State Route 79 Realignment Project: Domenigoni Parkway to Gilman Springs Road

Riverside County, California

District 8-RIV-79-KP R25.4/R54.4 (PM R15.78/R33.80)

08-494000

PN 0800000784

Draft

Environmental Impact Report/Environmental Impact Statement

Volume 1

Prepared by the State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

February 2013

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GENERAL INFORMATION ABOUT THIS DOCUMENT

What's in This Document:

The California Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), has prepared this Environmental Impact Report/Environmental Impact Statement (EIR/EIS), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Riverside County, California. The Department is the lead agency under the National Environmental Policy Act (NEPA). The Department is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What You Should Do:

- Please read the document.
- Additional copies of the document, and the technical studies we relied on in preparing it, are available for review at the Riverside County Transportation Commission, 4080 Lemon Street, 3rd Floor, Riverside, California, 92501 and the California Department of Transportation, District 8 office, located at 464 W. 4th Street, San Bernardino, California, 92401. Additional copies of this document are available for review at the following locations:

Hemet Public Library 300 E. Latham Avenue Hemet, CA 92543	San Jacinto Public Library 500 Idyllwild Drive Riverside, CA 92583

  This document may be downloaded at the following website: *http://www.sr79project.info/*.

- Attend the public hearing.
  Tahquitz High School
  Multipurpose Room
  4425 Titan Trail
  Hemet, CA 92545

Tuesday, February 26, 2013 3:00 p.m. to 6:00 p.m.	or	Wednesday, February 27, 2013 5:00 p.m. to 8:00 p.m.

- We'd like to hear what you think. If you have any comments regarding the proposed project, please attend the hearing and/or send your written comments to the Department by the deadline.
- Submit comments via postal mail to:
  Aaron Burton, Senior Environmental Planner
  P.O. Box 12008
  Riverside, CA 92502-2208
- Submit comments via email through our website at *www.sr79project.info/contact*.
- Be sure to submit comments by the deadline: March 25, 2013

What Happens Next:

After comments are received from the public and reviewing agencies, the Department, as assigned by FHWA, may: (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, the Department could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Aaron Burton, Senior Environmental Planner, P.O. Box 12008, Riverside, CA 92502-2208; (951) 824-8706 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

SCH# 2004091040
08-RIV-79- KP R25.4/R54.4
(PM R15.78/R33.80)
EA 08-494000
PN 0800000784

Realign State Route 79, from south of Domenigoni Parkway to Gilman Springs Road
(postmile R15.78 to postmile R33.80)

DRAFT
ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C) and 49 USC 303

THE STATE OF CALIFORNIA
Department of Transportation

COOPERATING AGENCY: United States Army Corps of Engineers

RESPONSIBLE AGENCIES: Riverside County Transportation Commission
California Transportation Commission

1-31-2013
Date of Approval

David Bricker
Deputy District Director
District 8 Division of Environmental Planning
California Department of Transportation
NEPA/CEQA Lead Agency

The following person may be contacted for additional information concerning this document:

Aaron Burton
California Department of Transportation
P.O. Box 12008
Riverside, CA 92502-2208
(951) 824-8706

Abstract: The State Route 79 Realignment Project proposes to realign State Route 79 from Domenigoni Parkway to Gilman Springs Road, a distance of approximately 18 miles, in the cities of Hemet and San Jacinto and unincorporated Riverside County. The realigned highway would be a limited-access, four-lane expressway, with two travel lanes in each direction separated by a median. Comments should be sent to the contact person above. The public comment and review period for this document ends 03/25/2013.

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Summary

The California Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), has prepared this Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS), which examines the potential environmental impacts of the alternatives being considered for the State Route 79 (SR 79) Realignment Project, Domenigoni Parkway to Gilman Springs Road, located in Riverside County, California (Project or proposed Project). The document describes why the Project is being proposed, alternatives for the Project, the existing environment that could be affected by the Project, the potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

The Department will serve as the lead agency under the California Environmental Quality Act (CEQA) and the lead agency under the National Environmental Policy Act (NEPA).

S.1 Overview of the Project Area

The Riverside County Transportation Commission (RCTC), in cooperation with the Department, the County of Riverside, the City of Hemet, and the City of San Jacinto, has proposed a project for the realignment of SR 79 in the vicinity of the cities of Hemet and San Jacinto in Riverside County, California.

The Project would realign SR 79 from just south of Domenigoni Parkway to Gilman Springs Road. This realignment would facilitate the regional movement of people and goods, enhance safety, and protect right-of-way (ROW) for future improvements and would provide a more efficient connection between Domenigoni Parkway and Gilman Springs Road. The completed Project would be a limited-access highway with accommodation for oversized trucks and would not preclude future multimodal transportation systems.

S.2 Purpose and Need

The Project purpose and need was developed in accordance with the NEPA/404 Integration Process in a joint effort among the Department, FHWA, United States Army Corps of Engineers (USACE), United States Environmental Protection Agency (USEPA), and United States Fish and Wildlife Service (USFWS) to integrate the NEPA and federal Clean Water Act Section 404(b)(1) alternatives analysis process. Local (City of Hemet, City of San Jacinto, County of Riverside) and state agencies (California Department of Fish and Game [CDFG] and Santa Ana Regional Water Quality Control Board [RWQCB]) also participated in this process. Although the Project would be in the jurisdictions of the Santa Ana RWQCB and the San Diego RWQCB, such a small portion of it would be in San Diego RWQCB jurisdiction that the San Diego RWQCB deferred its participation to the Santa Ana RWQCB. This effort was undertaken and substantively concluded prior to the Department assuming all the United States Department of Transportation (USDOT) Secretary’s responsibilities under NEPA pursuant to Section 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), codified at 23 USC 327(a)(2)(A), which became effective July 1, 2007.

S.2.1 Project Purpose

The purpose of the proposed transportation action is:

- To improve traffic flow for local and regional north-south traffic in the San Jacinto Valley
- To improve operational efficiency and enhance safety conditions by maintaining route continuity and upgrading the facility
- To allow regional traffic, including truck traffic, to adequately bypass local roads
- To reduce the diversion of traffic from state routes onto local roads

S.2.2 Project Need

Several factors have contributed to the deficiencies of the transportation corridor between Domenigoni Parkway and Gilman Springs Road. These include:

- Regional traffic on the current SR 79 alignment traverses heavily developed areas in Winchester, Hemet, and San Jacinto. The regional traffic competes with local traffic for the limited SR 79 roadway capacity.
- The current alignment of SR 79 between Domenigoni Parkway and Gilman Springs Road is circuitous, with numerous at-grade intersections, residential and commercial driveways, traffic signals, and other impediments that degrade the operational characteristics of the facility. With no viable alternative facilities, Sanderson Avenue and Warren Road have become default north-south routes for regional traffic, thereby adding more traffic onto local streets.
- SR 79 and State Route 74 (SR 74) are collocated as one facility for about 11.3 kilometers (km) (7 miles [mi]) along Florida Avenue. As a result, SR 74 east-west traffic and SR 79 north-south traffic are combined.
- The geometric design of SR 79 does not support the movement of trucks exceeding the length of 40 feet, which are authorized under the Surface Transportation Assistance Act (STAA). As such, STAA vehicles are diverted to Sanderson Avenue.
- Fatal and injury accident rates on most of SR 79 between Domenigoni Parkway and Gilman Springs Road are higher than the comparable statewide average.
- Request to *realign and improve California Route 79 in Riverside County* included in TEA-21 High Priority Projects Program (enacted on June 9, 1998, as Public Law 105-178, listed as High Priority Project No. 193) and its reauthorization as part of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU, enacted August 10, 2005, as Public Law 109-59, listed as High Priority Projects Program Project No. 1421).

S.2.3 Independent Utility and Logical Termini

The Route Concept Report (1992) evaluated the entire length of SR 79 in Riverside County from the San Diego/ Riverside county line to the junction at Interstate 10 (I-10). The ultimate facility was determined to be a six-lane expressway. Part of the analysis for the Route Concept Report was an evaluation of the environmental and geometric constraints of expanding the facility. The analysis resulted in design objectives for parts of SR 79 to allow projects to be developed independently, but in a manner that is compatible with the entire facility. Although most of the alignment was proposed for widening, two areas were identified for realignment. One was from Butterfield Stage Road in Temecula north to Keller Road. The second was the proposed Project, from Newport Road to Gilman Springs Road. Because of the unique purpose and need to realign this portion of SR 79, it was promoted as a separate project and was determined to satisfy FHWA regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) as having independent utility and logical termini. This is further supported when evaluating the objectives for the portions of SR 79 south and north of the proposed Project. The projects discussed below are also included in the Riverside County General Plan, Circulation Element.

Over the past 10 years, several projects have been constructed on SR 79. Many of these have widened SR 79 south of the Project. Immediately to the south, the SR 79 Widening Project (sponsored by Riverside County Transportation Department) will improve the existing alignment of SR 79 from Thompson Road to just south of Domenigoni Parkway (proposed Project southern limit), a distance of approximately 8 km (5 mi). This portion of SR 79 would initially be constructed as a four-lane facility and then ultimately a six-lane facility. Currently, the first phase of the four-lane widening is under construction. Farther south, Riverside County also sponsored several signal and road-widening projects from Hunter Road to Thompson Road. Near the southern limit of the Project, Domenigoni Parkway, which runs perpendicular to SR 79, has been extended west to I-215 from its previous termination at SR 79.

North of the Project limit, SR 79 crosses the San Jacinto River and enters Lamb Canyon. SR 79 is a four-lane expressway through Lamb Canyon to I-10 in Beaumont. Although this section is expected to be widened to six lanes in its ultimate concept, no project is currently proposed. The future Mid County Parkway Project would connect with SR 79 at Ramona Expressway, just south of Gilman Springs Road.

S.3 Proposed Project

The SR 79 Realignment Project would be located near Hemet and San Jacinto in Riverside County, California, beginning just south of Domenigoni Parkway and continuing north to Gilman Springs Road. It would serve southwestern Riverside County, including the community of Winchester and the cities of Hemet and San Jacinto (see Figure 1.1-2 at the end of Chapter 1 in this volume).

The Project as designed would be a divided limited-access expressway with four travel lanes (two lanes in each direction). Almost all of the realignment would be new construction, in areas where no such highway exists. The Project would begin at kilometer post (KP) R25.4 (post mile [PM] R15.78), which is 2.035 km (1.26 mi) south of Domenigoni Parkway, and end approximately 29 km (18 mi) north at the intersection of SR 79 and Gilman Springs Road (KP R54.4 [PM R33.80]).

S.3.1 Project Alternatives

Along with the No Build Alternative that is required by NEPA and CEQA regulations, four Build alternatives (with two design options) have been developed for study by RCTC and the Department to realign SR 79. The following sections describe the Build alternatives and associated design features.

Design Features of the Build Alternatives

The Build alternatives were defined based on specific elements of roadway design. Each Build alternative is composed of several roadway segments with design features that can generally be described as either common or unique to the Project, as discussed in detail below.

Roadway Segments

There are 14 potential roadway segments (designated A through N, from south to north and west to east), as shown in Figure 2.2-3 (at the end of Chapter 2 in this volume). Combinations of roadway segments were joined to establish a functional and a reasonable range of alternatives proposed as Build alternatives for the Project. The typical cross-section for the Project was first defined in the 1992 Route Concept Report. The ultimate concept for the facility is a six-lane expressway (three lanes in each direction). The typical dimensions proposed for the Project are those designated by Riverside County for a six-lane expressway. These dimensions include an 18.2-meter (m) (60-foot [ft]) median and a 67.0-m (220-ft) ROW. This is from Riverside County Road Improvement Standards & Specifications, Ordinance 461, Standard 82.

Roadway segments were designed from a typical cross-section for a limited-access expressway according to Riverside County Standard 82. A smaller typical section could be considered during final design to reduce ROW and environmental impacts, but to ensure that all environmental impacts would be analyzed, the smaller cross-section was not considered at this time. Based on this cross-section, roadway segments would include inside and outside shoulders, a median, and two lanes traveling in each direction (referred to as the Project roadway). The total median width would be 25.8 m (84.0 ft), measured from the inside edge of the travel lane on one side of the roadway to the inside edge of the travel lane on the other side. This median width would be consistent with Riverside County Standard 82 because it allows room for a future project to add two more lanes (to achieve the ultimate six-lane concept) without increasing the ROW. The median would have inside shoulders that are each 1.5 m (5 ft) wide. The combined width of the two travel lanes would be 7.2 m (24 ft), each 3.6 m (12 ft) wide. The outside shoulder width would be 3.0 m (10 ft). An additional 4.57 m (15 ft) beyond the toe of slope/top of cut would be provided for maintenance. Side slopes would be required outside the shoulders. Because the widths of the side-slopes would vary based on the elevation of the roadway, a varying ROW would be required. Therefore, the actual width of the Project ROW would range from 70 m (230 ft) to 620 m (2,035 ft), based on locations that include roadway versus those that include interchanges, respectively.

Common and Unique Design Features

Design features that are shared by all roadway segments are common design features. Common design features include at-grade intersections, grade-separated interchanges (ramps), bridges, aqueduct crossings, and drainage facilities. These features are inside the Project ROW. Another common design feature, local street improvements, is outside the ROW, but within the Project Impact Area (PIA).

Design features that are unique to a particular roadway segment or occur at a specific location along the Project roadway are unique design features. Unique design features include utility relocation areas and connections to Hemet Channel outside the Project ROW and PIA.

Definition of the Build Alternatives

Combining the roadway segments described above to link the Project termini of Domenigoni Parkway in the south and Gilman Springs Road in the north resulted in four Build alternatives. The descriptions of the Build alternatives, design options, and roadway segments are as follows:

- **Build Alternative 1a** – Roadway Segments A, E, G, I, J, L, and N (Figure 2.2-5a)
- **Build Alternative 1b and Design Option 1b1** – Roadway Segments B, C, G, I, K, M, and N (Figure 2.2-5b)
- **Build Alternative 2a** – Roadway Segments A, F, H, I, K, L, and N (Figure 2.2-6a)
- **Build Alternative 2b and Design Option 2b1** – Roadway Segments B, D, H, I, J, M, and N (Figure 2.2-6b)

The two design options respond to comments from the Winchester community regarding the height of the profile as initially described for the base condition. Both design options would be on the southern end of the Project near the Winchester community. Design Option 1b1 would affect Roadway Segments B, C, and G of Build Alternative 1b. Design Option 2b1 would affect Roadway Segments B, D, and H of Build Alternative 2b. The design options would not change the roadway profile for Roadway Segments I, K, M, and N of Build Alternative 1b or Roadway Segments I, J, M, and N of Build Alternative 2b. Roadway plan and profile views of the Build alternatives and design options are shown in Figures 2.2-7a through 2.2-7d.

The design options would include the following changes to the base condition of Build Alternatives 1b and 2b:

- Design Option 1b1 (Figure 2.2-7b 1 of 2)
  - Roadway Segment B – An increased area of ROW acquisition and variations in roadway access, affecting intersection, interchange, and bridge design
  - Roadway Segment C – Variations in roadway access, affecting intersection, interchange, and bridge design and a reduced roadway profile
  - Roadway Segment G – A reduced roadway profile
- Design Option 2b1 (Figure 2.2-7d 1 of 2)
  - Roadway Segment B – An increased area of ROW acquisition and variations in roadway access, affecting intersection, interchange, and bridge design
  - Roadway Segment D – Variations in roadway access, affecting intersection, interchange, and bridge design and a reduced roadway profile
  - Roadway Segment H – A reduced roadway profile

The design options would include a near-grade crossing over the San Jacinto Branch Line with embankment and structural section for SR 79. The near-grade crossing over the existing railroad would be approximately 0.9 to 2.4 m (3 to 8 ft) above grade. According to RCTC, the owner of the rail line, it has not been in operation over the past 5 years. However, by placing embankment over the track and not severing it, rail traffic could be restored if using the track becomes necessary. If rail traffic is needed, RCTC would contact the Department with detailed, written requirements at least two weeks prior to the expected train operations. The embankment and structural section would be removed, then replaced once the rail activity is finished. A short-term detour would be required for traffic on SR 79. In the future, if a separate project is developed that adds passenger rail service, a grade-separation project would need to be considered.

The cost estimates (including construction and ROW) for each of the four Build alternatives and the two design options are as follows:

- Build Alternative 1a – $1,072,473,000
- Build Alternative 1b – $1,071,912,000
- Design Option 1b1 – $1,044,002,000
- Build Alternative 2a – $1,109,535,000
- Build Alternative 2b – $1,034,939,000
- Design Option 2b1 – $990,810,000

S.4 Joint CEQA/NEPA Document

The proposed Project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration (FHWA), and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The Department is the lead agency under NEPA. The Department is the lead agency under CEQA. In addition, FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (USC) 327.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for NEPA. One of the most commonly seen joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA).

Following receipt of comments from the public and reviewing agencies, a Final EIR/EIS will be prepared. The Department may undertake additional environmental and/or engineering studies to address comments. The Final EIR/EIS will include responses to comments received on the Draft EIR/EIS and will identify the preferred alternative. Following circulation of the Final EIR/EIS, if the decision is made to approve the project, a Notice of Determination will be published for compliance with CEQA, and a Record of Decision will be published for compliance with NEPA.

S.5 Project Impacts

Table S-1 (page ix) summarizes the primary impacts documented in the environmental analysis contained in Chapter 3 of this Draft EIR/EIS, along with related avoidance, minimization, and/or mitigation measures to minimize or mitigate those impacts. The measures are also listed in Appendix E, Environmental Commitments Record, in Volume 2 of this document.

A key component of the biological resources analysis is the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), which is described in detail in Chapter 3, Section 3.3.1.3 (Volume 2, page 3-459). The MSHCP is a large plan created to maintain biological and ecological diversity in southwestern Riverside County, where growth is occurring at a rapid rate.

There are many permittees under the MSHCP, including the Project CEQA/NEPA lead agency (the Department) and the cooperating agency for the Project (USACE), RCTC, County of Riverside, the City of Hemet, and the City of San Jacinto.

The Project would be in the area that is addressed by the MSHCP and is identified as a Covered Activity in the MSHCP. As such, there are avoidance, minimization, and mitigation measures shown in Table S-1 (page ix), throughout Chapter 3, Section 3.3 (Volume 2, page 3-437), and Appendix E (Volume 2) that the Project must incorporate to be in compliance with the MSHCP and to receive take authorization for any Covered Species identified in the MSHCP.

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Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
Cost						
Total Costs (Final Design, Right-of-Way, and Construction)	Not applicable	$1,072,473,000	$1,071,912,000 OR $1,044,002,000	$1,109,535,000	$1,034,939,000 OR $990,810,000	Not Applicable
Human Environment						
Land Use						
Existing and Future Land Use	Rapid and ongoing conversion of current land uses, including agriculture and undeveloped to residential and commercial uses, will continue and convert essentially all farmland and undeveloped land within the next two decades. This is consistent with local land use plans.	Current use of land converted to transportation use: Agricultural 241.9 ha (597.7 ac) Commercial/Industrial 14.1 ha (35.8 ac) Parks/Open Space 0.1 ha (0.3 ac) Residential 1.2 ha (2.9 ac) Rural Residential 48.5 ha (119.8 ac) Services/Facilities 60.2 ha (148.8 ac) Undeveloped 83.0 ha (205.1 ac) Total Land Required 448.87 ha (1109.18 ac)	Current use of land converted to transportation use: Agricultural 203.2 ha (502.2 ac) Commercial/Industrial 13.7 ha (33.8 ac) Parks/Open Space 0.1 ha (0.3 ac) Residential 1.0 ha (2.6 ac) Rural Residential 43.7 ha (108.0 ac) Services/Facilities 58.8 ha (145.3 ac) Undeveloped 98.8 ha (244.1 ac) Total Land Required 419.22 ha (1035.92 ac) / 419.56 ha (1036.76 ac)	Current use of land converted to transportation use: Agricultural 238.6 ha (589.5 ac) Commercial/Industrial 14.2 ha (35.1 ac) Parks/Open Space 0.1 ha (0.3 ac) Residential 1.0 ha (2.5 ac) Rural Residential 40.9 ha (101.2 ac) Services/Facilities 60.5 ha (149.6 ac) Undeveloped 69.4 ha (171.5 ac) Total Land Required 424.65 ha (1049.35 ac)	Current use of land converted to transportation use: Agricultural 272.0 ha (495.4 ac) Commercial/Industrial 13.4 ha (33.0 ac) Parks/Open Space 0.1 ha (0.3 ac) Residential 0.9 ha (2.1 ac) Rural Residential 50.0 ha (122.8 ac) Services/Facilities 55.9 ha (138.0 ac) Undeveloped 85.7 ha (211.8 ac) Total Land Required 405.91 ha (1003.04 ac) / 406.25 ha (1003.88 ac)	Measures would be similar with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. LU-1. City of Hemet General Plan and Build Alternative 1a. LU-2. City of San Jacinto General Plan and Build Alternative 1a. LU-3. City of Hemet General Plan and Build Alternative 1b and Design Option 1b1. LU-4. City of Hemet General Plan and Build Alternative 2a. LU 5. City of San Jacinto General Plan and Build Alternative 2a. LU-6. County of Riverside Circulation System.
Growth	Historical growth levels will continue. The area experienced a doubling of population in the past 20 years and is expected to double again from 2000 to 2030. The Southern California Association of Governments anticipates a local annual growth rate of 4 percent, contrasted with 1.4 percent for the region. Between 2010 and 2035, Hemet is projected to grow 87 percent, while San Jacinto is projected to grow 163 percent. Available land indicates that most growth will concentrate in area between Sanderson and California Avenues. Local jurisdictions have zoned and planned for the growth. Good local access exists along streets such as Sanderson Avenue, Warren Road, California Avenue, Simpson Road, Stetson Avenue, Tres Cerritos Avenue, Esplanade Avenue, and Cottonwood Avenue. Water, sewer, electricity, and other utilities are available to serve the additional households.	Overall level of growth and general location would not change from the No Build Alternative. Commercial and higher density residential will be most likely near planned intersections and interchanges, including East Newport Road, Domenigoni Parkway, Ranchland Road, Florida Avenue, Tres Cerritos Avenue, Esplanade Avenue, Cottonwood Avenue, Future Street B, Sanderson Avenue, and Ramona Expressway. Intersections and interchanges at East Newport Road, Florida Avenue, Tres Cerritos Avenue, Esplanade Avenue, Cottonwood Avenue, and Ramona Expressway would be virtually the same for all alternatives.	Build Alternative 1b (including Design Option 1b1) would be the same as Build Alternative 1a except that the interchange with Domenigoni Parkway would be about one mile east, and there would be an interchange with Sanderson Avenue about one mile southeast of the Build Alternative 1a interchange with Future Street B. These differences would affect the location, but not the level or the timing of growth in the vicinity of the interchanges.	Build Alternative 2a would be the same as Build Alternative 1a except that there would be an interchange with Future Street A instead of one with Ranchland Road. The two locations would be less than a half mile apart. This difference would affect the location, but not the level or the timing of growth in the vicinity.	Build Alternative 2b (including Design Option 2b1) would be the same as Build Alternative 1a except that there would be an interchange with Future Street A instead of one with Ranchland Road about one-half mile southeast, and there would be an interchange with Sanderson Avenue about one mile southeast of the Build Alternative 1a interchange with Future Street B. These differences would affect the location, but not the level or the timing of growth in the vicinity of the interchanges.	No measures are proposed because the Project would address regional traffic and safety needs in response to growth in the Project area.

Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
Farmlands (direct plus indirect)	Ongoing growth and existing development plans of Riverside County and the Cities of Hemet and San Jacinto will see the conversion of virtually all existing farmland to other uses within the next two decades.	Existing Farmland 309.99 ha (766.01 ac) Prime Farmland 50.53 ha (124.86 ac) Unique Farmland 15.16 ha (37.48 ac) Farmland of Statewide Importance 41.75 ha (103.17 ac) Farmland of Local Importance 241.57 ha (596.95 ac) Williamson Act Land 22.00 ha (54.40 ac) Zoned Riverside County Farmlands (per General Plan data) 22.10 ha (54.61 ac) Zoned City of Hemet Farmlands (per General Plan data) 7.09 ha (17.52 ac) Partial acquisitions of farm/agricultural operation would be minor and would not require displacement.	Existing Farmland 276.89 ha (706.45 ac) Prime Farmland 41.32 ha (102.10 ac) Unique Farmland 8.69 ha (21.48 ac) Farmland of Statewide Importance 44.36 ha (109.61 ac) Farmland of Local Importance 240.28 ha (593.76 ac) OR 240.62 ha (594.60 ac) Williamson Act Land 10.12 ha (25.00 ac) Zoned Riverside County Farmlands (per General Plan data) 24.26 ha (59.95 ac) Zoned City of Hemet Farmlands (per General Plan data) 6.67 ha (16.48 ac) Partial acquisitions of farm/agricultural operation would be minor and would not require displacement.	Existing Farmland 307.52 ha (759.90 ac) Prime Farmland 45.28 ha (111.90 ac) Unique Farmland Same as Build Alternative 1a Farmland of Statewide Importance 41.51 ha (102.58 ac) Farmland of Local Importance 246.04 ha (607.98 ac) Williamson Act Land Same as Build Alternative 1a Zoned Riverside County Farmlands (per General Plan data) Same as Build Alternative 1b Zoned City of Hemet Farmlands (per General Plan data) Same as Build Alternative 1b Partial acquisitions of farm/agricultural operation would be minor and would not require displacement.	Existing Farmland 284.66 ha (703.39 ac) Prime Farmland 40.40 ha (99.82 ac) Unique Farmland Same as Build Alternative 1b Farmland of Statewide Importance 40.48 ha (100.02 ac) Farmland of Local Importance 242.99 ha (600.44 ac) OR 243.33 ha (601.28 ac) Williamson Act Land Same as Build Alternative 1b Zoned Riverside County Farmlands (per General Plan data) Same as Build Alternative 1a Zoned City of Hemet Farmlands (per General Plan data) Same as Build Alternative 1a Partial acquisitions of farm/agricultural operation would be minor and would not require displacement.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. AG-1. Maintain Access to Existing Farmlands. AG-2. Coordination with Owners. AG-3. Notification of Williamson Act Land Acquisition.
Community Character and Cohesion	Planned transportation benefits to existing and future communities would not be provided. Regional traffic would continue to be routed through the center of existing residential communities and commercial areas. Continued or decreased levels of service along existing SR 79 may divide existing communities by encouraging the use of alternate routes through established communities as "shortcuts."	Build Alternative 1a would not impede access or mobility within the Emerging Hemet Community. It would not divide or adversely affect community cohesion. The Project would not affect the cohesion of Tres Cerritos Hills. It would, however, alter the setting of the portion of the community adjacent to the realignment by adding noise barriers, embankments, and a 10-m (33-ft) -high bridge at Tres Cerritos Avenue. Build Alternative 1a would alter the setting along the realignment and, therefore, the character of the Emerging San Jacinto Community because of noise barriers, embankments, and an 8-m (26-ft) -high bridge at Cottonwood Avenue. However, it would not affect community cohesion. Embankments, an 8-m (26-ft) -high interchange at Ramona Expressway, and noise barriers would alter the setting along the realignment and, therefore, the character of the Gateway Specific Plan/River Community. The Project would effectively extend the width of existing Sanderson Avenue but would not affect the cohesion of the Gateway Specific Plan/River Community. Although the Project would divide a number of school attendance areas, the	Impacts from Build Alternative 1b and Design Option 1b1 would be the same as those from Build Alternative 1a except for the following: Build Alternative 1b and Design Option 1b1 would alter the appearance and geographic setting of Rural Winchester and the Green Acres Community. The alternative would require substantial roadway cuts through a ridge, as well as through the center of the West Hemet Hills. Build Alternative 1b would divide the community of Rural Winchester and could impede social interaction and isolate residents, thereby affecting the cohesion of this rural community. Build Alternative 1b and Design Option 1b1 would alter the appearance and geographic setting of Rural Winchester, as viewed from Green Acres, thereby affecting the character of the Green Acres Community. In addition, this alternative would require noise barriers at specific locations to address noise abatement requirements. Implementation of abatement measures would address potential permanent impacts to community character. However, Build Alternative 1b and Design Option 1b1 would not divide Green Acres or affect the cohesion of this rural community.	Impacts from Build Alternative 2a would be the same as those from Build Alternative 1a except for the following: Build Alternative 2a would place a new transportation facility on the edge of Winchester. Together with the noise barriers, this would impact the character of the community. However, this alternative would not affect community cohesion in Winchester. Build Alternative 2a would alter the appearance and geographic setting of Rural Winchester and Green Acres Community. The alternative would require substantial roadway cuts through a ridge, as well as through the center of the West Hemet Hills. Although Build Alternative 2a would divide the community of Rural Winchester, crossings that would be built at almost every existing roadway would minimize the potential effect on cohesion. Build Alternative 2a would not divide the community or affect the character or cohesion in the Green Acres Community.	Impacts from Build Alternative 2b and Design Option 2b1 would be the same as those from Build Alternative 1a except for the following: The new roadway, major cuts in a ridge at the Project terminus near Winchester, and noise barriers would all affect the character of that community. The community cohesion is not expected to be changed. Embankments and overpasses would dominate views from nearby areas. Cuts at the Project terminus and in West Hemet Hills would affect community character in Rural Winchester. Although Build Alternative 2b and Design Option 2b1 would pass through rural and rural residential development, crossings that would be built at almost every existing roadway would minimize the potential effect on community cohesion. Build Alternative 2b and Design Option 2b1 would not affect the character or cohesion in the Green Acres Community.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. The measures listed in Visual/Aesthetics would address impacts to community character associated with the creation of high embankments, creation of large cut slopes, creation of large over-crossings, and noise barriers. They are not duplicated here. COM-1. Establish Pedestrian/Bike/Equestrian Paths. COM-2. School District Coordination. COM-3. Traffic Management Plan for Access. COM-4. Recycling during Operations.

Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
		home-to-school routes would remain unchanged other than a few that would pass under or over SR 79. Many areas are already divided by roadways and a canal that SR 79 would parallel. Temporary inconvenience would occur during construction. High embankments would alter the character of the rural environment, dominating views from nearby areas and blocking views of more distant elements of the landscape. Major overcrossing structures would dominate the area and block views of more distant landscape features. Noise barriers could dominate views from nearby areas, block more distant views, and make communities feel less rural or more enclosed. Build Alternative 1a would place a new transportation facility through the community of Rural Winchester. However, linkages between the components of this community would be maintained, and little if any impact on community cohesion is anticipated.				
Relocations and Real Property Acquisition	No Project-related impact	Residential Units displaced – 42 Residents displaced – 134 Commercial Units displaced – 14 Employees displaced – 89	Residential Units displaced – 37 Residents displaced – 106 Commercial Units displaced – 14 Employees displaced – 90	Residential Units displaced – 39 Residents displaced – 107 Commercial Units displaced – 14 Employees displaced – 89	Residential Units displaced – 29 Residents displaced – 75 Commercial Units displaced – 13 Employees displaced – 86	Mitigation would be the same with all Build alternatives, so the measure is listed here by title, with the details available in Chapter 3. RELOC-1. Relocation Assistance.
Environmental Justice	No Impact	Study Area (Riverside County) Racial minority 18.0% (34.5%) Ethnic (Hispanic) minority 22.8% (36.2%) Low income 12.5% (14.2%)	Study Area (Riverside County) Racial minority 18.0% (34.5%) Ethnic (Hispanic) minority 22.8% (36.2%) Low income 12.5% (14.2%)	Study Area (Riverside County) Racial minority 18.0% (34.5%) Ethnic (Hispanic) minority 22.8% (36.2%) Low income 12.5% (14.2%)	Study Area (Riverside County) Racial minority 17.5% (34.5%) Ethnic (Hispanic) minority 21.5% (36.2%) Low income 12.7% (14.2%)	Because the minority and low-income populations within the Environmental Justice Study Area would not be adversely affected by the Project, no avoidance, minimization, and/or mitigation measures are required.
Utilities/Emergency Services	No Impact	With Build Alternative 1a, Cable television, electricity, natural gas, sewer, telephone, and water utilities could experience occasional disruption during construction. Relocation of two utility towers in Segment G could affect cell phone coverage.	Impacts from Build Alternative 1b and Design Option 1b1 would be the same as those from Build Alternative 1a except for the following: Design Option 1b1 would include a near-grade crossing of the San Jacinto Branch Line. This would impact rail operations because the near-grade crossing would prohibit continuous use of the tracks.	Impacts from Build Alternative 2a would be the same as those from Build Alternative 1a except for the following:. Build Alternative 2a would not affect the utility towers.	Impacts from Build Alternative 2b and Design Option 2b1 would be the same as those from Build Alternative 1b and Design Option 1b1 except for the following: Build Alternative 2b and Design Option 2b1 would not affect the utility towers.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. UTIL-1. Coordination with Utility Companies. UTIL-2. Roadway Segment G Utility Tower Relocations. UTIL-3. Temporary Detour for Railroad. UTIL-4. Notification of Underground Service Alert. UTIL-5. Utility Relocation. SERV-1. Coordination with Emergency Responders Prior to Opening Year (2015). SERV-2. Coordination of Temporary Detours with Emergency Responders.

Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
Traffic and Transportation	Without the proposed Project, 10 of 30 study intersections would operate at level of service (LOS)* D, E, or F. *LOS ratings: A = Free flow B = Reasonably free flow C = Stable flow D = Approaching unstable flow E = Unstable flow F = Forced or breakdown flow	Three of the 30 study intersections would operate at LOS D, E, or F; the intersection at San Jacinto Street/ Ramona Boulevard/Main Street is too far from the Project to be affected. The intersection at Sanderson Avenue/ Stetson Avenue would improve from D/F to D/D, and the one at Sanderson Avenue/Florida Avenue would improve from F/F to D/E.	Impacts from Build Alternative 1b and Design Option 1b1 would be the same as those from Build Alternative 1a except for the following: Design Option 1b1 would include a near-grade crossing of the San Jacinto Branch Line. This would impact rail operations because the near-grade crossing would prohibit continuous use of the tracks. Operational Performance: The access modifications to Olive Avenue and Simpson Road for Design Option 1b1 would permanently remove east-west access on either side of the realigned SR 79.	Impacts from Build Alternative 2a would be the same as those from Build Alternative 1a.	Impacts from Build Alternative 2b and Design Option 2b1 would be the same as those from Build Alternative 1b and Design Option 1b1.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. LU-6. County of Riverside Circulation System. UTIL-3. Temporary Detour for Railroad.
Pedestrian and Bicycle Facilities	There are no bike paths in the Project study area along California Avenue, Cottonwood Avenue, Devonshire Avenue, Esplanade Avenue, Florida Avenue, Odell Avenue, Ramona Expressway, Sanderson Avenue, Simpson Road, Stetson Avenue, or Warren Road. Local officials confirmed in December 2010 and January 2011 that there are no plans to construct bike paths along these roads in the near future, even as painted areas on the shoulder.	There are no bike paths or sidewalks in the study area for Build Alternative 1a, and no impacts would occur. Sidewalks are present along portions of existing SR 74 including Florida Avenue and State Street. Bike lanes are painted on the shoulder of some existing streets such as Sanderson Avenue, which also has sidewalks. Reduction of traffic volume in these areas should result in a better experience for pedestrians and bicyclists.	Build Alternative 1b (including Design Option 1b1) would be the same as Build Alternative 1a.	Build Alternative 2a would be the same as Build Alternative 1a.	Build Alternative 2b (including Design Option 2b1) would be the same as Build Alternative 1a.	Temporary impacts from construction to pedestrian and bicycle transportation would be mitigated with the implementation of the Traffic Management Plan for the Project.
Visual/Aesthetics	The Project would not be built and, therefore, would not cause any visual changes to the Project area except those that could be associated with a potential increase in surface street congestion over time.	All of the Build alternatives and both design options would result in high levels of adverse visual impacts, which would impart a more developed character to the landscape and would affect the character of most of the Project area. All of the alternatives would alter the natural ridgelines and cause scarring. Winchester and the Green Acres Community would be affected by Build Alternative 1a, which would not be visible from Hemet and San Jacinto. The alternative would require road cuts, resulting in scarring along the western and northern sides of the West Hemet Hills and would alter the natural ridgelines. Build Alternative 1a would cause more visible scarring but less ridgeline alteration than Build Alternatives 2a and 2b.	The Green Acres Community would be affected by Build Alternative 1b (including Design Option 1b1), which would not be visible from Hemet and San Jacinto. Build Alternative 1b (including Design Option 1b1) would cause more visible scarring but less ridgeline alteration than Build Alternatives 2a and 2b.	Winchester would be most strongly affected by Build Alternative 2a. Build Alternative 2a may be visible from limited parts of Hemet and San Jacinto. Build Alternative 2a would require road cuts, resulting in scarring along the western and northern sides of the West Hemet Hills and would require the removal of a substantial portion of the southern peak, leaving two pyramid-shaped cut slopes in its place. Users of Eligible State Scenic Highway 74 are likely to be sensitive to visual impacts, but would be impacted less by Build Alternative 2a than by Build Alternatives 1a and 1b because it would require less road cutting than these other alternatives.	Build Alternative 2b (including Design Option 2b1) may be marginally better than the other alternatives in terms of visual character, quality, and degree of exposure and sensitivity. Build Alternative 2b (including Design Option 2b1) would require the removal of a substantial portion of the southern peak in the West Hemet Hills and would leave two pyramid-shaped cut slopes in its place. Build Alternative 2b may be visible from limited parts of Hemet and San Jacinto. Build Alternative 2b (including Design Option 2b1) would cause less visible scarring but more ridgeline alteration than Build Alternatives 1a and 1b. Users of Eligible State Scenic Highway 74 are likely to be sensitive to visual impacts, but would be impacted less by Build Alternative 2b (including Design Option 2b1) than by Build Alternatives 1a and 1b because it would require less road cutting than these other alternatives.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. VIS-1. Corridor Master Plan. VIS-2. Mitigation Planting/Highway Planting. VIS-3. Plantings to Bring Down Apparent Scale. VIS-4. Minimize Visual Impacts with Revegetation. VIS-5. Textured Noise Barriers. VIS-6. Aesthetic Treatment to Structures. VIS-7. Planting on Structures to Minimize Glare. VIS-8. Concentrations of Trees and Shrubs at Interchanges. VIS-9. Screening Treatments in Winchester. VIS-10. Noise Barrier Screening in Winchester. VIS-11. Prepare Contour Grading Plans. VIS-12. Cut Slope Design. VIS-13. Over-Excavate Slopes. VIS-14. Create Artificial Draws. VIS-15. Weathering of Exposed Rock. VIS-16. Revegetate Cut Slopes. VIS-17. Erosion Control. VIS-18. Hydroseed Fill Slopes. VIS-19. Texturize Fill Slopes. VIS-20. Revegetate Fill Slopes. VIS-21. Benched Slopes. VIS-22. Fill Slope Design. VIS-23. Earthen Basins. VIS-24. Nonreflective Materials. VIS-25. Overcrossing Design. VIS-26. Noise Barrier Design Treatments.

Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
						VIS-27. Noise Barrier Landscaping. VIS-28. Noise Barrier Surfaces. Noise barrier surfaces will be textured to discourage graffiti. VIS-29. Lighting.
Cultural Resources	No permanent impacts to archaeological resources or built environment resources.	The study area for Build Alternative 1a contains 17 archaeological sites that require further evaluation. If any are found to be eligible for the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR), Build Alternative 1a could adversely impact them. Portions of the Colorado River Aqueduct (CA-RIV-6726H), which is eligible for the NRHP, are crossed by Build Alternative 1a. Because these portions are underground, the State Historic Preservation Office (SHPO) is expected to determine No Adverse Effect. A burial site (CA-RIV-5786), previously determined NRHP eligible, is in the study area for Build Alternative 1a, but was removed and reburied in 1995. Further evaluation is needed before Final EIR/EIS to determine current eligibility and Project effect. A multicomponent archaeological site (CA-RIV-6907/H) is presumed NRHP eligible for this Project. If Build Alternative 1a is identified as the Preferred Alternative, site CA-RIV-6907/H would not be impacted and would be protected as an Environmentally Sensitive Area (ESA).	The study area for Build Alternative 1b (including Design Option 1b1) contains 14 archaeological sites that require further evaluation. If any are found to be eligible for the NRHP and/or the CRHR, Build Alternative 1b could adversely impact them. Impacts to the Colorado River Aqueduct would be the same as with Build Alternative 1a.	The study area for Build Alternative 2a contains 16 archaeological sites that require further evaluation. If any are found to be eligible for the NRHP and/or the CRHR, Build Alternative 2a could adversely impact them. Impacts to the Colorado River Aqueduct would be the same as with Build Alternative 1a. Impacts to site CA-RIV-5786 would be the same as with Build Alternative 1a. Impacts to site CA-RIV-6907/H) would be the same as Build Alternative 1a.	The study area for Build Alternative 2b (including Design Option 2b1) contains 15 archaeological sites that require further evaluation. If any are found to be eligible for the NRHP and/or the CRHR, Build Alternative 2b could adversely impact them. Impacts to the Colorado River Aqueduct would be the same as with Build Alternative 1a.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. CR-1. Cultural Materials Discovered during Construction. CR-2. Discovery of Human Remains. CR-3. Establishment of ESAs for CA-RIV-6907/H. CR-4. Additional Avoidance, Minimization, and/or Mitigation Measures.
Physical Environment						
Hydrology and Floodplain	There would be no change in water surface elevation.	Build Alternative 1a would result in a 0.26 m (0.85 ft) change in water surface elevation in the immediate vicinity of the Sanderson Avenue Bridge of the San Jacinto River floodplain. The impact would be localized and would be minimal compared to the overall floodplain and would also be less than the allowable 0.305 m (1.0 ft) increase specified in Federal Emergency Management Agency (FEMA) guidelines. As such, the impact to the floodplain would not be significant.	Build Alternative 1b (including Design Option 1b1) would be the same as Build Alternative 1a.	Build Alternative 2a would be the same as Build Alternative 1a.	Build Alternative 2b (including Design Option 2b1) would be the same as Build Alternative 1a.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. HYDRA-1. Construct Drainage and Flood Control Facilities. HYDRA-2. Complete a Letter of Map Revision.
Water Quality	Although the No Build Alternative would not result in additional impervious surface area that would contribute to an increase in storm water runoff, there may be an increase in traffic on the existing SR 79 alignment. The increase in traffic would result in an increase in the potential for typical vehicle-related pollutants to accumulate and wash into existing drainages. There are no treatment best management practices associated with the No Build Alternative, so the long-term result may be an increase in vehicle-related pollutants and degradation of water quality in downstream water bodies.	Build Alternative 1a would add about 95.9 ha (236.8 ac) of impervious area. It would have two drainage crossings totaling about 370 m (1,214 ft) of roadway that would pass over Salt Creek. Eight canal crossings totaling about 399 m (1,310 ft) would pass over San Diego Canal, Casa Loma Canal, and the Colorado River Aqueduct. This alternative could have impacts to vernal pools and seasonal wetlands.	Build Alternative 1b would add about 91.5 ha (226.4 ac) of impervious area. Design Option 1b1 would add about 92.7 ha (229.3 ac) Both would have two drainage crossings totaling about 252 m (827 ft) of roadway that would pass over Salt Creek and Hemet Channel. Eight canal crossings totaling about 484 m (1,588 ft) would pass over San Diego Canal, Casa Loma Canal, and the Colorado River Aqueduct. Impacts to vernal pools and seasonal wetlands would be the same as Build Alternative 1a.	Build Alternative 2a would add about 94.4 ha (233.3 ac) of impervious area. It would have five drainage crossings totaling about 556 m (1,823 ft) of roadway that would pass over Salt Creek and Hemet Channel. Eight canal crossings totaling about 489 m (1,605 ft) would pass over San Diego Canal, Casa Loma Canal, and the Colorado River Aqueduct. Impacts to vernal pools and seasonal wetlands would be the same as Build Alternative 1a.	Build Alternative 2b would add about 90.6 ha (224.1 ac) of impervious area. Design Option 2b1 would add about 91.8 ha (226.8 ac). Both would have three drainage crossings totaling about 392 m (1,286 ft) of roadway that would pass over Salt Creek and Hemet Channel. Eight canal crossings totaling about 394 m (1,293 ft) would pass over San Diego Canal, Casa Loma Canal, and the Colorado River Aqueduct. Impacts to vernal pools and seasonal wetlands would be the same as Build Alternative 1a.	Although no measures have been proposed to address minimizing impervious area, the Project has been designed to add as little impervious surface as possible, thereby limiting its effects on existing drainage patterns and storm water runoff. Measures that address drainage and storm water runoff would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. WQ-1. Construction Best Management Practices in Compliance with Project Planning and Design Guide (PPDG), Storm Water Management Plan (SWMP), Storm Water Pollution Prevention Plan (SWPPP), and Standard Special Provisions (SSP). WQ-2. Revegetation. WQ-3. Disturbed Slope Stabilization. WQ-4. Treatment BMPs. WQ-5. Dewatering Permit.

Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
Paleontology	There would be no permanent impacts to paleontological resources in the Project area as a result of the No Build Alternative because there would be no earth-moving activity that would disturb any fossil-bearing strata.	Potential permanent impacts to paleontological resources would be the same for all of the Build alternatives. Direct impacts would result mostly from earth-moving activities (particularly excavation) in previously undisturbed strata, making the strata and their resources permanently unavailable for future scientific investigation. Indirect impacts could result from unauthorized fossil collecting by construction personnel, rock hounds, and amateur and commercial fossil collectors who would be afforded easier access to fresh exposures of fossiliferous strata by these earth-moving activities.	Build Alternative 1b (including Design Option 1b1) would be the same as Build Alternative 1a.	Build Alternative 2a would be the same as Build Alternative 1a.	Build Alternative 2b (including Design Option 2b1) would be the same as Build Alternative 1a.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. PALEO-1. Paleontological Mitigation Plan (PMP). • PALEO-1a. Retention of Pathologist. • PALEO-1b. Museum Storage Agreement. • PALEO-1c. Additional Paleontological Survey. • PALEO-1d. Preconstruction Coordination with Resident Engineer. • PALEO-1e. Monitoring Plan. • PALEO-1f. Specimen Handling. • PALEO-1g. Transfer of Fossil Collection to Museum. • PALEO-1h. Reporting.
Hazardous Materials	Unknown risk potential	Potential risks include: Agricultural parcels provide a low to moderate potential for pesticide residue in soil. Buildings constructed prior to the 1980s pose a low to moderate risk of lead-based paint or asbestos-containing material. Parcels within the current ROW of SR 79/ Winchester Road, SR 74/Florida Avenue, and Domenigoni Parkway have a low to moderate potential for aerially deposited lead in soil.	Build Alternative 1b (including Design Option 1b1) would be the same as Build Alternative 1a.	Build Alternative 2a would be the same as Build Alternative 1a.	Build Alternative 2b (including Design Option 2b1) would be the same as Build Alternative 1a.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. HAZMAT-1. Phase II Environmental Site Assessment. HAZMAT-2. Aerially Deposited Lead Surveys. HAZMAT-3. Asbestos-Containing Materials and Lead-Based Paint Surveys. HAZMAT-4. Hazardous Materials Contingency Plan. HAZMAT-5. National Pollutant Discharge Elimination System Permit.
Air Quality	The No Build Alternative would have increased congestion levels, more stop-and-go travel, and lower operating speeds than existing conditions. All are associated with high levels of air emissions. Regional mobile source air toxics (MSAT) emissions will improve by 2035 because of EPA national control programs. At the Project level, the No Build Alternative would have higher MSAT emissions than the Build alternatives due to its poor LOS.	The Project is included in the SCAG 2012-2035 RTP, which was formally adopted on April 4, 2012. The FHWA and the Federal Transit Administration (FTA) concurred with the air quality conformity finding on June 4, 2012. The Project is also included in the SCAG 2011 Federal Transportation Improvement Plan (FTIP), which was found to conform by FHWA and FTA on December 14, 2010. The Project demonstrates conformity with localized particulate matter with a diameter of 10 micrometers or less (PM_{10}) and particulate matter with a diameter of 2.5 micrometers or less ($PM_{2.5}$) requirements. It would not cause or contribute to any new localized PM_{10}) or $PM_{2.5}$ violations, would not increase the frequency or severity of any existing violations of the PM_{10} or $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS), and would not delay timely attainment of the PM_{10} or $PM_{2.5}$ NAAQS. Regional MSAT emissions will improve by 2035 because of EPA national control programs. At the Project level, all Build alternatives would be the same and would have lower emissions than the No Build Alternative because of improvements in LOS.	Build Alternative 1b (including Design Option 1b1) would be the same as Build Alternative 1a.	Build Alternative 2a would be the same as Build Alternative 1a.	Build Alternative 2b (including Design Option 2b1) would be the same as Build Alternative 1a.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. AQ-1. Second-Stage Smog Alerts. AQ-2. Electricity. AQ-3. Construction Parking.AQ-4. Construction Truck Routes. AQ-5. Onsite Construction Traffic Control. AQ-6. Construction Vehicle Turn Lanes. AQ-7. Blasting Activities. AQ-8. Signal Boards. AQ-9. Environmentally Sensitive Areas (ESAs).

Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
Noise	The No Build Alternative would result in some increases over existing noise levels. Such increases in future noise levels would be due to higher traffic volume on local roadways, a result of development and growth in the surrounding communities. Similar to existing conditions, some sensitive receiver locations would experience noise levels that approach or exceed the noise abatement criteria (NAC).	Noise levels with Build Alternative 1a would approach or exceed the NAC at nearly all studied locations. Temporary construction noise impacts would occur at all noise-sensitive locations adjacent to Build Alternative 1a. Based on the studies completed to date for Build Alternative 1a, the Department intends to incorporate noise abatement in the form of five noise barriers with average heights ranging between 3.05 to 4.27 m (10 to 14 ft) and a total length of 5,323.33 m (17,465 ft). Calculations based on preliminary design data indicate that feasible and reasonable barriers will substantially reduce noise levels for 282 to 331 residences at an estimated total cost of $14.98 million to $16.52 million.	Build Alternative 1b (including Design Option 1b1) would be the same as Build Alternative 1a, with the following exception. Based on the studies completed to date for Build Alternative 1b and Design Option 1b1, the Department intends to incorporate noise abatement in the form of six noise barriers with average heights ranging between 3.1 and 4.3 m (10 to 14 ft) and a total length of 6,709.56 m (22,013 ft). Calculations based on preliminary design data indicate that feasible and reasonable barriers will substantially reduce noise levels for 388 to 451 residences at an estimated total cost of $19.03 to $22.11 million.	Build Alternative 2a would be the same as Build Alternative 1a, with the following exception. Based on the studies completed to date for Build Alternative 2a, the Department intends to incorporate noise abatement in the form of five noise barriers with average heights ranging between 3.1 and 4.3 m (10 and 14 ft) and a total length of 4,692.09 m (15,394 ft). Calculations based on preliminary design data indicate that feasible and reasonable barriers will substantially reduce noise levels for 286 to 293 residences at an estimated total cost of $14.08 to $14.79 million.	Build Alternative 2b (including Design Option 2b1) would be the same as Build Alternative 1a, with the following exception. Based on the studies completed to date for Build Alternative 2b and Design Option 2b1, the Department intends to incorporate noise abatement in the form of six noise barriers with average heights ranging between 3.1 and 4.3 m (10 and 14 ft) and a total length of 6,339.23 m (20,798 feet). Calculations based on preliminary design data indicate that feasible and reasonable barriers will substantially reduce noise levels for 352 to 386 residences at an estimated total cost of $17.96 to $20.85 million.	NO-1. Installation of Recommended Noise Barriers Shown to be Feasible and Reasonable. Recommended noise barriers that are shown to be feasible and reasonable under each Build alternative or design option should be considered further for inclusion as part of the project. While primarily an abatement measure for traffic noise, barriers will also provide abatement of construction noise if they are in place prior to construction. The noise barriers per alternative are: • Build Alternative 1a: Five noise barriers including 1A-E1, 1A-G1, 1A-J2, 1A-L2, and 1A-L3. • Build Alternative 1b (including Design Option 1b1): Six noise barriers including 1B-G2, 1B-K3, 1B-M3, 1B-M4, 1B-N1, and 1B-N2. • Build Alternative 2a: Five noise barriers including 2A-F1, 2A-H1, 2A-K3, 2A-L2, and 2A-L3. • Build Alternative 2b (including Design Option 2b1): Six noise barriers including 2B-H1, 2B-J2, 2B-M3, 2B-M4, 2B-N1, and 2B-N2. Measures beyond those listed in NO-1 would be the same with all Build alternatives, so the titles only are listed here, with the details available in Chapter 3. NO-2. Observation of Time Restrictions and Use of Alternative Alarms. NO-3. Use Mufflers on Equipment with Internal Combustion Engines. NO-4. Placement of Stationary Equipment. NO-5. Construction Equipment Staging.
Biological Environment						
Natural Communities and Wildlife Movement (direct and indirect)	No Project-related impacts to natural communities or wildlife movement would occur with this alternative.	Nine sensitive natural communities would be impacted by Build Alternative 1a. • Alkali Grassland: 14.7 ha (36.3 ac) • Alkali Playa: 0.032 ha (0.079 ac) • Cottonwood Willow Riparian Forest: 0.7 ha (1.7 ac) • Emergent Wetland: 0.2 ha (0.5 ac) • Mulefat Scrub: 0.004 ha (0.01 ac) • Riversidian Sage Scrub: 59.7 ha (147.5 ac) • Seasonal Wetland: 5.0 ha (12.4 ac) • Vernal Pool: 1.1 ha (2.7 ac) • Willow Riparian Scrub and Forest: 1.6 ha (4.0 ac) Eight wildlife corridors would be impacted by Build Alternative 1a. • Existing Constrained Linkage B (Salt Creek): Avian, Large Mammals, Small Mammals, Reptile, Amphibian, and Insects • Newport Road Hills to Patton Road: Avian, Large Mammals, Small Mammals, Reptile, Amphibian, and Insects • Hemet Channel: Avian Wildlife, Large Mammals, Small Mammals, Reptile, Amphibian, and Insects • San Jacinto Branch Line: Avian, Large Mammals, Small Mammals, Reptile, and Amphibian • Double Butte to West Hemet Hills: Avian, Large Mammals, Small Mammals, Reptile, and Amphibian	Nine sensitive natural communities would be impacted by Build Alternative 1b and Design Option 1b1. • Alkali Grassland: 10.1 ha (25.0 ac) • Alkali Playa: 0.062 ha (0.15 ac) • Cottonwood Willow Riparian Forest: 0.8 ha (2.0 ac) • Emergent Wetland: 0.1 ha (0.2 ac) • Mulefat Scrub: 0.004 ha (0.01 ac) • Riversidian Sage Scrub: 57.2 ha (141.3 ac) • Seasonal Wetland: 5.2 ha (12.8 ac) • Vernal Pool: 0.30 ha (0.74 ac) • Willow Riparian Scrub and Forest: 1.9 ha (4.7 ac) • Eight wildlife corridors would be impacted by Build Alternative 1b and Design Option 1b1. These would be the same as Build Alternative 1a.	Nine sensitive natural communities would be impacted by Build Alternative 2a. • Alkali Grassland: 22.9 ha (56.6 ac) • Alkali Playa: 0.10 ha (0.25 ac) • Cottonwood Willow Riparian Forest: 0.7 ha (1.7 ac) • Emergent Wetland: 0.2 ha (0.5 ac) • Mulefat Scrub: 0.004 ha (0.01 ac) • Riversidian Sage Scrub: 66.3 ha (163.8 ac) • Seasonal Wetland: 5.0 ha (12.4 ac) • Vernal Pool: 1.3 ha (3.2 ac) • Willow Riparian Scrub and Forest: 1.6 ha (4.0 ac) Seven wildlife corridors would be impacted by Build Alternative 2a. These would be the same as Build Alternative 1a except as follows. • Double Butte to West Hemet Hills and West Hemet Hills to Lakeview are not involved. • Hemet Channel: Avian Wildlife, Large Mammals, Small Mammals, Reptile, Amphibian, Insects, and Passive Dispersers • West Hemet Hills to Hemet-Ryan Airport: Avian Wildlife, Large Mammals, Small Mammals, Reptile, and Amphibian	Nine sensitive natural communities would be impacted by Build Alternative 2b and Design Option 2b1. • Alkali Grassland: 17.6 ha (43.5 ac) • Alkali Playa: 0.032 ha (0.08 ac) • Cottonwood Willow Riparian Forest: 0.8 ha (2.0 ac) • Emergent Wetland: 0.09 ha (0.2 ac) • Mulefat Scrub: 0.004 ha (0.01 ac) • Riversidian Sage Scrub: 63.8 ha (157.7 ac) • Seasonal Wetland: 5.4 ha (13.3 ac) • Vernal Pool: 2.1 ha (5.2 ac) • Willow Riparian Scrub and Forest: 1.9 ha (4.7 ac) Seven wildlife corridors would be impacted by Build Alternative 2b and Design Option 2b1. These would be the same as Build Alternative 1a except as follows. • Double Butte to West Hemet Hills and West Hemet Hills to Lakeview are not involved. • West Hemet Hills to Hemet-Ryan Airport: Same as Build Alternative 2a	BIO-15. Crossing Structures and Spacing Intervals for a Variety of Species. Depending on the alternative selected, the following bridges (as shown in Figures 3.3-11 through 3.3-16 [Volume 2]) will be constructed to facilitate wildlife movement: • SR 79 over Salt Creek Channel (all Build alternatives and design options) • SR 79 over San Jacinto Branch Line (Build Alternative 1a) • SR 79 over Hemet Channel (Design Options 1b1 and 2b1) • SR 79 over San Jacinto Branch Line/Hemet Channel (Build Alternatives 1b, 2a, and 2b) • Future Street "A" SB off-ramp over San Jacinto Branch Line (Build Alternatives 2a and 2b and Design Option 2b1) Measures beyond those listed in BIO-15 would be the same with all alternatives, so the titles only are listed here, with the details available in Chapter 3. BIO-1. Landscaping Plans. BIO-2. Avoid the Use of Invasive and Non-Native Plants. BIO-3. Barrier Fencing along ROW. BIO-4. Slope Construction within ROW. BIO-5. Equipment Storage, Fueling, and Staging Areas. BIO-6. Training about Sensitive Biological Resources. BIO-7. Fire Season Work. BIO-8. Dust Minimization. BIO-9. Designated Areas for Equipment Maintenance and Staging. BIO-10. Litter Control. BIO-11. Bridge over Salt Creek Channel. BIO-12. Avoidance of San Jacinto River. BIO-13. Avoidance of Existing Constrained Linkage C. BIO-14. Night Lighting. BIO-16. Openings in K-Rails for Small Animals.

Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
		• West Hemet Hills to Lakeview Mountains: Avian and Large Mammals • Lakeview Mountains to Tres Cerritos Hills: Avian and Large Mammals • Colorado River Aqueduct: Avian, Large Mammals, Small Mammals, Reptile, and Amphibian				BIO-17. Wildlife Crossings Intended for Large Mammalian Wildlife. BIO-18. Use of Tree and Shrub Buffers Around Crossing Entrances, No Artificial Lighting. BIO-19. Wildlife Crossings Vegetated as Naturally as Possible. BIO-20. Use of Natural Objects in the Crossing Facility. BIO-21. Installation of Vegetative Cover Near the Entrances to Culverts. BIO-22. Installation of Dirt, Rock, or Concrete Benches on at Least One Side of Large Mammal Crossings. BIO-23. Welded Wire Fencing to Guide Wildlife to Appropriate Crossing Locations. BIO-24. Fences Continue at Least 0.8 Kilometers beyond the Critical Area. BIO-25. Installation of One-Way Wildlife Doors. BIO-26. Jump-Outs and One-Way Gates. BIO-27. Enhancements to Wildlife Corridors.
Wetlands and Other Waters	No Project-related impacts would occur with this alternative.	Build Alternative 1a would cross both Salt Creek Channel and Hemet Channel. Additional wetlands and other waters present are: 3 vernal pools 0.81 ha (1.99 ac) 7 seasonal wetlands 0.384 ha (0.93 ac) 5 agricultural seasonal wetlands 3.66 ha (9.05 ac) 3 constructed ponds 1.07 ha (2.63 ac) 4 riparian areas 0.64 ha (1.58 ac) 36 drainage ditches 2.05 ha (5.09 ac) 7 erosional drainages 0.13 ha (0.31 ac) There would be no indirect impacts to wetlands or other waters with this Build alternative.	Build Alternative 1b (including Design Option 1b1) would cross both Salt Creek Channel and Hemet Channel. Additional wetlands and other waters present are: 2 vernal pools 0.004 ha (0.01 ac) 8 seasonal wetlands 0.384 ha (0.93 ac) 5 agricultural seasonal wetlands 3.66 ha (9.05 ac) 7 constructed ponds 2.57 ha (6.33 ac) 5 riparian areas 0.64 ha (1.58 ac) 35 drainage ditches 1.78 ha (4.43 ac) 7 erosional drainages 0.13 ha (0.31 ac) There would be no indirect impacts to wetlands or other waters with this Build alternative.	Build Alternative 2a would cross both Salt Creek Channel and Hemet Channel. Additional wetlands and other waters present are: 2 vernal pools 0.004 ha (0.01 ac) 8 seasonal wetlands 0.43 ha (1.06 ac) 5 agricultural seasonal wetlands 3.66 ha (9.05 ac) 4 constructed ponds 1.07 ha (2.63 ac) 4 riparian areas 0.64 ha (1.59 ac) 36 drainage ditches 1.99 ha (4.96 ac) 6 erosional drainages 0.03 ha (0.08 ac) Indirect Impacts: Vernal Pool Complex 0.98 ha (2.43 ac)	Build Alternative 2b (including Design Option 2b1) would cross both Salt Creek Channel and Hemet Channel. Additional wetlands and other waters present are: 3 vernal pools 0.81 ha (1.99 ac) 9 seasonal wetlands 0.43 ha (1.06 ac) 5 agricultural seasonal wetlands 3.66 ha (9.05 ac) 6 constructed ponds 2.57 ha (6.435 ac) 5 riparian areas 0.65 ha (1.59 ac) 36 drainage ditches 1.86 ha (4.62 ac) 6 erosional drainages 0.03 ha (0.08 ac) Indirect Impacts: Vernal Pool Complex 0.98 ha (2.43 ac)	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. WQ-1. Construction Best Management Practices in Compliance with Project Planning and Design Guide (PPDG), Storm Water Management Plan (SWMP), Storm Water Pollution Prevention Plan (SWPPP) and Standard Special Provisions (SSP). WQ-4. Treatment BMPs. WQ-5. Dewatering Permit. BIO-28. Environmentally Sensitive Area Fencing. BIO-29. Onsite and Offsite Drainage Facilities in the Project ROW. BIO-30. Maintenance of Constructed Storm Water Systems. BIO-31. No Erodible Materials Deposited in Watercourses. BIO-32. Ongoing Monitoring and Reporting. BIO-33. Modification of the Project Design to Construct a Gravity-Based Surface Water Diversion System. BIO-34. Mitigation of Impacts to Water Features.
Plant Species	No Project-related impacts would occur with this alternative.	Special Status Plants: • Species observed – 10 Eight MSHCP Covered Species shown by populations (plants): • Davidson's saltscale: 1 (6) • Plummer's mariposa lily: 1 (2) • Smooth tarplant: 248 (99,584) • Parry's spineflower: 27 (112,536) • Long-spined spineflower: 4 (4,465) • Vernal Barley: 12 (18,921) • Coulter's goldfields: 23 (5,435) • Little mousetail: 2 (18,589) Two Special Status Plants not Covered by the MSHCP: • Robinson's peppergrass: 16 (79,124) • Paniculate Tarplant: 37 (21,374)	Special-Status Plants: • Species observed – 10 Eight MSHCP Covered Species shown by populations (plants): • Davidson's saltscale: 1 (6) • Plummer's mariposa lily: 1 (2) • Smooth tarplant: 251 (529,988) • Parry's spineflower: 26 (111,996) • Long-spined spineflower: 4 (4,465) • Vernal Barley: 16 (18,221) • Coulter's goldfields: 4 (29,125) • Little mousetail: 2 (19,886) Two Special Status Plants not Covered by the MSHCP: • Robinson's peppergrass: 16 (79,124) • Paniculate Tarplant: 29 (6,998)	Special Status Plants: • Species observed – 12 Ten MSHCP Covered Species shown by populations (plants): • Davidson's saltscale: 60 (12,142) • Smooth tarplant: 257 (103,556) • Parry's spineflower: 36 (13,893) • Long-spined spineflower: 27 (15,564) • Vernal Barley: 14 (5,026,922) • Coulter's goldfields: 23 (5,435) • Parish's brittlescale: 13 (1,320) • Little mousetail: 15 (22,750) • Small-flowered microseris: 1 (15) • Palmer's grapplinghook: 1 (500)	Special Status Plants: • Species observed – 12 Ten MSHCP Covered Species shown by populations (plants): • Davidson's saltscale: 60 (12,142) • Smooth tarplant: 252 (527,426) • Parry's spineflower: 35 (13,353) • Long-spined spineflower: 27 (15,564) • Vernal Barley: 17 (5,025,722) • Coulter's goldfields: 4 (29,125) • Parish's brittlescale: 13 (1,320) • Little mousetail: 15 (21,395) • Small-flowered microseris: 1 (15) • Palmer's grapplinghook: 1 (500)	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. BIO-1. Landscaping Plans. BIO-2. Avoid the Use of Invasive and Non-Native Plants. BIO-28. Environmentally Sensitive Area Fencing. BIO-33. Modification of the Project Design to Construct a Gravity-Based Surface Water Diversion System. BIO-35. Avoidance of Sensitive Plant Populations. BIO-36. Avoid the Spread of Invasive Plant Species. BIO-37. Mitigation for Robinson's Peppergrass Populations. BIO-38. Coulter's Goldfields and Smooth Tarplant Populations. BIO-39. Culvert/Drainage System for Coulter's Goldfields and Smooth Tarplant Populations.

Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
		Three species with long-term conservation value (MSHCP term used to describe plants that will contribute to MSHCP objectives and reserve assembly): • Smooth tarplant • Coulter's goldfields • Little mousetail Criteria Area Cells (MSHCP term used to describe groups of land that will guide assembly of Additional Reserve Lands throughout the MSHCP Conservation Area): 3683, 3584, 3291, 2774, 2775, and 2778 through 2878	Two species with long-term conservation value: • Smooth tarplant • Little mousetail Criteria Area Cells: 3683, 3584, 3291, and 2364	Two Special Status Plants not covered by the MSHCP: • Robinson's peppergrass: 19 (7,872) • Paniculate Tarplant: 39 (42,424) Five species with long-term conservation value: • Little mousetail • Smooth tarplant • Coulter's goldfields • Parish's brittlescale • Davidson's saltscale Criteria Area Cells: 2683, 2774, 2775, 2878, 2364, 3584, 3683, 3684, 3791, 3891, 3887, and 4007	Two Special Status Plants not Covered by the MSHCP: • Robinson's peppergrass: 19 (7,872) • Paniculate Tarplant: 31 (28,044) Five species with long-term conservation value: • Little mousetail • Smooth tarplant • Coulter's goldfields • Parish's brittlescale • Davidson's saltscale Criteria Area Cells: 2683, 2774, 2775, 2878, 2364, 3584, 3683, 3684, 3791, 3891, 3887, and 4007	
Animal Species (permanent and/or temporary)	No Project-related impacts would occur with this alternative.	Bats: Loss of roosting habitat Burrowing owl: 6 pairs, 1 single male Barn owl: 3 pairs Red-tailed hawk: 9 pairs White-tailed kite: 3 pairs Los Angeles pocket mouse: 2.0 ha (4.8 ac) of occupied habitat	Impacts to bats would be the same as Build Alternative 1a. Burrowing owl: 7 pairs Barn owl: 2 pairs Red-tailed hawk: 10 pairs White-tailed kite: 2 pairs Impacts to the Los Angeles pocket mouse: would be the same as Build Alternative 1a.	Impacts to bats would be the same as Build Alternative 1a. Impacts to burrowing owls would be the same as Build Alternative 1a. Impacts to barn owls would be the same as Build Alternative 1a. Cooper's hawk: 1 pair Impacts to red-tailed hawk would be the same as Build Alternative 1a. White-tailed kite: 4 pairs Impacts to the Los Angeles pocket mouse: would be the same as Build Alternative 1a.	Impacts to bats would be the same as Build Alternative 1a. Impacts to burrowing owls would be the same as Build Alternative 1b. Impacts to barn owls would be the same as Build Alternative 1b. Impacts to Cooper's hawk would be the same as Build Alternative 2a. Impacts to red-tailed hawk would be the same as Build Alternative 1b. White-tailed kite: 2 pairs Impacts to the Los Angeles pocket mouse: would be the same as Build Alternative 1a.	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. BIO-14. Night Lighting. BIO-40. Conduct Presence/Absence Surveys Immediately Prior to Construction Each Year. BIO-41. Relocation of Burrowing Owls. BIO-42. Maintenance of Hydrology to Existing Vernal Pool/Alkali Playa Habitat. BIO-43. Conducting Vegetation Clearance to Avoid Active Breeding Season (March 1 through June 30). BIO-44. Nesting Raptor Surveys and Implementation of Nest Exclusion. BIO-45. Inspections for Roosting Bats before Demolition. BIO-46. Installation of Bat-Friendly Gate on Mine Adit Adjacent to Roadway Segments A, B, and C. BIO-47. Provision of Suitable Habitat for Vegetation-Roosting Bats. BIO-48. Los Angeles Pocket Mouse Conservation Objectives Identified in the MSHCP, Volume II-B, Species Accounts.

Table S-1 Summary of Primary Environmental Impacts and Related Avoidance, Minimization, and/or Mitigation Measures

Potential Impacts	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]	Avoidance/ Minimization/ Mitigation Measures
Threatened and Endangered Species (permanent and/or temporary)	No Project-related impacts would occur with this alternative.	Potential impact to Stephens' kangaroo rat habitat: 235.1 ha (581.0 ac) Potential impact to Quino checkerspot butterfly habitat: 249.03 ha (615.4 ac) Potential impact to coastal California gnatcatcher habitat: 69.79 ha (172.5 ac) No impact to vernal pool branchiopods Potential impact to suitable least Bell's vireo habitat: 10.99 ha (27.16 ac)[c] Potential impact to suitable southwestern willow flycatcher habitat: 10.99 ha (27.16 ac)[c] San Jacinto Valley crownscale: 15 populations (6,727 individuals) Spreading navarretia critical habitat: 1.9 ha (4.7 ac)	Potential impact to Stephens' kangaroo rat habitat: 232.2 ha (573.9 ac) Potential impact to Quino checkerspot butterfly habitat: 260.18 ha (642.9 ac) Potential impact to coastal California gnatcatcher habitat: 67.78 ha (167.49 ac) No impact to vernal pool branchiopods Potential impact to suitable least Bell's vireo habitat: 16.93 ha (41.84 ac) Potential impact to suitable southwestern willow flycatcher habitat: 16.93 ha (41.84 ac) San Jacinto Valley crownscale: 15 populations (6,727 individuals) Spreading navarretia critical habitat: 1.9 ha (4.7 ac) Design Option 1b1: Quino checkerspot butterfly habitat: 260.43 ha (643.5 ac)	Potential impact to Stephens' kangaroo rat habitat: 231.8 ha (572.9 ac) Potential impact to Quino checkerspot butterfly habitat: 385.6 ha (952.8 ac) Potential impact to coastal California gnatcatcher habitat: 86.84 ha (214.6 ac) Potential impact to vernal pool branchiopod habitat: 0.72 ha (1.79 ac) Potential impact to suitable least Bell's vireo habitat: 10.99 (27.16 ac) Potential impact to suitable southwestern willow flycatcher habitat: 10.99 (27.16 ac) San Jacinto Valley crownscale: 36 populations (7,137 individuals) Spreading navarretia: 15 populations (28,533 individuals) California Orcutt grass: 2 populations (4,266 individuals) Thread-leaved brodiaea:[b] 9 populations (231 individuals) Spreading navarretia critical habitat: 135.1 ha (333.8 ac)	Potential impact to Stephens' kangaroo rat habitat: 227.7 ha (562.6 ac) Potential impact to Quino checkerspot butterfly habitat: 402.64 ha (994.9 ac) Potential impact to coastal California gnatcatcher habitat: 84.84 ha (209.6 ac) Potential impact to vernal pool branchiopod habitat: 0.72 ha (1.79 ac) Potential impact to suitable least Bell's vireo habitat: 16.93 ha (41.84 ac) Potential impact to suitable southwestern willow flycatcher habitat: 16.93 ha (41.84 ac) San Jacinto Valley crownscale: 36 populations (7,137 individuals) Spreading navarretia: 15 populations (28,533 individuals) California Orcutt grass: 2 populations (4,266 individuals) Thread-leaved brodiaea:[b] 9 populations (231 individuals) Spreading navarretia critical habitat: 135.1 ha (333.8 ac) Design Option 2b1: Quino checkerspot butterfly habitat: 402.89 ha (995.6 ac)	Measures would be the same with all Build alternatives, so titles only are listed here, with the details available in Chapter 3. BIO-28. Environmentally Sensitive Area Fencing. BIO-35. Avoidance of Sensitive Plant Populations. BIO-49. Conducting Clearance of Riparian Habitat Outside Riparian Bird Active Breeding Season (Generally March 1 through June 30).

