

I-215/Barton Road Interchange Improvement Project

Visual Impact Assessment

City of Grand Terrace and City of Colton
08-SBD-215 PM 0.58-1.66
EA 08-0J0700
(PN 0800000282)



November 2013



This page intentionally left blank

I-215/Barton Road Interchange Improvement Project
Visual Impact Assessment
City of Grand Terrace and City of Colton
08-SBD-215, PM 0.58-1.66
EA 08-0J0700
(PN 0800000282)

This Visual Impact Assessment has been prepared under the direction of the following Licensed Landscape Architect. The Licensed Landscape Architect attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based.




Ernest A. Figueroa
Project Landscape Architect
License Number-3745

11/5/13
Date

Approved by:


FOR Ray Desselle
District Landscape Architect

11/8/13
Date

Table of Contents

	Page
Table of Contents	i
Figures and Tables	iii
Acronyms and Abbreviations	v
Chapter 1 Introduction	1
1.1 Purpose of the Study	1
1.2 Project Description	5
1.3 Project Alternatives for the Project.....	6
1.3.1 No Build Alternative	6
1.3.2 Proposed Build Alternatives	6
1.3.3 Alternatives Considered but Eliminated from Further Discussion.....	15
Chapter 2 Purpose and Need.....	21
2.1 Purpose	21
2.2 Need.....	21
2.3 Capacity and Transportation Demand	21
2.4 Roadway Deficiencies	21
2.5 Social Demand and Economic Development	22
Chapter 3 Visual Environment	23
3.1 Regional Setting	23
3.2 Vegetation.....	23
3.3 Adopted Goals, Policies, and Plans	24
3.3.1 City of Grand Terrace General Plan Open Space and Conservation Element (2010)	27
3.3.2 City of Grand Terrace Barton Road Specific Plan (1990).....	27
3.3.3 City of Grand Terrace Municipal Code	29
3.3.4 City of Colton General Plan Open Space and Conservation Element (1987)	29
3.4 Landscape Units	30
3.5 Viewshed	30
Chapter 4 Visual Characteristics and Viewer Response.....	31
4.1 Visual Character	31
4.2 Visual Quality	31
4.3 Sensitive Viewer Groups	32
4.4 Viewer Sensitivity	32
4.5 Viewer Exposure and Response	33
Chapter 5 Impacts	35
5.1 Visual Impact Levels	35
5.2 Key View Analysis.....	36
5.2.1 Alternative 1 (No Build).....	36
5.2.2 Alternative 3	36
5.2.3 Alternative 6	46
5.2.4 Modified Alternative 7	53
5.2.5 Alternatives 3, 6, and Modified Alternative 7	65
5.2.6 Summary of Key View Analysis	72
5.3 Light, Glare, Shade, and Shadow	73
5.4 Compatibility with Visual Resource Policies	73

5.5 Construction Impacts	73
Chapter 6 Avoidance, Minimization, and/or Mitigation Measures	75
Chapter 7 References	77
Appendix A City of Grand Terrace Municipal Code	A-1
Appendix B I-215 Bi-County Aesthetic Concept	B-1

Figures and Tables

	Page
Figure 1 Project Location.....	3
Figure 2 Alternative 3	9
Figure 3 Alternative 6	13
Figure 4 Modified Alternative 7	17
Figure 5 Vegetation.....	25
Figure 6 Key View 1.....	39
Figure 7 Key View 2.....	43
Figure 8 Key View 3.....	47
Figure 9 Key View 1.....	51
Figure 10 Key View 4.....	55
Figure 11 Key View 4 Close-up	59
Figure 12 Key View 5.....	63
Figure 13 Key View 5 close up.....	67
Figure 14 Key View 6.....	69

	Page
Table A: Key View 1, Existing and Proposed Visual Quality.....	41
Table B: Key View 2, Existing and Proposed Visual Quality	45
Table C: Key View 3, Existing and Proposed Visual Quality	49
Table D: Key View 1, Existing and Proposed Visual Quality.....	54
Table E: Key View 4, Existing and Proposed Visual Quality	57
Table F: Key View 5, Existing and Proposed Visual Quality.....	61
Table G: Key View 6, Existing and Proposed Visual Quality.....	71

This page intentionally left blank

Acronyms and Abbreviations

ac	acre(s)
AP	Office/Professional
BNSF	Burlington Northern Santa Fe Railroad
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CJUSD	Colton Joint Unified School District
CUP	Conditional Use Permit
Caltrans	California Department of Transportation
DRIS	Draft Relocation Impact Statement
EA/IS	Environmental Assessment/Initial Study
EO	Executive Order
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
ft	foot/feet
GIS	geographic information system
HDM	Highway Design Manual
HOV	high-occupancy vehicle
I-10	Interstate 10
I-15	Interstate 15
I-215	Interstate 215
kW	kilowatt
LOS	level of service
mi	mile(s)

NADR	Noise Abatement Decision Report
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
OPC	Overland, Pacific, and Cutler
PDT	Project Development Team
PSR/PDS	Project Study Report (Project Development Support)
RCTC	Riverside County Transportation Commission
RSA	resource study area
RTA	Riverside Transit Agency
RTP	Regional Transportation Plan
RV	recreational vehicle
SANBAG	San Bernardino Associated Governments
SBSD	San Bernardino County Sheriff's Department
SCAG	Southern California Association of Governments
SCS	Sustainable Communities Strategy
SR-60	State Route 60
SR-91	State Route 91
STAA	Surface Transportation Assistance Act
TCE	temporary construction easement
TMP	Transportation Management Plan
Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
UPRR	Union Pacific Railroad
US	United States
USC	United States Code
VA	United States Department of Veterans Affairs

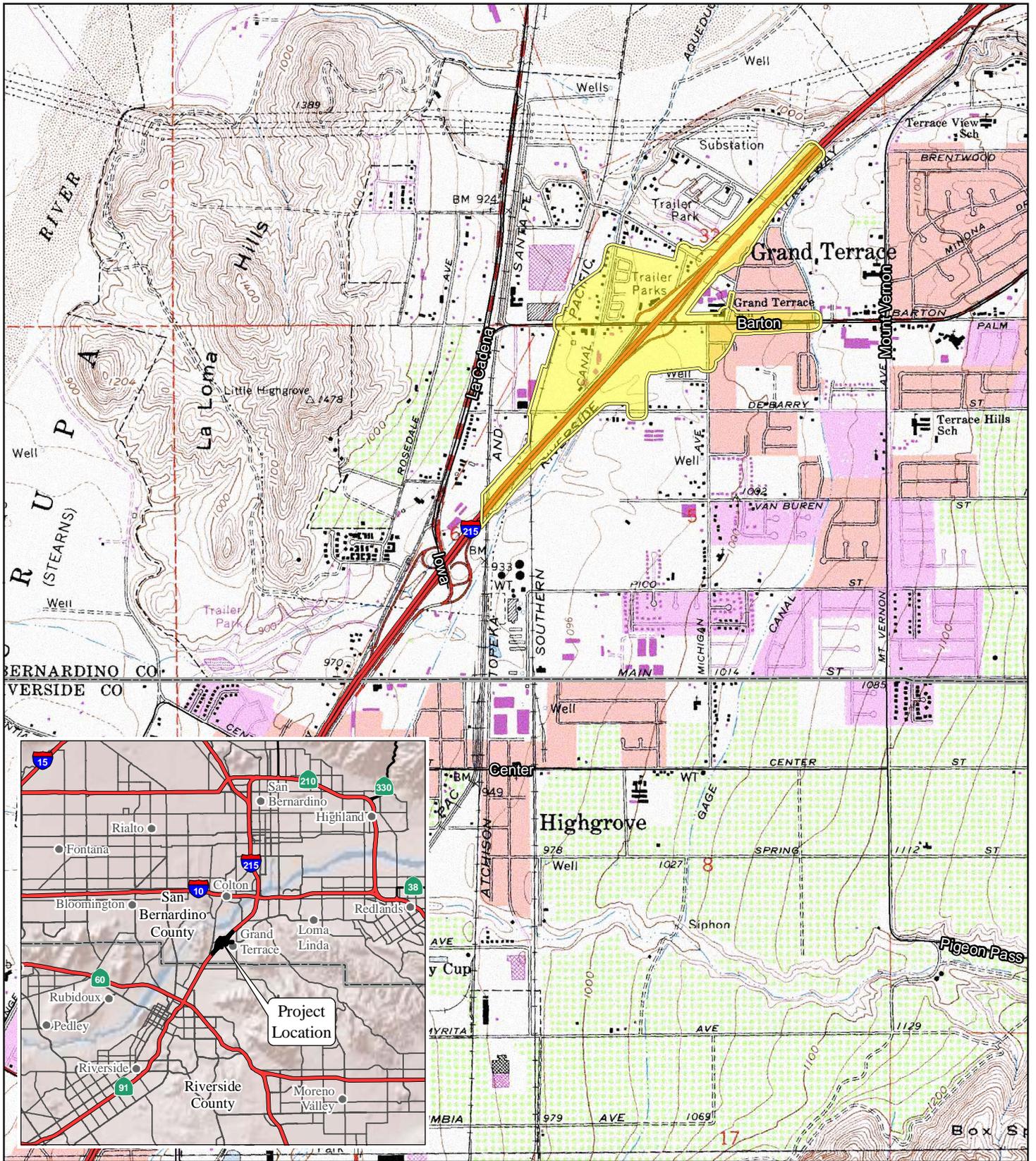
Chapter 1 Introduction

San Bernardino Associated Governments (SANBAG), in cooperation with the California Department of Transportation (Caltrans), the City of Grand Terrace, and the City of Colton, proposes to improve the Interstate 215 (I-215)/Barton Road interchange. The proposed I-215/Barton Road Interchange Improvement Project (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 limits extend from approximately 0.3 mile (mi) west of I-215 to 0.4 mi east of I-215. The project limits on I-215 extend from approximately 0.8 mi south of Barton Road to 0.4 mi north of Barton Road. Figure 1 shows project location and vicinity maps.

1.1 Purpose of the Study

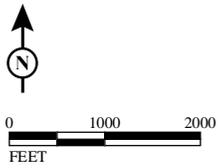
The purpose of this Visual Impact Assessment (VIA) is to assess the potential visual impacts associated with implementation of the proposed I-215/Barton Road Interchange Improvement Project (project). This VIA includes an analysis and description of the existing visual setting and potential visual impacts within the study area. The study area includes the area of project improvements, including potential sound barriers on private property lines, as well as an approximate 500-foot (ft) wide area around those improvements. A 500 ft wide area is sufficient to determine how a viewshed would be impacted by the project. This VIA evaluates the potential visual impacts of the project alternatives and includes avoidance, minimization, and/or mitigation measures, as applicable.

This page intentionally left blank



LEGEND
 Project Area

FIGURE 1



I-215/Barton Road Interchange Improvement Project
 Project Location

SOURCE: USGS 7.5 min. quad. (San Bernardino South, 1980)
 I:\SBA330\Barton_I-215\GIS\ProjectVicinity.mxd (1/30/2012)

This page intentionally left blank

1.2 Project Description

The Project Description 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 alternatives are Alternative 1 (No Build), Alternative 3 (Cloverleaf Interchange), Alternative 6 (Modified Cloverleaf), and Modified Alternative 7 (Modified Cloverleaf/Diamond). The proposed 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 proposed 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 proposed project is to reconstruct and improve the interchange in order to improve operation, increase capacity, and reduce congestion at the I-215/Barton Road interchange. The existing interchange has a nonstandard southbound off-ramp, and the existing interchange restricts large truck movements and pedestrian and bicyclist access. Without the interchange improvement, the operation of this facility will deteriorate over time to reach unacceptable levels of service (LOS) in the future.

The project area for the I-215/Barton Road Interchange Improvement Project overlaps the project area with the I-215 Bi-County HOV Lane Gap Closure Project at the Burlington Northern Santa Fe (BNSF) Railway two-track underpass (bridge over the freeway) and the Union Pacific Railroad (UPRR) single-track underpass between the Iowa Avenue/La Cadena Drive interchange and the Barton Road interchange. Both projects would require the reconstruction of these two structures. For the I-215/Barton Road Interchange Improvement Project, the reconstruction is needed to accommodate an auxiliary lane that is proposed between the northbound La Cadena entrance ramp and the proposed Barton Road exit ramp. The underpass replacements are required for I-215/Barton Road interchange Alternatives 3, 6, and Modified Alternative 7. For the I-215 Bi-County HOV Lane Gap Closure Project, the reconstruction is necessary due to inadequate horizontal clearance between the existing structure supports and the proposed HOV lane addition. The reconstructed bridges would be raised to provide adequate vertical clearance with the freeway.

Because the I-215 Bi-County HOV Lane Gap Closure Project analyzed the environmental impacts of reconstruction of the two railroad structures, as well as

construction of temporary railroad bridges to be utilized during reconstruction of the existing structures (railroad shooflies), and because this project is currently under construction, these impacts are not evaluated as part of this document.

