intersections with Barton Road	X	X	
Curb Ramps at intersection of Michigan Avenue/Commerce Way and intersection of Barton Road/Grand Terrace Avenue		X	
Superelevation transition length on tangent and curve: a. Northbound off-ramp			X
Superelevation transition length: a. Southbound on-ramp b. Northbound off-ramp	X X		X
Superelevation runoff length on tangent and curve: a. Southbound on-ramp b. Northbound off-ramp	X		
Weaving section between the northbound on-ramp at the I-215/La Cadena Drive-Iowa Avenue interchange and the northbound off-ramp at I-215/Barton Road interchange		X	

Sources: *Draft Project Report* (November 2013), *Project Report* (March 2014).

#### **1.4.6 Transportation Systems Management and Transportation Demand Management Alternatives**

Alternative travel modes were considered during the early planning studies. Transportation Systems Management (TSM) strives to maximize efficiency of the existing system through operational modifications by providing options such as ridesharing, reversible lanes, ramp metering, and traffic-signal optimization. TSM strategy options consist of actions to improve traffic flow and increase the number of vehicle trips without altering the number of through lanes, while Transportation Demand Management (TDM) focuses on the demand side of travel behavior, with regional strategies for reducing the number of vehicle trips and vehicle miles traveled, and increasing vehicle occupancy. It facilitates higher vehicle occupancy or reduces traffic congestion by expanding travelers' transportation choices through initiatives such as telecommuting and changing work schedules to produce a more even pattern of transportation network use, muting the effect of morning and evening rush hours. In addition, multimodal alternatives integrate multiple modes of transportation, such as pedestrian, bicycle, automobile, rail, and transit.

The purpose of the I-215/Barton Road Interchange Improvement Project is to improve the operation, increase the capacity, and reduce the existing and future congestion at the I-215/Barton Road interchange, and improve access to facilities served by the interchange. A separate TDM Alternative, such as a Mass Transit Alternative, was not developed because there are transit services (i.e., Omnitrans, RTA [local and regional bus services]) provided in the Project vicinity, and because the planned interchange improvements are needed to provide improved access to I-215. The Build Alternatives include construction of Class II bicycle lanes and sidewalks along Barton Road within the Project area to facilitate pedestrian and bicycle circulation. In addition, the I-215 Bi-County HOV Lane Gap Closure Project is planned along the Project segment of I-215. Therefore, no TSM/TDM alternative is evaluated in this IS/EA.

Although TSM/TDM measures alone could not satisfy the purpose and need of the Project, TSM/TDM measures, including an auxiliary lane, turning lanes, and HOV bypass lanes on the on-ramps, have been incorporated into the Build Alternative for this Project. In addition, the planned ramps would also accommodate ramp metering.

## **1.4.7 No Build Alternative**

### **1.4.7.1 Alternative 1 (No Build Alternative)**

Under this alternative, no interchange reconstruction would occur. This alternative would not improve operation, increase capacity, or reduce congestion at the I-215/Barton Road interchange. As seen in Table 1.D, LOS for all study area local intersections, with the exception of the Barton Road/La Cadena Drive intersection in the AM peak hour, would deteriorate to unsatisfactory LOS by 2040 without improvements due to demand at the interchange. Analysis of the No Build Alternative for the Project includes consideration of the I-215 Bi-County HOV Lane Gap Closure Project in 2016. Analysis of the No Build Alternative includes consideration of the I-215/Mount Vernon/Washington Street Interchange Improvement Project and the I-215 Bi-County Improvement Project in 2040. The No Build Alternative for the Project is not consistent with the mobility goals of the Regional Congestion Management Plan.

## **1.5 Comparison of Alternatives**

Table 1.K provides a comparison between the No Build Alternative (Alternative 1) and Build Alternatives (Alternatives 3, 6, and Modified Alternative 7). Because the interchange is within a developed area of the City of Grand Terrace, which does not have a large tax base, it is preferred that the Build Alternatives minimize right of way acquisition and displacements, and maintain local circulation while meeting the purpose and need for the Project. As seen in Table 1.K, Modified Alternative 7 would result in the fewest number of potential full property acquisitions, and would have the lowest cost of the Build Alternatives.

### **1.5.1 Operational Comparison**

The Build Alternatives would reduce congestion and improve operations at the interchange when compared to the No Build Alternative. Specific data illustrating these improvements are shown in Tables 1.L through 1.P.