Note: MSHCP = Western Riverside County Multiple Species Habitat Conservation Plan

BMP = best management practice

ROW = right-of-way

ha = hectare

ac = acre

[a]Information is presented first for the base condition of Build Alternatives 1b and 2b, followed by Design Options 1b1 and 2b1. If there is no variation between the base condition and the design options, the information is given only once.

[b]Although nine populations of thread-leaved brodiaea were observed in Additional Indirect Impact Study Area 1, the hydrology in this area had already been altered by the construction of roads and drainage ditches. The proposed Project would not change these existing conditions, and impacts are not likely to occur.

[c]Although potential impacts are shown for least Bell's vireo and southwestern willow flycatcher habitat, these species were not detected in the study area. A "not likely to adversely affect" determination is requested for these two species.

S.6 Coordination with Public and Other Agencies

Coordination for the Project was led by RCTC (the responsible agency) and the Department (the NEPA and CEQA lead agency), with participation by USACE (Cooperating Agency), USEPA, USFWS, CDFG, RWQCB, and other agencies with an interest in the Project. FHWA was also a participant in this regard until July 1, 2007, when the Department began its assignment of NEPA responsibilities, pursuant to Section 6005 of SAFETEA-LU (23 USC 327). This team was formed to ensure collaborative planning at key decision points during the environmental review process.

Team activities included coordination for technical assistance and concurrent review of environmental documents and technical reports. Agencies were also consulted at key decision points and Project milestones, including:

- Preliminary Agreement on Purpose and Need from USACE and USEPA (December 2003)
- Preliminary Agreement on the Final Project Criteria and Alternatives Selection (June 2004)
- Response to the request for Cooperating Agency participation (April 2005)
- Preliminary Agreement on Supplemental Information for Project Criteria and Alternatives Selection (May 2005)
- Final Agreement on the Build Alternatives to be Identified in the Draft Environmental Impact Statement (July 2007)

Due to the length and complexity of the documentation supporting the above steps, correspondence and reports documenting these activities are incorporated herein by reference (FHWA 2005b, 2007a, 2007b, 2007c).

A range of realignment alternatives was presented to the community during development of the Project scope. The alignment alternatives in the western, central, and eastern portions of the Project area were identified through an alternatives analysis process described in detail in a document entitled *Project Criteria and Alternatives Selection for Preliminary Agreement* of June 2004.

The alternatives were further refined through the NEPA/404 Memorandum of Understanding (MOU) integration process, incorporating comments from the public scoping process, as well as from the analyses in technical studies. In addition to the Build alternatives, a No Build Alternative has been included as required by NEPA and CEQA regulations. The Project alternatives to be analyzed were identified in the May 21, 2007, *Request for Final Agreement on Build Alternatives to be Identified in the Draft Environmental Impact Statement for State Route 79 Realignment Project from Domenigoni Parkway to Gilman Springs Road* (FHWA 2007c).

Agency consultation and public participation for the Project have been accomplished through a variety of formal and informal methods. Coordination included monthly Project development team meetings, interagency coordination meetings, and focused discipline-specific technical meetings, as well as ongoing consultation with Native American tribes. Public participation was incorporated into the environmental process through meetings held in September and October 2004 and October 2005, public notices, newsletters/fact sheets, newspaper advertisements, updates on the Project website, and email notifications. Specifically, public opinion was requested on the potential concerns about and benefits of alternatives that would be considered in focused technical analyses and in the Draft EIR/EIS. Public concerns can be categorized into three general topic areas:

- Environmental (aesthetics/visual resource, biological resources, community impacts, etc.)
- Engineering (construction phasing, route design, access, etc.)
- General (decision-making authority, implementation, public outreach)

Based on public concerns, stakeholders were generally supportive of the Project. However, responses indicated varying preferences for the alternative that might be chosen for the Project. Please see Chapter 5, Section 5.3, Public Participation (page 5-5 in Volume 2 of this environmental document), for a detailed discussion of public participation activities and the outcomes from them.

In May 2009, comments were received from the public (specifically the Winchester Homeowners Association [HOA] and the County of Riverside) regarding the proposed design of the Project. The Winchester HOA requested that two items be considered in a modified design. The first was a lower profile of the roadway south of Stowe Road. The second was access at Newport Road. In response to the comments received, design options to Build Alternatives 1b and 2b were developed. Stakeholders were informed about the design options, and their feedback was positive. In June 2009, the design options were incorporated into the Project, and studies to identify and evaluate potential impacts that would be specific to the design options were begun. All of the design-option studies were completed by August 2010.

S.6.1 Permits and Approvals Needed

The permits and approvals required for the Project are listed in Table S-2. In addition, after certification of the Final EIR/EIS by the Department, this EIR/EIS may be used for related steps under CEQA, including General Plan Amendments by Riverside County and the Cities of Hemet and San Jacinto.

Table S-2 Permits and Approvals Needed

Agency	Permit/Approval	Status
Federal		
United States Army Corps of Engineers	• Individual Section 404 permit for impacts to waters of the United States	A Department of the Army Individual Permit application will be submitted after identification of a Preferred Alternative for the Project.
United States Department of Transportation Federal Highway Administration	• Draft Project Management Plan • Cost Estimate/Financial Plan	These plans will be developed after a Preferred Alternative is identified for the Project and will be submitted prior to the final NEPA determination.
California Department of Transportation, on behalf of United States Department of Transportation Federal Highway Administration	• Section 4(f) Determination	Section 4(f) use will not occur for parks, recreation facilities, or wildlife refuges. Section 4(f) use will occur to the Colorado River Aqueduct (historic property), as it is on or eligible on the NRHP under Criterion A as a driving and enabling force for the economic development of Southern California, and under Criterion C as a marvel of civil engineering. The evaluation of historic resources has not been completed. The archaeological excavations and associated cultural landscape/historic district analysis of 28 sites

Table S-2 Permits and Approvals Needed

Agency	Permit/Approval	Status
		to further document the potential impacts will be completed between the Draft and Final EIR/EIS after the identification of the Preferred Alternative, in order to reduce the amount of disruption and impact to potentially sensitive sites. After completion of the technical study, the Department and RCTC will circulate the revised Cultural Resources section and Appendix B of this Draft EIR/EIS in order to meet our commitments of public comments and disclosure on the potential impacts to Section 4(f) resources if applicable (i.e., that the resource triggers the requirements of Section 4(f)). The appropriate sections of the Final EIR/EIS will be revised accordingly based on our findings and coordination with SHPO.
United States Fish and Wildlife Service	• Section 7 consultation for threatened and endangered species • Consistency Determination required per the Western Riverside County MSHCP • A Determination of Biological Equivalent or Superior Preservation (DBESP) for Criteria Area species required per the Western Riverside County MSHCP	Consultation to be conducted following identification of a Preferred Alternative for the Project.
State		
California Department of Fish and Game	• Consistency Determination required per the Western Riverside County MSHCP • A Determination of Biological Equivalent or Superior Preservation (DBESP) for Criteria Area species required per the Western Riverside County MSHCP • Streambed Alteration Agreement	Coordination to be conducted and applications to be submitted after identification of the Preferred Alternative and prior to construction.
California Transportation Commission	• Route adoption	Coordination to be conducted based on Final EIR/EIS and after Record of Decision.
Regional Water Quality Control Board	• Section 401 Water Quality Certification • Section 402 National Pollutant Discharge Elimination System (NPDES): – NPDES Permit: Order No. 99-06-DWQ, NPDES No. CAS000003 – Construction General Permit: Order No. 2009-0009-DWQ, NPDES No. CAS000002	Notice of Intent (NOI) will be submitted prior to start of construction. If applicable, a separate dewatering permit will be requested from the Santa Ana Regional Water Quality Control Board for the San Jacinto Watershed; the permit number is NPDES CAG 998001.
State Historic Preservation Office	Section 106 compliance: • Historic Property Determinations of Eligibility — Finding of Effect — Resolution of Adverse Effects, Memorandum of Agreement (MOA)	Coordination to be conducted after identification of the Preferred Alternative and prior to publication of the Final EIR/EIS.

Table S-2 Permits and Approvals Needed

Agency	Permit/Approval	Status
Regional/Local		
Riverside County and Cities of Hemet and San Jacinto	• Freeway Agreement between each local entity and the Department • Street construction permits, approval of street closures and rerouting, and associated improvements within the public ROW • Noise variance for temporary exceedance of noise ordinances during Project construction • Riverside County MS4 Permit (Order No. R8-2010-0033, NPDES No. CAS618033)	Coordination to be conducted and approvals/permits to be issued prior to construction.
Riverside County Flood Control and Water Conservation District (RCFCWCD)	Encroachment permit for improvements affecting RCFCWCD facilities	Coordination to be conducted based on final design and prior to construction.
Western Riverside County Regional Conservation Authority	Consistency Determination required per the Western Riverside County MSHCP	Coordination to be conducted following identification of a Preferred Alternative for the Project.

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Chapter 1 Proposed Project

1.1 Introduction

The Riverside County Transportation Commission (RCTC), in cooperation with the Federal Highway Administration (FHWA), the California Department of Transportation (Department), the County of Riverside, the City of Hemet, and the City of San Jacinto, has proposed a project for the realignment of State Route 79 (SR 79) (Project or proposed Project) in the vicinity of the cities of Hemet and San Jacinto in Riverside County, California. The Department is the lead agency under the National Environmental Policy Act (NEPA). The Department is the lead agency under the California Environmental Quality Act (CEQA). The United States Army Corps of Engineers (USACE) is a Cooperating Agency under NEPA (USACE 2005).[1] A map showing the regional location of the Project is in Figure 1.1-1 at the end of this chapter. The realignment is proposed to begin south of Domenigoni Parkway and continue north to Gilman Springs Road, a distance of approximately 29 kilometers (km) (18 miles [mi]). The existing portion of SR 79 proposed for realignment is shown in Figure 1.1-2.

1.1.1 Project Background

1.1.1.1 Project History

The intent to realign SR 79 was first identified in the Route Concept Report in 1992 (Department 1992). The Route Concept Report determined that the existing route required realignment and defined the ultimate facility type as a six-lane expressway that would maintain a level of service (LOS) D (see Table 1.2-1 [page 1-7] and Table 3.1-35 [page 3-172] for definitions of LOS).

Subsequently, a Route Concept Fact Sheet was prepared (Department 1999b). The fact sheet noted that—due to the collocation of SR 79 with State Route 74 (SR 74) on Florida Avenue, the more than 90 driveways directly accessing SR 79, and other right-of-way (ROW) issues—most of the existing alignment could not be reasonably upgraded to an expressway, and any lesser improvements would not adequately accommodate future traffic (Department 1992). The fact sheet was also supported by the technical information included in the SR 79 Realignment Study Report (1998).

Following these activities, the Project Study Report/Project Development Support (PSR/PDS) (2002) evaluated conceptual alternatives for the Project. During this same period, the Riverside County Integrated Project (RCIP) planning process and the Cities' general plan update processes were being developed.

The elements of the RCIP include the Riverside County General Plan (led by the County of Riverside), the Community and Environmental Transportation Acceptability Process (CETAP) (led by RCTC), and the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) (led by the County of Riverside). These

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[1]Complete references for all citations are in Chapter 8.

elements guided the choices and decisions made about how to address the changes necessary to accommodate and support predicted growth in the county.

The Project alternatives identified in the PSR/PDS were also vetted through the NEPA/Clean Water Act Section 404 Integration Process and were closely coordinated with the local community. This process began with the development of the Project Purpose and Need (2003) and continued with the determination of environmental screening criteria (including field surveys) and the screening of preliminary alternatives (2004 and 2005), formal scoping (2005), and the selection of the Build alternatives to be included in technical studies and the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) (2005). This effort was undertaken because of the potential for substantial impacts to waters of the United States, primarily to wetlands (vernal pools) and the species they support, including listed and endemic species. Each of the approving or commenting federal and state agencies associated with these resources participated in this process to ensure that impacts to resources of concern would be avoided or minimized.

This coordination effort has resulted in the development of a reasonable range of Build alternatives for the Project, which are also included in the RCIP and City planning documents. The general plans for the County of Riverside (County 2003a), the City of Hemet (Hemet 2011b), and the City of San Jacinto (San Jacinto 2006) include goals and policies for improved circulation and access in association with a realigned SR 79.

Both the City of San Jacinto and the City of Hemet have adopted, via city council resolutions, Locally Preferred Alternatives (LPAs) for the Project (San Jacinto 2001, Hemet 2008). The respective LPAs are included in the general plans of each jurisdiction. Riverside County has not designated an LPA, but has included all of the Build alternatives in the County General Plan. In addition, the MSHCP has specific criteria included so that the Project is provided “Covered Activity” status.

The Project alternatives and design options developed are consistent with federal, state, regional, and local planning policies regarding traffic and circulation, public services, safety, and land use plans. The Project addresses the vision and long-range goals, policies, and strategies for development and population growth in the county.

1.1.1.2 Funding and Programming

Funding

Funding for the Project Approval/Environmental Document (PA/ED) phase of the Project, including preparation of this Draft EIR/EIS, is provided by the Federal Transportation Equity Act for the 21st Century (TEA-21), Riverside County Measure “A,” and Transportation Uniform Mitigation Fees (TUMF), as described below. Additionally, federal, state, and local funds (Measure “A” and TUMF funds) are expected to be used to continue the Project beyond the PA/ED phase. This Project was identified in the voter-approved Riverside County Transportation Expenditure Plan and, as such, is a priority project for RCTC.

Federal Congressionally Designated Funding

TEA-21 was originally enacted on June 9, 1998, as Public Law 105-178. As part of this authorization, a High Priority Projects Program was established subject to 23 United States Code (USC) 117. The Project is listed as High Priority Project No. 193 (FHWA 2011). TEA-21 authorized the federal surface transportation programs for highways, highway safety, and transit for the 6-year period from 1998 to 2003 and expired September 30, 2003. Under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which was enacted August 10, 2005, as Public Law 109-59, which reauthorized TEA-21 for the 5-year period 2005 through 2009, the Project was listed again as High Priority Projects Program 1421. In addition, the Project was listed as Section 112 Surface Transportation Project CA794 in the annual Appropriations Act.

Riverside County Measure A

Approved in 1988, Measure A designates a "half-cent" sales tax for transportation improvements in three districts of Riverside County—Western Riverside County, Coachella Valley, and Palo Verde. Transportation project funding for each district is proportionate to the sales tax contribution each district provides. In 2002, Measure A was extended by Riverside County voters and will continue to fund transportation improvements, including the proposed Project, through 2039.

Transportation Uniform Mitigation Fee

Approved as part of the Measure A extension in 2002, developers of residential, industrial, and commercial property pay a development fee to fund transportation projects that will be required as a result of the growth new developments create. TUMF is administered by the Western Riverside Council of Governments, funding both local area projects and improvements to the arterial backbone system of the region, such as the SR 79 Realignment Project (RCTC 2008b).

Table 1.1-1 is a summary of the Project funding plan that RCTC submitted to the Southern California Association of Governments (SCAG) on September 11, 2012, for inclusion in the Federal Transportation Improvement Program (FTIP).

Table 1.1-1 Funding Sources for SR 79 Realignment Project (x$1,000)

	Engineering	Right-of-Way	Construction	Fund Total
Agency	$66,649	$233,500	$65,000	$365,149
Bonds – Local			$710,000	$710,000
City Funds	$1,055			$1,055
Demo – TEA-21	$4,222			$4,222
Demo – SAFETEA-LU 2	$2,160			$2,160
FFY 2006 Appropriations Earmarks	$693			$693
Western Riverside TUMF	$25,659	$16,500		$42,159
TOTAL	$100,438	$250,000	$775,000	$1,125,438

Source: SCAG 2012

Note: FFY = federal fiscal year

Programming

Federal Transportation Improvement Program

The FTIP for the six-county Southern California region is developed and approved by SCAG and is a listing of all capital transportation projects proposed over a six-year period (SCAG 2011). The 2011 SCAG FTIP covers the period for fiscal years 2010/2011 through 2015/2016. This listing identifies specific funding sources and funding amounts for each project. Projects include highway improvements, transit, rail, and bus facilities. The FTIP must include all transportation projects for which federal approval is required, regardless of funding source.

The Project is listed in the 2011 FTIP and the 2012-2035 SCAG Regional Transportation Plan (RTP) under Project ID RIV62024 with a project cost estimate of $1,125,438,000, which matches the funding total shown in Table 1.1-1 (page 1-3) (SCAG 2012). Inclusion in the adopted FTIP and RTP demonstrates that the Project was evaluated for regional impacts, meets the planning and regional requirements for demonstration of federal conformity, and is consistent with local air quality planning efforts.

The 2011 FTIP was adopted by SCAG on September 2, 2010, and was approved by federal agencies on December 14, 2010. The SCAG adopted the 2012-2035 RTP on April 4, 2012. Following the SCAG adoption, the 2012-2035 RTP was approved by FHWA and Federal Transit Administration (FTA) on June 4, 2012. Currently, RCTC has filed an amendment to the 2011 FTIP, which was approved by SCAG on September 24, 2012, in FTIP Amendment 11-32. The amendment maintains the Opening Year (2015) and the total Project cost estimate of $1,125,438,000. RCTC will be submitting an additional amendment to the FTIP to shift the opening year of the Project from 2015 to 2018 to allow for additional time to complete final design and construct the Project. If approved, this will be documented in the Final EIR/EIS for the Project.

1.2 Purpose and Need

The Project purpose and need were developed in accordance with the NEPA/404 Integration Process in a joint effort among the Department, FHWA, USACE, the United States Environmental Protection Agency (USEPA), and the United States Fish and Wildlife Service (USFWS) to integrate the NEPA and federal Clean Water Act Section 404(b)(1) alternatives analysis process. Local (City of Hemet, City of San Jacinto, County of Riverside) and state agencies (California Department of Fish and Game [CDFG] and the Santa Ana Regional Water Quality Control Board [RWQCB]) also participated in this process. Although the Project would be in the jurisdictions of the Santa Ana RWQCB and the San Diego RWQCB, such a small portion of it would be in San Diego RWQCB jurisdiction that the San Diego RWQCB deferred its participation to the Santa Ana RWQCB on October 14, 2004 (CARWQCB 2004).

1.2.1 Project Purpose

The purpose of the proposed transportation action is:

- To improve traffic flow for local and regional north-south traffic in the San Jacinto Valley
- To improve operational efficiency and enhance safety conditions by maintaining route continuity and upgrading the facility
- To allow regional traffic, including truck traffic, to adequately bypass local roads
- To reduce the diversion of traffic from state routes onto local roads

1.2.2 Project Need

Several factors have contributed to the deficiencies of the transportation corridor between Domenigoni Parkway and Gilman Springs Road. These include:

- Regional traffic on the current SR 79 alignment traverses heavily developed areas in Winchester, Hemet, and San Jacinto. The regional traffic competes with local traffic for the limited SR 79 roadway capacity.
- The current alignment of SR 79 between Domenigoni Parkway and Gilman Springs Road is circuitous, with numerous at-grade intersections, residential and commercial driveways, traffic signals, and other impediments that degrade the operational characteristics of the facility. With no viable alternative facilities, Sanderson Avenue and Warren Road have become default north-south routes for regional traffic, thereby adding more traffic onto local streets.
- SR 79 and SR 74 are collocated as one facility for about 11.3 km (7 mi) along Florida Avenue. As a result, SR 74 east-west traffic and SR 79 north-south traffic are combined.
- The geometric design of SR 79 does not support the movement of trucks exceeding the length of 12.2 meters (m) (40 feet [ft]), which are authorized under the Surface Transportation Assistance Act (STAA). As such, STAA vehicles (vehicles exceeding a length of 12.2 m [40 ft]) are diverted to Sanderson Avenue.
- Fatal and injury accident rates on most of SR 79 between Domenigoni Parkway and Gilman Springs Road are higher than the comparable statewide average.
- Request to *realign and improve California Route 79 in Riverside County* included in TEA-21 High Priority Projects Program (enacted on June 9, 1998, as Public Law 105-178, listed as High Priority Project No. 193) and its reauthorization as part of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU, enacted August 10, 2005, as Public Law 109-59, listed as High Priority Projects Program Project No. 1421).

1.2.3 Capacity, Transportation Demand, and Safety

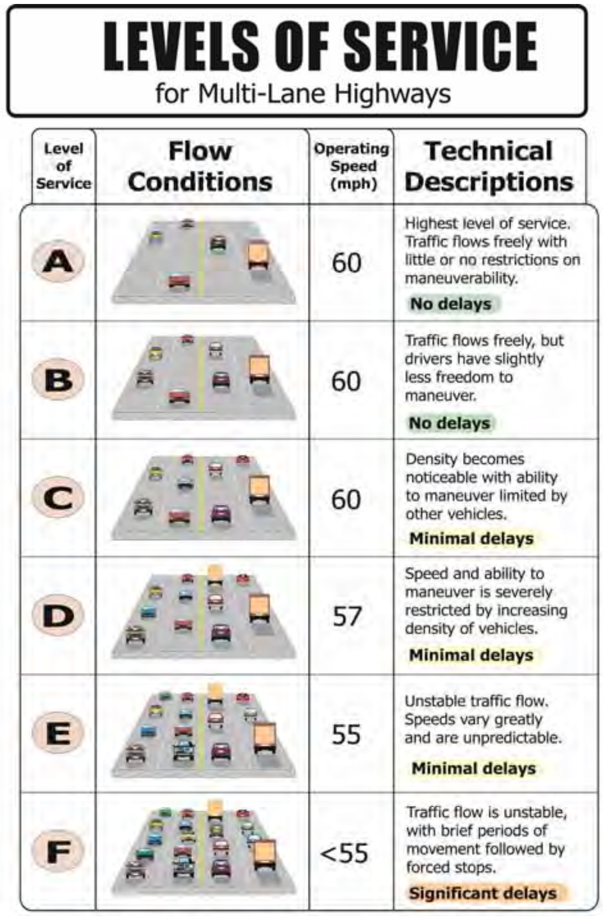
1.2.3.1 Roadway Capacity (Level of Service)

The traffic analysis conducted for the Project found that portions of the existing SR 79 alignment operate at LOS D, E, or F (see Table 1.2-1 [page 1-7] for definitions of LOS). SR 79 operates at LOS F between Newport Road and Domenigoni Parkway. Also, SR 79 operates at LOS D between Sanderson Avenue and San Jacinto Street. This is the portion of SR 79 collocated with SR 74, an east-west state route that passes through downtown Hemet. Other portions of SR 79 along San Jacinto Street, Ramona Expressway, and Sanderson Avenue operate at LOS D or worse, as shown in Table 1.2-2 (page 1-7). The remainder of SR 79 operates at an acceptable LOS (C or better) in the Project study area.

With no project, in 2035, the SR 79 facility would operate at LOS F over more than half of the entire route in the study area, even after ultimate general plan classification roadway improvements have been made (see Table 1.2-2 [page 1-7]). Existing SR 79 and the local street system do not provide sufficient capacity to accommodate the number of trips that are expected in the Project area in 2035. Because of the configuration of existing SR 79, regional traffic currently diverts from SR 79 to travel on more direct north-south routes on the local road network, such as Sanderson Avenue and Warren Road. Table 1.2-2 (page 1-7) also shows the traffic operations under the build conditions. The Build alternatives are discussed in detail in Chapter 2, and more detailed information about existing and future traffic operations is provided in Section 3.1.6 (page 3-167).

Base year traffic volumes represent 2004 conditions. Because several years had elapsed, these conditions were validated in November 2009. As part of the validation process, more recent counts were obtained from the Cities of Hemet and San Jacinto, the County of Riverside, and the Department to determine whether the 2004 counts would still be appropriate to use as the basis for the traffic study forecasts. The recent counts (2008 and 2009) from each of the major arterials in the study area (Domenigoni Parkway, Florida Avenue, Ramona Expressway, Sanderson Avenue, State Street, Warren Road, and Winchester Road) were compared to the 2004 counts to determine the amount of traffic growth from 2004 to 2009. These growth percentages were then compared to the projected five-year growth from the traffic study's original forecasts. The observed growth was compared to the projected short-term growth to determine whether the observed growth was less than, comparable to, or more than the projected growth. This comparison revealed that actual traffic growth in the study area has been consistently less than the projected growth; however, since the traffic model uses projected land uses to forecast traffic volumes, and the projected land uses have not been significantly altered by the local jurisdictions, it was determined that the 2004 forecasts are still reliable. Therefore, the long-term growth forecasts based on the 2004 counts still provide a sufficient basis for evaluating traffic for the Project. Table 1.2-1 (page 1-7) presents the characteristics associated with each LOS grade for multiple-lane highways. In October 2012, the Department submitted a memorandum confirming that the November 2009 traffic analysis is still valid. The memorandum states that since 2009, the study area has experienced economic downturn and no significant, sustained economic improvement. Therefore, it was concluded that the traffic growth from 2009 to 2012 would still be less than the projected growth, and the current traffic analysis would still be appropriate.

Table 1.2-1 Level of Service Definitions for Multi-Lane Highways



LEVELS OF SERVICE
for Multi-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		60	Highest level of service. Traffic flows freely with little or no restrictions on maneuverability. **No delays**
B		60	Traffic flows freely, but drivers have slightly less freedom to maneuver. **No delays**
C		60	Density becomes noticeable with ability to maneuver limited by other vehicles. **Minimal delays**
D		57	Speed and ability to maneuver is severely restricted by increasing density of vehicles. **Minimal delays**
E		55	Unstable traffic flow. Speeds vary greatly and are unpredictable. **Minimal delays**
F		<55	Traffic flow is unstable, with brief periods of movement followed by forced stops. **Significant delays**

Source: 2000 HCM, Exhibit 21-3, Speed-Flow Curves with LOS Criteria for Multi-Lane Highways

Table 1.2-2 SR 79 2004 Base Year and 2035 Average Daily Traffic Volumes and LOS

SR 79 Roadway	2004[a] Base Year			2035 No Project			2035 Build Alternatives[b]		
	LOS C Roadway Capacity	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[c]	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[c]	Daily Traffic Volumes	LOS
Winchester Road (SR 79) between:									
Newport Road and Domenigoni Parkway	14,400	27,162	F	27,300	36,800	F	27,300	1,200	C or better
Domenigoni Parkway and Simpson Avenue	14,400	8,280	C or better	27,300	38,200	F	27,300	3,400	C or better
Simpson Avenue and Florida Avenue	14,400	7,927	C or better	27,300	35,100	F	27,300	3,900	C or better
Florida Avenue (SR 74/SR 79) between:									
Winchester Road and Warren Road	32,700	29,897	C or better	49,000	57,500	E	49,000	29,200	C or better
Warren Road and Sanderson Avenue	32,700	27,879	C or better	49,000	48,400	C or better	49,000	32,800	C or better

Table 1.2-2 SR 79 2004 Base Year and 2035 Average Daily Traffic Volumes and LOS

SR 79 Roadway	2004[a] Base Year			2035 No Project			2035 Build Alternatives[b]		
	LOS C Roadway Capacity	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[c]	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[c]	Daily Traffic Volumes	LOS
Sanderson Avenue and State Street	27,300	32,972	D	27,300	36,300	F	27,300	35,900	F
State Street and San Jacinto Street	27,300	28,407	D	27,300	31,200	D	27,300	30,400	D
San Jacinto Street (SR 79) between:									
Florida Avenue and East Oakland Avenue	20,700	14,547	C or better	20,700	18,900	C or better	20,700	17,300	C or better
Menlo Avenue and Commonwealth Avenue	20,700	15,153	C or better	20,700	28,600	F	20,700	26,100	F
Esplanade Avenue and Seventh Street	20,700	14,576	C or better	20,700	20,800	D	20,700	18,500	C or better
Seventh Street and Main Street	10,400	13,676	F	20,700	16,400	C or better	20,700	14,700	C or better
Ramona Boulevard (SR 79) between:									
Main Street and State Street	10,400	9,846	C or better	20,700	12,100	C or better	20,700	12,200	C or better
State Street (SR 79) between:									
Ramona Boulevard and Ramona Expressway	27,300	19,022	C or better	27,300	20,900	C or better	27,300	21,300	C or better
Ramona Expressway (SR 79) between:									
State Street and Sanderson Avenue	14,400	20,857	F	43,100	36,000	C or better	43,100	37,300	C or better
Sanderson Avenue (SR 79) between:									
Ramona Expressway and Gilman Springs Road	27,300	28,531	D	32,700	48,800	F	32,700	47,200	F
Lamb Canyon Road (SR 79) between:									
Gilman Springs Road and Interstate 10	28,700	33,945	E	61,200	49,600	C or better	61,200	54,800	C or better

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

[a]2004 was used as the base year for the traffic analysis. More information is provided in Section 3.1.6 (page 3-167).

[b]For purposes of the traffic analysis, the different alignments do not substantially affect traffic; therefore, a generic Build alternative was analyzed.

[c]Capacity of the roadway in 2035 reflects the ultimate general plan classification of the roadway.

The current alignment of SR 79 does not facilitate the movement of local and regional traffic between Domenigoni Parkway and Gilman Springs Road. SR 79 is circuitous, with numerous at-grade intersections, residential and commercial driveways, traffic signals, and other impediments to efficient travel. The numerous direct access points to and from SR 79 result in conflicts between local and regional traffic that degrade the operational characteristics of the facility. With no viable alternative facilities, Sanderson Avenue and Warren Road have become default north-south routes for regional traffic, thereby adding regional traffic onto local streets. This regional traffic, particularly heavy trucks, is not consistent with the pavement section and land use on these local roads.

More detailed information about existing and future traffic operations is provided in Section 3.1.6 (page 3-167).

1.2.3.2 Safety

According to the most recent data available from the Department Traffic Accident Surveillance & Analysis System (TASAS) Table B, the actual accident rate on SR 79 between Domenigoni Parkway and Gilman Springs Road is 1.59, which is 30 percent higher than the statewide average rate of 1.22 for similar facilities. A summary of the accident rates and types of accidents on SR 79 in the study area for a 3-year period from January 1, 2008, through December 31, 2010, is provided in Tables 1.2-3 and 1.2-4.

The most common types of accidents reported in the Project study area were rear-end (32 percent), broadside (29 percent), and hit-object (16 percent) accidents. Rear-end and broadside collisions are typically congestion-related accidents (Spainhour 2005). Also, the large number of access points along existing SR 79 increases the frequency of turning movements into and out of driveways and intersections. This increases the number of conflict points and the potential for accidents. Mixing local and regional traffic along with the numerous access points creates safety issues along existing SR 79. Design elements for the proposed Project to improve safety should separate local and regional traffic and reduce the volumes on the existing alignment, which is expected to decrease the total number of accidents.

Table 1.2-3 SR 79 Actual and Average Accident Rates from January 1, 2008 to December 31, 2010

Location	Total Number of Accidents	Actual Rates (Mainline rates are per million vehicle miles)			Statewide Average Rates (Mainline rates are per million vehicle miles)		
		F*	F + I**	Total	F*	F+I**	Total
PM R15.15/R33.79 – Domenigoni Parkway to Gilman Springs Road	139	0.023	0.70	1.59	0.023	0.48	1.22

Source: Caltrans, Traffic Accident Surveillance and Analysis System (TASAS) Selective Record Retrieval for the period of January 1, 2008, to December 31, 2010.

Note: Post miles (PM) are the limits of this traffic data. These, although similar, are not the same as the Project limits.

* Fatal
** Fatal and injury

Table 1.2-4 Summary of Types of Accidents from January 1, 2008 to December 31, 2010

Location	Head-On	Sideswipe	Rear-End	Broadside	Hit Object	Overturn	Pedestrian	Other	Total
PM R15.15/R33.79 – Domenigoni Parkway to Gilman Springs Road	7%	9%	32%	29%	16%	3%	3%	1%	100%

Source: Caltrans, TASAS Selective Record Retrieval for the period of January 1, 2008, to December 31, 2010.

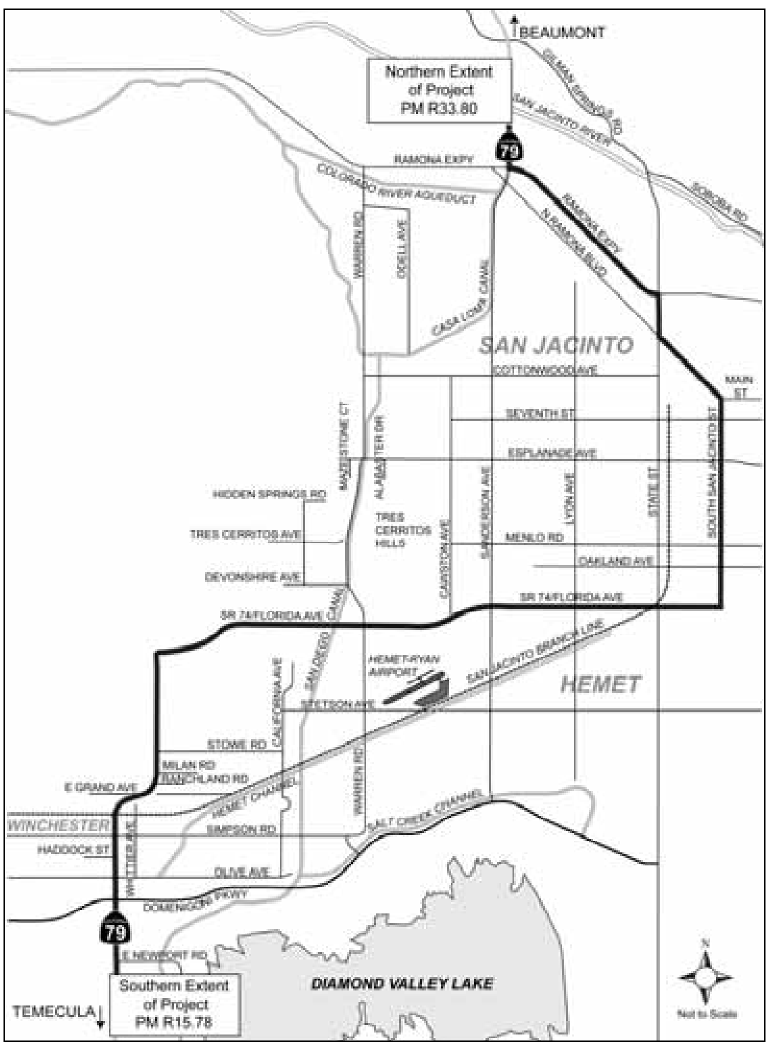
Note: Post miles (PM) are the limits of this traffic data. These, although similar, are not the same as the Project limits.

1.2.4 Roadway Deficiencies

As stated in Section 1.2.2 (page 1-5), in Hemet, the north-south corridor of SR 79 overlaps with the east-west corridor of SR 74 for approximately 11.3 km (7 mi) on Florida Avenue. Much of this portion of SR 74/Florida Avenue intersects with local streets that lead directly to residential neighborhoods and provides access to various businesses. As a result, the north-south regional traffic on SR 79 is mixed with the east-west regional traffic on SR 74/Florida Avenue and with local traffic.