1.3 Project Alternatives for the Project

Four alternatives are being analyzed for this project: the No Build Alternative (Alternative 1) and three Build Alternatives (Alternatives 3, 6, and Modified Alternative 7).

1.3.1 No Build Alternative

1.3.1.1 Alternative 1 (No Build Alternative)

Under this alternative, no interchange reconstruction would occur. This alternative would not improve operations, increase capacity, or reduce congestion at the I-215/Barton Road interchange.

1.3.2 Proposed Build Alternatives

1.3.2.1 Alternative 3 (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 and add turning lanes onto the southbound and northbound loop on-ramps. The existing overcrossing would be replaced with a new structure with four through lanes and two turn lanes. This alternative also includes the improvements listed below.

- The existing ramps would be removed and a new southbound off-ramp, southbound loop on-ramp, northbound loop on-ramp, and northbound off-ramp would be constructed.
- The 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; La Crosse Avenue north of Barton Road would be removed.
- The southbound loop on-ramp would provide three lanes at Barton Road.
- The northbound off-ramp would accommodate three lanes (two right-turn lanes and one left-turn lane) at the Barton Road intersection.
- The northbound loop on-ramp would provide three lanes at Barton Road.
- A portion of the I-215 Bi-County HOV Lane Gap Closure Project sound barrier in the northwest quadrant would be removed to accommodate the new southbound off-ramp.

- 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.
- The segment of Vivienda Avenue west of I-215 would be converted into a cul-de-sac.
- A new two-lane road would be constructed between La Crosse Avenue and Grand Terrace Road adjacent to Vivienda Avenue.
- Grand Terrace Road and the Grand Terrace Road/Barton Road intersection would be realigned.
- Grand Terrace Road would be extended southwest of Barton Road to tie into East De Berry Street.
- Grand Terrace Road at Barton Road would be converted into a cul-de-sac.
- Barton Road would be widened to four through lanes approximately between Grand Terrace Road and Vivienda Avenue.
- 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 in the northwest and southeast quadrants 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.
- Traffic signal modifications would be made at 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.

The conceptual design for Alternative 3 is shown on Figure 2.

1.3.2.2 Alternative 6 (Modified Cloverleaf)

Alternative 6 proposes a modified cloverleaf interchange with the southbound entrance and exit ramps directly connected to Barton Road; the northbound entrance and exit 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 plus one left-turn and one right-turn lane. The existing overcrossing

This page intentionally left blank



Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the

LEGEND

-  Parcel Boundary
-  Alternative 3 Layout
-  Temporary Construction Easement
-  Proposed Right of Way
-  Proposed Retaining Wall
-  I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier
-  Proposed Bioswales (approximate location)
-  Key View Location

FIGURE 2

I-215/Barton Road Interchange Improvement Project

Alternative 3

SOURCE: Microsoft (5/2010); County of San Bernardino (5/09); AECOM (8/2012)

I:\SBA330\Barton_I-215\GIS\VIA_ALT_3.mxd (8/26/2013)

This page intentionally left blank

would be replaced with a new structure with four through lanes and three turn lanes. This alternative also includes the improvements listed below.

- The existing ramps would be removed.
- A new southbound loop on-ramp would provide two lanes at Barton Road.
- A 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; La Crosse Avenue north of Barton Road would be removed; La Crosse south of Barton Road would be reconfigured to a right-in/right-out layout.
- A new northbound off-ramp would tie in to Commerce Way and provide for dual left-turn lanes and a single right-turn lane.
- A bridge would be constructed over the Riverside Canal on the northbound off-ramp to span the canal.
- A new northbound hook on-ramp would be provided in the southeast quadrant. The access to the ramp would be through the proposed extension of the Commerce Way.
- A portion of the I-215 Bi-County HOV Lane Gap Closure Project sound barrier in the northwest quadrant would be removed to accommodate the new southbound off-ramp.
- Commerce Way would be reconfigured to intersect with Barton Road at Vivienda Avenue.
- Commerce Way would be shifted to the east to accommodate the northbound off- and on-ramps.
- Commerce Way would be extended southeast of Barton Road to cross Michigan Avenue in the vicinity of De Berry Street.
- The northbound on-ramp and off-ramp would intersect with the proposed Commerce Way extension.
- The intersection of Michigan Avenue at Barton Road would be eliminated; Michigan Avenue would form a T-intersection with Commerce Way.
- A new two-lane road between La Crosse Avenue and Grand Terrace Road would be constructed adjacent to Vivienda Avenue.
- Barton Road would be widened to four through lanes approximately between Grand Terrace Road and Vivienda Avenue.
- 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 in the northwest and southeast quadrants 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.
- Traffic signal modifications would be made at Barton Road/Grand Terrace Road, I-215 northbound ramps/Commerce Way, I-215 southbound ramps/Barton Road, and Commerce Way/Vivienda Avenue/Barton Road.

The conceptual design for Alternative 6 is shown on Figure 3.

1.3.2.3 Modified Alternative 7 (Modified Cloverleaf/Diamond) (Locally Preferred Alternative)

Modified Alternative 7 would provide a tight diamond configuration for the northbound ramps. The southbound ramps would have a modified cloverleaf configuration with a roundabout at the intersection of the southbound ramps, Barton Road, and La Crosse Avenue. Barton Road would be widened to two through lanes in each direction plus one left-turn and one right-turn lane east of the southbound ramps. The existing overcrossing would be replaced with a new structure with four through lanes and one turn lane. This alternative also includes the improvements listed below.

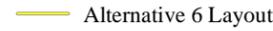
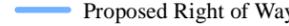
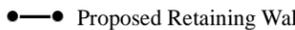
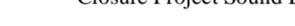
- The new southbound loop on-ramp would provide two lanes at Barton Road in a roundabout configuration.
- The new southbound off-ramp would make a connection at Barton Road and transition into a roundabout that would provide one right-turn lane, and one shared through/left-turn lane; La Crosse Avenue north of Barton Road would be removed.
- 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.
- 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.
- 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.

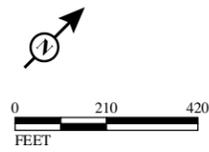


Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the

FIGURE 3

LEGEND

-  Parcel Boundary
-  Alternative 6 Layout
-  Temporary Construction Easement
-  Proposed Right of Way
-  Proposed Retaining Wall
-  I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier
-  Potential Sound Barrier
-  Key View Location



SOURCE: Microsoft (5/2010); County of San Bernardino (5/09); AECOM (8/2012)

I:\SBA330\Barton_I-215\GIS\VIA_ALT_6.mxd (12/6/2011)

This page intentionally left blank

- A new two-lane road between La Crosse Avenue and Grand Terrace Road would be constructed adjacent to Vivienda Avenue.
- Barton Road would be widened to four through lanes approximately between Grand Terrace Road and Vivienda Avenue.
- 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 in the northwest and southeast quadrants 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.
- Drainage facilities would be modified consistent with other project improvements.
- Traffic signal modifications would be made at Barton Road/Grand Terrace Road, I-215 northbound ramps/Barton Road, and Commerce Way/Vivienda Avenue/Barton Road.

The conceptual design for Modified Alternative 7 is shown in Figure 4.

1.3.3 Alternatives Considered but Eliminated from Further Discussion

Alternatives 2 and 4 included a new northbound on-ramp that encroached 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.

During reviews of the Build Alternatives that occurred between September 7, 2011, and October 27, 2011, it was discovered that the northbound on-ramp associated with Alternative 5 conflicts with the designed placement of the eastside bridge abutment for the Newport Avenue Overcrossing (OC) Bridge Replacement Project. The Newport OC Bridge project is in final design, and determining potential resolutions to the engineering conflict is expected to cause critical delays to this project by requiring substantial redesign, which in turn would be expected to result in an environmental reevaluation. In addition, Alternative 5 would result in greater environmental impacts than Alternatives 3, 6, and 7, and is the most expensive Build Alternative.

This page intentionally left blank

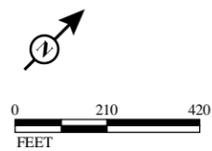


Source: Esri, Intellicast, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

FIGURE 4

LEGEND

- Parcel Boundary
- Modified Alternative 7 Layout
- Proposed Right of Way
- Temporary Construction Easement
- Proposed Retaining Wall
- I-215 Bi-County HOV Lane Gap Closure Project Sound Barrier
- Proposed Bioswales (approximate location)
- Key View Location



SOURCE: Microsoft (5/2010); County of San Bernardino (5/09); AECOM (4/2013)
 I:\SBA330\Barton_I-215\GIS\IA_ALT_7M.mxd (8/28/2013)

This page intentionally left blank

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 that 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 proposed realigned southbound off-ramp, this connection would be nonstandard per the Caltrans Highway Design Manual (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, and the right-in/right-out control at La Crosse Avenue was incorporated into the various engineering and environmental studies needed for Project Approval/Environmental Document (PA/ED) approval as Alternative 7.

A few property owners along the southern leg of La Crosse Avenue were concerned about how Alternative 7 would impact the access for their delivery trucks and contacted the City of Colton with questions in early 2012. The City of Colton presented the concept of Alternative 7, and the property owners indicated that the loss of full access to the interchange from La Crosse Avenue would negatively affect their businesses.

In August 2012, Caltrans submitted a draft Modified Access Request (MAR), which evaluated the Locally Preferred Alternative (Alternative 7) to FHWA for review. FHWA staff visited the project site along with several Caltrans project staff members. The private property owners' concerns were discussed. 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 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 ROW impacts. In February 2013, the Project Development Team (PDT) decided to proceed with a modification to Alternative 7 that includes a roundabout at the I-215 southbound ramps. This alternative was formally named Modified Alternative 7 and was selected as the Locally Preferred Alternative at the PDT meeting on March 5, 2013.

For the reasons described above, and because Alternatives 3, 6, and Modified Alternative 7 are feasible, the PDT made a decision to withdraw Alternatives 2 and 4 from further consideration on March 18, 2008, to withdraw Alternative 5 from further consideration on January 17, 2012, and to withdraw Alternative 7 from further consideration on March 5, 2013.

Chapter 2 Purpose and Need

2.1 Purpose

The purpose of the proposed project is to reconstruct and improve the interchange in order to improve operation, increase capacity, and reduce congestion at the I-215/Barton Road interchange and facilities served by the interchange.

2.2 Need

The proposed project is needed to increase capacity, improve operations, and reduce congestion at the I-215/Barton Road interchange. Based on traffic projections and the existing and future land uses in the vicinity, the facility is forecast to degrade to LOS F (breakdown condition) by 2040 without improvements. Due to its nonstandard design, the existing interchange restricts large truck movements, as well as pedestrian and bicyclist access to local streets.

2.3 Capacity and Transportation Demand

The study area intersections currently operate at LOS B or C during the a.m. and p.m. peak hours. Without improvements, in 2016, the Barton Road/Grand Terrace Road intersection would operate at LOS F during the a.m. peak hour and LOS E during the p.m. peak hour. Because of the projected demand, without improvements, by 2040 all seven study area intersections would operate at LOS F during both the a.m. and p.m. peak hours, with the exception of Barton Road/La Cadena Drive during the a.m. peak hour, which would operate at LOS C.

The demand for interchange access is also represented in traffic volumes. Traffic projections for 2040 show that the average daily traffic (ADT) volumes on I-215 will increase by more than 200 percent. The 2009 Barton Road interchange ramp volumes are forecast to double by 2040. Additional capacity is needed to accommodate projected traffic volumes and improve LOS.

2.4 Roadway Deficiencies

The existing I-215 southbound off-ramp at Barton Road is nonstandard per the Highway Design Manual (HDM, Sixth Edition) because it intersects with a local street (La Crosse Avenue) before reaching Barton Road. The southbound off-ramp at Barton Road is a five-legged intersection with a two-way frontage road adjacent to the southbound on-ramp. The existing interchange does not have adequate space for

Surface Transportation Assistance Act (STAA) truck-turning movements, a sidewalk on the south side, or bicycle lanes. Therefore, the existing interchange restricts large truck movements and pedestrian and bicyclist access to local streets. Reconstruction of the interchange is needed to improve access to the freeway and local streets.

In the existing condition, the left-turn lane on westbound Barton Road at the I-215 southbound on-ramp does not have sufficient vehicle capacity during the a.m. and p.m. peak hours. This prevents left-turning and through traffic from moving through the interchange. Queue lengths are forecasted to increase substantially by 2040 without interchange improvements. Additional turn-pocket capacity is needed in order to reduce delays at the interchange.

2.5 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 City of Colton is projected to experience substantial population growth through 2035 according to the SCAG 2012–2035 Adopted Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Growth Forecasts. The build out of the 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.

Chapter 3 Visual Environment

The regional landscape establishes the general visual environment of the project, but the specific visual environment upon which this assessment will focus is determined by defining landscape units and the project viewshed.