Table 1.L shows that all of the studied Build Alternatives would improve LOS at most of the study area intersections and all intersections would operate at satisfactory LOS for 2016. For 2040, Table 1.M shows that with all of the Build Alternatives, the Barton Road/La Cadena Drive intersection would operate at unsatisfactory LOS (LOS F) in the PM peak hour, similar to the No Build condition (Alternative 1). This deficiency is not a result of the planned I-215/Barton Road Interchange Improvement Project; it is due to the lack of capacity to accommodate projected growth. In order to achieve a satisfactory LOS at this intersection, La Cadena Drive would need to be

Table 1.K Project Alternatives Comparison

Issue	Alternative 1 (No Build Alternative)	Alternative 3	Alternative 6	Modified Alternative 7 (Preferred Alternative)
Right of way Acquisition	No displacements	30 full acquisitions 8 residential displacements 31 business displacements 131–321 employee displacements	10 full acquisitions 2 residential displacements 19 business displacements 40–102 employee displacements	8 full acquisitions 2 residential displacements 21 business displacements 60–140 employee displacements
Local Circulation	No change	<ol style="list-style-type: none"> <li>1. Would remove most of La Crosse Avenue north of Barton Road and all of La Crosse Avenue south of Barton Road.</li> <li>2. Maintains local circulation in the southwest and northwest quadrants by providing an extension of Grand Terrace Road and a new two-lane road between La Crosse Avenue and Grand Terrace Road parallel to Vivienda Avenue, respectively.</li> <li>3. Would realign Commerce Way and remove a portion of Michigan Avenue.</li> </ol>	<ol style="list-style-type: none"> <li>1. Would remove most of La Crosse Avenue north of Barton Road.</li> <li>2. Maintains local circulation in the northwest quadrant by providing a new two-lane road between La Crosse Avenue and Grand Terrace Road parallel to Vivienda Avenue.</li> <li>3. Would limit access to and from La Crosse Avenue south of Barton Road to Barton Road.</li> <li>4. Would realign Commerce Way and remove a portion of Michigan Avenue.</li> </ol>	<ol style="list-style-type: none"> <li>1. Would remove most of La Crosse Avenue north of Barton Road.</li> <li>2. Maintains local circulation in the southwest and northwest quadrants by providing a roundabout at Barton Road and the I-215 southbound ramps, and a new two-lane road between La Crosse Avenue and Grand Terrace Road parallel to Vivienda Avenue, respectively.</li> <li>3. Would remove a portion of Michigan Avenue.</li> </ol>
Estimated Cost	None	\$104,717,000	\$63,385,000	\$62,486,000
Operational Circulation	<ol style="list-style-type: none"> <li>1. Would not provide adequate storage in the left-turn lane from westbound Barton Road to the I-215 southbound ramp.</li> <li>2. Would result in unsatisfactory LOS at the Barton Road/Grand Terrace Road intersection in the AM and PM peak hours in 2016.</li> <li>3. All study area intersections would operate at unsatisfactory LOS in the AM and PM peak hours in 2040 with exception of the Barton Road/La Cadena Drive AM peak hour.</li> <li>4. The non-standard connection between the I-215 southbound off-ramp and a local street (La Crosse Avenue), prior to reaching Barton Road, would remain.</li> </ol>	<ol style="list-style-type: none"> <li>1. Would provide adequate storage in the left-turn lane from westbound Barton Road to the I-215 southbound ramp.</li> <li>2. Would provide satisfactory LOS at the Barton Road/Grand Terrace Road intersection in the AM and PM peak hours in 2016.</li> <li>3. All study area intersections would operate at satisfactory LOS in the AM and PM peak hours in 2040 with exception of the Barton Road/La Cadena Drive PM peak hour. As in the No Build condition, to achieve satisfactory LOS at this intersection, La Cadena Drive would need to be widened to six lanes, which would need to be completed as a separate project by the City of Colton.</li> </ol>	<ol style="list-style-type: none"> <li>1. Would provide adequate storage in the left-turn lane from westbound Barton Road to the I-215 southbound ramp.</li> <li>2. Would provide satisfactory LOS at the Barton Road/Grand Terrace Road intersection in the AM and PM peak hours in 2016.</li> <li>3. All study area intersections would operate at satisfactory LOS in the AM and PM peak hours in 2040 with exception of the Barton Road/La Cadena Drive PM peak hour. As in the No Build condition, to achieve satisfactory LOS at this intersection, La Cadena Drive would need to be widened to six lanes, which would need to be completed as a separate project by the City of Colton.</li> </ol>	<ol style="list-style-type: none"> <li>1. Would provide adequate storage in the left-turn lane from westbound Barton Road to the I-215 southbound ramp.</li> <li>2. Would provide satisfactory LOS at the Barton Road/Grand Terrace Road intersection in the AM and PM peak hours in 2016.</li> <li>3. All study area intersections would operate at satisfactory LOS in the AM and PM peak hours in 2040 with exception of the Barton Road/La Cadena Drive PM peak hour. As in the No Build condition, to achieve satisfactory LOS at this intersection, La Cadena Drive would need to be widened to six lanes, which would need to be completed as a separate project by the City of Colton.</li> </ol>