As shown in Figure 1.2-1, the existing SR 79 alignment is circuitous and overly long for regional traffic. The straight-line distance from Domenigoni Parkway to Gilman Springs Road is about 16 km (10 mi). Along existing SR 79, the distance is about 29 km (18 mi). The existing route intersects both Sanderson Avenue and State Street twice. Not only is this route overly long and doubles back on itself, but, as described in the following section, it is characterized by numerous at-grade intersections, residential and commercial driveways, traffic signals, and other impediments that degrade the operational characteristics of the facility. Some traffic diverts to a shorter route (23 km [14 mi]) by turning from Florida Avenue onto Sanderson Avenue. Although legal, this type of traffic is not compatible with the primarily residential land uses through which it passes.

Figure 1.2-1 Existing SR 79 Alignment



Roadway Design—Access

One of the design issues of the route on existing SR 79 is that numerous access points exist along the facility (driveways for residential and commercial properties, as well as intersecting streets), especially in Winchester, Hemet, and San Jacinto. Access points along SR 79 between Newport Road and Gilman Springs Road include driveway access (307), T-intersections (35), and full intersections (58) (as of February 2002). The locations of the driveways along SR 79 are presented in Figure 1.2-2, while the T-intersections and full intersections are shown in Figure 1.2-3. The presence of access points along SR 79 encourages turning movements into and out of these driveways, thereby decreasing the efficiency of traffic movement. Consequently, mixing local and regional traffic along this facility has resulted in portions of SR 79 not being able to provide effective traffic movement. This situation is also documented in the Route Concept Report (Department 1992). To improve the LOS on SR 79 between Domenigoni Parkway and Gilman Springs Road, the number of access points would need to be significantly reduced.

Roadway Design—Geometrics

The Truck Network on California State Highways was instituted by Assembly Bill 866 (1983–1984 Reg. Sess.) to implement the federal Surface Transportation Assistance Act (STAA) of 1982. The STAA requires states to allow larger single and double trailer trucks on a National Network of interstates and the non-interstate Federal-Aid Primary System. In addition to the National Network, Terminal Access (TA) state highways meet the geometric standards to accommodate STAA trucks, with no special restrictions for weight or length. Advisory state highways have special restrictions for weight or length because they are not safe for trucks of specific lengths. The length of a truck is measured from the kingpin (the main pivot in the steering mechanism of a vehicle) to the rear axle (KPRA). Trucks with a KPRA of less than 12.2 m (40 ft) (less than KPRA 40) are restricted on Advisory routes unless the route is posted for a lesser KPRA length.

SR 79 is a TA route from San Jacinto Street to Domenigoni Parkway and north of Gilman Springs Road. The portion of SR 79 between these locations is an Advisory route for KPRA 30 (trucks 9.1 m [30 ft] long). The geometrics of the route are inadequate for longer vehicles such as are common for local and regional freight movement. In Municipal Code 10.08.040, San Jacinto allows vehicles that exceed 14,000 pounds gross vehicle weight rating (GVWR) on Sanderson Avenue from the Ramona Expressway southbound to the southernmost city limits. In municipal code section 78-61, Hemet allows vehicles that exceed 14,000 pounds GVWR on Sanderson Avenue from the northernmost city limit to Domenigoni Parkway. Sanderson Avenue, which passes through primarily residential areas, has become a route for large regional trucks due to the inadequacy of SR 79.

In general, the responsibility for providing roads that serve regional traffic, particularly truck traffic, is a state and federal responsibility. SR 79 through Hemet and San Jacinto is a state route that is a designated truck route, but geometric deficiencies have resulted in the road being restricted for longer trucks (e.g., STAA 40 and STAA 35). Because other alternatives are not available, local authorities allow STAA 40 vehicles up to 14,000 pounds on Sanderson Avenue and Warren Road, although these local streets were not designed for heavy trucks and will deteriorate more quickly than an appropriately designed highway.

1.2.5 Social Demands or Economic Development

Regional population is forecast to increase an additional 153,624 people between 2005 and 2035. The city of Hemet could double in population between 2005 and 2035, from 68,591 to 144,888 people. The city of San Jacinto could increase threefold, from 30,007 to 96,107. Winchester is the relatively slow-growth community in the area, with its population forecast to increase 63 percent, from 17,739 to 28,966, by 2035 (County 2006).

The existing and planned land uses, the adopted general plans, and a number of specific plans in the City of Hemet, City of San Jacinto, and Riverside County that would affect the proposed Project are described in Section 3.1.1 (page 3-7). Hemet and San Jacinto, from the foot of the San Jacinto Mountains on the east to Sanderson Avenue on the west, are almost fully developed. Areas between Sanderson Avenue and Warren Road are rapidly developing. Land use plans and zoning for areas west of Hemet and northwest of San Jacinto document planned residential and commercial development. The San Jacinto General Plan shows several new or enhanced secondary roads in the area. The City of Hemet General Plan Circulation Element Update includes a number of collector, arterial, secondary, and other major roadways that would provide access to developable areas.

1.2.6 Legislation

The legislation associated with the Project was also discussed in Section 1.1.1.2 (page 1-2), and is summarized below. The Project has been included in three authorizations.

- High Priority Project Program, Project No. 193 in the TEA-21 High Priority Projects Program, authorized between June 9, 1998, and September 30, 2003 (FHWA 2011).
- High Priority Projects Program, Project No. 1421 in SAFETEA-LU, authorized on August 10, 2005.
- Section 112 Surface Transportation Project #CA794 in the annual Appropriations Act.

1.2.7 Modal Interrelationships and System Linkages

1.2.7.1 Bus

The Riverside Transit Agency (RTA) operates local and regional bus service in the Hemet/San Jacinto area. RTA operates bus route 31 from Hemet to Beaumont, route 74 from San Jacinto to Perris, route 79 from Hemet to Temecula, routes 27 and 212 from Hemet to Riverside, and route 217 from Hemet to Escondido. All of these routes pass through the Project area, and the Project would not preclude current transit service.

As a state highway, SR 79 is intended to be a route for local and regional traffic, including private vehicles, buses, and commercial vehicles. It links the rural areas of San Diego County to the western communities of Riverside County and connects the communities of Rancho California, Murrieta Hot Springs, and Winchester and the cities of Temecula, Murrieta, Hemet, San Jacinto, and Beaumont. Existing SR 79 has limited compatibility with future multimodal transportation systems. The north-south segment of SR 79 between Florida Avenue and Ramona Expressway is often narrow, with development to the edge of the ROW, several signalized intersections, and many cross streets and driveways, so it is not well suited for large vehicles. In this area, SR 79 is posted as a KPRA 30 advisory route, meaning that longer vehicles are advised to use another route. This is an indication that the route is not well suited as an express or commuter bus route. A realigned SR 79 would be more amenable to express or commuter bus service because buses would be able to move more quickly and maintain more predictable schedules, factors that can lead to higher passenger ridership.

1.2.7.2 Airport

Other transportation facilities in the region that city residents and workers use include the Ontario International Airport, French Valley Airport, and Hemet-Ryan Airport. Ontario International Airport is a commercial service airport about 89 km (55 mi) northwest of SR 79. French Valley Airport and Hemet-Ryan Airport are general aviation airports owned by the County of Riverside. French Valley Airport is about 32 km (20 mi) southwest of the Project. The Hemet-Ryan Airport, a public-use airport, would be located about 3.2 km (2 mi) east of the realigned SR 79. The realigned SR 79 would provide a new north-south limited-access expressway connection to the airport via a proposed interchange on Florida Avenue in Hemet. Hemet-Ryan Airport provides ground support, fuel, fuel services, maintenance, and aircraft-storage services to fixed-based operators and recreational flyers. It is the site of the Ryan Field Air Museum and California Department of Forestry and Fire Protection firefighting operations at Ryan Air Attack Base, Hemet-Ryan Airport.

1.2.7.3 Rail

There is no current light or commuter rail project programmed in the Hemet/San Jacinto area. The San Jacinto Branch Line is an existing rail line owned by RCTC. Plans call for the expansion of Metrolink service along the San Jacinto Branch Line that would connect the downtown areas of Hemet and San Jacinto with downtown Riverside. The Hemet General Plan shows a Metrolink station at the future West Hemet Business Park/Mixed Use area that would link to the proposed SR 79 Project, which would not preclude these future plans. This would allow connections to Metrolink service to Los Angeles, Orange, and San Bernardino counties and other parts of Riverside County.

RCTC is currently working on the San Jacinto Branch Line Commuter Rail (Perris Valley Line) Project, a 38.6-km (24-mi) extension of the Metrolink 91 Line that currently provides service from Riverside to Fullerton and downtown Los Angeles. The Perris Valley Line extension would parallel Interstate 215 (I-215) and would begin at the existing Riverside Downtown Metrolink Station and proceed north on the Burlington Northern Santa Fe Line for about 4.8 km (3 mi) before turning southeast along the San Jacinto Branch Line. The terminus of this extension would be at SR 74 and Ethanac Road in Perris. The Perris Valley Line is expected to begin operation in 2014.

The nearest opportunity for passenger rail service is in downtown Riverside (Riverside-Downtown Station), where Metrolink operates commuter trains to Los Angeles, Orange, and San Bernardino counties. There is also a commuter express bus link that provides a route between Temecula, Murrieta, Lake Elsinore, and the Corona Metrolink station. Metrolink is operated by the Southern California Regional Rail Authority (SCRRA), which provides transit services to the counties of Los Angeles, Riverside, San Bernardino, San Diego, Orange, and Ventura. Amtrak operates passenger service from Los Angeles and San Bernardino to Palm Springs and points east of California on a line that roughly parallels Interstate 10 (I-10) north of the Hemet/San Jacinto area.

1.2.7.4 Transportation System Linkages

There are limited regional transportation facilities, either vehicular or rail, directly serving Hemet and San Jacinto. SR 79 is the major roadway connecting the San Jacinto Valley with the surrounding region. SR 79 provides north-south connectivity through the San Jacinto Valley to I-10 to the north and the Murrieta, Temecula, and French Valley areas and connections to I-15 to the south. Local roads such as Warren Road, Sanderson Avenue, and State Street provide north-south connectivity within the valley, although not beyond.

SR 74 (Florida Avenue) is the primary east-west corridor in Hemet, while the Ramona Expressway serves the same purpose for San Jacinto. Also, both roads link with I-215 to the west. They also merge onto SR 74 east of Hemet and traverse the mountains to reach the Palm Desert/Rancho Mirage area. Domenigoni Parkway is an additional east-west road through the southern portion of the San Jacinto Valley that links I-215 with State Street. Stetson Avenue and Esplanade Avenue provide local east-west connectivity within the valley.

A realigned SR 79 would shorten travel distances and travel times, would remove north-south traffic that now mixes with east-west traffic on SR 74, and would provide a truck route with appropriate geometrics that does not pass through residential areas. Realigned SR 79 would improve linkages between Domenigoni Parkway and SR 74 and between SR 74 and the Ramona Expressway and eventually the Mid County Parkway (MCP), as well as local roads such as Warren Road, Sanderson Avenue, State Street, Stetson Avenue, and Esplanade Avenue.

The MCP is a proposed 16-mile east-west limited-access route for western Riverside County that will connect the San Jacinto area with the Perris area and points west. The MCP will provide east-west circulation capacity and serve as an integral link to SR 79, Sanderson Avenue, and Ramona Expressway.

1.2.8 Independent Utility and Logical Termini

FHWA regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the action evaluated:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope
- Have independent utility or independent significance (be usable and require a reasonable expenditure even if no additional transportation improvements in the area are made)
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements

The Route Concept Report (1992) evaluated the entire length of SR 79 in Riverside County from the San Diego/Riverside county line to the junction at I-10. The ultimate facility was determined to be a six-lane expressway. Part of the analysis for the Route Concept Report was an evaluation of the *environmental and geometric constraints of expanding the facility*. The analysis resulted in design objectives for parts of SR 79 to allow projects to be developed independently, but in a manner that is compatible with the entire facility. Although most of the alignment was proposed for widening, two areas were identified for realignment. One was from Butterfield Stage Road in Temecula north to Keller Road. The second was the proposed Project, from Newport Road to Gilman Springs Road. Because of the unique purpose and need to realign this portion of SR 79, it was promoted as a separate project and was determined to satisfy FHWA regulations (23 CFR 771.111 [f]) as having independent utility and logical termini. This is further supported when evaluating the objectives for the portions of

SR 79 south and north of the proposed Project. The projects discussed below are also included in the Riverside County General Plan, Circulation Element.

Over the past 10 years, several projects have been constructed on SR 79. Many of these have widened SR 79 south of the Project. Immediately to the south, the SR 79 Widening Project (sponsored by Riverside County Transportation Department) will improve the existing alignment of SR 79 from Thompson Road to just south of Domenigoni Parkway (proposed Project southern limit), a distance of approximately 8 km (5 mi). This portion of SR 79 would initially be constructed as a four-lane facility and then ultimately a six-lane facility. Currently, the first phase of the four-lane widening is under construction. Farther south, Riverside County also sponsored several signal and road-widening projects from Hunter Road to Thompson Road. Near the southern limit of the Project, Domenigoni Parkway, which runs perpendicular to SR 79, has been extended west to I-215 from its previous termination at SR 79.

North of the Project limit, SR 79 crosses the San Jacinto River and enters Lamb Canyon. SR 79 is a four-lane expressway through Lamb Canyon to I-10 in Beaumont. Although this section is expected to be widened to six lanes in its ultimate concept, no project is currently proposed. The future MCP Project would connect with SR 79 at Ramona Expressway, just south of Gilman Springs Road.

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Basemap Data: ESRI StreetMaps, 2004.

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LEGEND

- Existing State Route 79 Proposed for Realignment
- Interstate[ES]
- State Route[ES]
- Local Road[ES]
- County Boundary[CR]

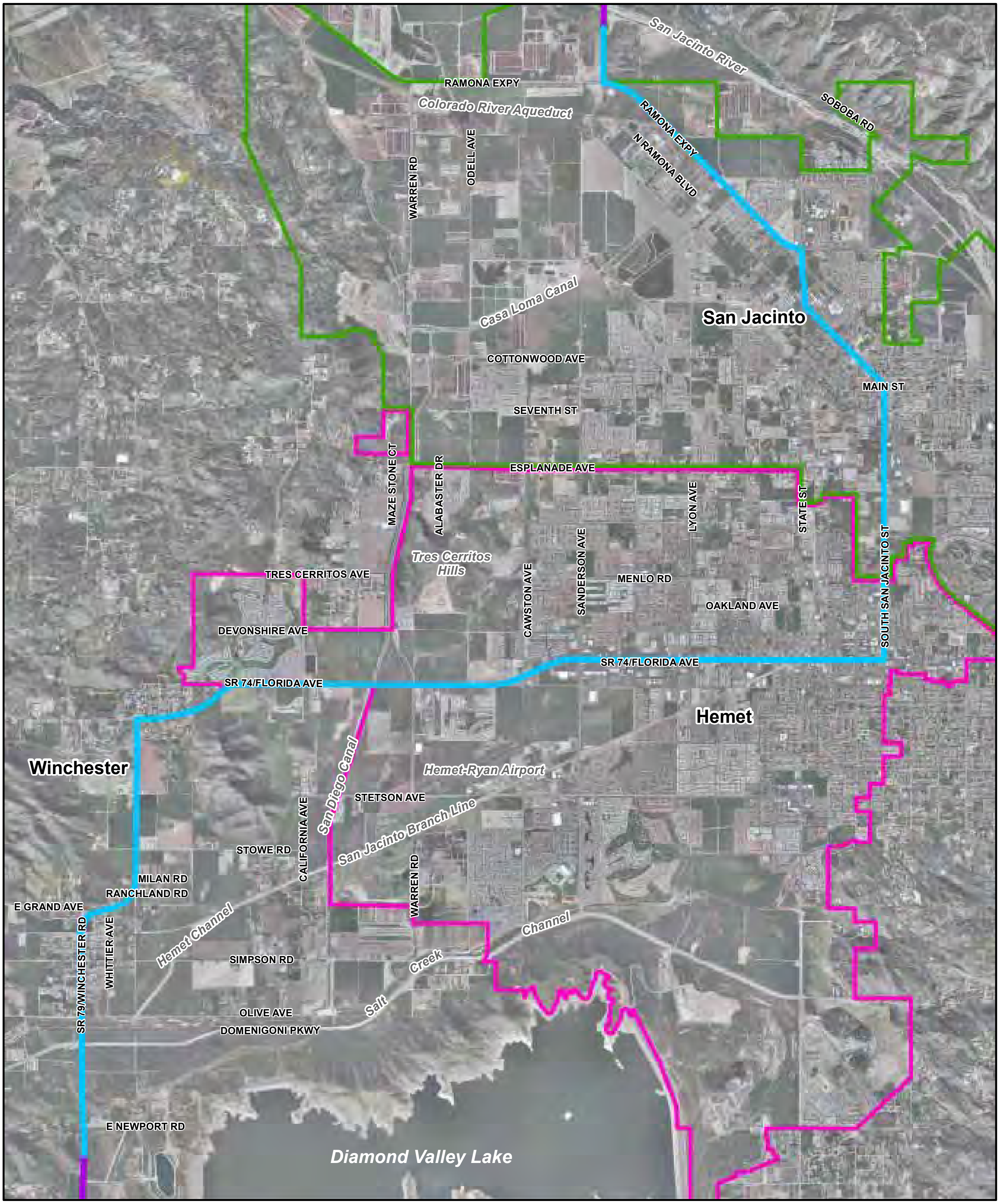
0 8.5 Miles

0 8.5 Kilometers

1:538,560

Sources: CR - County of Riverside; ES - ESRI

Figure 1.1-1
Regional Project Location
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PAD_E79_B.MXD PAD_E79_B.PDF 01/06/2012

LEGEND

- Existing State Route 79 Proposed for Realignment
- Existing State Route 79 Not to be Improved
- City of Hemet[CR]
- City of San Jacinto[CR]

0 7,000 Feet

0 1,500 Meters

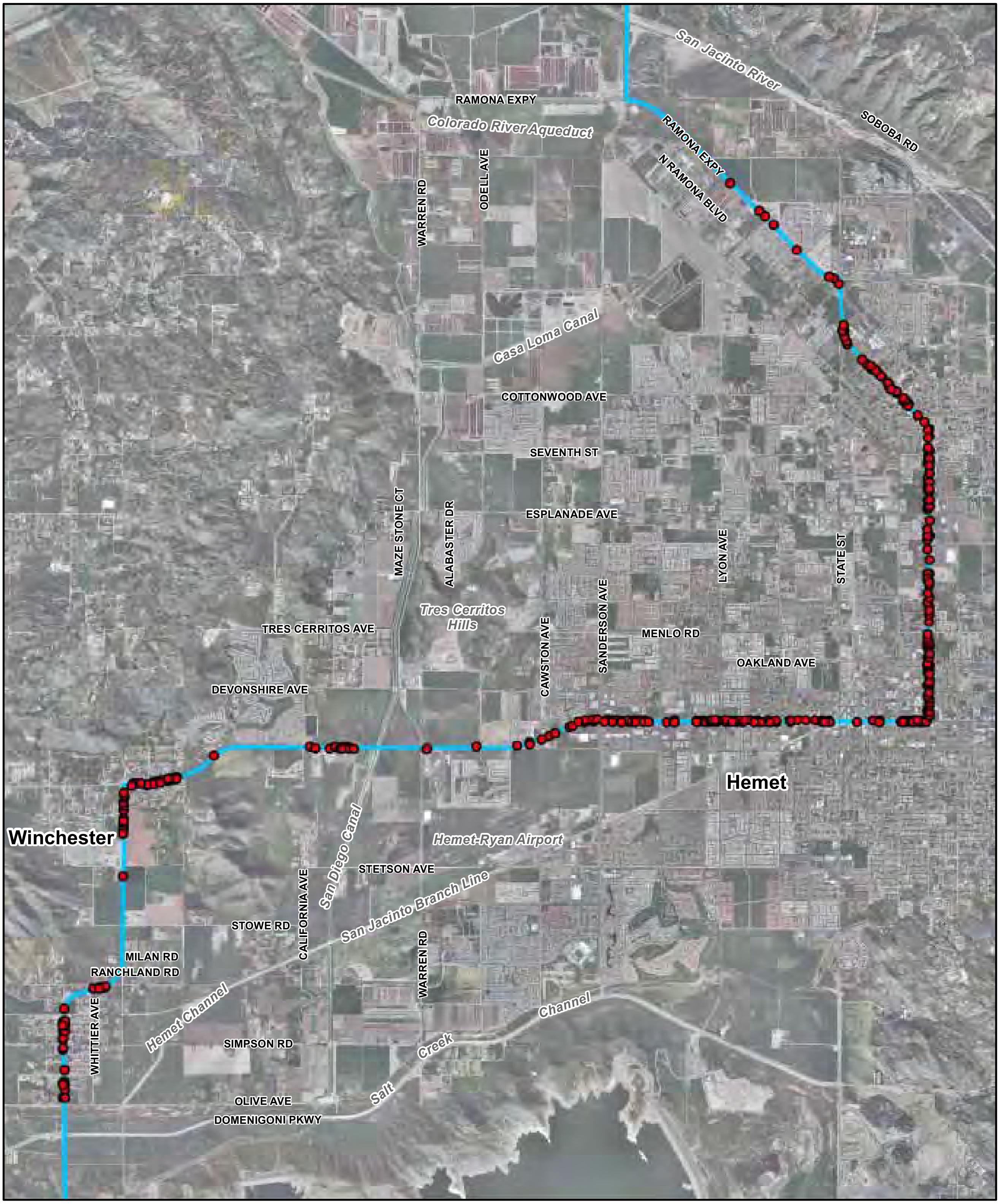
1:84,000

Source: CR - County of Riverside

Figure 1.1-2
Existing State Route 79

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Figure 1.2-1, Existing SR 79 Alignment, is included in the text of Chapter 1.



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Driveway
- State Route 79

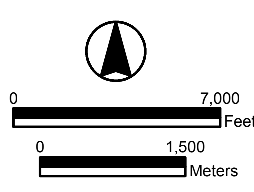

Figure 1.2-2
SR 79 Driveway Locations

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Source: Final Purpose and Need, 2003.

Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Existing Intersection
- Existing T-Intersection
- Existing State Route 79

0 7,500 Feet

0 1,600 Meters

1:90,000

Figure 1.2-3
SR 79 Existing Intersection Locations
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Source: Final Purpose and Need, 2003.

Chapter 2 Project Alternatives

2.1 Project Description

This chapter describes the proposed action and the design alternatives that were developed to meet the identified need through accomplishing the defined purpose(s), while avoiding or minimizing environmental impacts. The alternatives are Build Alternative 1a, Build Alternative 1b, Design Option 1b1, Build Alternative 2a, Build Alternative 2b, Design Option 2b1, and the No Build Alternative.

The Project would be located on State Route 79 (SR 79) in the western portion of the San Jacinto Valley, Riverside County, and is proposed as a divided limited-access expressway with four travel lanes (two lanes in each direction) on a new alignment. The Project limits begin at kilometer post (KP) R25.4 (post mile [PM] R15.78), which is 2.035 kilometers (km) (1.26 miles [mi]) south of Domenigoni Parkway, and end approximately 29 km (18 mi) north at the intersection of SR 79 and Gilman Springs Road (KP R54.4 [PM R33.80]). The proposed Mid County Parkway (MCP) project would connect with SR 79 at this location.

Due to the complexity and cost of the Project, construction could be phased over time. Phasing of the Project is described further in Section 2.2.1.3 (page 2-20) and is illustrated in Figures 2.2-26, 2.2-27a, 2.2-27b, 2.2-27c, and 2.2-27d.

Additional construction would be required to incorporate access modifications for the ultimate roadway design, a four-lane freeway (all remaining intersections would be converted to grade-separated interchanges). Timing would depend on funding, roadway capacity, operation, or safety needs, but the additional construction would be completed after Opening Year (2015) and prior to the 20-Year Design Horizon of the Project (2035). The Opening Year (2015) conditions are shown in Figure 2.2-1, and the 20-Year Design Horizon conditions are illustrated in Figure 2.2-2. Although the Project would be phased, potential environmental impacts have been analyzed for the 20-Year Design Horizon because this condition represents the full Project impact.

Right-of-way (ROW) would include all permanent acquisition, temporary easements, and permanent easements to accommodate construction, operation, and maintenance activities associated with a new transportation facility. Together, these are called the Project ROW. The Project Impact Area (PIA) includes the Project ROW and all local road improvements made by the Project, including street realignments and cul-de-sacs. The PIA is included in figures to show this.

2.2 Project Alternatives

The Project alternatives were developed in accordance with the National Environmental Policy Act (NEPA)/Section 404 Integration Process in a joint effort among federal, state, and local agencies (California Department of Transportation [Department], Federal Highway Administration [FHWA], United States Army Corps of Engineers [USACE], United States Environmental Protection Agency [USEPA], United States Fish and wildlife Service [USFWS], California Department of Fish and Game [CDFG], Regional Water Quality Control

Board [RWQCB], Riverside County Transportation Commission [RCTC], City of Hemet, City of San Jacinto, and County of Riverside), supported by community involvement over several years. This process involved identifying all possible alignments for SR 79 between Newport Road (the southern terminus specified in the Route Concept Report of 1992) and Gilman Springs Road and evaluating each based on selected criteria.

The specific criteria applied in this analysis included an evaluation of the four bullet items listed below.

- Purpose and Need
- Feasible (Constructible)
- Regulatory Constraint (Permittable)
- Reasonable (Fundable)

The evaluation of the criteria was supported by various field work and records review and coordination with the local agencies. This coordination ensured the compatibility of the Project alternatives with each element of the Riverside County Integrated Project (RCIP) (which includes the Community and Environmental Transportation Acceptability Process [CETAP], the Western Riverside County Multiple Species Habitat Conservation Plan [MSHCP], and the Riverside County General Plan) and the developing general plans of the Cities of Hemet and San Jacinto. This effort is summarized in Section 2.2.5, Alternatives Considered But Eliminated from Further Discussion (page 2-26), documented in several reports (see Chapter 1, Project History [page 1-1] and the List of Technical Studies at the beginning of Chapter 3), and determined the Project alternatives described below. These Project alternatives were approved by each of the NEPA/404 Memorandum of Understanding (MOU) signatory agencies in their respective Final Agreements in July 2007 (FHWA 2007a, b, c; USACE 2007; USEPA 2007; USFWS 2007).[2]

2.2.1 Build Alternatives

The Project alternatives are Build Alternatives 1a and 1b (including Design Option 1b1), Build Alternatives 2a and 2b (including Design Option 2b1), and the No Build Alternative. The No Build Alternative, which is required by NEPA and California Environmental Quality Act (CEQA) regulations, is considered a "do nothing" or "no action" alternative.

Design Features of the Build Alternatives

The Build alternatives were defined based on specific elements of roadway design. As illustrated in Figure 2.2-3, each Build alternative is composed of several roadway segments. Each roadway segment has specific design features that are either common to all Build alternatives or unique to one or more Build alternatives, but not common to all. Below is a summary of the roadway segments that are the basis of the Build alternatives, followed by descriptions of common and unique features of the Build alternatives.

[2]Complete references for all citations are in Chapter 8.

Roadway Segments

Roadway segments have been created to describe the Project at specific locations along the alignment. There are 14 potential roadway segments (designated A through N, south to north), as illustrated in Figure 2.2-3. The typical cross-section for the Project was first defined in the 1992 Route Concept Report. The ultimate concept for the facility is a six-lane expressway (three lanes in each direction). The typical dimensions proposed for the Project are those designated by Riverside County for a six-lane expressway. These dimensions include an 18.2-meter (m) (60-foot [ft]) median and a 67.0-m (220-ft) ROW. This is from Riverside County Road Improvement Standards & Specifications, Ordinance 461, Standard 82.

Roadway segments were designed from a typical cross-section for a limited-access expressway according to these standards (see Figure 2.2-4). A smaller typical section could be considered during final design to reduce ROW and environmental impacts, but to ensure that all environmental impacts would be analyzed, the smaller cross-section was not considered at this time. Based on this cross-section, roadway segments would include inside and outside shoulders, a median, and two lanes in each direction (referred to as the Project roadway). The median width would be 25.8 meters (m) (84.0 feet [ft]) measured from the inside edge of the travel lane on one side of the roadway to the inside edge of the travel lane on the other side. This median width would be consistent with Riverside County Standard 82 because it allows room for a future project to add two more lanes (to achieve the ultimate six-lane concept) without increasing the ROW. Within the median, there would be inside shoulders that are each 1.5 m (5.0 ft) wide. The combined width of the two travel lanes would be 7.2 m (24.0 ft), each 3.6 m (12.0 ft) wide. The outside shoulder width would be 3.0 m (10.0 ft). Side slopes would be required outside the shoulders. An additional 4.6 m (15.0 ft) beyond the toe of slope/top of cut would be provided for maintenance. Because the width of the side slopes would vary based on the elevation along the roadway, a varying ROW would be required. Therefore, the actual width of the Project ROW would range from 70 m (230 ft) to 620 m (2,035 ft), based on locations that include roadway versus those that include interchanges, respectively.

Combining the roadway segments described above to link the Project termini south of Domenigoni Parkway at the southern end of the Project and south of Gilman Springs Road in the north resulted in four Build alternatives and two design options.

Common and Unique Design Features

Table 2.2-1 (page 2-4) lists the major design features of each of the Build alternatives and the two design options. Design features found in all six are common design features. Design features that are exclusive to a particular roadway segment or that occur at a specific location along the Project roadway are unique design features. Unique design features include utility relocation areas and connections to Hemet Channel outside the Project ROW and are described in Section 2.2.1.2 (page 2-18).

Table 2.2-1 Major Design Features of Build Alternatives and Design Options

Design Feature	Build Alternative 1a	Build Alternative 1b	Build Alternative 2a	Build Alternative 2b	Design Option 1b1	Design Option 2b1
Roadway Segments	A, E, G, I, J, L, and N	B, C, G, I, K, M, and N	A, F, H, I, K, L, and N	B, D, H, I, J, M, and N	B, C, G, I, K, M, and N	B, D, H, I, J, M, and N
See Figure	**2.2-5a 2.2-7a**	**2.2-5b 2.2-7b**	**2.2-6a 2.2-7c**	**2.2-6b 2.2-7d**	**2.2-5b 2.2-7b**	**2.2-6b 2.2-7d**
Southern Project limit at SR 79 KP R25.4 (PM R15.78)	X	X	X	X	X	X
Newport Road bridge over SR 79	X	X	X	X		
Partial interchange with Newport Road bridging over SR 79[a]					X	X
Bridge over Patterson Avenue		X		X	X	X
Bridge over Patton Avenue		X		X	X	X
Full interchange with bridge over Domenigoni Parkway	X	X	X	X	X	X
Bridge over Salt Creek Channel, Winchester Road, and Olive Avenue	X		X			
Bridge over Salt Creek Channel					X[b]	X[c]
Cul-de-sac at Olive Avenue					X[b]	X[c]
Cul-de-sac at Simpson Road					X[b]	X[c]
Bridge over Salt Creek Channel and Olive Avenue		X		X		
Bridge over Whittier Avenue	X		X			
Bridge over Patterson Avenue	X		X			
Bridge over Simpson Road	X	X	X	X		
Full interchange with a bridge over Future Street "A"[d]			X	X		X[c]
Bridge over San Jacinto Branch Line	X					
Bridge over Hemet Channel and San Jacinto Branch Line		X	X	X		
Bridge over Hemet Channel					X[b]	X[c]
Near at-grade crossing of San Jacinto Branch Line					X[b]	X[c]
Cul-de-sac on Grand Avenue	X	X			X[b]	
Full interchange with bridge over Ranchland Road	X	X			X[b]	
Cul-de-sac on Milan Road	X	X			X	
Bridge over Stowe Road	X	X	X	X	X[b]	X[c]
Bridge over California Avenue	X	X	X	X	X	X
Full interchange with bridge over Florida Avenue	X	X	X	X	X	X
Bridge over SR 79 at Devonshire Avenue	X	X	X	X	X	X
Full interchange with bridge over SR 79 at Tres Cerritos Avenue	X	X	X	X	X	X
Bridge over Esplanade Avenue, Warren Road, and San Diego Canal	X	X	X	X	X	X

Table 2.2-1 Major Design Features of Build Alternatives and Design Options

Design Feature	Build Alternative 1a	Build Alternative 1b	Build Alternative 2a	Build Alternative 2b	Design Option 1b1	Design Option 2b1
Roadway Segments	A, E, G, I, J, L, and N	B, C, G, I, K, M, and N	A, F, H, I, K, L, and N	B, D, H, I, J, M, and N	B, C, G, I, K, M, and N	B, D, H, I, J, M, and N
See Figure	**2.2-5a 2.2-7a**	**2.2-5b 2.2-7b**	**2.2-6a 2.2-7c**	**2.2-6b 2.2-7d**	**2.2-5b 2.2-7b**	**2.2-6b 2.2-7d**
Bridge over Seventh Street	X	X	X	X	X	X
Full interchange with bridge over Cottonwood Avenue	X	X	X	X	X	X
Bridge over Casa Loma Canal	X		X			
Full interchange with a bridge over Future Street “B”[e]	X		X			
Sanderson Avenue bridge over SR 79	X		X			
Full interchange with a bridge over Sanderson Avenue		X		X	X	X
Crossing the Colorado River Aqueduct	X	X	X	X	X	X
Bridge over Ramona Expressway	X	X	X	X	X	X
Bridge between Ramona Expressway and San Jacinto River[f]	X	X	X	X	X	X
Northern Project limit at SR 79 KP R54.4 (PM R33.80)	X	X	X	X	X	X

Source: Project Description, 2007

Note: X – Feature is part of the alternative.

[a]Includes a northbound off-ramp to existing Winchester Road, and a southbound on-ramp from existing Winchester Road.

[b]Roadway profile lower than Build Alternative 1b.

[c]Roadway profile lower than Build Alternative 2b.

[d]Future Street “A” improvements to be built by others. This is noted as the Stetson Avenue/Grand Avenue realignment in the Hemet General Plan.

[e]Future Street “B” improvements to be built by others. This is noted as Bridge Street in the San Jacinto General Plan.

[f]To accommodate 100-year storm event.

The two design options respond to comments from the Winchester community regarding the height of the profile as initially described for the base condition. Both design options would be on the southern end of the Project near the Winchester community. Design Option 1b1 would affect Roadway Segments B, C, and G of Build Alternative 1b. Design Option 2b1 would affect Roadway Segments B, D, and H of Build Alternative 2b.

Both of the design options would include a near-grade crossing over the San Jacinto Branch Line with embankment and structural section for SR 79. The near-grade crossing over the existing railroad would be approximately 0.9 to 2.4 m (3 to 8 ft) above grade. The rail line is not used frequently and no trains have operated over the past 5 years. However, by placing embankment over the track and not severing it, rail traffic could be restored if using the track becomes necessary. If rail traffic is needed, RCTC would contact the Department with detailed, written requirements at least two weeks prior to the expected train operations. The embankment and structural section would be removed, then replaced once the rail activity is finished. A short-term detour would be required for traffic on SR 79. In the future, if passenger rail service is added; a grade-separation project would be completed under a separate environmental process.

The Build alternative discussions throughout this document generally address the base condition for the four proposed Build alternatives. As applicable, Build Alternatives 1b and 2b discussions address both the base condition and the design options. The minimum study area for each Build alternative is 152.4 m (500 ft) beyond the PIA. Resource-specific analyses may require a different study area.

The cost estimates (including construction and ROW) for each of the four Build alternatives and the two design options are as follows:

- Build Alternative 1a – $1,072,473,000
- Build Alternative 1b – $1,071,912,000
- Design Option 1b1 – $1,044,002,000
- Build Alternative 2a – $1,109,535,000
- Build Alternative 2b – $1,034,939,000
- Design Option 2b1 – $990,810,000

2.2.1.1 Common Design Features of the Build Alternatives' Roadway Segments

Common design features are permanent components of the Build alternatives that are same or very similar. The common design features of the Build alternatives include:

- At-grade intersections to allow at-grade access to, from, or across the realigned SR 79 (Table 2.2-1 [page 2-4])
- Grade-separated interchanges (ramps) to allow grade-separated access to and from the realigned SR 79 (Table 2.2-2 [page 2-8])
- Bridges to allow grade-separated roadway crossings of existing features, including local cross streets, surface waterways, and railroad tracks
- Aqueduct crossings to allow continuation of realigned SR 79 across the Metropolitan Water District Colorado River Aqueduct
- Local street improvements to provide adequate at-grade intersection and grade-separated interchange spacing, maintain local access, provide cul-de-sacs on streets where access has been removed, and provide conforming roadway geometry, based on applicable standards
- Drainage facilities to minimize adverse effects to water quality, maintain onsite drainage, and direct offsite storm water away from the Project during operation

At-Grade Intersections

At-grade intersections would be constructed to allow signalized access to and from local streets or across realigned SR 79. Under the base condition for the Build alternatives, all at-grade intersections would be constructed as part of Opening Year (2015) for Roadway Segments I, J, K, L, and M. With Design Options 1b1 and 2b1, at-grade intersections would also be constructed for Roadway Segments C and D. At-grade intersections that would be constructed for Opening Year (2015) are identified by Build alternative in Table 2.2-2 (page 2-7).