3.1 Regional Setting

The City of Grand Terrace is located in the flat lands of the San Bernardino Valley and extends onto the slopes of Blue Mountain to the east and the La Loma Hills to the west. The City of Grand Terrace's terrain is diverse, ranging in elevation from a low of 920 ft above sea level (asl) to a high of 2,428 ft asl (Blue Mountain). Blue Mountain is the City of Grand Terrace's dominant landform and, as such, is also the dominant component of a scenic vista available to a large number of observers at downslope locations to its west and northwest.

The community's western edge is bisected by I-215, which travels through the valley in a north-south direction. Two major north-south rail corridors (BNSF and UPRR) cross the western edge of the City of Grand Terrace. Although some large areas of open agricultural lands and hillside grasslands remain, much of the City of Grand Terrace has been built out with a low-density pattern of urbanization. In the corridor along the freeway and railroad lines in the western side of the City of Grand Terrace, industrial and warehouse uses predominate. Large warehouse buildings and paved areas associated with the industrial uses are a prominent part of the visual environment in this area. The portions of the City of Grand Terrace to the west and east of this corridor are characterized by neighborhoods of primarily single-family homes from which there are scenic views of nearby hills and the valley to the north of the City of Grand Terrace, as well as more distant mountain ridges.

3.2 Vegetation

The dominant vegetation type on the project site consists of nonnative ruderal vegetation, and developed areas are dominated by ornamental vegetation. There are two narrow, isolated stands of riparian habitat along Drainages B and F (Figure 5).

The majority of the study area is developed and is dominated by ornamental plantings consisting of introduced plant species used for landscaping purposes. Species within this vegetation type include Bermuda grass (*Cynodon dactylon*), ornamental pine (*Pinus sp.*), eucalyptus (*Eucalyptus sp.*), California fan palm (*Washingtonia filifera*),

oleander (*Nerium oleander*), tree of heaven (*Ailanthus altissima*), and elm (*Ulmus sp.*).

Nonnative ruderal vegetation consists of shortpod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), Russian thistle (*Salsola tragus*), morning glory (*Ipomoea sp.*), dove weed (*Croton setigerus*), cheeseweed (*Malva parviflora*), wild oat (*Avena fatua*), rescue grass (*Bromus catharticus*), and foxtail barley (*Hordeum murinum*).

Drainage B is located in the south part of the study area, east of I-215, on either side of the culverts under the UPRR and east of the BNSF Railroad/I-215 bridge. The drainage is moderately disturbed and contains riparian woodland habitat dominated by tree of heaven, velvet ash (*Fraxinus velutina*), and arroyo willow (*Salix lasiolepis*).

The other area of riparian habitat is located along Drainage F, in the north part of the study area, west of I-215, approximately 1,000 ft south of Newport Avenue and 400 ft north of Vivienda Avenue. Species in this stand include Goodding's willow (*Salix gooddingii*), Mexican fan palm (*Washingtonia robusta*), castor bean (*Ricinus communis*), and edible fig (*Ficus carica*).

3.3 Adopted Goals, Policies, and Plans

The project is within the planning area for the following documents:

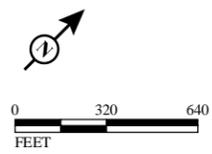
- City of Grand Terrace General Plan
- Barton Road Specific Plan
- City of Colton General Plan



FIGURE 5

LEGEND

- | | |
|---|--|
|  Project Area | Vegetation |
|  Parcel Boundary |  Ruderal field |
| |  Riparian habitat |
| |  Developed/Ornamental |



SOURCE: Microsoft (5/2010); County of San Bernardino (5/09)

I:\SBA330\Barton_I-215\GIS\Vegetation_Drainages.mxd (8/26/2013)

This page intentionally left blank

3.3.1 City of Grand Terrace General Plan Open Space and Conservation Element (2010)

The City of Grand Terrace General Plan does not have specific visual resources; however, it does have goals and policies related to the protection of the view of Blue Mountain. The applicable goals and policies related to visual resources are provided below

Goal 4.5 Protect and promote the beauty of Blue Mountain.

Policy 4.5.1: The City shall consider developing a specific plan for the western face of Blue Mountain.

Policy 4.5.2: The City shall designate Blue Mountain as a community symbol reflecting its value as a major open space and scenic resource.

Goal 4.9 Comply with state and federal regulations to ensure the protection of historical, archaeological, and paleontological resources.

- Policy 4.9.1 The City shall take reasonable steps to ensure that cultural resources are located, identified and evaluated to assure that appropriate action is taken as to the disposition of these resources.

3.3.2 City of Grand Terrace Barton Road Specific Plan (1990)

The Barton Road Specific Plan is intended to carry out the goals and objectives of the General Plan with respect to commercial, office, industrial, and residential development. The Plan, adopted in 1990 and amended in 2003, provides the zoning for all properties fronting, along, or directly related to Barton Road. It is intended to provide guidance for the development of primarily commercial property along this primary transportation corridor through the City of Grand Terrace. The Barton Road Specific Plan area boundary extends through the commercial and residential area on the south and north of Barton Road, including Grand Terrace Elementary School, which is adjacent to the project site.

The Barton Road Specific Plan includes several goals and policies related to visual resources which are included in the Community Design, Circulation, and Environmental sections of the plan.

The Community Design Objectives from the Barton Road Specific Plan are as follows:

- Develop consistent streetscape and architectural palettes that are sensitive to the creation of a “village” statement for Barton Road. (It is not the intent of this thematic requirement to discourage innovative or contemporary architectural expressions or to imitate the architecture of the past, but to promote the harmonious coexistence of architectural styles varying from restoration to contemporary architectural themes).
- Utilize landscape materials on private property that are clean, safe, wind resistant, and relatively low maintenance. Informal landscape forms should be utilized in the corridor to emphasize the “village” atmosphere and scale.
- Require that new development be sensitive to significant mature trees and views of natural landforms, such as Blue Mountain.

The Circulation goal and objectives are as follows:

Goal Maintain a circulation system that facilitates efficient, safe vehicular and pedestrian traffic and enhances the community design character along Barton Road.

Objectives Limit and/or consolidate vehicular access points onto Barton Road.

Provide for and phase necessary infrastructure improvements, such as under grounding utilities and landscaping to maximize the efficiency of traffic as well as add to the aesthetic quality of Barton Road.

The Environmental goal and objectives are as follows:

Goal Maintain the highest possible environmental quality within the Specific Plan area, by balancing the impacts of development with environmental concerns.

Objectives Establish regulations that preserve significant environmental features, such as mature trees and

views of local mountains within the Barton Road corridor.

Through the project approval process and the imposition of conditions or mitigation measures, ensure that all development within the Specific Plan area will not decrease environmental quality, and will wherever possible create a higher quality environment.

3.3.3 City of Grand Terrace Municipal Code

Chapter 12.28 (Street and Parkway Trees) Appendix A of the Municipal Code designates specific tree species (shown in Appendix A of this document) that may be planted either by developers, contractors, or individual homeowners.

3.3.4 City of Colton General Plan Open Space and Conservation Element (1987)

The City of Colton's current General Plan Open Space and Conservation Element was adopted in 1987. The City is in the process of preparing a new Open Space and Conservation Element, which will replace the current element. Because the Draft Open Space and Conservation Element has not been completed, applicable principles and standards from the existing Open Space and Conservation Element are provided below.

Principles

Outstanding scenic vistas and visual features shall be preserved and protected through the use of view easements, height limitations, and a design review board.

Establish a beautification program involving litter clean-up, street tree planting, and landscaped median and parking lots.

Standard

The use of natural and drought-tolerant vegetation shall be encouraged for landscaping in order that maintenance and water consumption are minimized.

3.4 Landscape Units

A landscape unit is a portion of the regional landscape and can be thought of as an outdoor room that exhibits a distinct visual character. A landscape unit will often correspond to a place or district that is commonly known among local viewers. Blue Mountain is the primary landscape unit in the project vicinity.

There are no historic districts or landscapes within the study area and no State or locally designated landmarks. In addition, neither I-215 nor Barton Road is designated a scenic highway.

3.5 Viewshed

A viewshed is a subset of a landscape unit and comprises all the surface areas visible from an observer's viewpoint. The limits of a viewshed are defined as the visual limits of the views located from the proposed project. The viewshed also includes the locations of viewers likely to be affected by visual changes brought about by project features.

The viewshed for this project is the landscape that is visible from I-215 within the project limits. At the southwestern end of the project limits, the viewshed of the surrounding area is limited because there are large berms on both sides of the freeway that shield views of the surrounding area. The most dominant view from I-215 is facing north toward the San Bernardino Mountains. However, the views may be limited due to climate conditions (i.e., smog) and freeway signs.

Heading north through the project limits, the berms on both sides of the freeway taper off, and views of Blue Mountain to the east and the La Loma Hills to the west become visible. However, these views are intermittently obstructed by landscape features and/or the commercial and residential properties located adjacent to the project limits (I-215).

There are several existing retaining and sound barriers within the project area. The existing sound barriers are primarily located adjacent to sensitive receivers (residences). The existing walls vary in size from 5 ft to 12.6 ft high.

Chapter 4 Visual Characteristics and Viewer Response

4.1 Visual Character

Visual character definitions establish an existing condition that can be discussed in general terms and then compared to the postproject development visual character categories, with any differences identified. The study area is dominated by the I-215/Barton Road interchange, including the freeway mainline travel lanes, embankments, I-215 ramps, and adjacent development and roads. Landscaping in the study area is typical of freeway corridors and includes grasses, low-lying shrubs, and a few trees. The I-215 Bi-County HOV Lane Gap Closure Project is currently under construction and all trees within State right-of-way in the interchange area have been removed. The areas surrounding the I-215/Barton Road interchange are characterized by moderate-density development, roadways and open space/vacant land. Land uses within and surrounding the project site are predominantly commercial, industrial, residential, and educational (Grand Terrace Elementary School).

4.2 Visual Quality

The visual quality of an area is evaluated by identifying the vividness, intactness, and unity present in the study area viewsheds. These identifying characteristics can be defined as follows:

- **Vividness** is the visual power or memorability of landscape components as they combine in distinctive visual patterns.
- **Intactness** is the visual integrity of the natural and man-built landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.
- **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual components in the landscape.

Features considered encroachment elements in the assessment of the study area's intactness include human-built structures such as features of I-215 (e.g. freeway signs, sound barriers, overcrossings, utility lines and poles, yellow crash barrels, and k-rails) that encroach into the views within the project viewshed. Encroaching features are dominant features that are easily noticeable and juxtaposed against

natural elements (e.g. mature trees). Features contributing to the unity of the landscape include the general commercial, residential, and educational uses surrounding the study area. Development of commercial, residential, and educational uses are subject to the City's design review process and must adhere to zoning code design standards established to maintain unity in development. However, these land uses vary in design character depending on the period of development and degree of upkeep. Sound barriers can occasionally provide unity, particularly if they are textured or include a themed aesthetic treatment.

4.3 Sensitive Viewer Groups

The primary sensitive viewer groups in the study area include motorists traveling along I-215, Barton Road, Vivienda Avenue, Commerce Way, La Crosse Avenue, Grand Terrace Road, and Michigan Avenue. Other viewers likely to be affected by visual changes brought about by project features include those from Grand Terrace Elementary School, residential properties adjacent to I-215 and surrounding areas, and commercial businesses within the project limits.

4.4 Viewer Sensitivity

Viewer sensitivity is defined both as the viewer's concern for scenic quality and the viewer's response to change in the visual resources that make up the view. Local values and goals may confer visual significance on landscape components and areas that would otherwise appear unexceptional in a visual resources analysis. Even when the existing appearance of a project site is uninspiring, a community may still object to projects that fall short of its visual goals.

A viewer traveling along I-215 and/or Barton Road has intermittent views of scenic elements such as Blue Mountain and the La Loma Hills; however, each of these scenic elements is obstructed by the existing development and vegetation located within the study area. Therefore, views from I-215 and Barton Road are not panoramic views, and the sensitivity of a viewer traveling along I-215 and/or Barton Road would not be considered high. Additionally, the study area is not defined as a scenic highway by State or local governments.

Viewers at public educational uses have a higher concern for scenic quality because public educational facilities include recreational uses (e.g., elementary school playgrounds). Viewers at residential land uses have a higher concern for scenic quality because they have an investment in the overall quality of their property and

often spend the majority of their time at their place of residence. The sensitivity of viewers from educational and residential uses within the viewshed of the project would be considered high because these land uses are places of relaxation, education, and recreation.

4.5 Viewer Exposure and Response

Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, the type of viewer activity, the duration of the view, the speed at which the viewer moves, and the position of the viewer.

Viewer response is composed of two elements: viewer sensitivity and viewer exposure. These elements combine to form a method of predicting how the public might react to visual changes brought about by a project.

Motorists traveling along I-215 and/or Barton Road would be considered to have a low exposure to the visual changes because the change in view from the road would not be substantial and the duration of the view would be brief as the viewer travels through the study area. The residential and educational uses adjacent to the project would be considered to have a medium to high viewer exposure because the viewers would be stationary and would generally have a longer level of exposure to the changes in views, and because activities at these uses are considered sensitive in nature.