**Table 1.L 2016 Intersection Levels of Service**

Intersection	No Build Alternative LOS		Build Alternatives LOS					
			Alternative 3		Alternative 6		Modified Alternative 7 (Preferred Alternative)	
	AM Peak Hour	PM Peak Hour	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
Barton Road/La Cadena Drive	B	C	B	C	B	C	B	C
Barton Road/Grand Terrace Road	F	F	A	A	A	A	A	A
Barton Road/I-215 Southbound Ramps	C	F	A	A	B	C	A	A
Barton Road/I-215 Northbound Ramps	B	C	A	A	B	B	B	B
Barton Road/Michigan Street	B	B	Does not Exist					
Barton Road/Vivienda Avenue	C	C	B	B	B	B	B	B
Barton Road/Terrace Avenue <sup>1</sup>	C	C	-	-	C	C	-	-

Sources: *Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis* (December 2011), *Draft Project Report* (November 2013), *Project Report* (March 2014).

<sup>1</sup> Intersection was not studied under Alternative 3 or Modified Alternative 7 because westbound Barton Road left-turns to southbound La Crosse Avenue would be allowed. This intersection was not studied in 2040 because the I-215 Bi-County Improvement Project would realign La Crosse Avenue with Grand Terrace Road.

\* See note included at bottom of Table 1.B above, on page 1-13.

**Table 1.M 2040 Intersection Levels of Service**

Intersection	No Build Alternative LOS		Build Alternatives LOS					
			Alternative 3		Alternative 6		Modified Alternative 7 (Preferred Alternative)	
	AM Peak Hour	PM Peak Hour	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
Barton Road/La Cadena Drive	C	F	D	F	D	F	D	F
Barton Road/Grand Terrace Road	F	F	A	A	A	A	B	A
Barton Road/I-215 Southbound Ramps	F	F	B	B	C	B	A	A
Barton Road/I-215 Northbound Ramps	F	F	A	B	C	B	B	C
Barton Road/Michigan Street	F	F	Does not Exist					
Barton Road/Vivienda Avenue	F	F	D	D	D	D	D	D

Sources: *Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis* (December 2011), *Barton Road Interchange Improvement Project Roundabout Analyses* (August 2013), *Draft Project Report* (November 2013), *Project Report* (March 2014).

widened to six lanes, which would need to be completed as a separate project by the City of Colton. The Nexus Study Arterial Project List in the 2007 SANBAG Congestion Management Plan includes the widening of La Cadena Drive to six lanes through this portion of the City of Colton. Table 1.N shows that the freeway mainline LOS is the same for the No Build Alternative and the Build Alternatives except for the northbound segment between the Iowa Avenue on-ramp and the Barton Road off-ramp. The Build Alternatives include an auxiliary lane in this segment, which improves the LOS in 2016. All segments operate at satisfactory LOS. In 2040, in the No Build and Build conditions, all freeway segments would operate at satisfactory LOS except for the segment between the Barton Road off-ramp and the Barton Road on-ramp in the northbound direction, which would fail for a 15-minute period during the PM peak hour. This is a function of the I-215 mainline being overcapacity.