Table 2.2-2 At-Grade Intersections: Opening Year (2015)

	Location[a]
Build Alternative 1a	
Roadway Segment I	Tres Cerritos Avenue
Roadway Segment J	Alabaster Drive/Esplanade Avenue[b]
Roadway Segment L	Cottonwood Avenue Future Street B[c]
Roadway Segment N	N/A
Build Alternative 1b (including Design Option 1b1)	
Roadway Segment C	N/A OR Simpson Road[d]
Roadway Segment I	Tres Cerritos Avenue
Roadway Segment K	Alabaster Drive/Esplanade Avenue[b]
Roadway Segment M	Cottonwood Avenue
Build Alternative 2a	
Roadway Segment I	Tres Cerritos Avenue
Roadway Segment K	Alabaster Drive/Esplanade Avenue[b]
Roadway Segment L	Cottonwood Avenue Future Street B[c]
Build Alternative 2b (including Design Option 2b1)	
Roadway Segment D	N/A OR Simpson Road[d]
Roadway Segment I	Tres Cerritos Avenue
Roadway Segment J	Alabaster Drive/Esplanade Avenue[b]
Roadway Segment M	Cottonwood Avenue

Source: Final Project Description, November 2007

Note: N/A (Not Applicable) – An at-grade intersection is not associated with this roadway segment.

[a]All at-grade intersections would be constructed as part of Opening Year (2015) and would be replaced with grade-separated interchanges prior to the 20-Year Design Horizon.

[b]A local street improvement (access modification) would be required at this location. Existing Alabaster Drive would be continued north of Esplanade Avenue to provide an at-grade intersection with SR 79 for Esplanade Avenue.

[c]A local cross street does not currently exist in this location, but is expected to exist prior to the construction of this Project feature. This future street will be constructed by others as part of a separate project.

[d]This roadway segment is part of Build Alternative 1b and/or Build Alternative 2b. At-grade intersection design is presented first for the base condition of Build Alternatives 1b and 2b, followed by that for Design Options 1b1 and 2b1. Build Alternatives 1b and 2b would not require an at-grade intersection on Roadway Segments C and D. However, Design Options 1b1 and 2b1 would include construction of an at-grade intersection at Simpson Road. Ultimately, local access to SR 79 from Simpson Road would be removed by cul-de-sacs before the 20-Year Design Horizon.

With the base condition for the Build alternatives, at-grade intersections would be removed and replaced with grade-separated interchanges (ramps) prior to the 20-Year Design Horizon. With Design Options 1b1 and 2b1, the at-grade intersection at Simpson Road would be replaced by cul-de-sacs once the Ranchland Road (Roadway Segment C) or Future Street A (Roadway Segment D) grade-separated interchange is built.

As with the base conditions, the design options would have grade-separated interchanges to be constructed prior to the 20-Year Design Horizon. Some of these locations on Roadway Segments C and D would not include at-grade intersections for Opening Year (2015). These locations are shown on the left in Figures 2.2-24 and 2.2-25.

Grade-Separated Interchanges (Ramps)

Grade-separated interchanges (ramps) would consist of a bridge and ramps that would provide vehicular access to and from the realigned SR 79. Grade-separated interchanges would be constructed under both Opening Year

(2015) and 20-Year Design Horizon conditions. Grade-separated interchange types and locations were chosen based on coordination during Project Development Team meetings with the local jurisdictions, planning for future development, and continuity of community access while trying to maintain the Department-standard minimum requirement of 1.6 km (1 mi) between interchanges. If traffic volume is heavy where SR 79 would cross a major facility, then a grade-separated interchange would be provided for Opening Year (2015). Where traffic counts are currently low but are expected to increase in the future, or to comply with the local city general plans, an interchange would be provided during the 20-Year Design Horizon. The type of interchange proposed to accommodate the traffic demand was a partial cloverleaf. A partial cloverleaf was selected because it would accommodate more traffic than a standard diamond interchange.

Interchange locations are identified by Build alternative in Table 2.2-3. Focused views of the grade-separated interchanges that would be constructed with the base condition at the 20-Year Design Horizon are shown in Figures 2.2-8a through 2.2-8n. Side-by-side comparisons of base condition Opening Day (2015) and 20-Year Design Horizon are shown by roadway segment in Figures 2.2-15 through 2.2-23. Similar comparisons for the design options are shown in Figures 2.2-24 and 2.2-25.

With Design Options 1b1 and 2b1, the location and design of grade-separated interchanges along Roadway Segments B, C, and D would vary from the base condition. Side-by-side comparisons of base condition and design option for these roadway segments are provided in Figures 2.2-9 through 2.2-11. In each figure, the base condition for each roadway segment is on the left, and the design option is on the right.

Table 2.2-3 Grade-Separated Interchanges (Ramps): Opening Year (2015) and 20-Year Design Horizon

	Location and Relative Position to Local Cross Streets	
	Opening Year (2015)	**20-Year Design Horizon**
Build Alternative 1a		
Roadway Segment A	SR 79 over Domenigoni Parkway[a]	SR 79 over Domenigoni Parkway[a]
Roadway Segment E	N/A	SR 79 over Ranchland Road[b]
Roadway Segment G	SR 79 over Florida Avenue[a]	SR 79 over Florida Avenue[a]
Roadway Segment I	N/A	Tres Cerritos Avenue over SR 79[b]
Roadway Segment J	N/A	SR 79 over Esplanade Avenue[b]
Roadway Segment K	N/A	SR 79 over Esplanade Avenue[b]
Roadway Segment L	N/A N/A	Cottonwood Avenue over SR 79[b] Future Street B over SR 79[b, c]
Roadway Segment N	SR 79 over Ramona Expressway[a]	SR 79 over Ramona Expressway[a]
Build Alternative 1b (including Design Option 1b1)		
Roadway Segment B	N/A OR East Newport Road NB off-ramp over SR 79[b]	N/A OR East Newport Road NB off-ramp over SR 79[d]
Roadway Segment C	SR 79 over Domenigoni Parkway[a] N/A	SR 79 over Domenigoni Parkway[a] SR 79 over Ranchland Road[b] OR Ranchland Road over SR 79[e]
Roadway Segment G	SR 79 over Florida Avenue[a]	SR 79 over Florida Avenue[a]
Roadway Segment I	N/A	Tres Cerritos Avenue over SR 79[b]
Roadway Segment K	N/A	SR 79 over Esplanade Avenue[b]
Roadway Segment M	Sanderson Avenue over SR 79[a] N/A	Sanderson Avenue over SR 79[a] Cottonwood Avenue over SR 79[b]

Table 2.2-3 Grade-Separated Interchanges (Ramps): Opening Year (2015) and 20-Year Design Horizon

	Location and Relative Position to Local Cross Streets	
	Opening Year (2015)	**20-Year Design Horizon**
Roadway Segment N	SR 79 over Ramona Expressway[a]	SR 79 over Ramona Expressway[a]
Build Alternative 2a		
Roadway Segment A	SR 79 over Domenigoni Parkway[a]	SR 79 over Domenigoni Parkway[a]
Roadway Segment F	N/A	SR 79 over Future Street A[b, c]
Roadway Segment H	SR 79 over Florida Avenue[a]	SR 79 over Florida Avenue[a]
Roadway Segment I	N/A	Tres Cerritos Avenue over SR 79[b]
Roadway Segment K	N/A	SR 79 over Esplanade Avenue[b]
Roadway Segment L	N/A N/A	Cottonwood Avenue over SR 79[b] Future Street B over SR 79[b, c]
Roadway Segment N	SR 79 over Ramona Expressway[a]	SR 79 over Ramona Expressway[a]
Build Alternative 2b (including Design Option 2b1)		
Roadway Segment B	N/A OR East Newport Road NB off-ramp over SR 79[b]	N/A OR East Newport Road NB off-ramp over SR 79[d]
Roadway Segment D	SR 79 over Domenigoni Parkway[a] N/A	SR 79 over Domenigoni Parkway[a] SR 79 over Future Street A[b, c] OR Future Street A over SR 79[e]
Roadway Segment H	SR 79 over Florida Avenue[a]	SR 79 over Florida Avenue[a]
Roadway Segment I	N/A	Tres Cerritos Avenue over SR 79[b]
Roadway Segment J	N/A	SR 79 over Esplanade Avenue[b]
Roadway Segment M	Sanderson Avenue over SR 79[a] N/A	Sanderson Avenue over SR 79[a] Cottonwood Avenue over SR 79[b]
Roadway Segment N	SR 79 over Ramona Expressway[a]	SR 79 over Ramona Expressway[a]

Source: Final Project Description, November 2007

Note: N/A (Not Applicable) – A grade-separated interchange would not be constructed for this roadway segment in this phase of the Project.

NB – northbound

[a]Grade-separated interchanges constructed for Opening Year (2015) would not be modified prior to the 20-Year Design Horizon.

[b]A bridge would be constructed at this location prior to Opening Year (2015). Ramps would be added to this bridge to form a grade-separated interchange prior to the 20-Year Design Horizon.

[c]A local cross street does not currently exist at this location. This local cross street is part of the City of Hemet or the City of San Jacinto General Plans and is expected to exist prior to the construction of this Project feature.

[d]This roadway segment is part of Build Alternative 1b and/or Build Alternative 2b. Grade-separated interchange design is presented first for the base condition of Build Alternatives 1b and 2b, followed by that for Design Options 1b1 and 2b1. Build Alternatives 1b and 2b do not require a grade separation along Roadway Segment B. However, Design Options 1b1 and 2b1 require that the East Newport Road NB off-ramp be grade separated over proposed SR 79 prior to Opening Year (2015).

[e]This roadway segment is part of Build Alternative 1b and/or Build Alternative 2b. Grade-separated interchange design is presented first for the base condition of Build Alternatives 1b and 2b, followed by that for Design Options 1b1 and 2b1. Build Alternatives 1b and 2b require SR 79 to be grade separated over existing local streets along Roadway Segments C and D by 20-Year Design Horizon. However, Design Options 1b1 and 2b1 require existing local streets to be grade separated over proposed SR 79 by 20-Year Design Horizon.

Prior to the 20-Year Design Horizon, additional grade-separated interchanges would be constructed. The phasing of this construction would not vary between the base condition and the design options. In both the base condition and design option figures, grade-separated interchanges to be built prior to the 20-Year Design Horizon are shown on the right as "Project Features to be Constructed Prior to 20-Year Design Horizon." Phasing of the Project is described further in Section 2.2.1.3 (page 2-20).

Bridges

Bridges would be constructed to separate the realigned SR 79 roadway from existing features, which would include local cross streets, surface waterways, and the San Jacinto Branch Line. For crossings of local streets, realigned SR 79 would be elevated over an at-grade street or constructed at grade with a local cross street elevated over it. SR 79 would be elevated for crossings of water-conveyance facilities and, with the base condition only, the San Jacinto Branch Line. The bridge types have been defined generically for the Project and are summarized in Table 2.2-4. The design of the bridge structures, such as the length, width, and number of footings, would vary depending on the feature to be crossed.

Table 2.2-4 Bridge Types and Definitions

Bridge Type	Definition
Bridge over SR 79	Elevate local traffic over realigned SR 79
Bridge over Local Street	Elevate SR 79 traffic over local cross streets
Bridge over Other Feature	Elevate traffic over nonroadway features such as water-conveyance facilities, railroad tracks, and drainage features
Bridge over Local Street and Other Feature	Elevate traffic over local cross streets and nonroadway features

Source: Final Project Description, November 2007

Bridges would be constructed for both Opening Year (2015) and 20-Year Design Horizon conditions. One bridge constructed for Opening Year (2015) would be removed and replaced with a bridge in a new location prior to the 20-Year Design Horizon. Other bridges constructed for Opening Year (2015) would be widened prior to the 20-Year Design Horizon. Bridge locations are identified by roadway segment in relation to an existing feature, property access, or as identified in the local city general plan for future development and continuity of community access in Table 2.2-5 (page 2-11). Focused views of the bridges to be constructed for the base-condition 20-Year Design Horizon are shown in Figures 2.2-8a through 2.2-8n.

Aqueduct Crossings

An aqueduct crossing is an at-grade crossing of the Colorado River Aqueduct (CRA). The CRA is an underground water-conveyance facility. To protect it from heavy loads and to allow maintenance access, Metropolitan Water District of Southern California has special design parameters for roadways that cross the CRA. These parameters would be required for roadway segments and local street improvements that intersect the CRA. The CRA itself would not be modified. The roadway would be constructed on graded material over the CRA. A concrete encasement would surround the CRA to protect it from embankment and traffic loads. CRA crossings would be constructed prior to Opening Year (2015) and would remain at the 20-Year Design Horizon. Roadway Segments L and M and Sanderson Avenue would intersect the CRA. The locations of these CRA crossings are illustrated in Figures 2.2-8l and 2.2-8m.

Table 2.2-5 Bridges: Opening Year (2015) and 20-Year Design Horizon

	Location and Timing of Construction		Relative Position to Existing Feature
	Opening Year (2015)	20-Year Design Horizon	
Build Alternative 1a			
Roadway Segment A	East Newport Road over SR 79	East Newport Road over SR 79	Bridge over SR 79
	SR 79 over Domenigoni Parkway[a]	SR 79 over Domenigoni Parkway[a]	Bridge over Local Street
	SR 79 over Olive Avenue, Winchester Road, and Salt Creek Channel	SR 79 over Olive Avenue, Winchester Road, and Salt Creek Channel	Bridge over Local Street and Other Feature[b]
Roadway Segment E	SR 79 over Whittier Avenue	SR 79 over Whittier Avenue	Bridge over Local Street
	SR 79 over Patterson Avenue	SR 79 over Patterson Avenue	Bridge over Local Street
	SR 79 over Simpson Road	SR 79 over Simpson Road	Bridge over Local Street
	SR 79 over San Jacinto Branch Line[c]	SR 79 over San Jacinto Branch Line	Bridge over Other Feature[b]
	SR 79 over Ranchland Road[c]	SR 79 over Ranchland Road[a]	Bridge over Local Street
	SR 79 over Stowe Road	SR 79 over Stowe Road	Bridge over Local Street
Roadway Segment G	SR 79 over California Avenue	SR 79 over California Avenue	Bridge over Local Street
	SR 79 over Florida Avenue[a]	SR 79 over Florida Avenue[a]	Bridge over Local Street
Roadway Segment I	Devonshire Avenue over SR 79	Devonshire Avenue over SR 79	Bridge over SR 79
	N/A	Tres Cerritos Avenue over SR 79[a]	Bridge over SR 79
	Tres Cerritos Avenue over the San Diego Canal	Tres Cerritos Avenue over the San Diego Canal[f]	Bridge over Other Feature[b]
Roadway Segment J	SR 79 over Warren Road, Esplanade Avenue, and the San Diego Canal	SR 79 over Warren Road, Esplanade Avenue, and the San Diego Canal[a]	Bridge over Local Street and Other Feature[b]
	SR 79 over Seventh Street	SR 79 over Seventh Street	Bridge over Local Street
	N/A	Esplanade Avenue NB off-ramp over San Diego Canal and Warren Road[a]	Bridge over Local Street and Other Feature[b]
	N/A	Esplanade Avenue SB off-ramp over San Diego Canal, Esplanade Avenue, and Warren Road[a]	Bridge over Local Street and Other Feature[b]
Roadway Segment L	N/A	Cottonwood Avenue over SR 79[a]	Bridge over SR 79
	SR 79 over Casa Loma Canal[d]	SR 79 over Casa Loma Canal	Bridge over Other Feature[b]
	Sanderson Avenue over SR 79	Sanderson Avenue over SR 79	Bridge over SR 79
	N/A	Future Street B[c] over SR 79[a]	Bridge over SR 79

Table 2.2-5 Bridges: Opening Year (2015) and 20-Year Design Horizon

	Location and Timing of Construction		Relative Position to Existing Feature
	Opening Year (2015)	20-Year Design Horizon	
Roadway Segment N	SR 79 over Ramona Expressway[a]	SR 79 over Ramona Expressway[a]	Bridge over Local Street
	SR 79 over Drainage Area	SR 79 over Drainage Area	Bridge over Other Feature[b]
Build Alternative 1b (including Design Option 1b1)			
Roadway Segment B	East Newport Road over SR 79 OR East Newport Road over SR 79 and East Newport NB off-ramp over SR 79[d]	East Newport Road over SR 79 OR East Newport Road over SR 79 and East Newport NB off-ramp over SR 79[d]	Bridge over SR 79 OR Bridge over SR 79[d]
	SR 79 over Patterson Avenue	SR 79 over Patterson Avenue	Bridge over Local Street
	SR 79 over Patton Avenue	SR 79 over Patton Avenue	Bridge over Local Street
Roadway Segment C	SR 79 over Domenigoni Parkway[a]	SR 79 over Domenigoni Parkway[a]	Bridge over Local Street
	SR 79 over Olive Avenue and Salt Creek Channel OR SR 79 over Salt Creek Channel	SR 79 over Olive Avenue and Salt Creek Channel OR SR 79 over Salt Creek Channel	Bridge over Local Street and Other Feature[b] OR Bridge over Other Feature[d]
	SR 79 over Simpson Road OR N/A	SR 79 over Simpson Road OR N/A	Bridge over Local Street OR N/A[d]
	SR 79 over San Jacinto Branch Line and Hemet Channel OR SR 79 over Hemet Channel[d]	SR 79 over San Jacinto Branch Line and Hemet Channel OR SR 79 over Hemet Channel[d]	Bridge over Other Feature[b] OR Bridge over Other Feature[d]
	SR 79 over Ranchland Road[c] OR N/A[d]	SR 79 over Ranchland Road[a] OR Ranchland Road over SR 79[d]	Bridge over Local Street OR Bridge over SR 79[d]
	SR 79 over Stowe Road	SR 79 over Stowe Road	Bridge over Local Street
Roadway Segment G	SR 79 over California Avenue	SR 79 over California Avenue	Bridge over Local Street
	SR 79 over Florida Avenue[a]	SR 79 over Florida Avenue[a]	Bridge over Local Street
Roadway Segment I	Devonshire Avenue over SR 79	Devonshire Avenue over SR 79	Bridge over SR 79
	N/A	Tres Cerritos Avenue over SR 79[a]	Bridge over SR 79
	Tres Cerritos Avenue over the San Diego Canal	Tres Cerritos Avenue over the San Diego Canal[f]	Bridge over Other Feature[b]
Roadway Segment K	SR 79 over Warren Road, Esplanade Avenue, and the San Diego Canal	SR 79 over Warren Road, Esplanade Avenue, and the San Diego Canal[a]	Bridge over Local Street and Other Feature[b]
	SR 79 over Seventh Street	SR 79 over Seventh Street	Bridge over Local Street
	N/A	Esplanade Avenue NB off-ramp over San Diego Canal and Warren Road[a]	Bridge over Local Street and Other Feature[b]
	N/A	Esplanade Avenue SB off-ramp over San Diego Canal, Esplanade Avenue, and Warren Road[a]	Bridge over Local Street and Other Feature[b]

Table 2.2-5 Bridges: Opening Year (2015) and 20-Year Design Horizon

	Location and Timing of Construction		Relative Position to Existing Feature
	Opening Year (2015)	20-Year Design Horizon	
Roadway Segment M	N/A	Cottonwood Avenue over SR 79[a]	Bridge over SR 79
	Sanderson Avenue over SR 79[a]	Sanderson Avenue over SR 79[a]	Bridge over SR 79
	Sanderson Avenue on-ramp over Casa Loma Canal[a]	Sanderson Avenue on-ramp over Casa Loma Canal[a]	Bridge over Other Feature[b]
Roadway Segment N	SR 79 over Ramona Expressway[a]	SR 79 over Ramona Expressway[a]	Bridge over Local Street
	SR 79 over Drainage Area	SR 79 over Drainage Area	Bridge over Other Feature[b]
Build Alternative 2a			
Roadway Segment A	East Newport Road over SR 79	East Newport Road over SR 79	Bridge over SR 79
	SR 79 over Domenigoni Parkway[a]	SR 79 over Domenigoni Parkway[a]	Bridge over Local Street
	SR 79 over Olive Avenue, Winchester Road, and Salt Creek Channel	SR 79 over Olive Avenue, Winchester Road, and Salt Creek Channel	Bridge over Local Street and Other Feature[b]
Roadway Segment F	SR 79 over Whittier Avenue	SR 79 over Whittier Avenue	Bridge over Local Street
	SR 79 over Patterson Avenue	SR 79 over Patterson Avenue	Bridge over Local Street
	SR 79 over San Jacinto Branch Line and Hemet Channel	SR 79 over San Jacinto Branch Line and Hemet Channel	Bridge over Other Feature[b]
	SR 79 over Simpson Road[c]	SR 79 over Simpson Road	Bridge over Local Street
	SR 79 over Future Street A[c, e]	SR 79 over Future Street A[a, e]	Bridge over Local Street
	SR 79 over Stowe Road	SR 79 over Stowe Road	Bridge over Local Street
Roadway Segment H	SR 79 over California Avenue	SR 79 over California Avenue	Bridge over Local Street
	SR 79 over Florida Avenue[a]	SR 79 over Florida Avenue[a]	Bridge over Local Street
Roadway Segment I	Devonshire Avenue over SR 79	Devonshire Avenue over SR 79	Bridge over SR 79
	N/A	Tres Cerritos Avenue over SR 79[a]	Bridge over SR 79
	Tres Cerritos Avenue over the San Diego Canal	Tres Cerritos Avenue over the San Diego Canal[f]	Bridge over Other Feature[b]
Roadway Segment K	SR 79 over Warren Road, Esplanade Avenue, and the San Diego Canal	SR 79 over Warren Road, Esplanade Avenue, and the San Diego Canal[a]	Bridge over Local Street and Other Feature[b]
	SR 79 over Seventh Street	SR 79 over Seventh Street	Bridge over Local Street
	N/A	Esplanade Avenue NB off-ramp over San Diego Canal and Warren Road[a]	Bridge over Local Street and Other Feature[b]
	N/A	Esplanade Avenue SB off-ramp over San Diego Canal, Esplanade Avenue, and Warren Road[a]	Bridge over Local Street and Other Feature[b]

Table 2.2-5 Bridges: Opening Year (2015) and 20-Year Design Horizon

	Location and Timing of Construction		Relative Position to Existing Feature
	Opening Year (2015)	20-Year Design Horizon	
Roadway Segment L	N/A	Cottonwood Avenue over SR 79[a]	Bridge over SR 79
	SR 79 over Casa Loma Canal[d]	SR 79 over Casa Loma Canal	Bridge over Other Feature[b]
	Sanderson Avenue over SR 79	Sanderson Avenue over SR 79	Bridge over SR 79
	N/A	Future Street B[c] over SR 79[a]	Bridge over SR 79
Roadway Segment N	SR 79 over Ramona Expressway[a]	SR 79 over Ramona Expressway[a]	Bridge over Local Street
	SR 79 over Drainage Area	SR 79 over Drainage Area	Bridge over Other Feature[b]
Build Alternative 2b (including Design Option 2b1)			
Roadway Segment B	East Newport Road over SR 79 OR East Newport Road over SR 79 and East Newport NB off-ramp over SR 79[d]	East Newport Road over SR 79 OR East Newport Road over SR 79 and East Newport NB off-ramp over SR 79[d]	Bridge over SR 79 OR Bridge over SR 79[d]
	SR 79 over Patterson Avenue	SR 79 over Patterson Avenue	Bridge over Local Street
	SR 79 over Patton Avenue	SR 79 over Patton Avenue	Bridge over Local Street
Roadway Segment D	SR 79 over Domenigoni Parkway[a]	SR 79 over Domenigoni Parkway[a]	Bridge over Local Street
	SR 79 over Olive Avenue and Salt Creek Channel OR SR 79 over Salt Creek Channel	SR 79 over Olive Avenue and Salt Creek Channel OR SR 79 over Salt Creek Channel	Bridge over Local Street and Other Feature[b] OR Bridge over Other Feature[d]
	SR 79 over Simpson Road[c] OR N/A[d]	SR 79 over Simpson Road OR N/A[d]	Bridge over Local Street OR N/A[d]
	SR 79 over Future Street A[c, e] OR N/A[d]	SR 79 over Future Street A[a, e] OR Future Street A over SR 79[d]	Bridge over Local Street OR Bridge over SR 79[d]
	SR 79 over San Jacinto Branch Line and Hemet Channel OR SR 79 over Hemet Channel[d]	SR 79 over San Jacinto Branch Line and Hemet Channel OR SR 79 over Hemet Channel[d]	Bridge over Other Feature[b] OR Bridge over Other Feature
	SR 79 over Stowe Road	SR 79 over Stowe Road	Bridge over Local Street
Roadway Segment H	SR 79 over California Avenue	SR 79 over California Avenue	Bridge over Local Street
	SR 79 over Florida Avenue[a]	SR 79 over Florida Avenue[a]	Bridge over Local Street
Roadway Segment I	Devonshire Avenue over SR 79	Devonshire Avenue over SR 79	Bridge over SR 79
	N/A	Tres Cerritos Avenue over SR 79[a]	Bridge over SR 79
	Tres Cerritos Avenue over the San Diego Canal	Tres Cerritos Avenue over the San Diego Canal[f]	Bridge over Other Feature[b]

Table 2.2-5 Bridges: Opening Year (2015) and 20-Year Design Horizon

	Location and Timing of Construction		
	Opening Year (2015)	20-Year Design Horizon	Relative Position to Existing Feature
Roadway Segment J	SR 79 over Warren Road, Esplanade Avenue, and the San Diego Canal	SR 79 over Warren Road, Esplanade Avenue, and the San Diego Canal[a]	Bridge over Local Street and Other Feature[b]
	SR 79 over Seventh Street	SR 79 over Seventh Street	Bridge over Local Street
	N/A	Esplanade Avenue NB off-ramp over San Diego Canal and Warren Road[a]	Bridge over Local Street and Other Feature[b]
	N/A	Esplanade Avenue SB off-ramp over San Diego Canal, Esplanade Avenue, and Warren Road[a]	Bridge over Local Street and Other Feature[b]
Roadway Segment M	N/A	Cottonwood Avenue over SR 79[a]	Bridge over SR 79
	Sanderson Avenue over SR 79[a]	Sanderson Avenue over SR 79[a]	Bridge over SR 79
	Sanderson Avenue on-ramp over Casa Loma Canal[a]	Sanderson Avenue on-ramp over Casa Loma Canal[a]	Bridge over Other Feature[b]
Roadway Segment N	SR 79 over Ramona Expressway[a]	SR 79 over Ramona Expressway[a]	Bridge over Local Street
	SR 79 over Drainage Area	SR 79 over Drainage Area	Bridge over Other Feature[b]

Source: Final Project Description, November 2007

Note: N/A (Not Applicable) – A bridge would not be constructed at this location for Opening Year (2015), but would be built as part of a grade-separated interchange (ramp) prior to the 20-Year Design Horizon.

NB – northbound

[a]Bridge is associated with a grade-separated interchange (ramp).

[b]The term “Other Feature” refers to nonroadway features such as water-conveyance facilities (Salt Creek Channel, Hemet Channel, San Diego Canal, Casa Loma Canal, and Colorado River Aqueduct); railroad tracks (San Jacinto Branch Line); and drainage areas (areas of undeveloped land that could accommodate overland water flow from offsite locations).

[c]The bridge constructed at this location for Opening Year (2015) would be widened prior to the 20-Year Design Horizon.

[d]This roadway segment is part of Build Alternative 1b and/or Build Alternative 2b. Bridge design is presented first for the base condition of Build Alternatives 1b and 2b, followed by that for Design Options 1b1 and 2b1.

[e]A local street does not currently exist in this location. This local street is part of the City of Hemet or the City of San Jacinto General Plans and is expected to exist before construction of this Project feature.

[f]The bridge constructed prior to Opening Year (2015) would be removed and replaced by a bridge in a new location prior to the 20-Year Design Horizon.

Local Street Improvements

Local street improvements would be required to provide adequate spacing for at-grade intersections and grade-separated interchanges, as well as sufficient roadway geometry, in compliance with applicable standards. Local street improvements would modify local circulation patterns to maintain traffic flow and control access to the realigned SR 79. Local street improvements include:

- Cul-de-sacs (where realigned SR 79 would close a local street and alter access so that traffic has only one inlet/outlet)
- Realignments (where portions of existing streets would be moved to new locations)
- Access modifications (where access points would be changed and construction of additional roadway would connect the existing local street to a new location)
- Maintenance roads (where access would be provided for maintenance of local canals)

Local street improvements would be required with the base condition for Roadway Segments A, C, E, I, J, K, M, and N and with the design options for Roadway Segments B, C, and D. These improvements would be permanent. The locations, sequences, and types of local street improvements are identified for each roadway segment in Table 2.2-6. Focused views of the local street improvements are shown for the base condition in Figures 2.2-8a, 2.2-8c, 2.2-8e, 2.2-8i, 2.2-8j, 2.2-8k, 2.2-8m, and 2.2-8n.

With the design options, the locations and designs of local street improvements along Roadway Segments B, C, and D would vary from the base condition. The improvements required for Roadway Segments B, C, and D with the design options are shown in Figures 2.2-9 through 2.2-11. In each figure, the base condition for each roadway segment is on the left, and the design option is on the right.

Table 2.2-6 Local Street Improvements: Opening Year (2015) and 20-Year Design Horizon

	Location and Timing of Construction		Type
	Opening Year (2015)	**20-Year Design Horizon**	
Build Alternative 1a			
Roadway Segment A	Winchester Road	N/A	Cul-de-sac
Roadway Segment G	N/A	N/A	N/A
Roadway Segment I	Warren Road	N/A	Realignment
Roadway Segment J	Alabaster Drive/Esplanade Avenue[a]	N/A	Access Modification
	Maze Stone Court/Warren Road[b]	N/A	Access Modification
Roadway Segment L[c]	N/A	N/A	N/A
Roadway Segment N	Sanderson Avenue	N/A	Realignment
Build Alternative 1b (including Design Option 1b1)			
Roadway Segment B	N/A OR Winchester Road[d]	N/A OR Winchester Road[d]	N/A OR Access Modification[d]
Roadway Segment C	N/A	N/A OR Simpson Road[d]	N/A OR Cul-de-sac
	N/A OR Olive Avenue[d]	N/A	N/A OR Cul-de-sac[d]
	Milan Road	N/A	Cul-de-sac
	East Grand Avenue	N/A	Cul-de-sac
Roadway Segment G	N/A	N/A	N/A

Table 2.2-6 Local Street Improvements: Opening Year (2015) and 20-Year Design Horizon

	Location and Timing of Construction		
	Opening Year (2015)	20-Year Design Horizon	Type
Roadway Segment I	Warren Road	N/A	Realignment
Roadway Segment K	Alabaster Drive/Esplanade Avenue[a]	N/A	Access Modification
	Maze Stone Court/Warren Road[b]	N/A	Access Modification
Roadway Segment M	Sanderson Avenue Casa Loma Canal	N/A	Realignment Maintenance Road
Roadway Segment N	Sanderson Avenue	N/A	Realignment
Build Alternative 2a			
Roadway Segment A	Winchester Road	N/A	Cul-de-sac
Roadway Segment F	N/A	N/A	N/A
Roadway Segment H	N/A	N/A	N/A
Roadway Segment I	Warren Road	N/A	Realignment
Roadway Segment K	Alabaster Drive/Esplanade Avenue[a]	N/A	Access Modification
	Maze Stone Court/Warren Road[b]	N/A	Access Modification
Roadway Segment L[c]	N/A	N/A	N/A
Roadway Segment N	Sanderson Avenue	N/A	Realignment
Build Alternative 2b (including Design Option 2b1)			
Roadway Segment B	N/A OR Winchester Road[d]	N/A OR Winchester Road[d]	N/A OR Access Modification[d]
Roadway Segment D	N/A	N/A OR Simpson Road	N/A OR Cul-de-sac[d]
	N/A OR Olive Avenue[d]	N/A	N/A OR Cul-de-sac[d]
Roadway Segment H	N/A	N/A	N/A
Roadway Segment I	Warren Road	N/A	Realignment
Roadway Segment J	Alabaster Drive/Esplanade Avenue[a]	N/A	Access Modification
	Maze Stone Court/Warren Road[b]	N/A	Access Modification
Roadway Segment M	Sanderson Avenue Casa Loma Canal	N/A	Realignment Maintenance Road
Roadway Segment N	Sanderson Avenue	N/A	Realignment

Source: Final Project Description, November 2007

Note: N/A (Not Applicable) – A local street improvement is not associated with this roadway segment for this phase of the Project.

[a]An additional portion of existing Alabaster Drive would be constructed north of Esplanade Avenue to provide an at-grade intersection with SR 79 for Esplanade Avenue.

[b]An additional portion of existing Maze Stone Court would be constructed north of Esplanade Avenue to provide access to Warren Road during Opening Year (2015).

[c]A local street, Sanderson Avenue, is located along this roadway segment. However, improvements to Sanderson Avenue would be associated with bridge construction at this location and would not be included as part of local street improvements identified in this table.

[d]This roadway segment is part of Build Alternative 1b and/or Build Alternative 2b. Local street improvements are presented first for the base condition of Build Alternatives 1b and 2b, followed by Design Options 1b1 and 2b1.

Drainage Facilities

Drainage facilities would be permanent features and would be required for Project operation. As discussed in greater detail in Section 3.2.2.3 (page 3-301), the drainage facilities would minimize adverse effects to water quality, maintain onsite drainage, and direct offsite storm water away from the Project. Drainage facilities would be located within the Project ROW and would consist of the following:

- Treatment Best Management Practices (treatment BMPs)
- Storm Water Conveyance Facilities (to manage onsite and offsite storm water flows)

Treatment Best Management Practices

Treatment BMPs would be part of the drainage facilities, thus would be located inside the Project ROW. The types of treatment BMPs to be implemented (infiltration device, Austin sand filter, detention basin, or biofiltration system) will depend on site-specific conditions and will be determined during final design.

Storm Water Conveyance Facilities

Storm water conveyance facilities are required to ensure proper onsite drainage for the Project and to maintain existing offsite water flows in the Project area. Onsite storm water is the surface runoff from paved areas of the Project, while offsite storm water flows are generated in areas outside the Project facilities and need to be conveyed from one side of the Project to the other. Thus the storm water conveyance facilities for the Project would be one of two types, for onsite drainage or for offsite drainage. Drainage facilities associated with the Project would be designed to maintain existing flow patterns whenever possible.

Onsite Drainage Facilities

Onsite drainage facilities, typically consisting of drainage pipes, inlets, and outlets, would ensure proper drainage by directing onsite storm water flows to a treatment BMP facility and ultimately to a flood control facility (expected to be Hemet Channel or Salt Creek Channel). Onsite drainage facilities would be located inside the Project ROW, with specific locations to be determined during the final design phase of the Project.

Offsite Drainage Facilities

Offsite drainage facilities would consist of culverts and roadside ditches. Culverts would maintain existing offsite flows by allowing storm water to pass under the Project roadway from one side to the other. Roadside ditches would redirect storm water away from the roadway. Roadside ditches would ultimately connect to existing flood control facilities (expected to be Hemet Channel or Salt Creek Channel). Offsite drainage facilities would be inside the Project ROW except for connections to existing flood control facilities, as discussed in Connections to Hemet Channel Outside the Project ROW on page 2-19. The specific locations of offsite drainage facilities will be determined during the final design phase of the Project.