This page intentionally left blank

Chapter 5 Impacts

The visual impacts are determined by assessing the visual resource change due to the project and predicting viewer response to that change. Visual resource change is the sum of the change in visual character and the change in visual quality. The first step in determining visual resource change is to assess the compatibility of the proposed project with the visual character of the existing landscape. The second step is to compare the visual quality of the existing resources with the projected visual quality after the project is constructed. The viewer response to project-related changes is the sum of viewer exposure and viewer sensitivity to the project. The resulting level of visual impact is determined by combining the severity of visual resource change with the degree to which people are likely to oppose the change.

5.1 Visual Impact Levels

The following visual impact levels used in this VIA have been adopted from the Caltrans Visual Impact Assessment outline:

- **Low:** Low-level visual impacts include minor adverse changes to existing visual resources, with a low viewer response to the potential changes in the visual environment. Low-level visual impacts may or may not require mitigation.
- **Moderate:** Moderate-level visual impacts include a moderate adverse change to the visual resource with moderate viewer response. Moderate-level visual impacts can be mitigated within 5 years using conventional practices.
- **Moderately High:** Moderately high-level visual impacts are impacts with a moderate adverse visual resource change and high viewer response or a high adverse visual resource change and moderate viewer response. Extraordinary mitigation practices may be required, and landscape treatment mitigation required will generally take longer than 5 years to complete.
- **High:** High-level visual impacts are impacts associated with a high level of adverse change to the resource or a high level of viewer response to visual change such that architectural design and landscape treatment cannot mitigate the impacts. An alternative project design may be required to avoid highly adverse impacts.

5.2 Key View Analysis

Because it is not feasible to analyze all the views in which the proposed project would be seen, it is necessary to select a number of key viewpoints that would most clearly display the visual effects of the project. Key views also represent the primary viewer groups that would potentially be affected by the project.

To evaluate the visual effects created by the proposed project, specific views have been identified to represent the visual resources, the quality of typical existing viewsheds from the perspective of sensitive viewers in the study area, and the sensitive viewer's perspective. Nonsensitive viewers surround the majority of the study area (i.e., commercial, light industrial, and transportation uses). Key views were selected that most clearly display the visual effects of the project from the perspective of a sensitive viewer with a higher exposure to the project changes and that represent the primary viewer groups potentially affected by the project. The key views represent the visual quality of typical existing viewsheds in the study area that would be modified by the project. The overall existing quality of views and changes to those views have been quantified in the following tables corresponding to each view.

Key views are discussed below by alternative. The alternative described for each key view would be the worst-case scenario from each of the alternatives from that key view. Descriptions of the existing and proposed key views are provided below along with a numerical evaluation of the existing and proposed visual quality.

5.2.1 Alternative 1 (No Build)

Alternative 1 would not involve changes to the Barton Road Overcrossing, local roadways, or land uses within the project area. The I-215 Bi-County HOV Lane Gap Closure Project is currently under construction within the project area and trees have been removed within State right-of-way adjacent to the existing interchange ramps. As a result, the visual quality of the project area is moderately low under Alternative 1.

5.2.2 Alternative 3

Two key views were specifically analyzed for Alternative 3 and are described below.

5.2.2.1 Key View 1

Existing View

Key View 1 (Figure 6) is an existing view from the viewpoint of a motorist traveling west on Barton Road approximately 150 ft east of the Barton Road/I-215

overcrossing. The foreground of the view includes Barton Road and ornamental vegetation within a landscaped median. Middleground views include Barton Road, landscaped median, ornamental vegetation, the I-215 northbound on-ramp, trees, a brick wall, and roadway signage. Background views include Barton Road, the overcrossing, fencing, traffic signals, utility poles and lines, trees, the La Loma Hills, vehicles, and sky. There are no designated visual resources within the existing view of Key View 1. This view represents typical views from a motorist traveling on Barton Road in the vicinity of I-215.

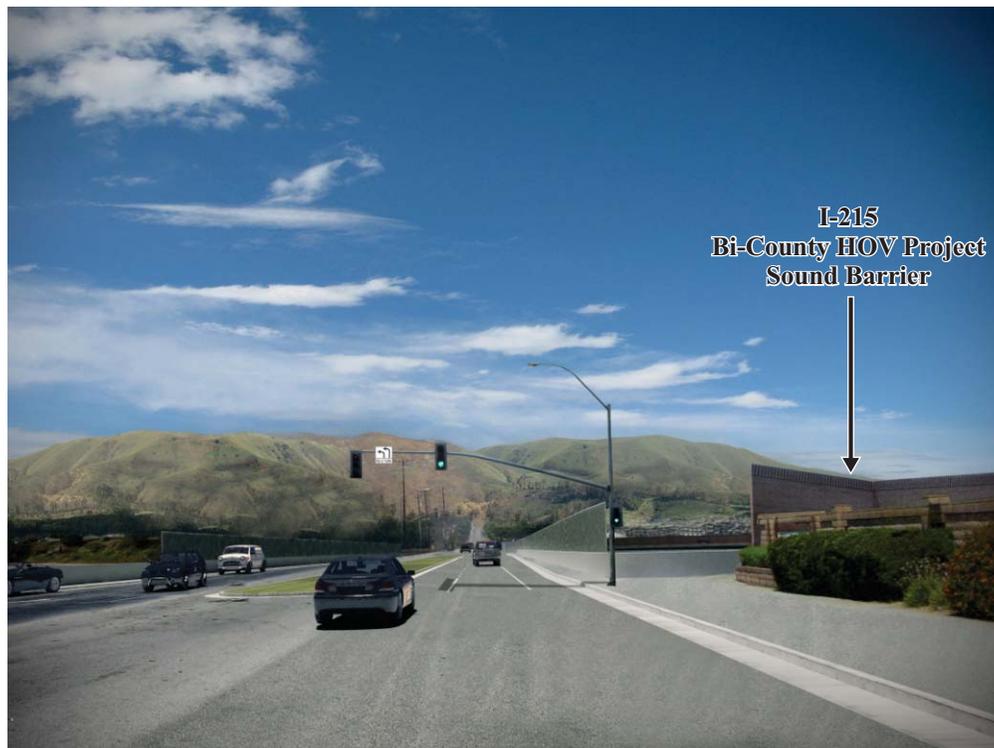
The existing viewer sensitivity from Key View 1 would be considered low because of the obstructed views of scenic elements. In this location, views from the road and Grand Terrace Elementary School are of Barton Road, ornamental landscaping, and a narrow view of La Loma Hills. There are a high number of motorists traveling on Barton Road at the I-215 Interchange; however, because of the viewer activity, duration, speed, and position of motorists, the existing viewer exposure would be considered medium from Key View 1.

The overall existing visual quality of Key View 1 is 3.3 (i.e., moderately low), due to the presence of Barton Road, the I-215 on-ramp, roadway signage, and associated vehicles, as listed in Table A.

This page intentionally left blank



Existing Key View 1 from Barton Road, east of I-215, facing west.



Key View 1 View Simulation of Alternative 3.

FIGURE 6

This page intentionally left blank

Table A: Key View 1, Existing and Proposed Visual Quality

Vividness (V)		Intactness (I)		Unity (U)		Overall Visual Quality ([V+I+U]/3)
Features	Rating	Encroachment	Rating	Elements	Rating	
Existing View						
Moderate level of vividness with the presence of mature landscaping; however, lacking striking features.	4	Integrity of natural features impacted by the presence of road, on- and off-ramps, and overcrossing.	3	Roadway, traffic signals, and signs contribute to a lack of visual harmony.	3	3.3
Proposed View						
Improvements remove mature vegetation and reduce the distinctiveness of view.	3	Removal of mature landscaping provides views of natural features beyond.	3	Roadway and traffic signals would continue to contribute to a lack of harmony; however, removal of mature landscaping would provide views of hillsides beyond.	3	3
Difference from Existing Visual Quality						-0.3

Rating Scale:

1–7 (1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high)

I-215 = Interstate 215

Changes to Key View 1

As shown on Figure 6, the proposed northbound on-ramp would be visible from Barton Road east of I-215. The proposed views would include Barton Road and ornamental vegetation in the foreground. The median landscaping within the City limits would be removed to allow for the turn lane onto the I-215 northbound on-ramp. Middleground views would include Barton Road, vehicles, a landscaped median, ornamental vegetation, a brick wall, and the I-215 Bi-County HOV Lane Gap Closure Project sound barrier. Some trees would be removed to accommodate the new I-215 northbound loop on-ramp. Background views would include Barton Road roadway, the overcrossing, fencing, traffic signals, the La Loma Hills, vehicles, and sky. Some trees would be removed to accommodate the new I-215 southbound loop on-ramp. Changes to this viewscape represent the typical changes to views from Barton Road resulting from Alternative 3. The overall proposed visual quality of the proposed Key View 1 is moderately low (i.e., 3) due to removal of trees and ornamental landscaping, and the widening of the overcrossing. However, with the removal of trees, the La Loma Hills, located west of the project area, would become partially visible from Barton Road. Measure VIS-1 requires implementation of a Landscape Plan that would minimize impacts related to the removal of landscaping,

and Measure VIS-2 includes aesthetic elements for hardscape such as sound barriers. Therefore, implementation of Alternative 3 would have a low-level visual impact on the visual quality of Key View 1.

Because Alternative 3 would have a low-level visual impact on Key View 1, and because viewer sensitivity is low and viewer exposure is medium at Key View 1, it is anticipated that the viewer response would be considered low from the view point of a motorist at Key View 1.

5.2.2.2 Key View 2

Existing View

Key View 2 (Figure 7) is an existing view from the viewpoint of a motorist traveling east on Barton Road approximately 480 ft west of the Barton Road/I-215 overcrossing. The foreground of the view includes Barton Road. Middleground views include Barton Road roadway, ornamental vegetation, utility poles and lines, a chain-link fence, and mobile homes. Background views include Barton Road, vehicles, utility poles and lines, mobile homes, trees, Blue Mountain hills, and sky. In this location, the Grand Terrace Mobile Home Park view includes Barton Road, commercial buildings on the road, and I-215 in the background. There are no designated visual resources within the existing view of Key View 2.

The existing viewer sensitivity from Key View 2 would be considered low because of the obstructed views of scenic elements. There are a high number of motorists traveling on Barton Road at I-215 Interchange; however, because of the viewer activity, duration, speed, and position of motorists, the existing viewer exposure would be considered medium from Key View 2.

The overall existing visual quality of Key View 2 is 3.3 (i.e., moderately low), due to the presence of Barton Road roadway, utility poles and lines, the chain-link fence, mobile homes, and vehicles, as listed in Table B.

Changes to Key View 2

As shown on Figure 7, the proposed Alternative 3 southbound off-ramp would be visible from Barton Road west of I-215. The proposed views would include Barton Road and vehicles in the foreground. The grass turf on the south side of Barton Road would be removed to accommodate the road widening. Middleground views include Barton Road, vehicles, ornamental vegetation/landscaping, utility poles and lines, and



Existing Key View 2 from Barton Road, west of I-215, facing east.



Key View 2 View Simulation of Alternative 3.

FIGURE 7

This page intentionally left blank

Table B: Key View 2, Existing and Proposed Visual Quality

Vividness (V)		Intactness (I)		Unity (U)		Overall Visual Quality
Features	Rating	Encroachment	Rating	Elements	Rating	([V+I+U]/3)
Existing View						
Moderate level of vividness with roadway, landscaping, and sky features.	4	Road, utility lines, and residential use contribute to the lack of integrity.	3	Relatively low elevation of buildings and lack of distinctive natural features result in low disruption to harmony.	3	3.3
Proposed View						
Vividness decreases with the increase in manmade features.	3	Additional encroachments are present with the proposed view.	2	Addition of the sound barrier provides coherence to the roadway view.	3	2.6
Difference from Existing Visual Quality						-0.7

Rating Scale:

1-7 (1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high)

I-215 = Interstate 215

a sound barrier. Background views include Barton Road, the overcrossing, fencing, traffic signals, the Barton Road southbound off-ramp, Blue Mountain, vehicles, and sky.

Changes to this viewscape represent the typical changes to views from Barton Road resulting from Alternative 3. Alternative 3 would require partial acquisition of Grand Terrace Mobile Home Park located in the near left of the view and full acquisition of the commercial parcel located on the far left of the view to accommodate the proposed southbound off-ramp and the Barton Road widening.

Additionally, Alternative 3 would require partial acquisition of the commercial parcel on the near right of Key View 2 and full acquisition of the commercial parcel on the far right of Key View 2 to accommodate the proposed intersection, Barton Road widening, and the southbound on-ramp and off-ramp. Measure VIS-1 requires implementation of a Landscape Plan that would minimize impacts related to the removal of landscaping, and Measure VIS-2 includes aesthetic elements for hardscape such as sound barriers. The overall proposed visual quality of the proposed Key View 2 is low (i.e., 2.6) due to the removal of trees and ornamental landscaping

and the widening of Barton Road. Implementation of Alternative 3 would have a low-level visual impact on the visual quality of Key View 2.