**Table 1.N Future (2016 and 2040) Freeway Mainline Levels of Service**

Freeway Segment	2016*		2040	
	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
<b>Alternative 1 (No Build)</b>				
<b>Northbound</b>				
Iowa Avenue On-Ramp to Barton Road Off-Ramp	D	E	D	E
Barton Road Off-Ramp to Barton Road On-Ramp	D	D	E	F <sup>1</sup>
Barton Road On-Ramp to Washington Street Off-Ramp	D	E	D	E
<b>Southbound</b>				
Washington Street On-Ramp to Barton Road Off-Ramp	E	D	D	D
Barton Road Off-Ramp to Barton Road On-Ramp	D	D	E	E
Barton Road On-Ramp to La Cadena Drive Off-Ramp	E	D	D	D
<b>All Build Alternatives</b>				
<b>Northbound</b>				
Iowa Avenue On-Ramp to Barton Road Off-Ramp	C	D	D	E
Barton Road Off-Ramp to Barton Road On-Ramp	D	D	E	F
Barton Road On-Ramp to Washington Street Off-Ramp	D	E	D	E
<b>Southbound</b>				
Washington Street On-Ramp to Barton Road Off-Ramp	E	D	D	D
Barton Road Off-Ramp to Barton Road On-Ramp	D	D	E	E
Barton Road On-Ramp to La Cadena Drive Off-Ramp	E	D	D	D

Source: *Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis* (December 2011).

Freeway is over capacity during peak 15-minute period.

\*See note included at bottom of Table 1.B above, on page 1-13.

As shown in Table 1.O, freeway ramps at Barton Road are currently operating at satisfactory LOS (LOS E or better). In the 2016 and 2040 No Build condition, freeway ramps at Barton Road are projected to operate at LOS E or better. The ramps LOS are the same for the No Build Alternative and the Build Alternatives, except for the Barton Road northbound off-ramp. A second lane would be added to the Barton Road northbound off-ramp under all the Build Alternatives, which would improve LOS at this location in 2016. LOS improves in 2040 due to construction of the I-215 Bi-County Improvement Project.

**Table 1.O Future (2016 and 2040) Ramp Levels of Service**

Ramp	2016*		2040	
	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
<b>Alternative 1 (No Build)</b>				
<b>Northbound</b>				
Barton Road Off-Ramp	D	E	A	A
Barton Road On-Ramp	D	D	C	B
<b>Southbound</b>				
Barton Road Off-Ramp	E	D	A	A
Barton Road On-Ramp	D	D	C	B
<b>All Build Alternatives</b>				
<b>Northbound</b>				
Barton Road Off-Ramp	B	B	A	A
Barton Road On-Ramp	D	D	C	B
<b>Southbound</b>				
Barton Road Off-Ramp	E	D	A	A
Barton Road On-Ramp	D	D	C	B

Source: Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis (December 2011).

\*See note included at bottom of Table 1.B above, on page 1-13.

As seen in Table 1.P, under Alternatives 3 and 6, the eastbound and westbound Barton Road left-turn lanes onto the southbound ramps would have adequate queuing distance during both the AM and PM peak hours in 2016 and 2040. Alternatives 3 and 6 would include longer left-turn lanes to provide the extra queue length. Modified Alternative 7 includes a roundabout configuration at the southbound ramps and the LOS at these ramps would be adequate.

Table 1.P Future (2016 and 2040) Intersection Queue Lengths

Intersection	2016*				2040			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Space Provided (ft)	Queue Length 95 <sup>th</sup> Percentile (ft)	Space Provided (ft)	Queue Length 95 <sup>th</sup> Percentile (ft)	Space Provided (ft)	Queue Length 95 <sup>th</sup> Percentile (ft)	Space Provided (ft)	Queue Length 95 <sup>th</sup> Percentile (ft)
<b>Alternative 1 (No Build)</b>								
Barton Road/I-215 Southbound Ramps – Westbound left-turn lane	120	478	120	231	120	491	120	252
<b>Alternative 3</b>								
Barton Road/I-215 Southbound Ramps – Eastbound left-turn lane	220	20	220	41	220	53	220	85
<b>Alternative 6</b>								
Barton Road/I-215 Southbound Ramps – Eastbound left-turn lane	250	85	250	183	225	130	225	191
<b>Modified Alternative 7</b>								
Barton Road/I-215 Southbound Ramps – Eastbound left-turn lane	N/A <sup>1</sup>	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Sources: *Interstate 215/Barton Road Interchange Improvement Project Revised Traffic Operations Analysis* (December 2011); *Barton Road Interchange Improvement Project Roundabout Analyses* (August 2013).

<sup>1</sup> Barton Road will intersect the I-215 southbound ramps in a roundabout configuration under this alternative.

\*See note included at bottom of Table 1.B above, on page 1-13.