2.2.1.2 Unique Features of Build Alternatives

Unique design features of the Project include the specific locations of common features in addition to unique design features are that only found in particular Build alternatives. Unique design features only found in particular Build alternatives include:

- Utility Relocation Areas
- Connections to Hemet Channel Outside the Project ROW

Utility Relocation Areas

To comply with Department policy that excludes them from the ROW of a limited-access expressway, utilities would be relocated to areas outside the Project ROW. These areas can be local streets, cul-de-sacs, or designated utility corridors (Department 2006). Two areas outside the Project ROW have been designated as utility corridors. The utility relocation areas would be established in two permanent utility easements. Utility Relocation Areas 1 and 2 would ensure that the Project would not interrupt existing utility services and that it would adhere to established Department policy. Study areas have been designated that extend 152.4 m (500 ft) beyond the boundary of each of the utility relocation areas.

Utility Relocation Area 1 would be immediately west of Roadway Segments G and H, just north of State Route 74 (SR 74)/Florida Avenue and south of Devonshire Avenue. An overhead line currently runs down Hyatt Avenue. Utility Relocation Area 1 would realign the overhead line along the outside of the southbound off-ramp proposed at Florida Avenue.

Utility Relocation Area 2 would be immediately west of Roadway Segments L, M, and N, north of the CRA. It would end south of the northern terminus of Roadway Segment N. An overhead line currently runs down Sanderson Avenue. Utility Relocation Area 2 would realign the overhead line along the west side of the new SR 79 roadway and back to the existing line location at Sanderson Avenue.

The utility relocation areas are shown as unique design features in Figure 2.2-12 and with their associated study areas in Figures 2.2-13a and 2.2-13b.

Connections to Hemet Channel Outside the Project ROW

The offsite drainage facilities would be inside the Project ROW, except at the connections to Hemet Channel, as discussed earlier in this section. Connections to Hemet Channel outside the Project ROW would convey storm water away from the Project to specific discharge points in Hemet Channel. Each connection would consist of a pipe culvert, an outlet, and erosion-control features to protect the bed and banks of Hemet Channel against scouring. Because these connections would be established outside the Project ROW but on Riverside County Flood Control and Water Conservation District property, they would require encroachment permits. Study areas have been designated that extend 152.4 m (500 ft) beyond each of the connections.

Connections outside the Project ROW are proposed at three discharge points into Hemet Channel, near Roadway Segments E and F. Connections 1 and 2 would be to the east of Roadway Segment E, south of the San Jacinto Branch Line. Connection 3 would be to the north of Roadway Segment F, south of Simpson Road. Connections 1 and 2 would be required for Build Alternatives 1a and 2a. Connection 3 would be required for Build Alternative 2a only. Build Alternatives 1b and 2b would not require connections to Hemet Channel.

The connections are shown as unique design features in Figure 2.2-12 and with their associated study areas in Figures 2.2-14a and 2.2-14b.

2.2.1.3 Project Phasing

In the event that funding for the entire Project is not available at one time as it is currently programmed, an alternate approach has been developed to construct the Project in four phases. This approach could be implemented to construct the Project in four phases, no matter which alternative is identified as the Selected Alternative. Figure 2.2-26 shows the overview of the four phases, and Figures 2.2-27a through 2.2-27d show the four phases in more detail.

The Construction Staging Analysis for SR 79 Realignment, April 2008, was conducted to identify appropriate phasing for the construction of the Project. The analysis identified the improvements needed in the corridor to maintain acceptable traffic operations over time as the new segments of the Project are built. The identification and prioritization of the phases was based on evaluating both the traffic and excavated material (to be used to construct the embankment for the SR 79 roadway) needs, with traffic being the primary driver. The phasing analysis determined congested locations in the Project corridor during various interim timeframes, and the resulting phasing plan identified Phase 1 (Florida Avenue to Sanderson Avenue) as the highest priority with the most significant traffic benefits. By constructing this segment first, it would have the most improvement to current traffic because it would help divert much of the regional traffic off local roads (Florida Avenue [east of the San Diego Canal], Warren Road, and Sanderson Avenue) and onto the new Project roadway. Phase 1 work also makes sense from a construction standpoint because the excavated material from the Hemet Hills would be used for all four phases.

Construction of Phases 2 and 3 would be completed next to maintain acceptable traffic operations on local streets in Hemet and San Jacinto. The traffic analysis recommended that Phases 2 and 3 be completed concurrently. Finally, construction of Phase 4 would complete the new Project roadway and provide acceptable traffic relief and improvements.

Although the construction of the Project could be phased, the FHWA Major Project deliverables would be completed for the entire Project addressed in this Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The Project qualifies for this program because construction costs are expected to exceed $500 million. Consistent with the current Major Project Deliverable Timeline required by FHWA, the following activities would be completed during their specified timeframes.

- Draft Project Management Plan (PMP) – submitted 60 days prior to submission of Final EIR/EIS
- Final PMP – submitted 90 days after signing the Record of Decision, subsequently updated 90 days prior to start of new phase or based on significant change
- Cost Estimate Review – conducted 30 days before completing the Final EIR/EIS and when starting construction
- Initial Financial Plan (IFP) – submitted during Final Design/Right-of-Way and approved prior to authorization of Federal Financial Assistance for construction and for each annual update

If a decision is made to phase the construction of the Project, an Operational Independence and Non-Concurrent Construction (OINCC) analysis would be conducted per the FHWA Major Project Guidance. This analysis would be completed for each of the phases described below and would meet the independent utility and logical termini requirements pursuant to 23 Code of Federal Regulations (CFR) 771.111(f).

Phase 1

Phase 1 (Figure 2.2-27a) would begin at Florida Avenue and end at Sanderson Avenue for Build Alternatives 1b and 2b (and Design Options 1b1 and 2b1). It would begin at Florida Avenue and end at Future Street "B" for Build Alternatives 1a and 2a. The rest of the Phase 1 description would be the same for all alternatives.

Starting from Florida Avenue, this phase would include a northbound on-ramp to SR 79 and a southbound off-ramp to Florida Avenue. These ramps would be west of the San Diego Canal and east of California Avenue. A new traffic signal would be installed at each of these connections. A bridge would be constructed over Florida Avenue so that trucks can access earthwork material from a borrow site located south of Florida Avenue. This bridge would be placed to eliminate any interruption to Florida Avenue traffic. The new SR 79 southbound lanes would be used to haul earthwork material to other locations along the Project alignment where such material would be needed.

Northward on SR 79, a bridge would be built over SR 79 at Devonshire Avenue. Traffic, during construction of this bridge, could continue on Warren Road to the east and California Avenue to the west, with connections to each of these via Florida Avenue to the south. Continuing north, there would be a signalized intersection at SR 79 and Tres Cerritos Avenue. Tres Cerritos would then be connected to Warren Road on the east by the construction of a bridge over the San Diego Canal. The alignment would then continue north, parallel to the San Diego Canal. Just south of Esplanade Avenue, the alignment would curve to the east and cross the canal, Warren Road, and Esplanade Avenue. A signalized intersection would be placed north of Esplanade Avenue at SR 79. The alignment would then continue north over Seventh Street and come to another signalized intersection at Cottonwood Avenue. For Build Alternatives 1a and 2a, the alignment would continue north, ending at a signalized intersection with Future Street B.

Phase 2

Phase 2 (Figure 2.2-27b) would realign SR 79 from Domenigoni Parkway to Florida Avenue. Starting from Domenigoni Parkway, this phase would include a northbound on-ramp and a loop ramp onto SR 79 and a southbound off-ramp to Domenigoni Parkway. The SR 79 northbound bridge would be built over Domenigoni Parkway, and the haul route would be realigned to continue on the SR 79 southbound lanes for large trucks hauling earthwork material to other locations along the alignment.

At this point in Phase 2, each Build alternative and design option would differ from the others in the direction of the alignment and modifications to local roads. This makes it necessary to discuss each one separately. For clarity, some amplifying statements are repeated from one alternative to the next.

Build Alternative 1a

With Build Alternative 1a, starting north from Domenigoni Parkway, a bridge would be built over Salt Creek Channel, Olive Avenue, and Winchester Road. From there, the alignment would continue northeast, crossing over

Whittier Avenue, Patterson Avenue, and Simpson Road. The alignment would then cross over the San Jacinto Branch Line and continue north over Ranchland Road, where a full interchange would be constructed.

Build Alternative 1b

With Build Alternative 1b, starting north from Domenigoni Parkway, a bridge would be built over Salt Creek Channel and Olive Avenue. From there, the alignment would continue north, crossing over Simpson Road, then over Hemet Channel and the San Jacinto Branch Line. It would continue north over Ranchland Road, where a full interchange would be constructed.

Design Option 1b1

With Design Option 1b1, starting north from Domenigoni Parkway, a bridge would be built over Salt Creek Channel. Olive Avenue would be closed by permanent cul-de-sacs on the east and west sides of SR 79. From there, the alignment would continue north to Simpson Road, which also would be closed by permanent cul-de-sacs on the east and west sides of SR 79. The alignment would then cross over Hemet Channel. The crossing at the San Jacinto Branch Line would be near ground level. The embankment and structural section of the roadway at the San Jacinto Branch Line would be placed on top of the tracks. It would not sever the rail line, so access could be restored if rail traffic develops. The alignment would then continue north to Ranchland Road, which would bridge over SR 79, and a full interchange would be constructed.

Build Alternative 2a

With Build Alternative 2a, starting north from Domenigoni Parkway, a bridge would be built over Salt Creek Channel, Olive Avenue, and Winchester Road. From there, the alignment would continue east-northeast, crossing over Whittier Avenue, Patterson Avenue, and Simpson Road. The alignment would then continue north to a grade-separated interchange at Future Street A. From there, the roadway would bridge over Hemet Channel and the San Jacinto Branch Line.

Build Alternative 2b

With Build Alternative 2b, starting north from Domenigoni Parkway, a bridge would be built over Salt Creek Channel and Olive Avenue. From there, the alignment would continue north, crossing over Simpson Road and Future Street A, then over Hemet Channel and the San Jacinto Branch Line.

Design Option 2b1

With Design Option 2b1, starting north from Domenigoni Parkway, a bridge would be built over Salt Creek Channel. Olive Avenue would be closed by permanent cul-de-sacs on the east and west sides of SR 79. From there, the alignment would continue north, closing Simpson Road with permanent cul-de-sacs on the east and west sides of SR 79. It would then continue north to Future Street A, which would bridge over SR 79, and a full interchange would be constructed. The alignment would then cross over Hemet Channel. The crossing at the San Jacinto Branch Line would be near ground level. The embankment and structural section of the roadway at the

San Jacinto Branch line would be placed on top of the tracks. It would not sever the rail line, so access could be restored if rail traffic develops.

All Build Alternatives and Design Options

North of Ranchland Road (Build Alternatives 1a and 1b and Design Option 1b1) or the San Jacinto Branch Line (Build Alternatives 2a and 2b and Design Option 2b1), Phase 2 would be the same for all alternatives and both design options. The alignment would continue north over Stowe Road and cut into a large hill. The material from cutting through this hill would be used as embankment material along the Project. Emerging north from the hill, SR 79 would cross over California Avenue and tie into the improvements made at Florida Avenue during Phase 1. The tie-in would complete the full interchange at Florida Avenue. This interchange would include the northbound off-ramp, southbound on-ramp, and southbound loop ramp onto SR 79. The bridge over Florida Avenue would be completed for the SR 79 northbound lanes.

Phase 3

Phase 3 (Figure 2.2-27c) would begin from where Phase 1 ended at either Sanderson Avenue for Build Alternatives 1b and 2b (and Design Options 1b1 and 2b1) or Future Street B for Build Alternatives 1a and 2a and end just south of the San Jacinto River, where the new alignment would tie into existing SR 79. For Build Alternatives 1b and 2b (and Design Options 1b1 and 2b1), this phase would improve the intersection at Sanderson Avenue to a full interchange, with northbound and southbound loop ramps and on-ramps onto SR 79 and a southbound off-ramp to Sanderson Avenue. Sanderson Avenue would be realigned with a temporary detour during the construction of the bridge over SR 79. A bridge would be built for the southbound on-ramp over the Casa Loma Canal, but no impacts to traffic would occur. A driveway would be relocated for access into and out of the water treatment facility. From there, the alignment would continue north to a grade-separated interchange at Ramona Expressway. For Build Alternatives 1a and 2a, this phase would improve the intersection at Future Street B to a full interchange, with a northbound on-ramp and a southbound off-ramp onto SR 79. From there, the alignment would continue east, then north to a grade-separated interchange at Ramona Expressway.

Existing Sanderson Avenue would be realigned west of SR 79 and would bridge over the new alignment for Build Alternatives 1a and 2a. For Build Alternatives 1b and 2b, Sanderson Avenue would be realigned parallel to SR 79. For all Build alternatives and both design options, Sanderson Avenue would end at a signalized T-intersection with Ramona Expressway.

For all Build alternatives and both design options, the alignment would continue north to a grade-separated interchange at Ramona Expressway. A long bridge would be built over the Ramona Expressway. Farther north, there would be a smaller bridge over a drainage facility. A temporary detour would be provided for traffic during construction of this phase.

Phase 4

For all Build alternatives and both design options, Phase 4 (Figure 2.2-27d) would begin south of Newport Road and end at Domenigoni Parkway, where it would tie into the improvements made during Phase 2. The alignment would continue northeast for Build Alternatives 1b and 2b (and Design Options 1b1 and 2b1) or slightly northwest for Build Alternatives 1a and 2a, and Newport Road would bridge over SR 79. A temporary detour would be created for traffic during construction. For Design Options 1b1 and 2b1, Newport Road would be a grade-separated interchange.

With Build Alternatives 1b and 2b (and Design Options 1b1 and 2b1), the alignment would continue north, crossing over Patterson Avenue and Patton Avenue, then continuing to Domenigoni Parkway. With Build Alternatives 1a and 2a, the alignment would continue northwest. Here, for all Build alternatives and both design options, the southbound SR 79 bridge would be constructed, and the southbound loop and on-ramp to SR 79 and the northbound off-ramp to Domenigoni Parkway would be constructed to complete the interchange.

2.2.2 Transportation System Management and Transportation Demand Alternatives

Transportation Systems Management (TSM)/Transportation Demand Management (TDM) measures are strategies to enhance the efficiency of the transportation system while lowering cost. TSM measures seek to increase the number of vehicle trips that can be carried without adding lanes. TDM focuses on regional strategies for reducing vehicle trips and miles traveled and increasing vehicle occupancy. Based on the 2010 Census, the City of Hemet population was approximately 78,000 and the City of San Jacinto population was approximately 37,000. As identified in California Government Code § 65080(b)(1), the policy element of transportation planning agencies is based on populations that exceed 200,000 persons for their regional transportation plans in regards to the development of measures of mobility and traffic congestion, including, but not limited to, daily vehicle hours of delay per capita and vehicle miles traveled per capita.

The population for the Project urban areas is not larger than 200,000 persons and as a result does not meet the requirements of California Government Code § 65080. Therefore, a separate TSM/TDM alternative was not evaluated for the Project.

However, TSM/TDM strategies were considered in the definition of the Project purpose and need, and appropriate measures have been incorporated into the design of the Build alternatives. The Project facility is designed for limited access, with grade-separated interchanges to enhance travel efficiency and improve local and regional traffic flow. The Project is associated with right-of-way allowances that support the implementation of such TSM measures as ramp metering and enforcement areas. In addition, the facility would not preclude future (as yet undefined) multimodal transportation systems.

2.2.3 No Build (No Action) Alternative

The No Build Alternative would require no action by the Project proponent. Existing and projected capacity and operational benefits would not be realized. Existing SR 79 would not be realigned, ROW would not be acquired, and roadway construction would not occur.

The assumptions used for the traffic analysis of the No Build Alternative at the 20-Year Design Horizon of the Project (2035) include:

- The Mid County Parkway (formerly Cajalco/Ramona Corridor) would be a four-lane expressway.
- Arterial streets would be built to city or county general plan classification standards by 2035.
- Improvements planned by the Department and the County of Riverside for the portion of SR 79 between Hunter Road and Newport Road would be in place. There would be no further improvements on this portion of SR 79 before 2035.
- All regional facilities would be in accordance with the SCAG RTP.

The portion of SR 79 proposed for realignment would remain in place and unchanged, as shown in Figure 1.1-2. The selection of the No Build Alternative would not preclude construction of projects currently included in the General Plans of Riverside County, the City of Hemet, and the City of San Jacinto or any projects that might be proposed in the future.

2.2.4 Comparison of Alternatives

A comparison of the environmental impacts expected from the Project alternatives and design options is in Table S-1 (page ix), included in the Summary at the beginning of this Draft EIR/EIS.

RCTC and the Department have not identified a Preferred Alternative for the Project. However, two of the three local jurisdictions have taken action to document their Locally Preferred Alternative.

The City of San Jacinto adopted Resolution No. 2309, dated August 2, 2001, indentifying a Locally Preferred Alternative (San Jacinto 2001). Its Locally Preferred Alternative is the easternmost alignment through the city, Roadway Segments N, M, and K, which was subsequently included in their updated general plan (San Jacinto 2006).

The City of Hemet also adopted Resolution No. 4216, dated May 13, 2008, to identify the alignment of its Locally Preferred Alternative as Build Alternative 2. The intent of this resolution was to replace the Locally Preferred Alternative specified in the 1992 Hemet General Plan, which had been eliminated from the Project (Hemet 2008). As part of this process, the City of Hemet proposed and elected on May 24, 2005, to adopt an "Interim Urgency Ordinance" establishing the Western Hemet Planning Area and temporary development regulations applicable to this Planning Area, pending completion of a comprehensive and collaborative planning process. That effort has since been completed with the adoption of the 2012 Hemet General Plan (Hemet 2012), which includes a narrative and figure (Figure 4.1, Roadway Circulation Master Plan) in Chapter 4, Circulation, that shows the alignment consistent with Resolution No. 4216. The alignment shown in Figure 4.1 of the 2012 Hemet General Plan is consistent with Project Roadway Segments J/K, I, H, D, and B.

The Locally Preferred Alternatives identified by San Jacinto and Hemet are compatible, in that they connect and can operate as intended. The County of Riverside has not identified a Locally Preferred Alternative.

After the public circulation period, all comments will be considered, and the Department will identify a Preferred Alternative that most effectively meets the stated purpose and need. The Department will make the final determination of the Project's effect on the environment, using factors such as impacts to community and natural environment and Project costs. In accordance with CEQA, the Department will certify that the Project complies with CEQA, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that will not be mitigated below a level of significance, and certify that the findings contained in the Statement of Overriding Considerations have been considered prior to Project approval. The Department will then file a Notice of Determination with the State Clearinghouse that will identify whether the Project will have significant impacts, if mitigation measures were included as conditions of Project approval, that findings were made, and that a Statement of Overriding Considerations was adopted. With respect to NEPA, the Department, as assigned by FHWA, will document and explain its decision regarding the Selected Alternative, Project impacts, and mitigation measures in a Record of Decision in accordance with NEPA.

2.2.5 Alternatives Considered But Eliminated from Further Discussion

This section of the document describes the process undertaken and the resulting alternatives evaluated for the Project. The alternatives eliminated prior to the preparation of this Draft EIR/EIS are also identified, which are no longer considered viable for the Project.

2.2.5.1 Route Concept Report (1992)

The project development process was begun in 1992 with the release of the Route Concept Report for SR 79 (Department 1992). Within the document, the intent to realign this portion of SR 79 and the concept for the ultimate facility type were stated. The conclusion of this report was to initiate a study to analyze potential alternatives for the proposed Project.

2.2.5.2 State Route 79 Realignment Study Report (1998)

The State Route 79 Realignment Study Report (January 1998) documented the first attempt to identify alternatives for the proposed Project. The alternatives developed included the No Build alternative, as well as eight design alternatives. This included four alternatives for the southern section (Domenigoni Parkway to north of Devonshire Avenue) and four for the northern section (north of Devonshire Avenue to Gilman Springs Road) of the San Jacinto Valley. They are identified as Alternatives A through H in the report and are included in Appendix J of this document (Volume 2). The material in the Realignment Study Report was used to initiate a discussion of the proposed Project with the public and regulatory agencies. The report concluded with documentation of the meetings and did not eliminate any of the alternatives from further study.

2.2.5.3 Project Study Report/Project Development Support (2002)

Following the completion of the Realignment Study Report (1998), a study was prepared to advance the detail on the alternatives considered for the Project. The Project Study Report/Project Development Support (PSR/PDS) (2002) was undertaken to advance the concepts for the alternatives for the proposed Project. Because of this study, the initial eight design sections were improved to create a number of alternative segments for the Project. The locations of these segments in the San Jacinto Valley are shown in Exhibit H of the PSR/PDS and are included in Appendix J (Volume 2). The segments that were determined acceptable to move forward in the process are shown in blue. Those that were not found acceptable are shown in red. Summaries of the eliminated segments are provided below.

Segment WR – As stated in the PSR/PDS, this alignment runs on top of existing Warren Road, which would remove the capacity of the existing road from the local circulation. Segment WR was eliminated because it would have created a regulatory constraint due to the inconsistency with the City of San Jacinto Circulation Element of the General Plan because it would remove that segment of Warren Road from the local circulation identified within the General Plan.

Segment 5N – This alignment also runs on top of existing Warren Road, which would remove the capacity of the existing road from the local circulation. Segment 5N was eliminated because it would have created a regulatory constraint due to the inconsistency with the City of San Jacinto Circulation Element of the General Plan because it would remove that segment of Warren Road from the local circulation identified within the General Plan.

Segment 6N – This alignment cuts several parcels at a diagonal. Segment 6N was eliminated because the large skew angle between the SR 79 and Ramona Expressway would require a much longer structure than a perpendicular crossing and the interchange geometrics would require a larger amount of land to provide proper intersection geometrics for the ramp intersections.

Segment 3N – This alignment was modified to become Alignment 3NR as shown in Exhibit B. Segment 3N was eliminated because it would not be compatible with current Caltrans design standards. Interchanges would have a smaller skew angle, which would be on a large radius curve such that it would require a large amount of land to provide the necessary turning movements when compared with a standard perpendicular crossing at existing and/or planned future interchanges.

Segment 2N – This alignment impacts the wetlands area adjacent to the wastewater treatment plant. Segment 2N was eliminated to avoid a regulatory constraint. Segment 2N was not compatible with current and planned land uses (public wastewater treatment facility) and would have impacted biological resources (wetlands).

Segment 4N – This alignment also impacts the wetlands area adjacent to the wastewater treatment plant. Segment 4N was eliminated to avoid a regulatory constraint. Segment 4N was not compatible with current and planned land uses (public wastewater treatment facility) and would have impacted biological resources (wetlands).

Segment 1N – This alignment is too close to existing Sanderson Avenue and would create geometry at its crossing of Sanderson Avenue that would not be compatible with current Caltrans design standards. The skew angle between Sanderson Avenue and the proposed alignment would require major realignment of Sanderson for an at-grade intersection in the expressway condition and for a freeway condition the structure would be very long over Sanderson. Also, the geometrics for an interchange with Sanderson and SR 79 would not be standard. A far greater amount of land would be needed than with a perpendicular crossing.

Segment 1M – This alignment impacts the vernal pool complex on the east side of the San Diego Canal. There was a preliminary biological resources survey prepared in 2001. The survey found that the alignment would have occurred on top of two of the largest vernal pool complexes in the playa, which contained listed plant species. It would have eliminated a great deal of the playa (estimated at 25 to 40 percent), potentially disrupted the hydrology for half of the playa, and eliminated 2 of the 3 largest vernal pools in the complex. Segment 1M was eliminated to avoid a regulatory constraint and impacts to biological resources of the vernal pool complex, which is regulated by USACE, CDFW, and RWQCB as it is a Water of the U.S. per Section 404 of the Clean Water Act.

Segment 2M – Similar to Segment 1M, this alignment impacts the vernal pool complex on the east side of the San Diego Canal. There was a preliminary biological resources survey prepared in 2001. The survey found that the alignment would have occurred on top of two of the largest vernal pool complexes in the playa, which contained listed plant species. It would have eliminated a great deal of the playa (estimated at 25 to 40 percent), potentially disrupted the hydrology for half of the playa, and eliminated 2 of the 3 largest vernal pools in the complex. Segment 2M was eliminated to avoid a regulatory constraint and impacts to biological resources of the vernal pool complex, which is regulated by USACE, CDFW, and RWQCB as it is a Water of the U.S. per Section 404 of the Clean Water Act.

Segment 5S – This alignment was shifted to the west to provide greater separation from the end of the runway at the Hemet-Ryan Airport. SR 79 is required to be far enough west to provide room for the runway expansion and for the realignment of Warren Road. Segment 5S was revised to meet FAA design standards for a runway protection zone. As such, Segment 5S was eliminated and replaced with Segment 2MR.

Segment 2S – This alternative was eliminated because it did not meet the Project's purpose and need. As stated in the PSR/PDS, this alignment utilizes existing Domenigoni Parkway between Winchester Road and California Avenue, which combines east-west traffic with north-south traffic and minimizes the overall capacity of this link in the overall highway system.

Segment 1S – This alternative was eliminated to avoid a regulatory constraint. As discussed in the PSR/PDS, this alignment would run adjacent to and just south of Domenigoni Parkway between Winchester Road and California Avenue. This would impact habitat for the Quino Checkerspot Butterfly, which is a listed species regulated by USFWS, and would also make the geometrics of an interchange with Domenigoni Parkway not compatible with current Caltrans design standards.

Segment 4S – This alignment would have paralleled the railroad tracks, either being north of the railroad or having the railroad tracks in the median of SR 79. It was concluded that the vernal pools present east of California Avenue and north of the railroad would make any construction on the north side of the railroad tracks undesirable from an environmental standpoint. Segment 4S was eliminated to avoid a regulatory constraint, as it would have an increased impact to potential biological resources. Segment 4S is being carried forward as Alignment 4SR and will run on the south side of the railroad tracks to avoid the impact to the vernal pools.

Sanderson Avenue – This alignment would have upgraded existing Sanderson Avenue to expressway standards; however, this alternative was found to be unreasonable because of the existing development, numerous signals, and driveway connections along Sanderson Avenue. This alternative would also not meet the Project's purpose and need as it would remove the capacity of the existing road.

Existing SR 79 – The alternative of upgrading the existing SR 79 alignment was eliminated as unreasonable because of the existing development, numerous traffic signals, and private driveway connections along alignment.

As stated in the PSR/PDS, upgrading this alignment to expressway standards would result in massive disruption to the business districts of these communities and would not be compatible with adjacent land uses. Moreover, this alternative would not meet the Project's purpose and need as it would remove the capacity of the existing road.

The segments considered appropriate for further study are shown in Exhibit B of the PDR/PDS and are included in Appendix J (Volume 2). These include Segment WRR, Segment 6S, Segment 2MR, Segment 3MR, Segment 4SR, and Segment 3SR.

2.2.5.4 Final Project Criteria and Alternatives Selection for Preliminary Agreement (June 2004)

As part of the project development process, the state and federal resource agencies were consulted regarding the proposed Project. Resource agency meetings were initiated during the preparation and review of the Project's Purpose and Need (2003), as specified under the NEPA/404 Integration Process. This approach was adopted for the Project because construction had the potential to permanently impact more than 5 acres of jurisdictional wetlands. During this early consultation, the resource agencies identified that the biological resources within the areas of the San Jacinto Valley, primarily in an alkali vernal pool/playa complex in Hemet, were deemed so biologically sensitive (supporting threatened and endangered species, some endemic) that a more comprehensive review of the proposed Project Build alternatives was requested to be undertaken. This resulted in a more comprehensive approach to reviewing all possible alignment alternatives in the San Jacinto Valley for the Project.

As part of this process, 91 roadway segments between Domenigoni Parkway and Gilman Springs Road were identified. Included in the 91roadway segments were the segments evaluated in the PSR/PDS. This meant that any alternative previously considered and/or eliminated for the Project as part of the PSR/PDS was now being reconsidered for the Project. To analyze each segment, they were classified by type and then screened against essential Project criteria. Segments were eliminated from further evaluation if they were inconsistent with the Project purpose and need or were otherwise infeasible or avoidable based on constructibility, environmental impacts, or reasonability. Based on criteria screening, 30 segments were eliminated from further evaluation. Eleven segments were eliminated for MSHCP avoidance, five segments were eliminated because of community impact avoidance, six segments were eliminated for Section 4(f) avoidance, four segments were eliminated because of inconsistencies with the Project purpose and need, three segments were eliminated for Hemet Ryan Airport avoidance, and one segment was eliminated for landfill avoidance. In addition, 11 segments were eliminated from further evaluation due to their connection to an eliminated segment and subsequent isolation from the remaining viable segments. All of the roadway segments reviewed in this process are shown in Figure ES of the 2004 Final Project Criteria and Alternatives Selection for Preliminary Agreement, which is included in Appendix J (Volume 2). Each of the eliminated segments is shown in a color that identifies the criterion applied to remove it from further evaluation. Those segments that were deemed appropriate for further analysis are shown in Figure E3 of the 2004 Final Project Criteria and Alternatives Selection for Preliminary Agreement, which is also included in Appendix J (Volume 2). This analysis was documented in the report Final Project Criteria and Alternatives Selection for Preliminary Agreement (June 2004).

Based on the results of the screening evaluation described above, segments were considered collectively to identify complete alignment alternatives for further study. In areas where more than one segment remained and similarities occurred (i.e., adjacent location or connection points from and to other segments), an "Alignment Review Area" was created. The Alignment Review Areas created for the remaining roadway segments are shown in Figure K of the 2004 Final Project Criteria and Alternatives Selection for Preliminary Agreement and consolidated and shown in Figure L1 of that document. Both figures are included in Appendix J (Volume 2).

At the conclusion of this report, three alignment alternatives containing Alignment Review Areas (corridors) were identified and proposed for further analysis for the Project. They included the Western, Central, and Eastern alignments (Figures L2, L3, and L4 of the 2004 Final Project Criteria and Alternatives Selection for Preliminary Agreement [see Appendix J, Volume 2]). The resource agencies approved these alignment alternatives for the Project, as documented in the correspondence for Preliminary Agreement pursuant to the NEPA/404 MOU.

2.2.5.5 Value Analysis Study Report (2006)

A Value Analysis (VA) Study was conducted for the Project to review alternatives to optimize Project design with respect to costs and impacts. Through this process, a new VA alternative was identified and accepted for the Project, as shown in Number 3.1.2 of the 2006 Value Analysis Study Report (see also Appendix J [Volume 2]). This alternative was determined acceptable because it would reduce the environmental impact and improve the separation between regional and local traffic in the area. This alternative was named the "Midwestern Alternative."

2.2.5.6 Supplemental Information for Project Criteria and Alternatives Selection for Updated Preliminary Agreement (May 2005) and Request for Updated Preliminary Agreement for Project Criteria and Alternatives Selection and Responses (August 2005)

After the Preliminary Agreement was issued, new information was acquired for the Project and shared with the resource agencies. As a result, FHWA made a request to the resource agencies to remove Segment 6 from the Project and substitute the New Alternative for the Eastern Alternative. Segment 6 was determined, with the assistance of USFWS, to impact Southwestern Riverside County Multi-Species Reserve. Segment 6 was eliminated to avoid impacts to the Southwestern Riverside County Multi-Species Reserve. The Eastern Alternative was proposed to be eliminated to minimize substantial community impacts. This information is documented in Supplemental Information for Project Criteria and Alternatives Selection for Updated Preliminary Agreement (May 2005) The locations of the segments removed from further analysis are shown in Figure E4 of that document (see also Appendix J [Volume 2]). Segment 6 and the Eastern Alternative are shown in red in Figure E4. In addition, 8 segments (Segments 17, 27, 28, I-K, K-M, M-U, W-Z, and FF-NN), shown in yellow in Figure E4, were eliminated from further evaluation due to their connection to an eliminated segment and subsequent isolation from the remaining viable segments. The proposed eliminations were approved by the resource agencies (Updated Preliminary Agreement), and the Eastern Alignment and the isolated segments were eliminated from further consideration for the Project.

The remaining roadway segments for this analysis are shown in Figure E5 of the 2005 Supplemental Information for Project Criteria and Alternatives Selection for Updated Preliminary Agreement (also in Appendix J [Volume 2]). The corresponding alternative corridors, Western (Corridor 1), Central (Corridor 2), and Midwestern

(Corridor 3), are shown, respectively, in Figures L5 through L8 of that document and included in Appendix J (Volume 2). This decision was documented in Request for Updated Preliminary Agreement for Project Criteria and Alternatives Selection and Responses (August 2005).

During the process of obtaining Updated Preliminary Agreement, the City of Hemet proposed and elected on May 24, 2005, to adopt an "Interim Urgency Ordinance" establishing the Western Hemet Planning Area and temporary development regulations applicable to this Planning Area, pending completion of a comprehensive and collaborative planning process. The intent of this ordinance was to provide the Project technical team time to complete the review of the Midwestern Alternative prior to making decisions on the development applications in the immediate area of the alternative.

Subsequent to the technical review, the City of Hemet changed its designation of the Locally Preferred Alternative from the alignment shown in the 1992 Hemet General Plan (Central Alternative [Corridor 2]) to the Midwestern Alternative (Corridor 3). This was documented in the City of Hemet Resolution No. 4216, dated May 13, 2008. As a result of this action, the Central Corridor was also eliminated from further study for the Project.

2.2.5.7 Additional Coordination

Refinement of the Western, Midwestern, and Central Alignments continued in 2006 and 2007. As a result of the environmental field survey work done on all the alternatives, it became apparent that the Central Alignment would heavily impact the vernal pool complex that is south of Florida Avenue and east of the San Diego Canal. Other segments carried forward would not have as large an environmental impact on vernal pool resources as the Central Alignment. After discussions with the various stakeholders, it was agreed to eliminate the Central Alignment from further consideration to avoid impacts to vernal pools, biological resources, and MSHCP proposed conservation areas. The Central Alignment is shown as Alignment Review Area A in Figures L5 and L7 of the 2005 Supplemental Information for Project Criteria and Alternatives Selection for Updated Preliminary Agreement (also in Appendix J [Volume 2]).

Once this was accomplished, the Western and Midwestern alignments were renamed as Alternative Corridors 1 and 2, respectively. Build Alternatives 1a, 1b, 2a, and 2b were established to represent four sets of possible roadway segment combinations from those two corridors. This naming convention was then carried forward into formal scoping and the preparation of the technical reports for the Project. These Build alternatives are also described in this chapter and shown in Figures 2.2-5a, 2.2-5b, 2.2-6a, 2.2-6b.

2.2.5.8 Winchester Homeowners Association Comments (2009)

In May 2009, comments were received from the public (specifically the Winchester Homeowners Association [HOA] and the County of Riverside) regarding the design of the Project. The Winchester HOA requested that two items be considered in a modified design. The first was a lower profile of the roadway south of Stowe Road. The second was access at Newport Road. Because of the comments received, the Project alternatives were modified and now include design options (Design Option 1b1 and 2b1) to the base condition for Build Alternatives 1b and 2b. The design options are shown in Figure 2.2-7b (Design Option 1b1) and Figure 2.2-7d (Design Option 2b1). The design options include variations in access at SR 79/Winchester Road, Olive Avenue, Simpson

Road, and Ranchland Road/Future Street A. They also include a lower roadway profile for Roadway Segments B, C, and G in Design Option 1b1 and Roadway Segments B, D, and H in Design Option 2b1, generally from Domenigoni Parkway north to Florida Avenue. Stakeholders were informed about the proposed design options, and their feedback was positive. In June 2009, the design options were incorporated into the Project.

2.3 Permits and Approvals Needed

The permits and approvals required for the Project are listed in Table 2.3-1. In addition, following certification of the Final EIR/EIS by the Department, this EIR/EIS may be used for related discretionary actions under CEQA, including general plan amendments by Riverside County and the Cities of Hemet and San Jacinto.