Because Alternative 3 would have a low-level visual impact on Key View 2, and because viewer sensitivity is low and viewer exposure is medium at Key View 2, it is anticipated that the viewer response would be considered low from the view point of a motorist at Key View 2.

5.2.3 Alternative 6

One key view was analyzed specifically for Alternative 6 and is described below.

5.2.3.1 Key View 3

Existing View

Key View 3 (Figure 8) is an existing view from the viewpoint of a motorist traveling south on I-215 approximately 960 ft north of the Barton Road overcrossing. The foreground of the view includes I-215 and a cement center divider. Middleground views include I-215, vehicles, and a cement center divider. In this location, residences on Vivienda Avenue and Vivienda Court, west and east of I-215, respectively, have a view of I-215. Background views include the Barton Road overcrossing, trees, hills, and sky. While this view location provides views of the horizon, these views are obstructed by I-215 and associated vehicles. There are no designated visual resources within the existing view of Key View 3. This view represents a typical view from a motorist traveling on I-215 in the vicinity of Barton Road.

The existing viewer sensitivity from Key View 3 would be considered medium because of the lack of scenic elements within this view. There are a high number of motorists traveling on I-215 at the Barton Road Interchange; however, because of the viewer activity, duration, speed, and position of motorists, the existing viewer exposure would be considered low from Key View 3.

The overall existing visual quality of Key View 3 is 3 (i.e., moderately low), due to the presence of I-215 and associated vehicles, as listed in Table C.



Existing Key View 3 from I-215 south, north of Barton Road.



Key View 3 View Simulation of Alternative 6.

FIGURE 8

This page intentionally left blank

Table C: Key View 3, Existing and Proposed Visual Quality

Vividness (V)		Intactness (I)		Unity (U)		Overall Visual Quality ([V+I+U]/3)
Features	Rating	Encroachment	Rating	Elements	Rating	
Existing View						
Lack of striking features and roadway contribute to a moderately low level of vividness.	3	I-215 and vehicular traffic contribute to the lack of integrity.	3	Roadway and signage contribute to the lack of harmony.	3	3
Proposed View						
Removal of mature landscaping and addition of sound barrier reduce the level of vividness.	2	Additional roadway and sound barrier contribute to the lack of integrity and encroachments.	2	Additional roadway and sound barrier reduce the harmony.	2	2
Difference from Existing Visual Quality						-1

Rating Scale:

1-7 (1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high)

I-215 = Interstate 215

Changes to Key View 3

Alternative 6 would widen the Barton Road overcrossing to six lanes and include the southbound on- and off-ramps northeast of I-215 and Barton Road. As shown on Figure 8, the proposed Alternative 6 southbound on- and off-ramps and the widened Barton Road overcrossing would be visible from I-215 north of Barton Road. The proposed views would include I-215, vehicles, and a cement center divider in the foreground. Middleground views would include I-215, the I-215/Barton Road southbound off-ramp, vehicles, a cement center divider, and the I-215 Bi-County HOV Lane Gap Closure Project sound barrier as well as a potential sound barrier adjacent to the southbound off-ramp. In this location, residences on Vivienda Avenue and Vivienda Court would have a view of sound barriers that would separate the residential properties from I-215. Background views would include the Barton Road overcrossing, the I-215/Barton Road southbound on-ramp, hills, and sky.

Alternative 6 would require partial acquisition of the residential parcel located on the near right, adjacent to the existing off-ramp, and full acquisition of the commercial parcel located on the far right, adjacent to the existing off-ramp, to accommodate the proposed southbound on- and off-ramps. Changes to this viewscape represent the typical changes to views from I-215 resulting from Alternative 6. Measure VIS-1 requires implementation of a Landscape Plan that would minimize impacts related to the removal of landscaping, and Measure VIS-2 includes aesthetic elements for

This page intentionally left blank



Existing Key View 1 from Barton Road, east of I-215, facing west.



Key View 1 View Simulation of Modified Alternative 7.

FIGURE 9

This page intentionally left blank

hardscape such as sound barriers. The overall visual quality of the proposed Key View 3 is low (i.e., 2), due to encroachment of the on- and off-ramps and removal of ornamental vegetation and trees. Implementation of Alternative 6 would have a low-level visual impact on Key View 3 due to the existing low visual quality.

Because Alternative 6 would have a low-level visual impact on Key View 3, and because viewer sensitivity is medium and viewer exposure is low at Key View 3, it is anticipated that the viewer response would be considered low from the view point of a motorist at Key View 3.

5.2.4 Modified Alternative 7

Three key views were analyzed specifically for Modified Alternative 7 and are described below. The existing view of Key View 1 was previously discussed in Section 5.2.2.1 for Alternative 3.

5.2.4.1 Key View 1

Changes to Key View 1

The existing overcrossing would be replaced with a new structure with four through lanes and two turn lanes. As shown on Figure 9, the Alternative 7 northbound on-ramp would be visible from Barton Road east of I-215. The proposed views would include Barton Road, ornamental vegetation, and a landscaped median in the foreground. Middleground views would include Barton Road, vehicles, a landscaped median, ornamental vegetation, a brick wall, and a sound barrier. Trees would be removed to accommodate the new I-215 northbound on-ramp. Background views would include Barton Road, the Barton Road overcrossing, overcrossing fencing, traffic signals, the La Loma Hills, vehicles, and sky. Some trees would be removed to accommodate the new I-215 southbound loop on-ramp. As shown in Key View 1, the I-215 Bi-County HOV Lane Gap Closure Project will construct a sound barrier on the northwest side of the bridge to reduce traffic noise at Grand Terrace Elementary School and residences adjacent to northbound I-215. Changes to this viewscape represent the typical changes to views from Barton Road resulting from Modified Alternative 7. As shown in Table D, the overall proposed visual quality of the proposed Key View 1 is moderately low (i.e., 3) due to removal of street trees and ornamental landscaping and the widening of the Barton Road overcrossing. However, with the removal of additional trees, the La Loma Hills would become partially visible from Barton Road. Measure VIS-1 requires implementation of a Landscape Plan that would minimize impacts related to the removal of landscaping, and Measure VIS-2 includes aesthetic elements for hardscape such as sound barriers. Therefore,

Table D: Key View 1, Existing and Proposed Visual Quality

Vividness (V)		Intactness (I)		Unity (U)		Overall Visual Quality ([V+I+U]/3)
Features	Rating	Encroachment	Rating	Elements	Rating	
Existing View						
Same as Key View 1 for Alternative 3						
Proposed View						
Improvements remove mature vegetation and reduce the distinctiveness of view.	3	Removal of mature landscaping provides views of natural features beyond.	3	Roadway and traffic signals would continue to contribute to a lack of harmony; however, removal of mature landscaping would provide views of hillsides beyond.	3	3
Difference from Existing Visual Quality						-0.3

Rating Scale:

1-7 (1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high)

I-215 = Interstate 215

implementation of Modified Alternative 7 would have a low-level visual impact on the visual quality of Key View 1.

Because Modified Alternative 7 would have a low-level visual impact on Key View 1, and because viewer sensitivity is low and viewer exposure is medium at Key View 1, it is anticipated that the viewer response would be considered low from the viewpoint of a motorist at Key View 1.

5.2.4.2 Key View 4

Existing View

Key View 4 (Figure 10) is an existing view from the viewpoint of a motorist traveling east on Barton Road approximately 200 ft west of the Barton Road/I-215 overcrossing. The foreground of the view includes Barton Road. Middleground views include Barton Road, ornamental vegetation, utility poles and lines, Demetri’s Restaurant on the left side, and construction activity associated with the I-215 Bi-County HOV Lane Gap Closure Project on the right side. Background views include Barton Road, vehicles, utility poles and lines, trees, Blue Mountain hills, and sky. There are no designated visual resources within the existing view of Key View 4.

The existing viewer sensitivity from Key View 4 would be considered low because of the obstructed views of scenic elements. There are a high number of motorists traveling on Barton Road at the I-215 Interchange; however, because of the viewer activity, duration, speed, and position of motorists, the existing viewer exposure would be considered medium from Key View 4.



Existing Key View 4 from Barton Road, west of I-215, facing east.



Key View 4 View Simulation of Modified Alternative 7.

FIGURE 10

This page intentionally left blank

The overall existing visual quality of Key View 4 is 3.3 (i.e., moderately low), due to the presence of Barton Road, utility poles and lines, signs, and vehicles, as listed in Table E.

Table E: Key View 4, Existing and Proposed Visual Quality

Vividness (V)		Intactness (I)		Unity (U)		Overall Visual Quality
Features	Rating	Encroachment	Rating	Elements	Rating	([V+I+U]/3)
Existing View						
Moderate level of vividness with roadway, landscaping, and sky features.	4	Roadway, utility lines, commercial uses, and construction activity contribute to the lack of integrity.	3	Relatively low elevation of buildings and lack of distinctive natural features result in low disruption to harmony.	3	3.3
Proposed View						
Vividness decreases with the increase in manmade features.	3.5	Additional encroachments are present with the proposed view.	2.5	Addition of the roundabout provides coherence to the roadway view.	3.5	3.2
Difference from Existing Visual Quality						-0.1

Rating Scale:

1–7 (1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high)

I-215 = Interstate 215

Changes to Key View 4

As shown on Figure 10, the proposed roundabout would be visible from Barton Road west of I-215. The proposed views would include Barton Road and vehicles in the foreground. The grass turf on the south side of Barton Road would be removed to accommodate the road widening. Landscaping would be provided within and along the edges of the roundabout. Middleground views include Barton Road, vehicles, ornamental landscaping and utility poles and lines. Background views include Barton Road, trees, and sky.

Changes to this viewscape represent the typical changes to views from Barton Road resulting from Modified Alternative 7, which would require full acquisition of the commercial parcel that contains Demetri's Restaurant to accommodate the proposed southbound off-ramp, roundabout, and Barton Road widening.

The close-up view of Key View 4 (Figure 11) shows that the roadway features would be improved with the addition of a landscaped roundabout with an architectural feature and pedestrian crosswalk.

Measure VIS-1 requires implementation of a Landscape Plan that would minimize impacts related to the removal of landscaping, and Measure VIS-2 includes aesthetic elements for hardscape such as sound barriers. The overall proposed visual quality of the proposed Key View4 is low (i.e., 3.2) due to the removal of trees and ornamental landscaping and the widening of Barton Road. Implementation of Modified Alternative 7 would have a very low-level visual impact on the visual quality of Key View 4.

Because Modified Alternative 7 would have a low-level visual impact on Key View 4, and because viewer sensitivity is low and viewer exposure is medium at Key View 4, it is anticipated that the viewer response would be considered low from the view point of a motorist at Key View 4.



Key View 4 View Simulation of Modified Alternative 7.

FIGURE 11

This page intentionally left blank

5.2.4.3 Key View 5

Existing View

Key View 5 close up (Figure 12) is an existing view from the viewpoint of a motorist traveling south on the southbound off-ramp towards the roundabout. The foreground of the view includes the I-215 off-ramp at Barton Road. Middleground views include Barton Road, traffic signal poles, utility poles and lines, and construction activity associated with the I-215 Bi-County HOV Lane Gap Closure Project. Background views include an industrial building trees, Blue Mountain hills, and sky. Blue Mountain is a designated visual resource within the existing view of Key View 5.

The existing viewer sensitivity from Key View 5 would be considered low because of the obstructed views of scenic elements. There are a high number of motorists traveling on Barton Road at the I-215 Interchange; however, because of the viewer activity, duration, speed, and position of motorists, the existing viewer exposure would be considered medium from Key View 5.

The overall existing visual quality of Key View 5 is 3.0 (i.e., moderately low), due to the presence of ramps, Barton Road, traffic signal poles, utility poles and lines, and vehicles as listed in Table F.

Table F: Key View 5, Existing and Proposed Visual Quality

Vividness (V)		Intactness (I)		Unity (U)		Overall Visual Quality
Features	Rating	Encroachment	Rating	Elements	Rating	$([V+I+U]/3)$
Existing View						
Moderate level of vividness with roadway, mountain, and sky features.	4	Roadway, utility lines, traffic signals, and construction activity contribute to the lack of integrity.	3	Roadway, poles, construction activity disrupt harmony.	2	3.0
Proposed View						
Vividness increases with landscaping	4.5	Encroachments are reduced with the proposed view.	4	Addition of the roundabout provides coherence to the roadway view.	4	4.2
Difference from Existing Visual Quality						+1.2

Rating Scale:

1–7 (1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high)

I-215 = Interstate 215

This page intentionally left blank



Existing Key View 5 from La Crosse Avenue, west of I-215, facing southeast.



Key View 5 View Simulation of Modified Alternative 7.