## 1.6 Identification of the Preferred Alternative

The Draft Initial Study with Proposed Negative Declaration/ Environmental Assessment (Draft IS/EA) prepared and approved for the I-215/Barton Road Interchange Improvement Project, was circulated for public review and comment between November 27 and December 30, 2013. After review and consideration of all the comments received, comparing and weighing the benefits and impacts of all of the alternatives meeting the Project's purpose and need, the Project Development Team (PDT) identified Modified Alternative 7 as the Preferred Alternative at a PDT meeting on January 13, 2014. In addition to meeting the Project's purpose and need, the identification of the Preferred Alternative was based upon the following factors:

- Community impacts, including right of way acquisition and displacements
- Cost
- Operational performance

With respect to the Project's potential community impacts, Modified Alternative 7 is the only build alternative that retains full access at the intersection of Barton Road/ I-215 southbound ramps/La Crosse Avenue while still requiring no more additional residential displacements than Alternative 6 and fewer business displacements than Alternative 3. Modified Alternative 7 is anticipated to result in displacement of 2 residences and 21 businesses, and anticipated to potentially require full acquisition of 8 parcels. Alternative 3 would be anticipated to require displacement of 8 residences and 31 businesses, and would be anticipated to potentially require full acquisition of 30 parcels. Alternative 6 would be anticipated to displace 2 residences and 19 businesses, and would potentially require full acquisition of 10 parcels. As identified in the Draft IS/EA, minimizing right of way acquisition and business displacements was one of the specific evaluation criteria for the Project.

Modified Alternative 7 has the lowest cost of the Build Alternatives. Alternative 3 is estimated to cost \$104,912,000, Alternative 6 to cost \$63,287,000, and Modified Alternative 7 to cost \$62,486,000. As identified in the Draft IS/EA, project cost was one of the specific evaluation criteria for the Project.

Modified Alternative 7 would improve operation, increase capacity, and reduce future congestion at the I-215/Barton Road interchange. All study area intersections would operate at acceptable LOS except for one intersection that requires future local roadway improvements. Additionally, turn pockets will be lengthened to accommodate future projected traffic queues. When compared to Alternatives 3 and

6, Modified Alternative 7 would provide similar operational performance, as shown in Tables 1.K through 1.P earlier in this chapter. As identified in the Draft IS/EA, operational performance was one of the specific evaluation criteria for the Project.

## 1.7 Value Analysis

A Value Analysis (VA) study was conducted in 2008 to comply with the Federal Value Engineering (VE) mandate and to explore alternatives that will enhance the Project performance. There were a total of four VA strategies identified in the VA final report dated June 11, 2008. A brief description of the four strategies is shown below along with the disposition of each strategy:

- 1.0 Reduce the Newport Avenue Bridge width from 58 ft to 44 ft. This VA alternative applied to Alternative 5, which is no longer under consideration for this Project (see Section 5.22). However, this VA alternative was considered for the SHOPP project (EA 08-0P510), which is currently under construction. That project was combined into a single-construction contract with the I-215 Bi-County HOV Lane Gap Closure Project.
- 2.1 Construct PDT Alternative 3 in lieu of PDT Alternative 5. Alternative 3 is included as a viable alternative although it was not the preferred alternative, due in part to right of way impacts.
- 2.2 Redesign and construct PSR Alternative 2 with school playground land use modifications in lieu of PDT Alternative 5. Although the impact to the school property could be minimized with this strategy, it could not be avoided; thus, Alternative 2 is no longer under consideration (see Section 5.22) due to impacts to Grand Terrace Elementary School.
- 3.0 Upgrade two railroad bridges on Barton Road (west of I-215) as part of the project. It was determined that separate projects would be initiated to improve the railroad bridges but was dependent upon funding availability. Replacement or modification to the railroad bridges will not be part of the I-215/Barton Road Interchange Improvement Project.

## 1.8 Alternatives Considered but Eliminated from Further Discussion

### 1.8.1 Alternative 2 (Spread Diamond Interchange)

Under Alternative 2, Barton Road would be widened to two through lanes in each direction plus dual back-to-back left-turn lanes. In addition, right-turn lanes would be provided for eastbound right turns from Barton Road onto the southbound on-ramp

and for westbound right turns onto the northbound on-ramp. The existing overcrossing would be replaced with a new structure with four through lanes and two turn lanes.