Table 2.3-1 Permits and Approvals Needed

Agency	Permit/Approval	Status
Federal		
United States Army Corps of Engineers (USACE)	• Individual Section 404 permit for impacts to waters of the United States[a]	A Department of the Army Individual Permit application will be submitted after identification of a Preferred Alternative for the Project.
United States Department of Transportation Federal Highway Administration (FHWA)	• Draft Project Management Plan • Cost Estimate/Financial Plan	These plans will be developed after a Preferred Alternative is identified for the Project and will be submitted prior to the final NEPA determination.
California Department of Transportation, on behalf of United States Department of Transportation Federal Highway Administration	• Section 4(f) Determination	Section 4(f) use will not occur for parks, recreation facilities, or wildlife refuges. Section 4(f) use will occur to the Colorado River Aqueduct (historic property), as it is on or eligible on the NRHP under Criterion A as a driving and enabling force for the economic development of Southern California, and under Criterion C as a marvel of civil engineering. The evaluation of historic resources has not been completed. The archaeological excavations and associated cultural landscape/historic district analysis of 28 sites to further document the potential impacts will be completed between the Draft and Final EIR/EIS after the identification of the Preferred Alternative, in order to reduce the amount of disruption and impact to potentially sensitive sites. After completion of the technical study, the Department and RCTC will circulate the revised Cultural Resources section and Appendix B of this Draft EIR/EIS in order to meet our commitments of public comments and disclosure on the potential impacts to Section 4(f) resources if applicable (i.e., that the resource triggers the requirements of Section 4(f)). The appropriate sections of the Final EIR/EIS will be revised accordingly based on our findings and coordination with SHPO.

Table 2.3-1 Permits and Approvals Needed

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	• Section 7 consultation for threatened and endangered species[a] • Consistency Determination required per the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)[a] • A Determination of Biological Equivalent or Superior Preservation (DBESP) for Criteria Area species required per the Western Riverside County MSHCP[a]	Consultation to be conducted following identification of a Preferred Alternative for the Project.
State		
California Department of Fish and Game	• Consistency Determination required per the Western Riverside County MSHCP[a] • A Determination of Biological Equivalent or Superior Preservation (DBESP) for Criteria Area species required per the Western Riverside County MSHCP[a] • Streambed Alteration Agreement	Coordination to be conducted and applications to be submitted after identification of the Preferred Alternative and prior to construction.
California Transportation Commission	• Route adoption[b]	Coordination to be conducted based on Final EIR/EIS and after Record of Decision.
Regional Water Quality Control Board	• Section 401 Water Quality Certification[a] • Section 402 National Pollutant Discharge Elimination System (NPDES):[c] – NPDES Permit: Order No. 99-06-DWQ, NPDES No. CAS000003 – Construction General Permit: Order No. 2009-0009-DWQ, NPDES No. CAS000002	Notice of Intent (NOI) will be submitted prior to start of construction. If applicable, a separate dewatering permit will be requested from the Santa Ana Regional Water Quality Control Board for the San Jacinto Watershed; the permit number is NPDES CAG 998001.
State Historic Preservation Office	Section 106 compliance: • Historic Property Determinations of Eligibility – Finding of Effect – Resolution of Adverse Effects, Memorandum of Agreement (MOA)	Coordination to be conducted after identification of the Preferred Alternative and prior to publication of the Final EIR/EIS.
Regional/Local		
Riverside County and Cities of Hemet and San Jacinto	• Freeway Agreement between each local entity and the Department[b] • Street construction permits, approval of street closures and rerouting, and associated improvements within the public ROW[b] • Noise variance for temporary exceedance of noise ordinances during Project construction[b] • Riverside County MS4 Permit (Order No. R8-2010-0033, NPDES No. CAS618033	Coordination to be conducted and approvals/permits to be issued prior to construction.
Riverside County Flood Control and Water Conservation District (RCFCWCD)	Encroachment permit for improvements affecting RCFCWCD facilities[c]	Coordination to be conducted based on final design and prior to construction.
Western Riverside County Regional Conservation Authority	Consistency Determination required per the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)[a]	Coordination to be conducted following identification of a Preferred Alternative for the Project.

Source: [a]Natural Environmental Study, April 2010

[b]Draft Project Report, January 2013

[c]Final Water Quality Assessment Report, May 2008

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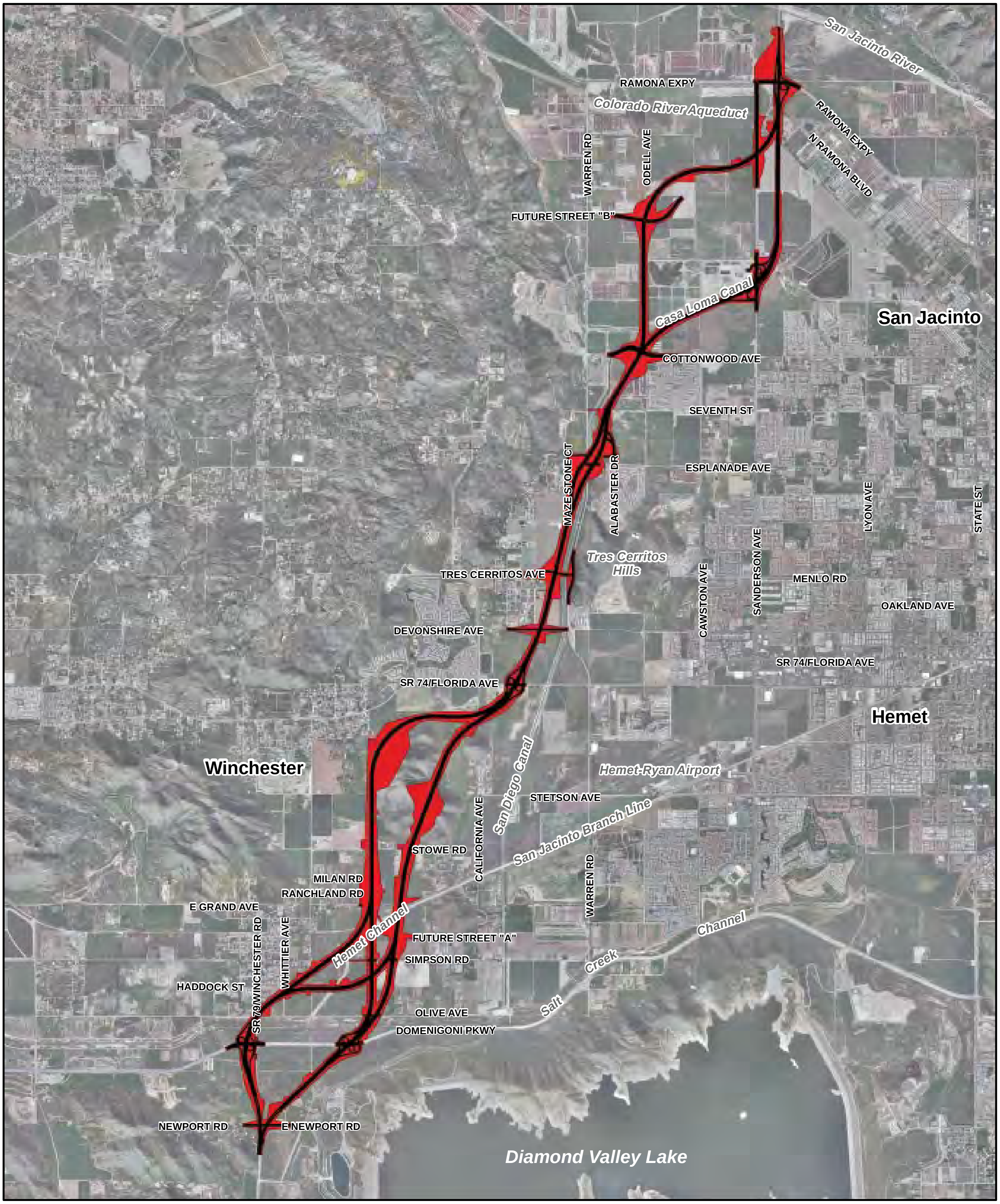

Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

Project Roadway and Local Street Improvements

Project Impact Area

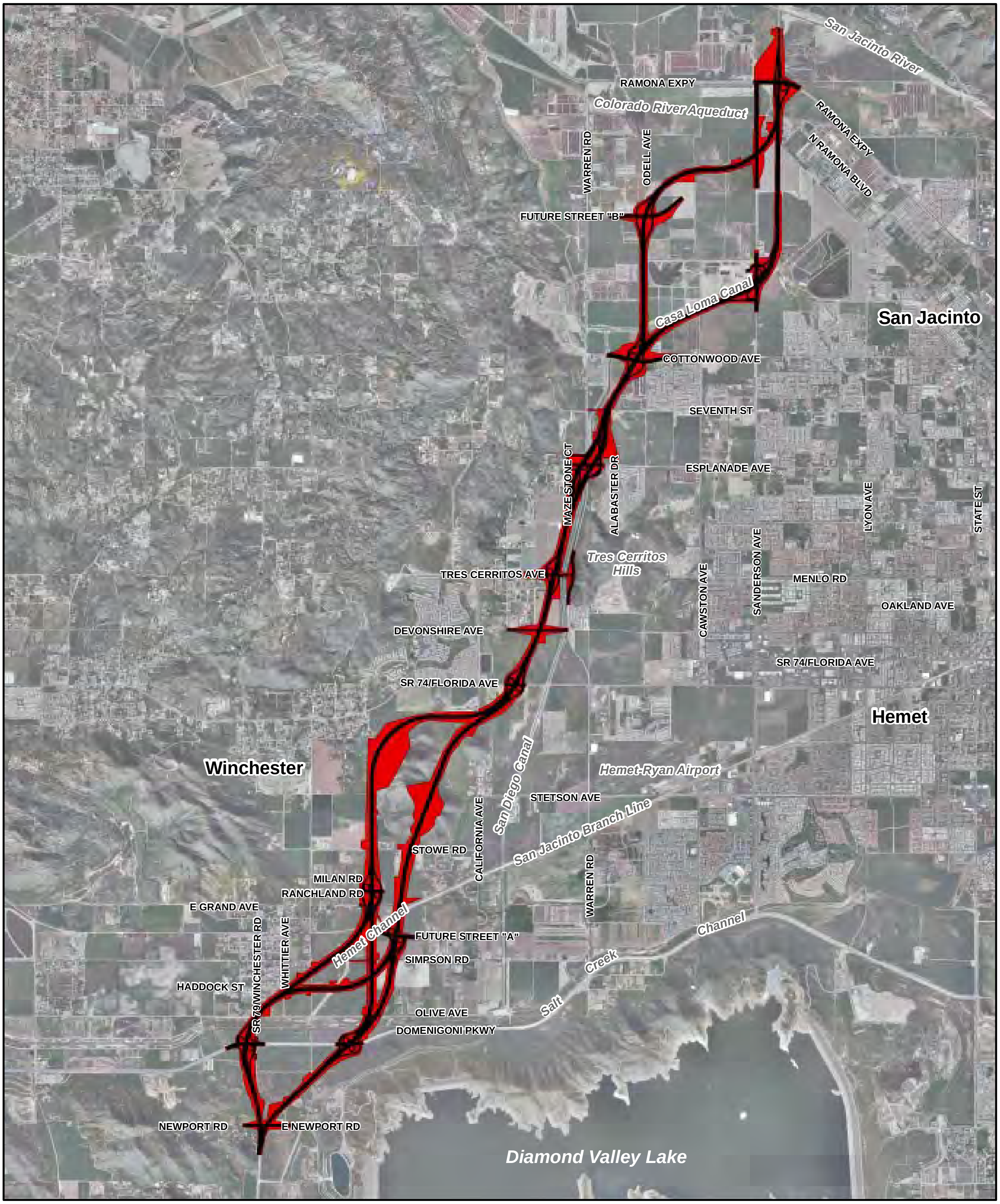
0 7,000 Feet

0 1,500 Meters

1:84,000

Figure 2.2-1
Build Alternatives
Opening Year (2015)

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

Project Roadway and Local Street Improvements

Project Impact Area

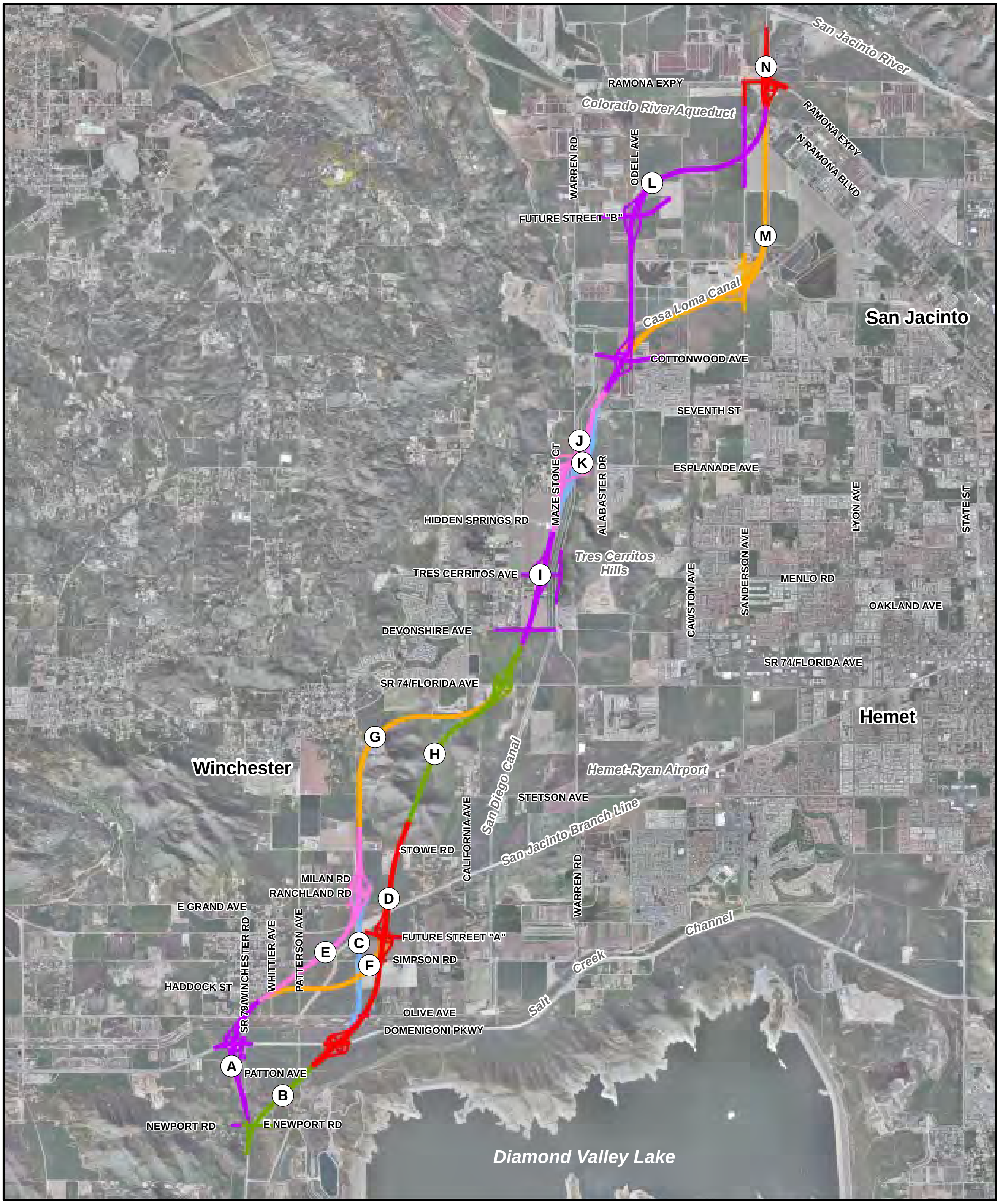
0 7,000 Feet

0 1,500 Meters

1:84,000

Figure 2.2-2
Build Alternatives
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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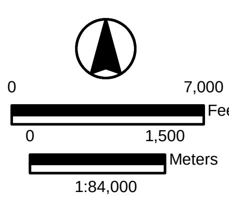
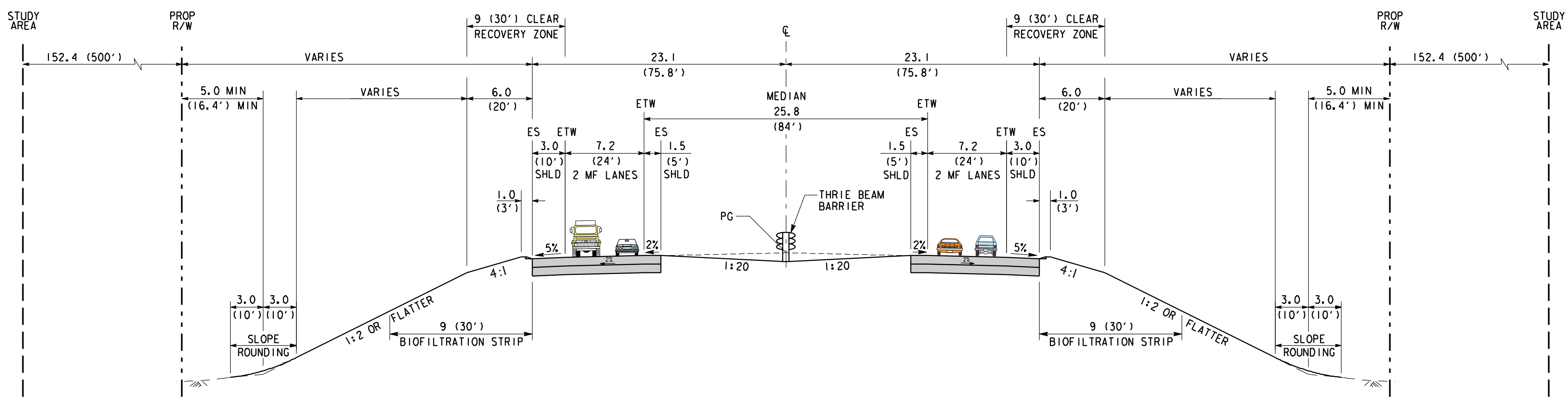


Note: This figure depicts the proposed roadway alignment by roadway segment. The roadway segments are shown in multiple colors to differentiate them from each other. The colors and letters shown on the roadway alignment identify independent roadway segments that have been assembled to create Project Build alternatives.

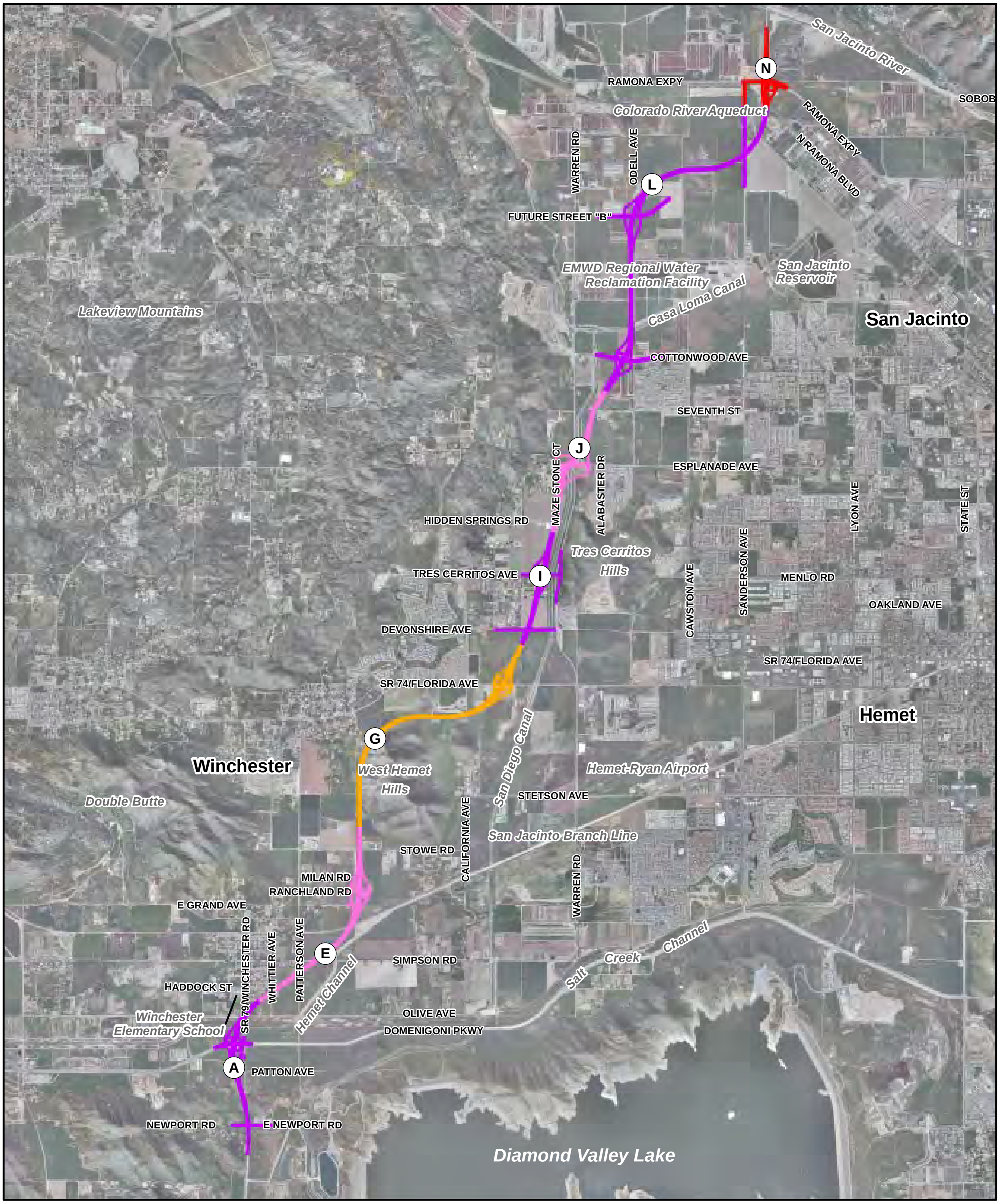
Figure 2.2-3
Project Roadway Segments

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Source: Final Project Description, November 2007

Figure 2.2-4
Typical Roadway Cross-Section
Limited-Access Expressway
Draft Environmental Impact Report/Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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Note: This figure depicts the proposed roadway alignment by roadway segment. The roadway segments are shown in multiple colors to differentiate them from each other. The colors and letters shown on the roadway alignment identify independent roadway segments that have been assembled to create Project Build alternatives.

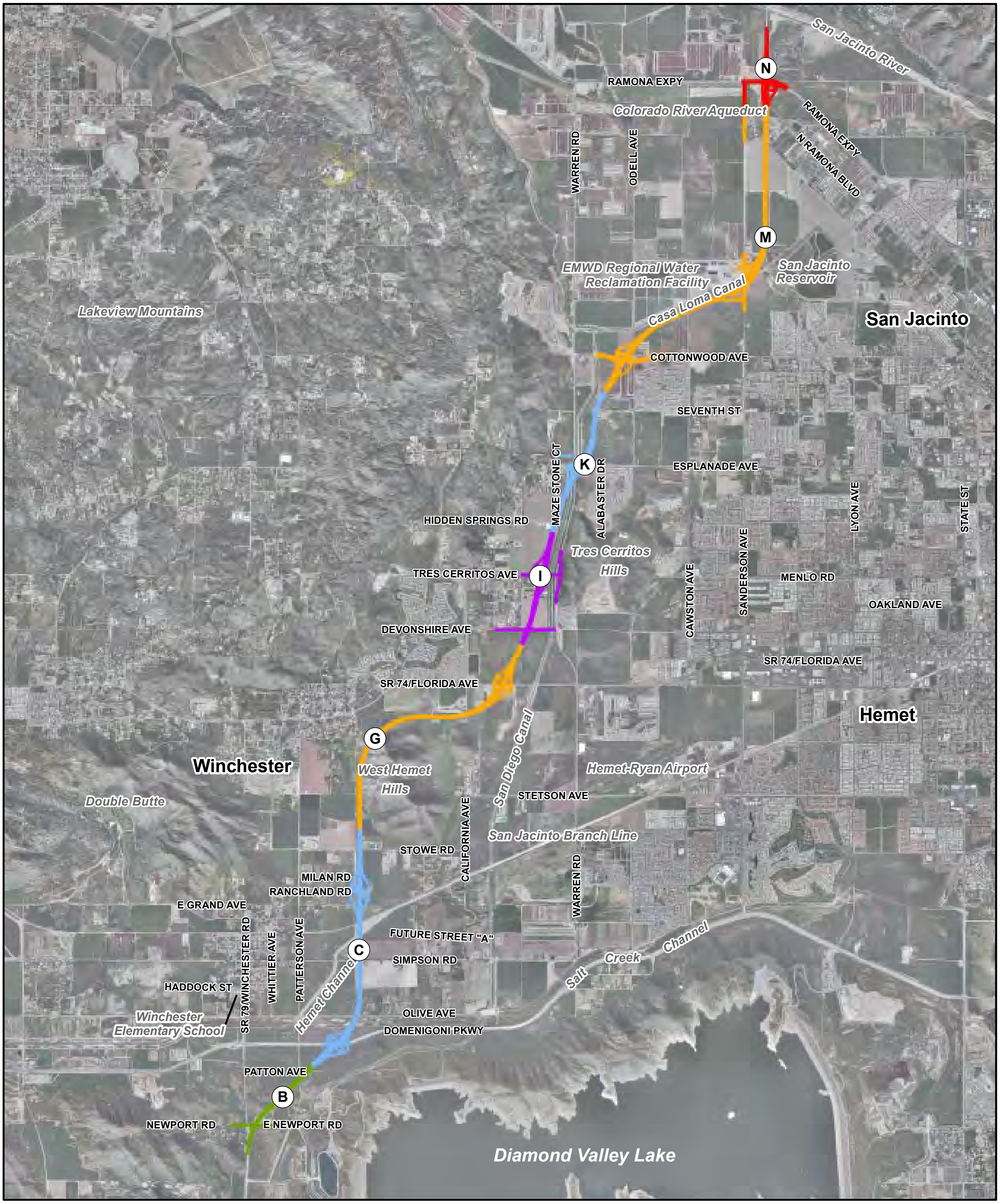
0 7,000 Feet

0 1,500 Meters

1:84,000

Figure 2.2-5a
Build Alternative 1a

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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Note: This figure depicts the proposed roadway alignment by roadway segment. The roadway segments are shown in multiple colors to differentiate them from each other. The colors and letters shown on the roadway alignment identify independent roadway segments that have been assembled to create Project Build alternatives.

0 7,000 Feet
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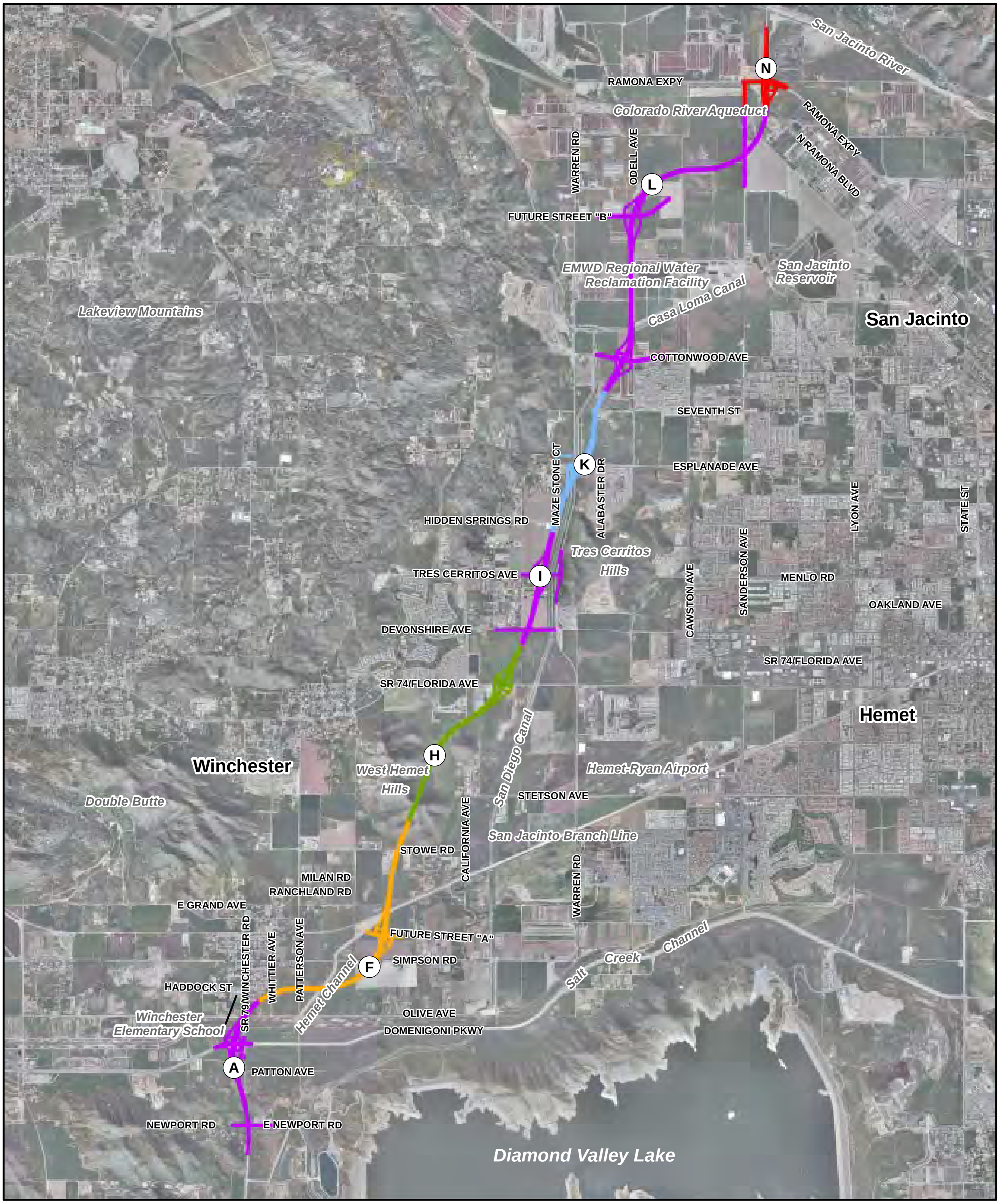
1:84,000

Figure 2.2-5b
Build Alternative 1b and Design Option 1b1

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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Note: This figure depicts the proposed roadway alignment by roadway segment. The roadway segments are shown in multiple colors to differentiate them from each other. The colors and letters shown on the roadway alignment identify independent roadway segments that have been assembled to create Project Build alternatives.

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0 1,500 Meters

1:84,000

Figure 2.2-6a
Build Alternative 2a

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

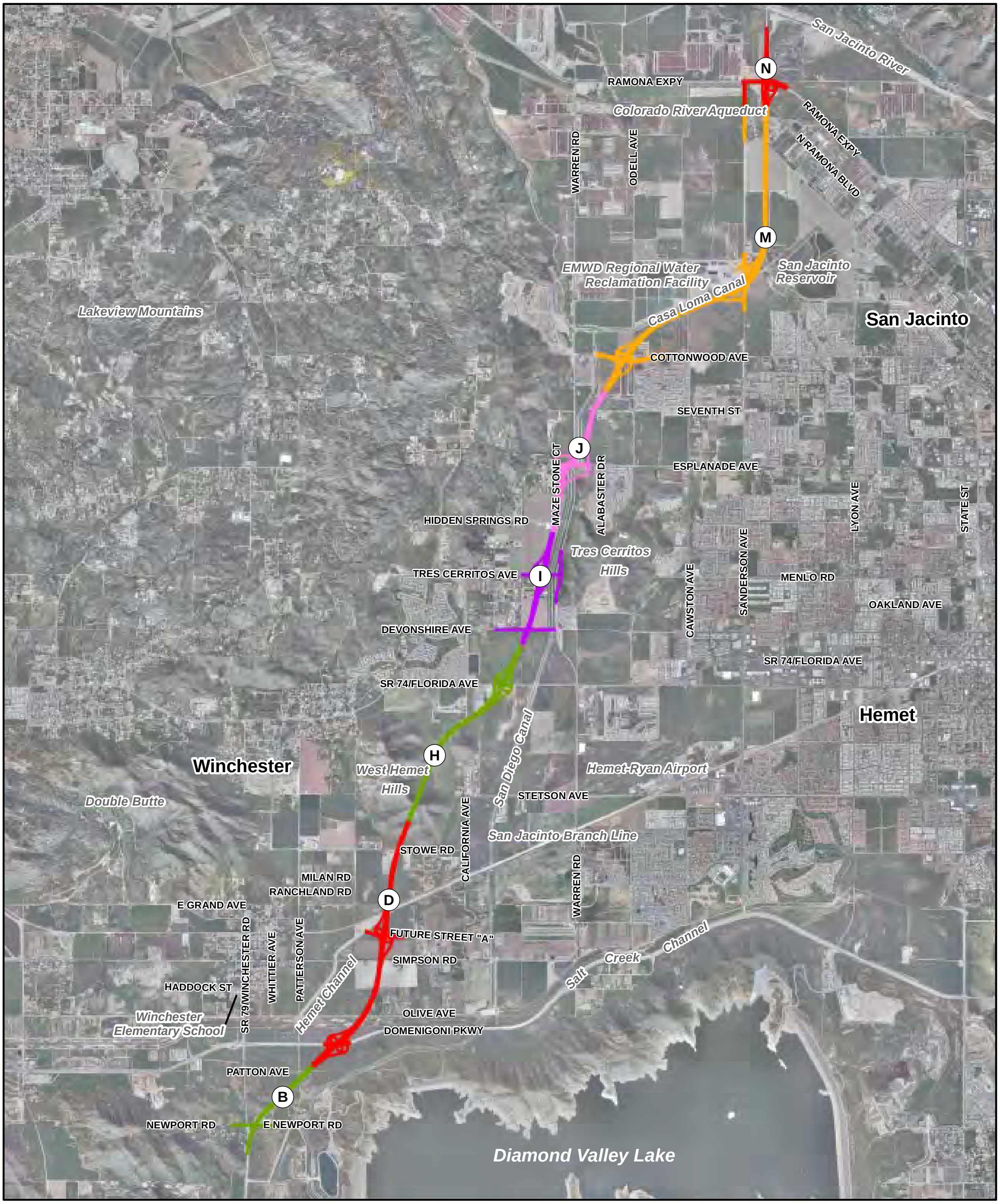

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Figure 2.2-6b
Build Alternative 2b
and Design Option 2b1

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

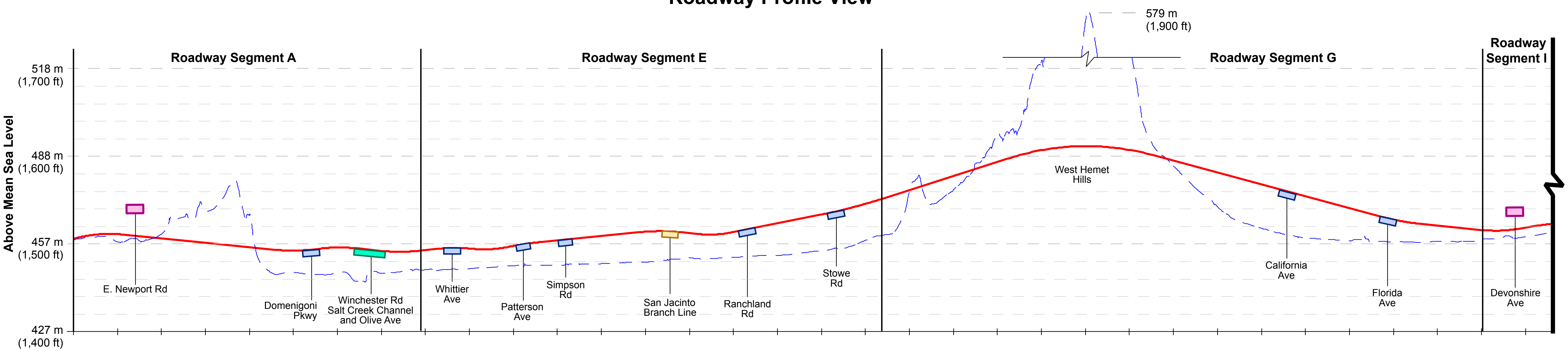
0 7,000 Feet
0 1,500 Meters
1:84,000

Note: This figure depicts the proposed roadway alignment by roadway segment. The roadway segments are shown in multiple colors to differentiate them from each other. The colors and letters shown on the roadway alignment identify independent roadway segments that have been assembled to create Project Build alternatives.

Roadway Plan View

Aerial Date: June 2009, Lenska Aerial Images, Inc.