FIGURE 12

This page intentionally left blank

Changes to Key View 5

As shown on Figure 12, the proposed views would include the I-215 southbound off-ramp and vehicles in the foreground. Middleground views include the roundabout, landscaping, and Barton Road. Background views include utility poles and lines, trees, Blue Mountain and sky.

Changes to this viewscape represent the typical changes to views from one of the I-215 southbound ramps towards Barton Road. Modified Alternative 7 would require full acquisition of the commercial parcel that contains Demetri's Restaurant to accommodate the proposed southbound off-ramp, roundabout, and Barton Road widening.

The close-up view of Key View 5 (Figure 13) shows that the roadway features would be improved with the addition of a landscaped roundabout with an architectural feature and pedestrian crosswalks.

Measure VIS-1 requires implementation of a Landscape Plan that would minimize impacts related to the removal of landscaping, and Measure VIS-2 includes aesthetic elements for hardscape such as sound barriers. The overall proposed visual quality of the proposed Key View 5 is moderate (i.e., 4.2), but it is an improvement compared to the existing condition. Implementation of Modified Alternative 7 would improve the visual quality of Key View 5.

Because Modified Alternative 7 would improve the visual environment in Key View 5, and because viewer sensitivity is low and viewer exposure is medium at Key View 5, it is anticipated that the viewer response would be positive from the view point of a motorist at Key View 5.

5.2.5 Alternatives 3, 6, and Modified Alternative 7

5.2.5.1 Key View 6

Existing View

Key 6 (Figure 14) provides an existing view from the playground at Grand Terrace Elementary School in the City of Grand Terrace. Key View 6 faces northwest on Barton Road. Grass, trees, playground fencing, and equipment are located in the foreground. Middleground views include a playground ball field, playground equipment, fencing, grass, and trees. Background views include trees, fencing, I-215,

This page intentionally left blank



Key View 5 close-up view simulation of Modified Alternative 7 roundabout.

FIGURE 13

This page intentionally left blank



Existing Key View 6 from Grand Terrace Elementary School playground facing northwest.



Key View 6 simulation of Alternative 3, 6, or Modified Alternative 7.

FIGURE 14

This page intentionally left blank

vehicles, an obstructed view of the La Loma Hills, and sky. There are no designated visual resources within the existing view of Key View 6.

The existing viewer sensitivity from Key View 6 would be considered high because of the playground activity that takes place at Key View 6. There are a moderate number of viewers utilizing this playground (i.e., school children and instructors), the viewer activity is recreational, occurring over a period of time several times a day, and their stationary views, the existing viewer exposure, would be considered high from Key View 6.

The overall existing visual quality of Key View 6 is moderate (i.e., 4), due to the grass and trees, views of the La Loma Hills, and views of I-215, as shown in Table G.

Table G: Key View 6, Existing and Proposed Visual Quality

Vividness (V)		Intactness (I)		Unity (U)		Overall Visual Quality
Features	Rating	Encroachment	Rating	Elements	Rating	[(V+I+U)/3]
Existing View						
Playground and landscaping are vivid striking features.	5	Integrity negatively impacted by presence of I-215.	3	Unity negatively impacted by presence of I-215.	4	4
Proposed View-Alternative 3						
Improvements eliminate view of I-215 and mature landscaping.	5	Sound barrier removes view of I-215.	4	Sound barrier provides unity of the space.	4	4.3
Difference from Existing Visual Quality						+0.3
Proposed View-Alternative 6						
Improvements eliminate view of I-215 and mature landscaping.	5	Sound barrier removes view of I-215.	3	Sound barrier provides unity of the space.	4	4
Difference from Existing Visual Quality						0
Proposed View- Modified Alternative 7						
Improvements eliminate view of I-215 and mature landscaping.	5	Sound barrier removes view of I-215.	4	Sound barrier provides unity of the space.	4	4.3
Difference from Existing Visual Quality						+0.3

Rating Scale:

1-7 (1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high)

I-215 = Interstate 215

Changes to Key View 6

The I-215 Bi-County HOV Lane Gap Closure Project will construct a sound barrier along the I-215 northbound on-ramp adjacent to Grand Terrace Elementary School. The proposed views would include grass and trees, with playground fencing and

equipment in the foreground. Middleground views will include a playground ball field, playground equipment, fencing, grass, and trees. Background views will include trees, the sound barrier, obstructed views of the La Loma Hills, and sky. Construction of the sound barrier will remove trees, fencing, I-215, and vehicles from the view. Removal of the mature trees associated with the I-215/Barton Road Interchange Project would provide a broader view of La Loma Hills. Measure VIS-1 requires implementation of a Landscape Plan that would minimize impacts related to the removal of landscaping, and Measure VIS-2 includes aesthetic elements for hardscape such as sound barriers. The overall proposed visual quality of Key View 6 is moderate (i.e., 4.3 for Alternative 3 and Modified Alternative 7 and 4.0 for Alternative 6), due to the grass and trees and enclosed playground separated from I-215. It is anticipated that the viewer response to the proposed changes would be positive, as the sound barrier will not obstruct views of any substantial scenic resources and will provide the school with a visual sense of unity by separating it from I-215.

5.2.6 Summary of Key View Analysis

As discussed above and depicted in Tables A through G, the visual quality of Key Views 1 would be reduced by 0.3, the visual quality of Key View 2 would be reduced by 0.7, and the visual quality of Key View 3 would be reduced by 1.0. The visual quality of Key View 4 would be reduced by 0.1 and the visual quality of Key View 5 would be improved by 1.2. Key View 6 would increase by 0.3 for Alternatives 3 and Modified Alternative 7 and by 0 for Alternative 6. Although Alternatives 3 and 6 would result in a reduction in visual quality for most of the key views, this reduction would not be substantial. Although the visual quality of most of the key views would be reduced, the key views would be consistent with views of and around a freeway. Overall, Modified Alternative 7 would improve the key views. Implementation of any of the Build Alternatives would be consistent with the I-215 Bi-County Aesthetic Concept as discussed in Minimization Measures VIS-1 and VIS-2 and shown in Appendix B. None of the viewpoints currently have unobstructed views of visual resources such as the La Loma Hills or Blue Mountain. Therefore, implementation of any of the alternatives would have a low-level visual impact on the project area due to the low-level existing visual quality, and any impact to visual resources resulting from the proposed alternatives would not be considered substantial. Thus, no specific mitigation is required.

5.3 Light, Glare, Shade, and Shadow

The study area receives light at night from traffic, street lighting, and lighted parking lots; signalization at the intersections and freeway on- and off-ramps; and commercial zone and limited light sources from residential development. Existing lighting on the streets and along the ramps would be modified or relocated as a part of the proposed project. Minimization Measure VIS-3 would minimize potential impacts regarding light and glare.

5.4 Compatibility with Visual Resource Policies

While the La Loma Hills and Blue Mountain are located within the viewshed of the study area, distant views of the La Loma Hills and/or Blue Mountain are obstructed by existing development. Because of the visual obstructions, there are no outstanding scenic vistas and/or visual features that would potentially be impacted by any of the proposed alternatives. Construction of the alternatives will require removal of trees. Any tree removal on public land beyond the project right-of-way must comply with City landscaping policies, as provided in Measure VIS-1. Therefore, the proposed project would not conflict with any local plans, policies, goals, or Municipal Code regulations of the City of Grand Terrace.

5.5 Construction Impacts

Temporary adverse visual impacts during construction, such as from construction activity, staging sites, truck hauling, excavation activity, and detour signage, are anticipated under all of the Build Alternatives. The project will require temporary construction easements (TCEs) from private property owners for access and staging purposes. Impacts would be minimized through compliance with the Caltrans Standard Construction Specifications.

This page intentionally left blank

Chapter 6 Avoidance, Minimization, and/or Mitigation Measures

Minimization Measures are required to reduce visual impacts associated with the removal of trees, and construction of roadway, ramps, and walls.

VIS-1 Landscape Plan. A landscape plan will be prepared that identifies all opportunities to use areas within the State right-of-way for full landscaping consistent with the Interstate 215 (*I-215*) *Bi-County Aesthetic Concept*. This will include landscaping for graded areas with plant species consistent with adjacent vegetation and enhancement of new project structures (ramps, sound barriers, and retaining walls) to the extent feasible. This plan will incorporate all applicable procedures and requirements detailed in the California Department of Transportation (Caltrans) *Highway Design Manual*, Section 902.1, Planting Guidelines (November 2001), and individual local policies as applicable.

VIS-2 Hardscape Plan. A Hardscape Plan with aesthetic enhancements of retaining and sound barriers, bridges, and other hardscape will be incorporated into the final design of the project consistent with the Interstate 215 (*I-215*) *Bi-County Aesthetic Concept* and applicable goals and policies in the affected City of Grand Terrace (City) General Plan. The design of all hardscape features is required to comply with California Department of Transportation (Caltrans) standards for sound attenuation (where the walls/barriers provide that function), safety requirements, and other pertinent standards. The design of sound barriers requires compliance with the *Caltrans Highway Design Manual* Standards, and aesthetic treatments will be reviewed and approved by Caltrans District 8 Landscape Architect. The sound barriers should include the following features:

- Aesthetic treatments will be incorporated into barrier designs to increase the visual quality of the area and to provide an expression of the regional “sense of place.”
- To the maximum extent feasible, trees and shrubs will be provided in available spaces, and textured walls with vines will be used on

sound barriers to soften the appearance of the wall and deter graffiti.

VIS-3 **Lighting Plan.** The lighting fixtures will be selected and installed to minimize glare on adjacent properties and into the night sky. Lighting will be shielded with nonglare hoods and focused within the project right-of-way. The lighting plan will be reviewed and approved by California Department of Transportation (Caltrans) District 8 Landscape Architect prior to construction to ensure compliance with these criteria.

Chapter 7 References

California Department of Transportation, I-215 Bi-County Aesthetic Concept, 2013.

City of Colton General Plan. May 1987.

City of Colton Draft General Plan. December 2012.

City of Grand Terrace Barton Road Specific Plan. September 2003.

City of Grand Terrace General Plan. April 2010.

City of Grand Terrace Municipal Code,
<http://municipalcodes.lexisnexis.com/codes/grandterrace/>, accessed August 24,
2013.

United States Department of Transportation, Federal Highway Administration, Office of
Environmental Policy, Visual Impact Assessment for Highway Projects,
Washington, D.C., March 1981.

This page intentionally left blank

Appendix A City of Grand Terrace Municipal Code

This page intentionally left blank

Appendix A City of Grand Terrace Municipal Code

Chapter 12.28 (Street and Parkway Trees) Appendix A specifies approved trees for replanting as listed below.

Scientific Name	Common Name
1. <i>Ginkgo biloba</i> (fastigate male)	Maidenhair tree
2. <i>Koelreuteria bipinnata</i>	Goldenrain tree
3. <i>Lagerstroemia indica</i>	Crape myrtle
4. <i>Magnolia grandiflora</i> cv.	Southern magnolia
5. <i>Pistacia chinensis</i>	Chinese pistachio
6. <i>Eriobotarya deflexa</i>	Bronze loquat
7. <i>Chitalpa tashkentensi</i>	Chitalpa
8. <i>Cercis canadensis</i>	Eastern Red Bud
9. <i>Cercis occidentalis</i>	Western Red Bud
10. <i>Trachycarpus fortunei</i> (<i>excelsa</i>)	Windmill palm
11. <i>Washington filifera</i>	California fan palm
12. <i>Washington robusta</i>	Mexican fan palm

This page intentionally left blank

Appendix B I-215 Bi-County Aesthetic Concept

This page intentionally left blank

RTE 215 Bi-County Aesthetic Treatment Concept "Transitional"