Alternative 2 would include a new northbound on-ramp that would encroach into the playfields and portable buildings at Grand Terrace Elementary School in the northeast quadrant of the interchange. Meetings with the Colton Joint Unified School District Director of Facilities and Planning and a California Department of Education representative determined that the acquisition of school property under these alternatives would require the school to be relocated. This would require that the Project cost include the cost of moving the school and environmental clearance of a new site. Further study determined that a suitable site within the school enrollment area was not available. For these reasons, and because there were other feasible Build Alternatives to study, the PDT made a decision to withdraw Alternative 2 from further consideration on March 18, 2008.

### **1.8.2 Alternative 4 (Spread Diamond/Partial Cloverleaf Interchange)**

Under Alternative 4, Barton Road would be widened to two through lanes in each direction plus a dual left-turn lane and a right-turn lane. The existing overcrossing would be replaced with a new structure with four through lanes and three turn lanes.

Similar to Alternative 2, Alternative 4 would include a new northbound on-ramp that would encroach into the playfields and portable buildings at Grand Terrace Elementary School in the northeast quadrant of the interchange. For the same reasons considered in deciding to withdraw Alternative 2 from further consideration, and because there were other feasible Build Alternatives to study, the PDT made a decision to also withdraw Alternative 4 from further consideration on March 18, 2008.

### **1.8.3 Alternative 5 (Single-Point/Bowtie Interchange)**

Alternative 5 would be constructed as a single-point/bowtie interchange, with all four ramps meeting at one intersection and two ramps that fly over the freeway. Under Alternative 5, Barton Road would be widened to two lanes in each direction. The existing overcrossing would be replaced with a new structure with four through lanes and three turn lanes.

Initially, Alternative 5 was considered a Build Alternative and as such, was analyzed in the technical studies. However, subsequent design review and analysis during the

environmental review process determined that Alternative 5 would conflict with the design and alignment of the I-215/Newport Avenue overcrossing.

The northbound on-ramp from Barton Road must pass under the Newport Avenue bridge as it merges with I-215; however, the placement of the bridge abutments do not provide sufficient space to accommodate the on-ramp from Alternative 5 and other programmed widening projects on I-215. Therefore, Alternative 5 causes a substantial engineering conflict.

A comparison of the Build Alternatives (Alternatives 3, 6, and 7) to Alternative 5 reveals that Alternative 5 is not superior to the other alternatives in its ability to meet the Project purpose. The primary purpose of the Project is to improve traffic operations and reduce congestion at the Barton Road interchange. The traffic study determined that the traffic improvements associated with Alternative 5 are comparable to the other Build Alternatives, and Alternative 5 would not provide a superior advantage to achieving the Project purpose.

The comparison of the Build Alternatives also reveals that Alternative 5 would cause more environmental impacts than other alternatives. For example, Alternative 5 would cause more full property acquisitions than the Build Alternatives. Alternative 5 would also cause more impacts to biological resources, including United States Army Corps of Engineers (USACE) and California Department of Fish and Wildlife (CDFW) jurisdiction, than the other Build Alternatives.

As a result of the engineering conflict, the lack of a unique Project benefit, and the greater level of environmental impacts compared to the other Build Alternatives, the PDT made a decision to withdraw Alternative 5 from further consideration on January 17, 2012. Some technical studies that were prepared in support of this Environmental Document still include reference and document the potential impacts associated with Alternative 5, however, because the PDT made the decision to withdraw Alternative 5 from further study, Alternative 5 was not included in this Environmental Document.

#### **1.8.4 Alternative 7 (Modified Cloverleaf/Diamond Interchange)**

During the development of Alternative 7, the design team and Caltrans worked to resolve issues associated with the intersection configuration, access control on La Crosse Avenue, and intersection control measures. The existing intersection at the I-215 southbound ramps and Barton Road contains a local street, La Crosse Avenue, which forms two legs of the intersection. The existing connection of La Crosse

Avenue north of Barton Road would be eliminated with Alternative 7, but the southern leg of La Crosse Avenue would remain active and provide access to the intersection. Because the connection of the southern leg of La Crosse Avenue at this intersection would occur directly opposite the realigned southbound off-ramp, this connection would be nonstandard per the Caltrans HDM Index 504.8, Access Control.

In September 2011, Caltrans, SANBAG, and FHWA staff met to review the issue of access control at La Crosse Avenue. During this meeting it was concluded that right-in/right-out access to La Crosse Avenue would provide an adequate compromise to maintain access while minimizing the nonstandard access control. The decision was contingent upon verifying that traffic would operate at an acceptable LOS with the right-in/right-out access control. The traffic operations were verified in October 2011, and the right-in/right-out control at La Crosse Avenue was incorporated into the various engineering and environmental studies needed for completion of the approval of the Project.