Project Design Elements

AESTHETIC TREATMENT LEVELS

Medium Level Aesthetic Treatment
With Caltrans Funding

1- Structures

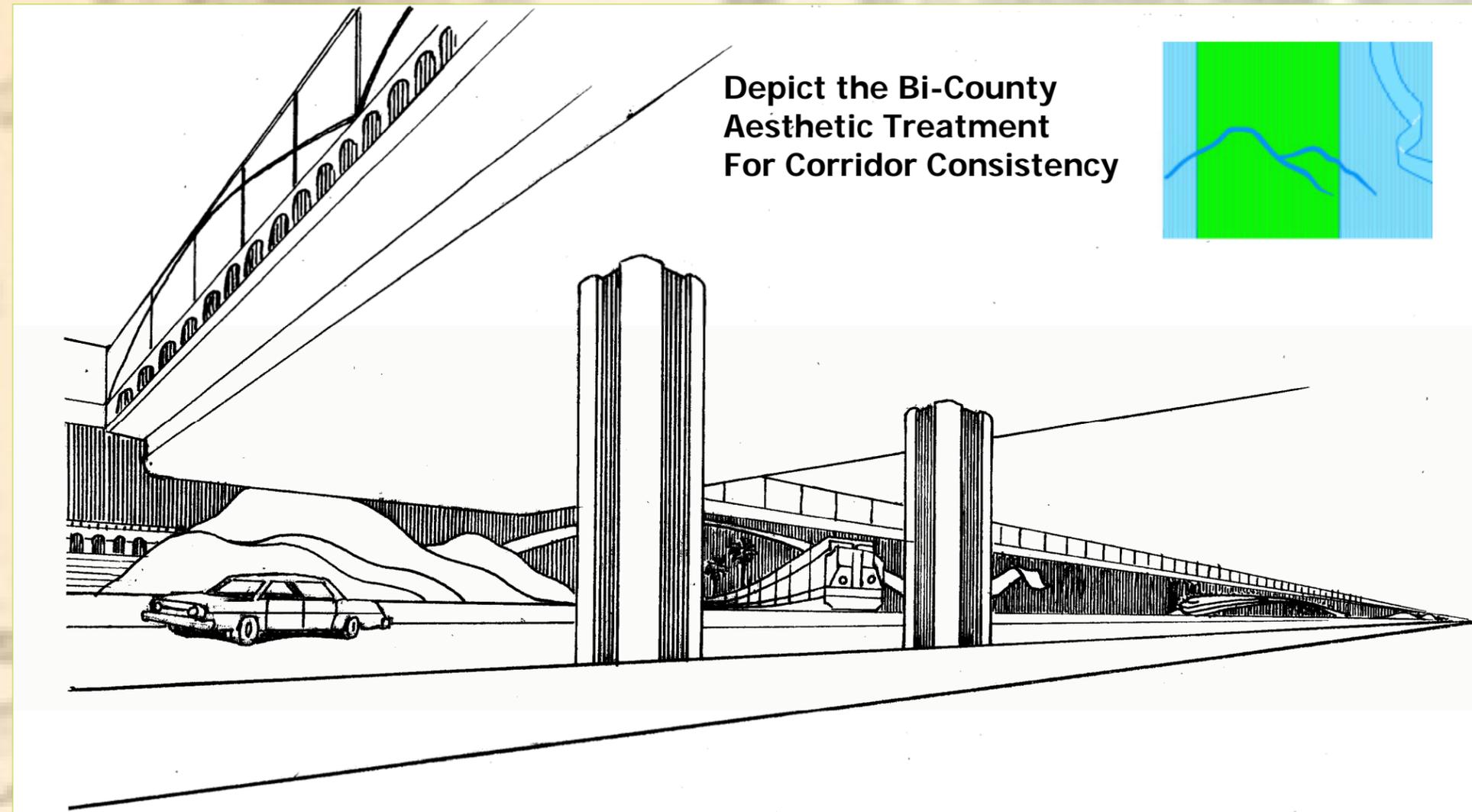
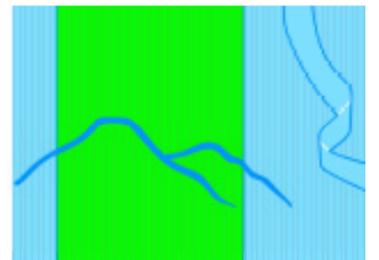
- Bridge Barrier
- Slope Paving or Abutment Walls
- Wing Walls

2- Retaining Walls

3- Sound Walls

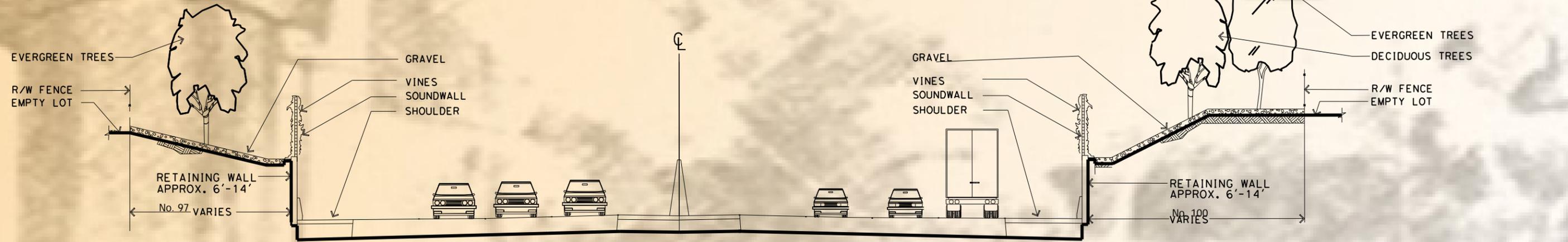
4- Neutral Corridor Basic Stain Color on Structures

Depict the Bi-County
Aesthetic Treatment
For Corridor Consistency

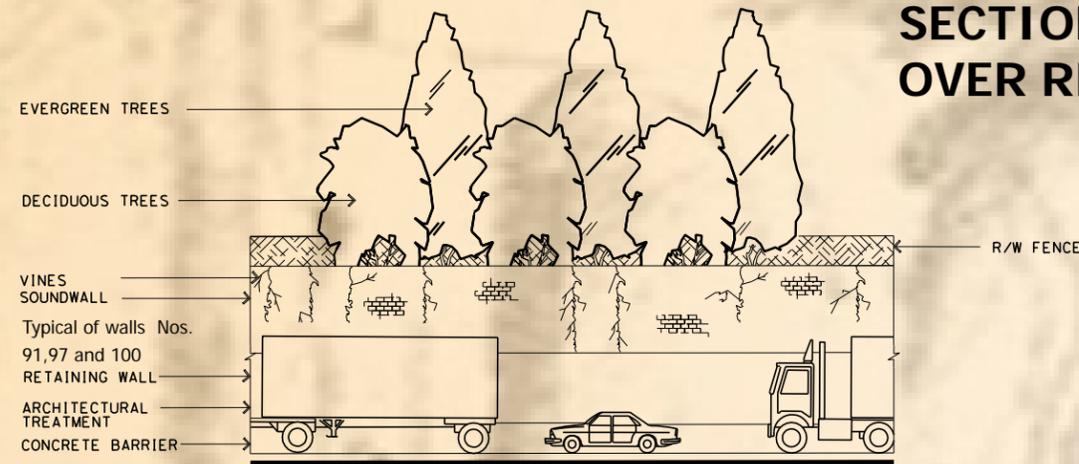


Rte 215 Bi-County Gap Closure Landscape Concept

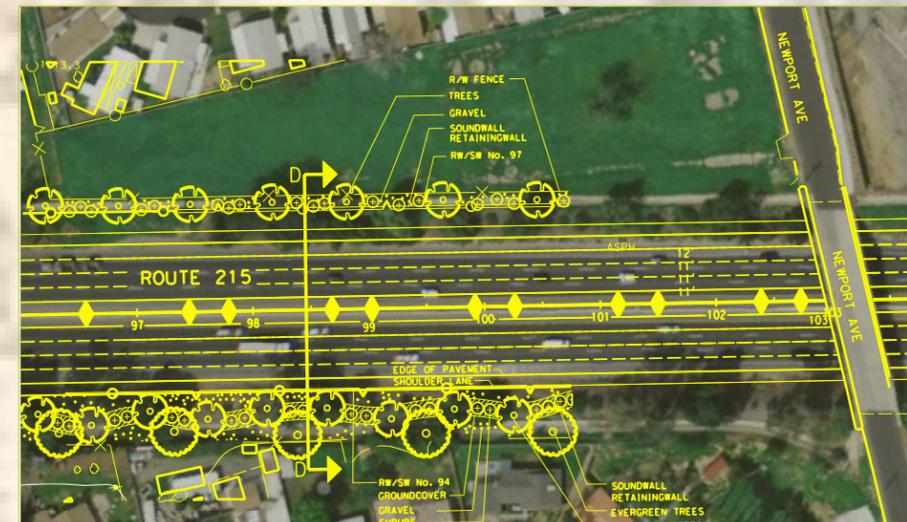
C-C TYPICAL VIEW FROM Rte 215



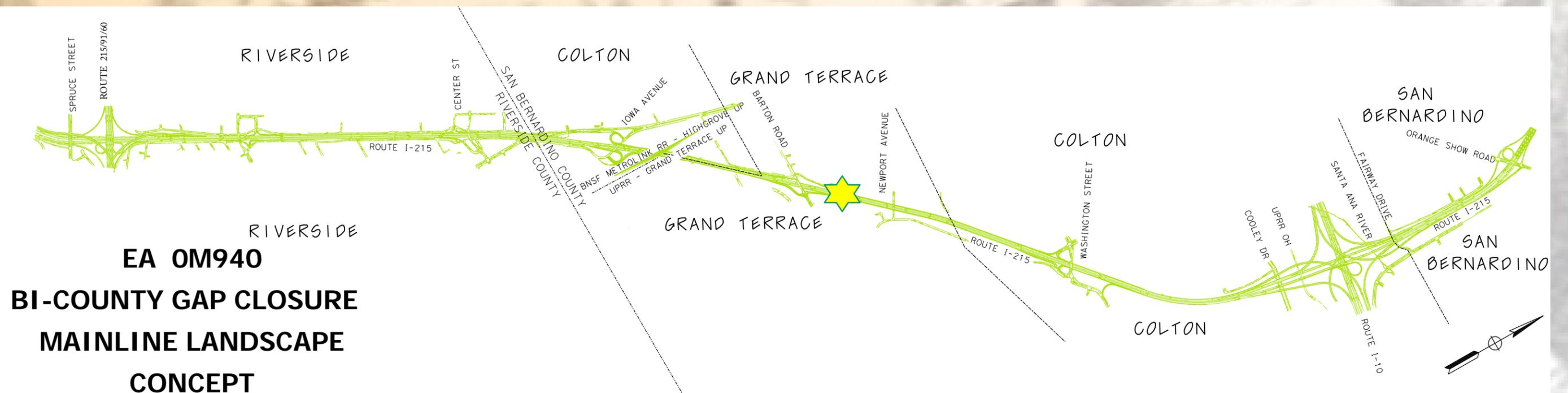
SECTION-SOUND WALL OVER RETAINING WALL



ELEVATION-SOUND WALL OVER RETAINING WALL



PLAN

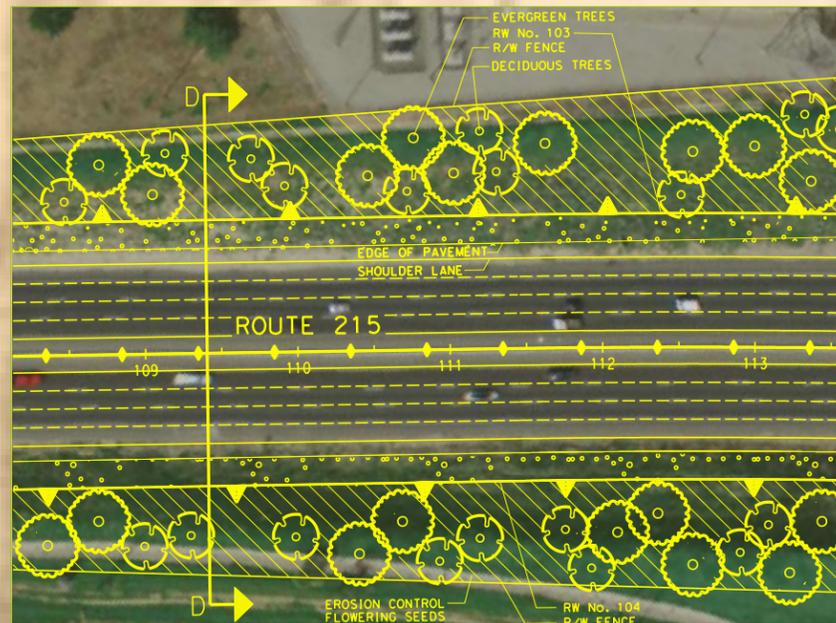


Rte 215 Bi-County Gap Closure Landscape Concept

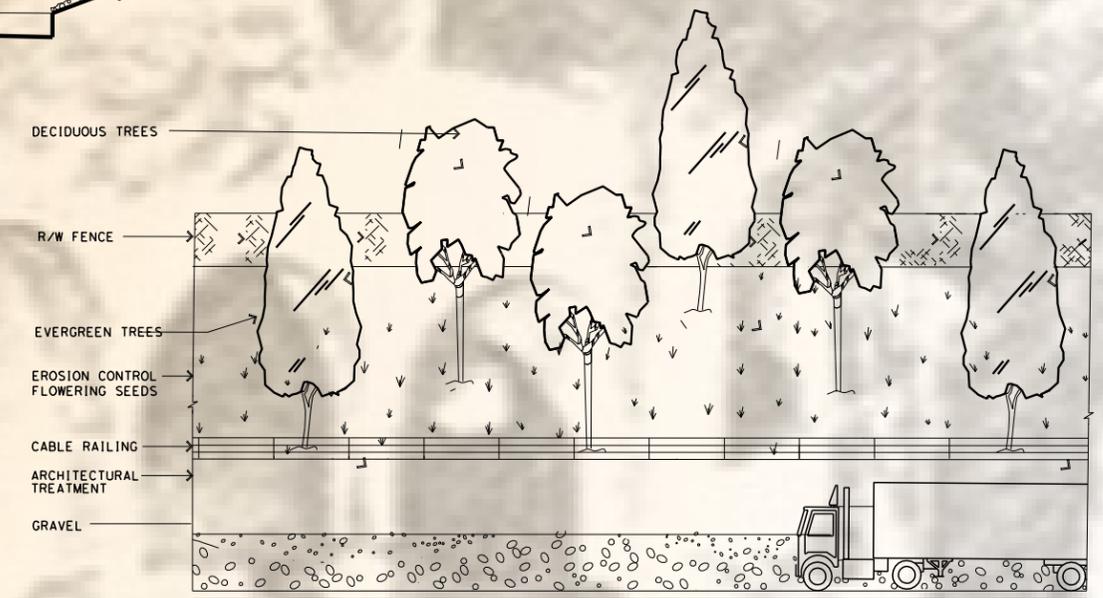
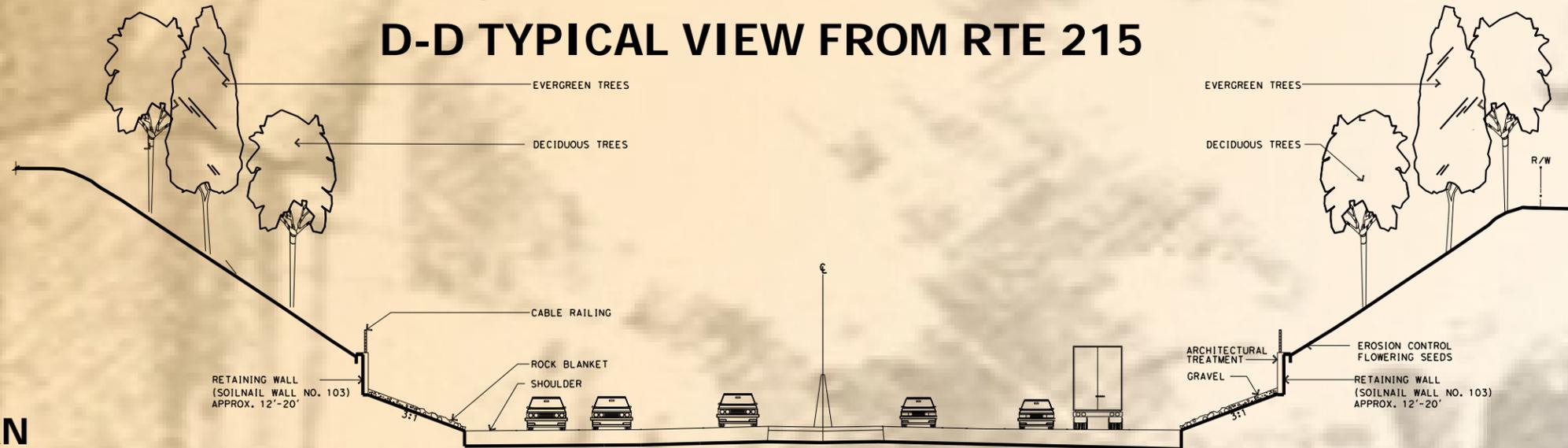
D-D TYPICAL VIEW FROM RTE 215

MAINLINE

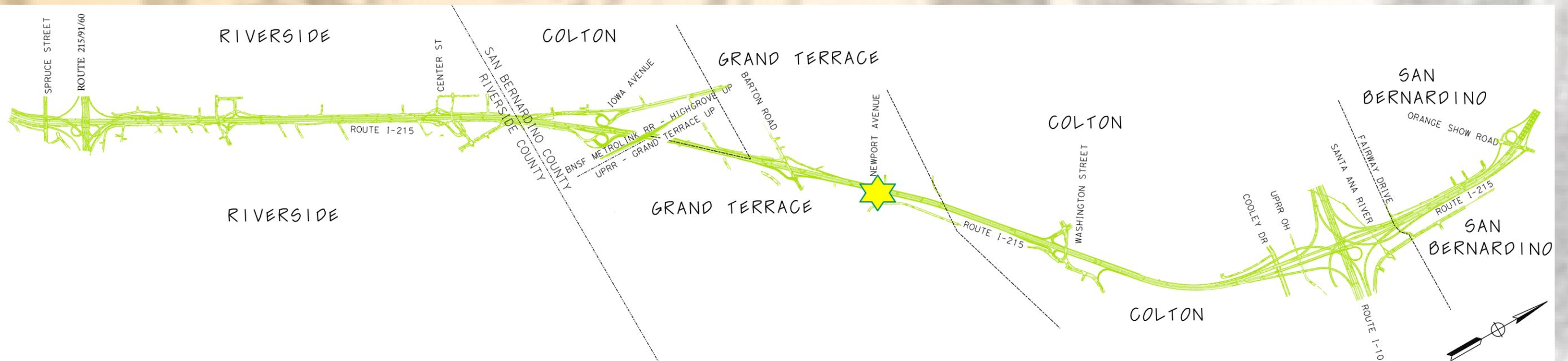
PLAN



SECTION



ELEVATION



RTE 215 Roundabout Safety Treatment Concept

Project Design Elements

AESTHETIC TREATMENT LEVELS



- Landscaped buffers can serve to separate vehicular from pedestrian traffic, encouraging pedestrians to cross only at designated crossing locations, and discouraging crossing to the central island.

- Landscaping and aesthetic paving can provide essential informational cues to visually-impaired pedestrians.

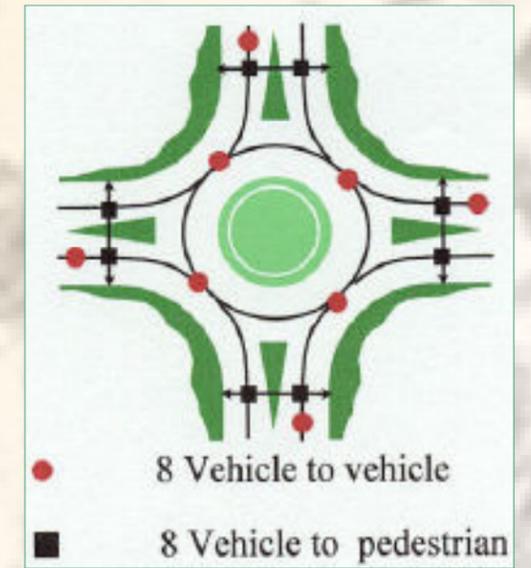
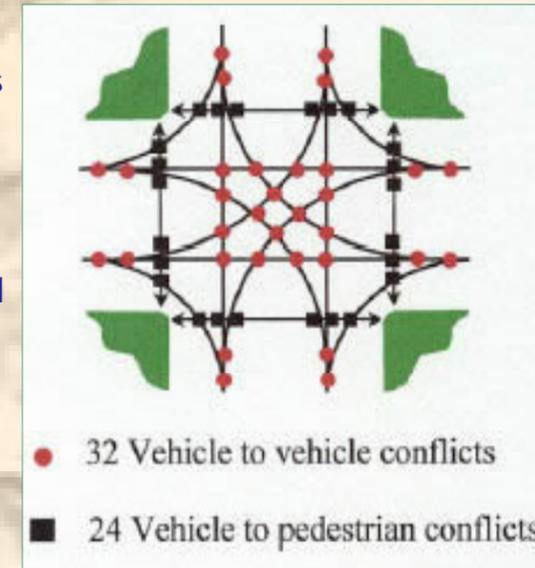
- Roundabouts offer the opportunity to provide attractive entries or centerpieces to communities.



- Landscaping serves to make the central island more conspicuous and clearly indicate to the driver that they cannot pass straight through the intersection.

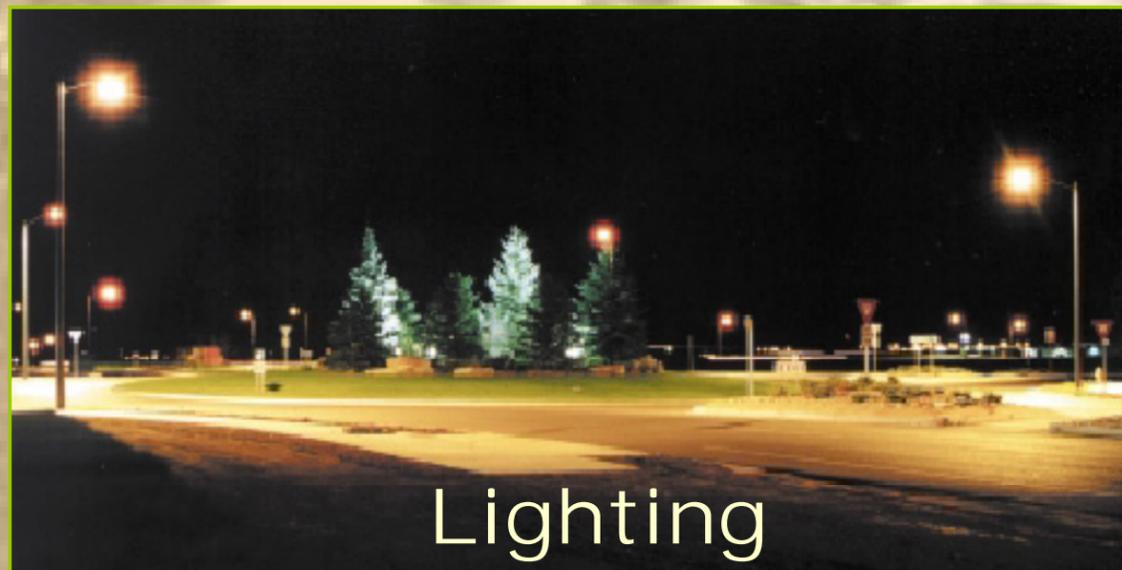
- Landscaping can enhance the safety of the intersection by making the intersection a focal point and by lowering speeds.

from [Roundabouts: An Informational Guide](#), FHWA, 2000



The most significant new opportunity introduced by the roundabout is the aesthetic and visual impact that this type of intersection can have. Unlike other traffic control measures, the roundabout can bring very positive visual changes to a location. A landscaped central island or an island with a sculptural feature creates a break in a visual corridor; it can mark a place and add some importance to the environment. These benefits are perceived by drivers as well as by the non-driving public. Positive commercial and real estate impacts can be expected from this type of aesthetic improvement.

[1998 Synthesis Report](#), [National Cooperative Highway Research Program](#), Transportation Research Board, National Research Council.



RTE 215 Roundabout Safety Treatment Concept

Project Design Elements

Level 1



Okemos, MI



Bloomington, IN

RTE 215 Roundabout Safety Treatment Concept

Project Design Elements *Level 2*



Haile Plantation Gainesville, Florida

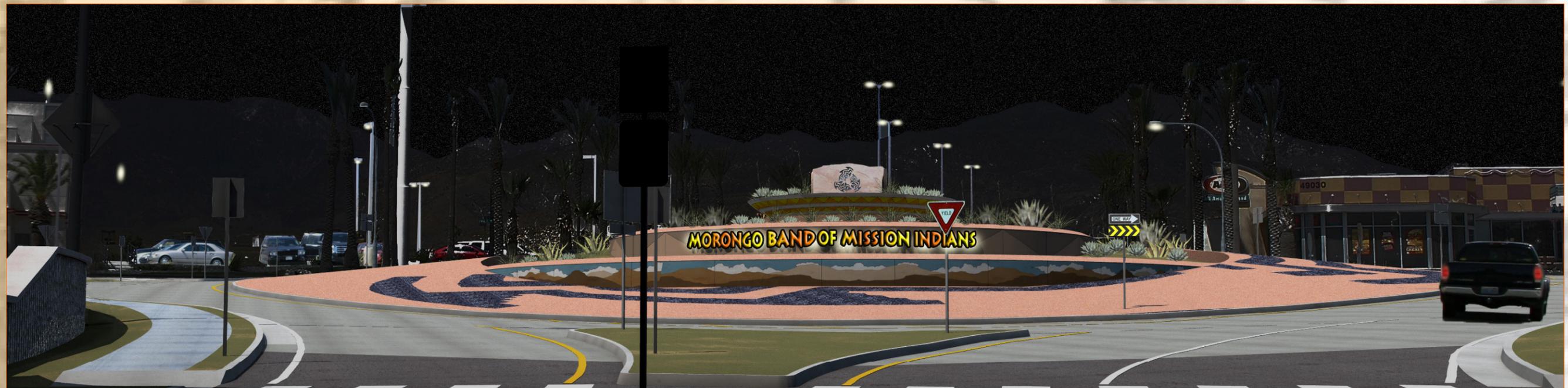


Project Design Elements
Level 2

RTE 215 Roundabout Safety
Treatment Concept



Morongo Trail, Cabazon, CA



Project Design Elements

Level 3

RTE 215 Roundabout Safety Treatment Concept



Mexico City, Mexico



Clearwater Beach, FL

Rte 215 Bi-County Gap Closure Landscape Concept

Rte 215/ Barton Rd

INTERCHANGE