At the February 21, 2012, PDT meeting, Richard Shields, Community Development Director at the City of Grand Terrace, and Victor Ortiz, Engineering Manager at the City of Colton, indicated that they have been getting calls from property owners with properties along the southern leg of La Crosse Avenue. The property owners were concerned about how Alternative 7 would impact the access for delivery trucks. SANBAG provided the cities with preliminary plans of the Build Alternatives so that they could be referenced when fielding questions.

Based on the concerns regarding the changes to the La Crosse Avenue/Barton Road intersection under Alternatives 6 and 7, SANBAG determined that a meeting would be held with the concerned property owners. The City of Grand Terrace held the meeting on April 23, 2012, to provide additional information regarding the preliminary design. In addition to the business owners, the City of Grand Terrace, SANBAG, and Caltrans staff attended the meeting. The property owners provided a written statement that the loss of a left turn from westbound Barton Road to La Crosse Avenue “would cripple the existing properties and businesses and severely restrict any future development.”

In August 2012, Caltrans submitted a draft Modified Access Request (MAR), which evaluated Alternative 7, to FHWA for review. FHWA staff visited the Project site along with several Caltrans Project staff members. During their visit, FHWA staff

questioned whether a roundabout concept would improve conditions at the southbound ramp intersection, solve the access control issues, and eliminate the controversy regarding the right-in/right-out configuration. The group agreed that a roundabout would reduce the impacts of La Crosse Avenue on the intersection since wrong-way moves would be more difficult and all directions of the intersection's legs would be served. FHWA informally rejected the MAR in August 2012 pending further study of a roundabout.

The design team prepared a traffic analysis for one and two roundabout scenarios. The analysis determined that a roundabout would be feasible at the I-215 southbound ramps/Barton Road /La Crosse Avenue intersection. A roundabout in this location would provide access control at La Crosse Avenue, maintain access to all four legs of the intersection, and solve the truck-turning movement concerns of the surrounding property owners. The traffic analysis also concluded that a roundabout on Barton Road at the I-215 northbound ramps is not feasible due to operational issues and increased right of way impacts. In February 2013, the PDT decided to proceed with a modification to Modified Alternative 7 that includes a roundabout at the I-215 southbound ramps. This alternative was formally named Modified Alternative 7 at a PDT meeting on March 5, 2013. At the same PDT meeting, the PDT made the decision to withdraw Alternative 7 from further consideration. Some technical studies that were prepared in support of this Environmental Document still include reference and document the potential impacts associated with Alternative 7, however, because the PDT made the decision to withdraw Alternative 7 from further study, Alternative 7 was not included in this Environmental Document.

## **1.9 Permits and Approvals Needed**

The following permits, reviews, and approvals would be required for Project construction, as shown in Table 1.Q.

**Table 1.Q Permits and/or Approvals Needed**

<b>Agency</b>	<b>Permit/Approval</b>	<b>Status</b>
State Water Resources Control Board	Section 402 NPDES (Construction Activity)	A Notice of Intent to comply with the Construction General Permit (Order No. 2009-0009-DWQ) and any subsequent permit will be filed prior to start of construction.
Santa Ana Regional Water Quality Control Board	Section 401 Certification	Application will be submitted after environmental document approval.
United States Army Corps of Engineers	Section 404 Permit (Nationwide)	The project will comply with the requirements of Nationwide Permit 14. Documentation, as required, will be prepared and provided as required.
California Department of Fish and Wildlife	Section 1602 or Letter of Nonjurisdiction	Application will be submitted after environmental document approval.
City of Grand Terrace	Encroachment Permit	Will be obtained prior to construction.
City of Colton	Encroachment Permit	Will be obtained prior to construction.
City of Grand Terrace	Street Vacation for La Crosse Avenue and Michigan Avenue	Will be obtained prior to construction.
City of Colton	Street Vacation for La Crosse Avenue	Will be obtained prior to construction.
FHWA	Air Quality Conformity Determination	FHWA issued the required Air Quality Conformity Determination Letter on February 20, 2014 (see Appendix H of this Environmental Document).
FHWA	Modified Access Report	Conceptual approval was obtained on November 20, 2013. Final approval will be obtained after approval of FED and after Project approval.