Roadway Profile View



LEGEND:

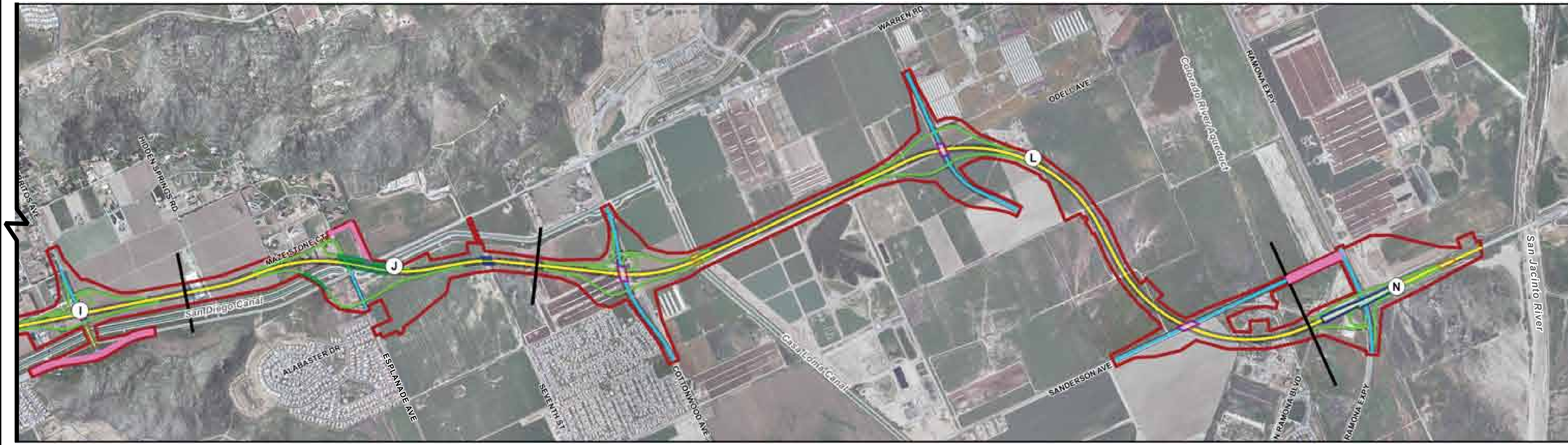
- Existing Topography
- Roadway Profile
- Project Roadway
- Roadway Segment Match Line
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Local Street Improvement
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Project Right-of-Way

NORTH
Not to Scale
Figure is intended for graphic depiction only.

Source: Project Description, 2007

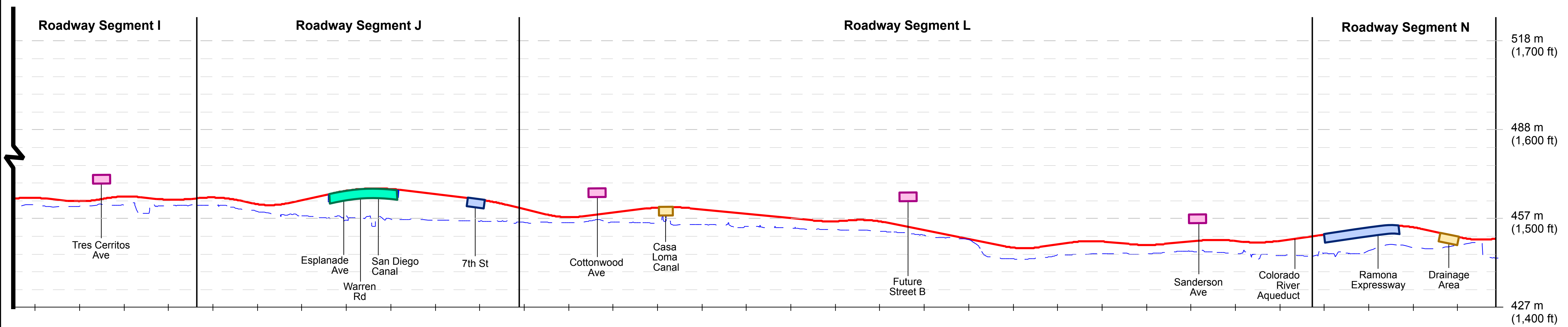
Figure 2.2-7a 1 of 2
Build Alternative 1a Plan and Profile
20-Year Design Horizon
Draft Environmental Impact Report/Environmental Impact Statement
State Route 79 Realignment Project

Roadway Plan View



Aerial Date: June 2009, Lenska Aerial Images, Inc.

Roadway Profile View



LEGEND:

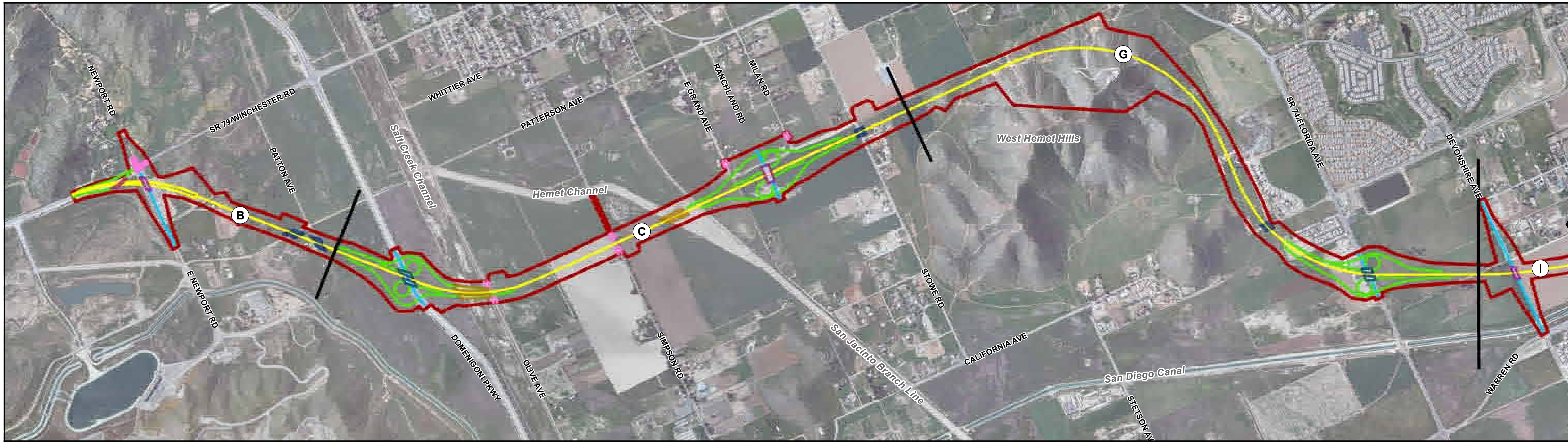
- Existing Topography
- Roadway Profile
- Project Roadway
- Roadway Segment Match Line
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Local Street Improvement
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Project Right-of-Way

Source: Project Description, 2007

NORTH
Not to Scale
Figure is intended for graphic depiction only.

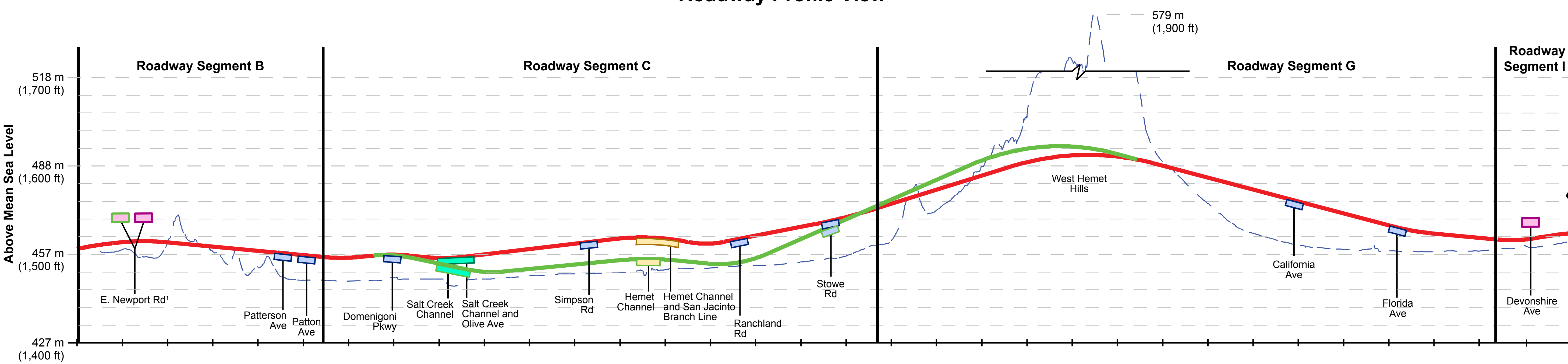
Figure 2.2-7a 2 of 2
Build Alternative 1a Plan and Profile
20-Year Design Horizon
Draft Environmental Impact Report/Environmental Impact Statement
State Route 79 Realignment Project

Roadway Plan View



Aerial Date: June 2009, Lenska Aerial Images, Inc.

Roadway Profile View



LEGEND:

- Existing Topography
- Roadway Profile
- Project Roadway
- Design Option
- Roadway Segment Match Line
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Local Street Improvement
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Project Right-of-Way

NORTH

Not to Scale

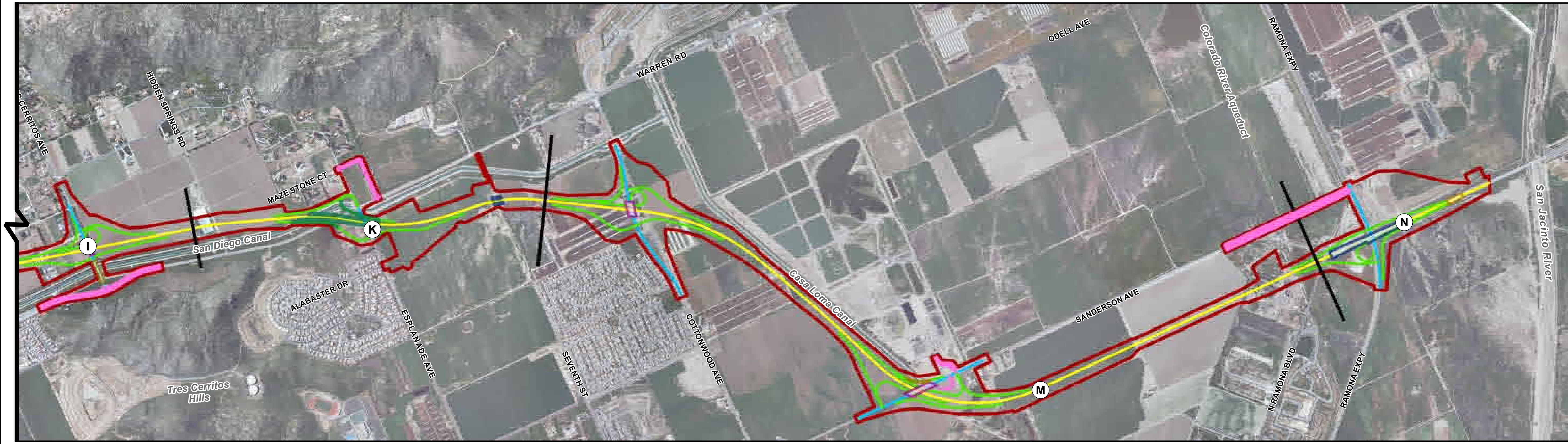
Figure is intended for graphic depiction only.

Note: [1]With the Base Condition, East Newport Road would be bridged over SR 79. With the Design Option, East Newport Road would be bridged over SR 79, a northbound off-ramp would be constructed from SR 79 to existing SR 79/Winchester Road, and a southbound on-ramp would be constructed from East Newport Road to SR 79 to accommodate a grade-separated interchange.

Source: Project Description, 2007, Technical Report Addendum Memoranda, June–August 2010

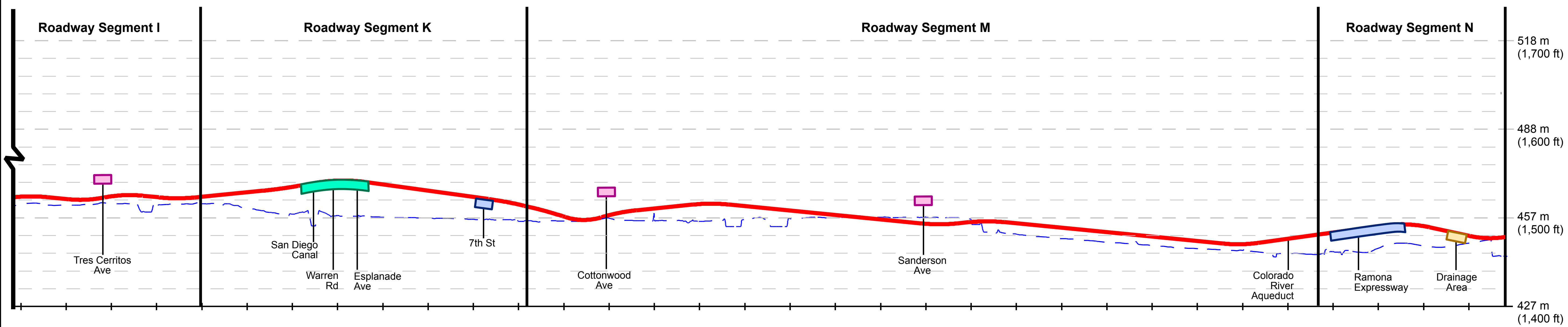
Figure 2.2-7b 1 of 2
Build Alternative 1b and Design Option 1b1
Plan and Profile
20-Year Design Horizon
Draft Environmental Impact Report/Environmental Impact Statement
State Route 79 Realignment Project

Roadway Plan View



Aerial Date: June 2009, Lenska Aerial Images, Inc.

Roadway Profile View



LEGEND:

- Existing Topography
- Roadway Profile
- Project Roadway
- Roadway Segment Match Line
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Local Street Improvement
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Project Right-of-Way

Source: Project Description, 2007

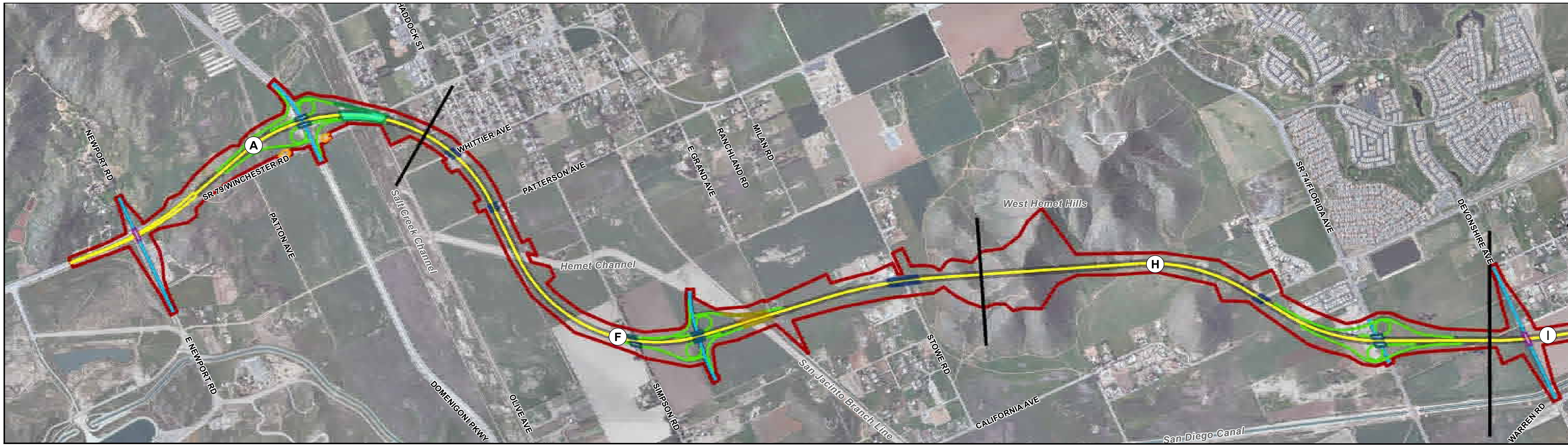
NORTH

Not to Scale

Figure is intended for graphic depiction only.

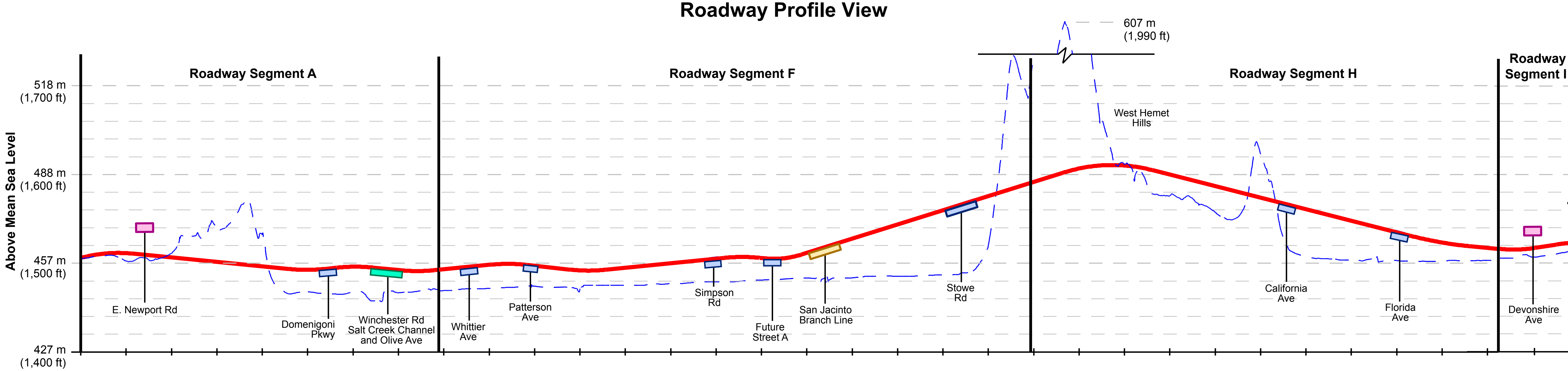
Figure 2.2-7b 2 of 2
Build Alternative 1b and Design Option 1b1
Plan and Profile
20-Year Design Horizon
Draft Environmental Impact Report/Environmental Impact Statement
State Route 79 Realignment Project

Roadway Plan View



Aerial Date: June 2009, Lenska Aerial Images, Inc.

Roadway Profile View



LEGEND:

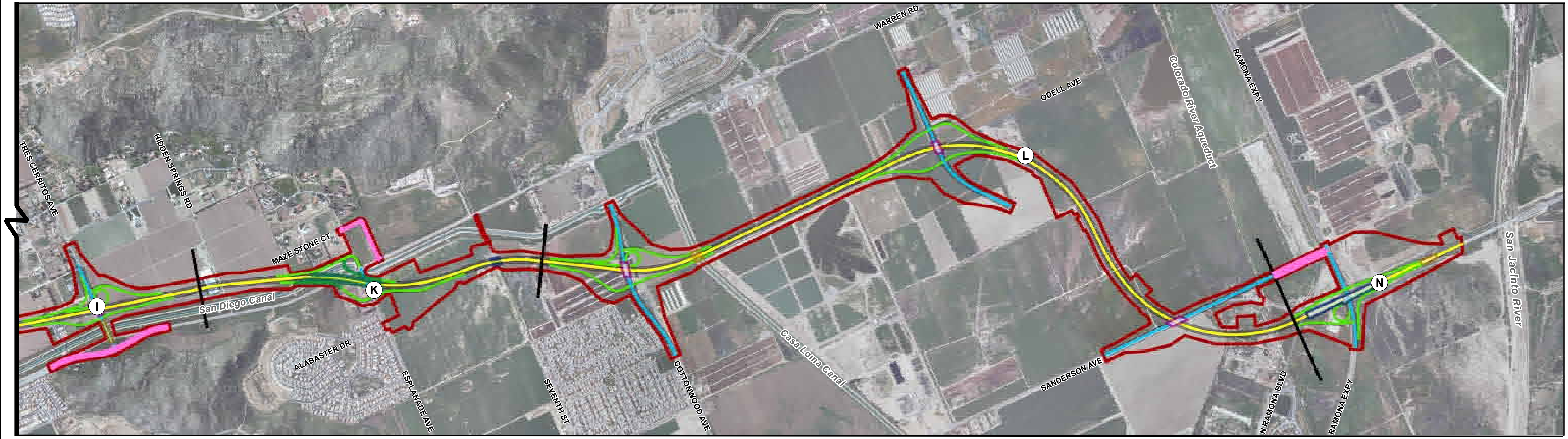
- Existing Topography
- Roadway Profile
- Project Roadway
- Roadway Segment Match Line
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Local Street Improvement
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Project Right-of-Way

NORTH
Not to Scale
Figure is intended for graphic depiction only.

Source: Project Description, 2007

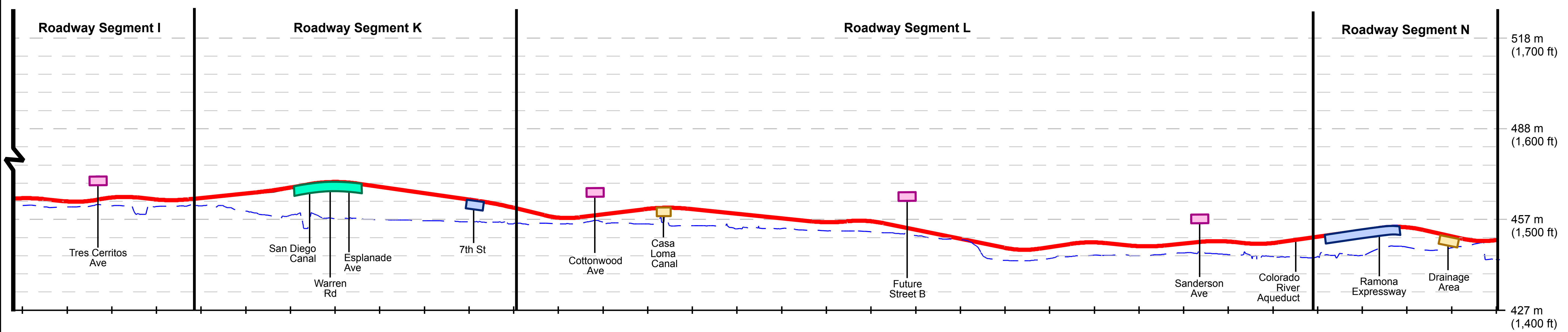
Figure 2.2-7c 1 of 2
Build Alternative 2a Plan and Profile
20-Year Design Horizon
Draft Environmental Impact Report/Environmental Impact Statement
State Route 79 Realignment Project

Roadway Plan View



Aerial Date: June 2009, Lenska Aerial Images, Inc.

Roadway Profile View



LEGEND:

- Existing Topography
- Roadway Profile
- Project Roadway
- Roadway Segment Match Line
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Local Street Improvement
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Project Right-of-Way

NORTH

Not to Scale

Figure is intended for graphic depiction only.

Source: Project Description, 2007

Figure 2.2-7c 2 of 2

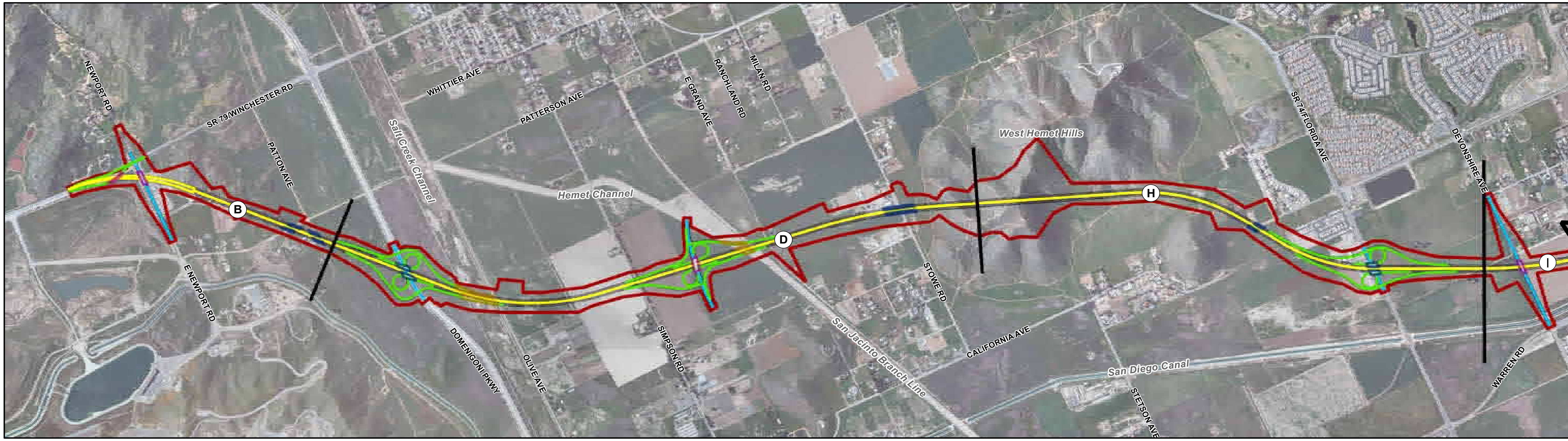
Build Alternative 2a Plan and Profile

20-Year Design Horizon

Draft Environmental Impact Report/Environmental Impact Statement

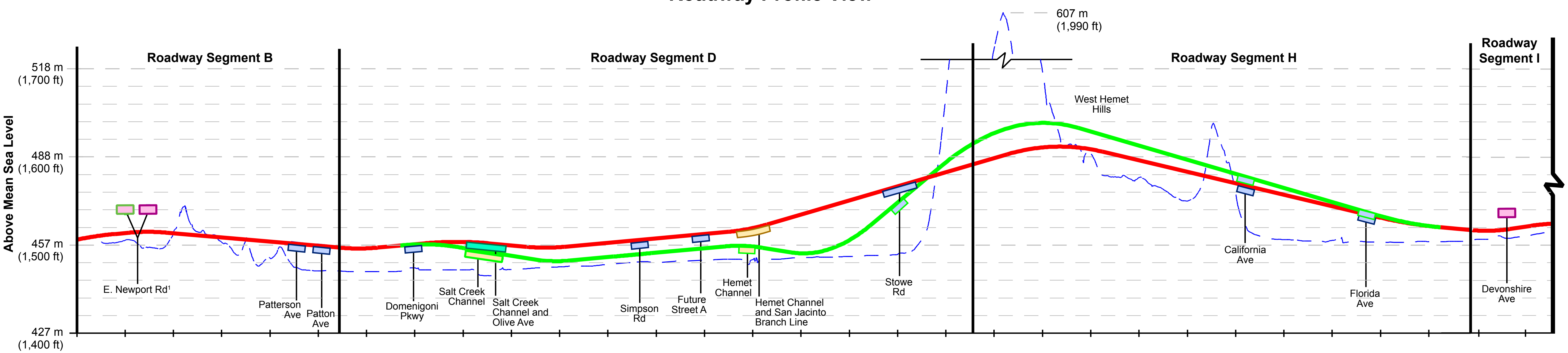
State Route 79 Realignment Project

Roadway Plan View



Aerial Date: June 2009, Lenska Aerial Images, Inc.

Roadway Profile View



LEGEND:

- Existing Topography
- Roadway Profile
- Project Roadway
- Design Option
- Roadway Segment Match Line
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Local Street Improvement
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Project Right-of-Way

NORTH

Not to Scale

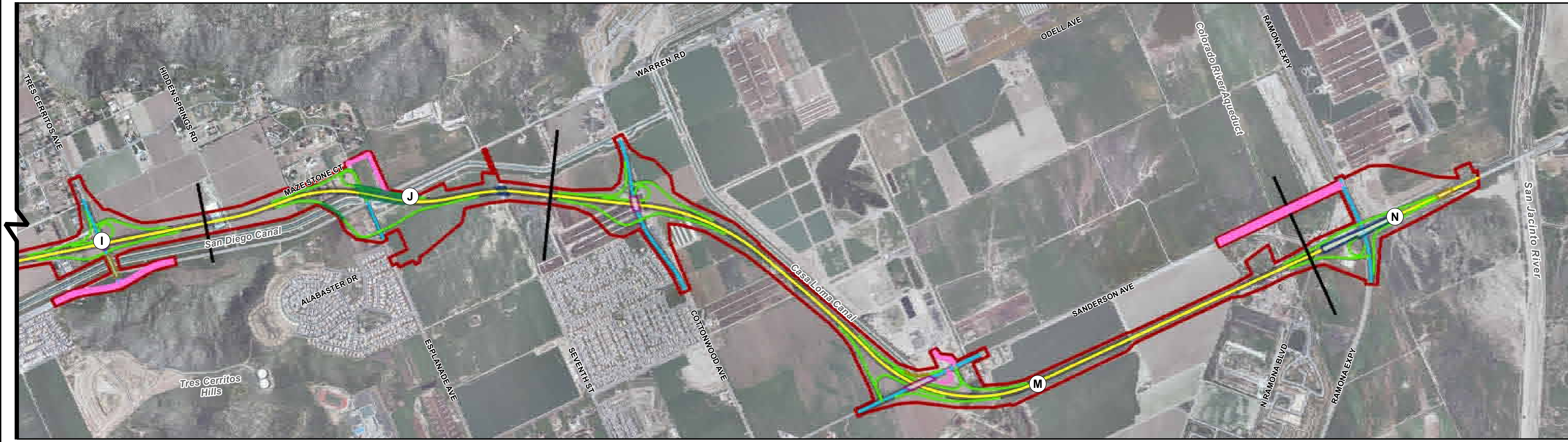
Figure is intended for graphic depiction only.

Note: [1] With the Base Condition, East Newport Road would be bridged over SR 79. With the Design Option, East Newport Road would be bridged over SR 79, a northbound off-ramp would be constructed from SR 79 to existing SR 79/Winchester Road, and a southbound on-ramp would be constructed from East Newport Road to SR 79 to accommodate a grade-separated interchange.

Source: Project Description, 2007, Technical Report Addendum Memoranda, June–August 2010

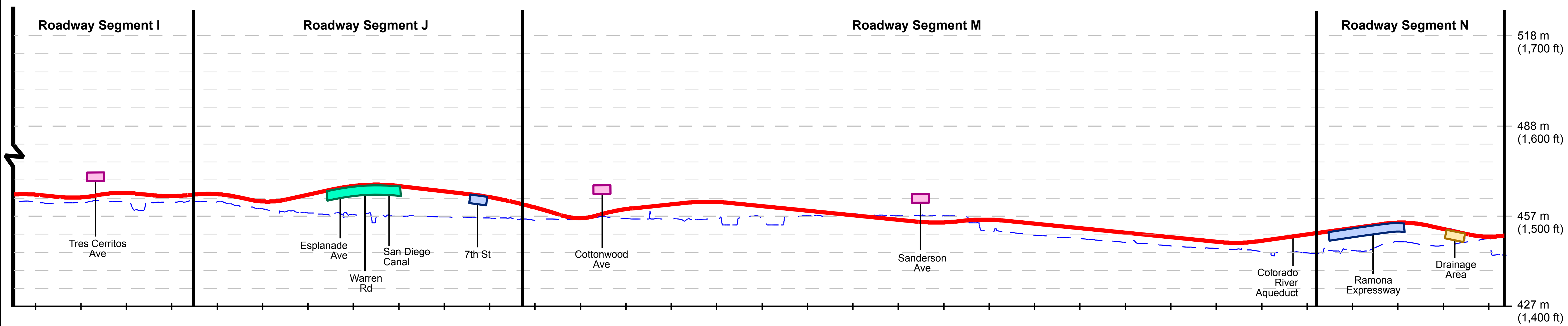
Figure 2.2-7d 1 of 2
Build Alternative 2b and Design Option 2b1
Plan and Profile
20-Year Design Horizon
Draft Environmental Impact Report/Environmental Impact Statement
State Route 79 Realignment Project

Roadway Plan View



Aerial Date: June 2009, Lenska Aerial Images, Inc.

Roadway Profile View



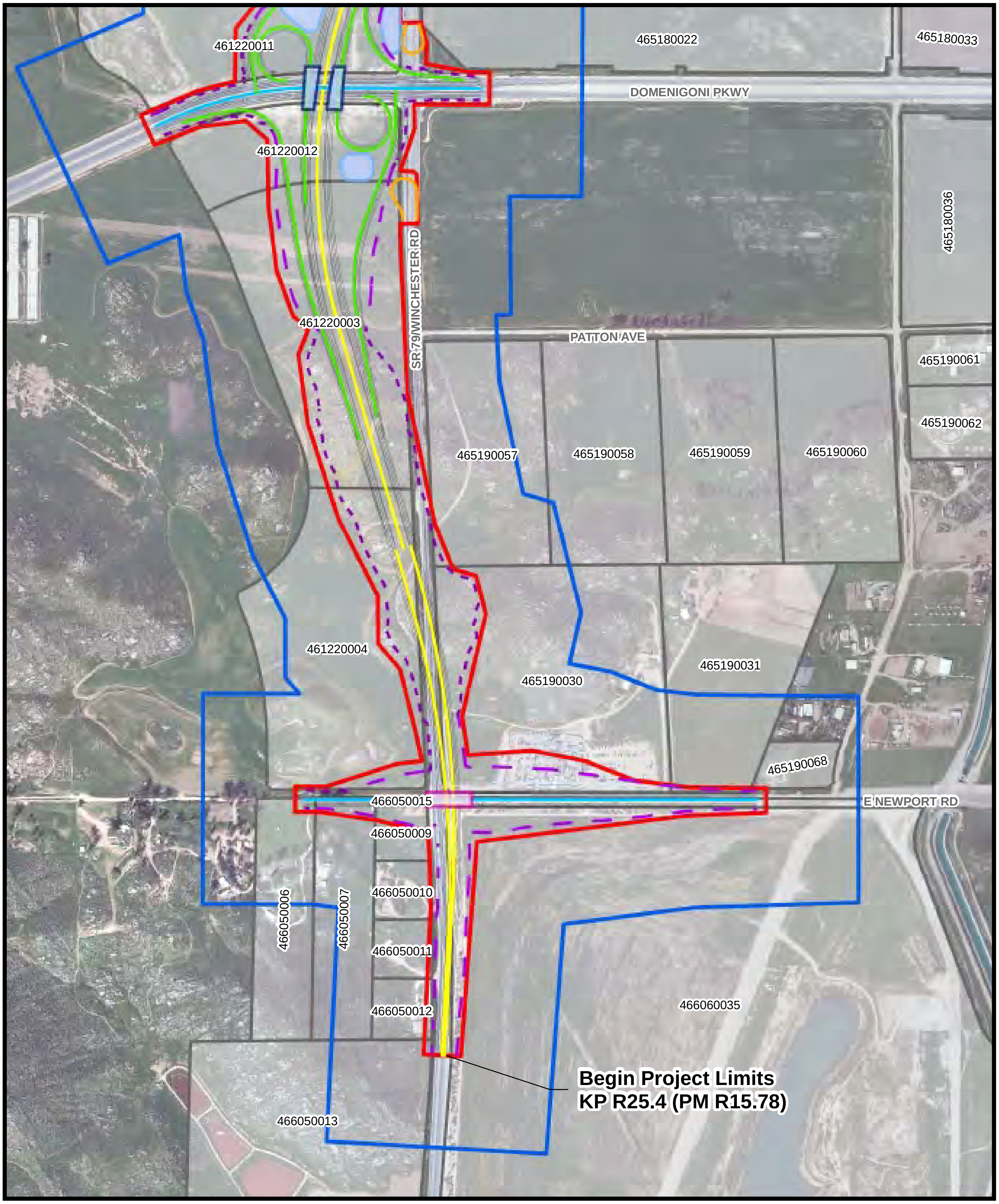
LEGEND:

- Existing Topography
- Roadway Profile
- Project Roadway
- Roadway Segment Match Line
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Local Street Improvement
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Project Right-of-Way

Source: Project Description, 2007

NORTH
Not to Scale
Figure is intended for graphic depiction only.

Figure 2.2-7d 2 of 2
Build Alternative 2b and Design Option 2b1
Plan and Profile
20-Year Design Horizon
Draft Environmental Impact Report/Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

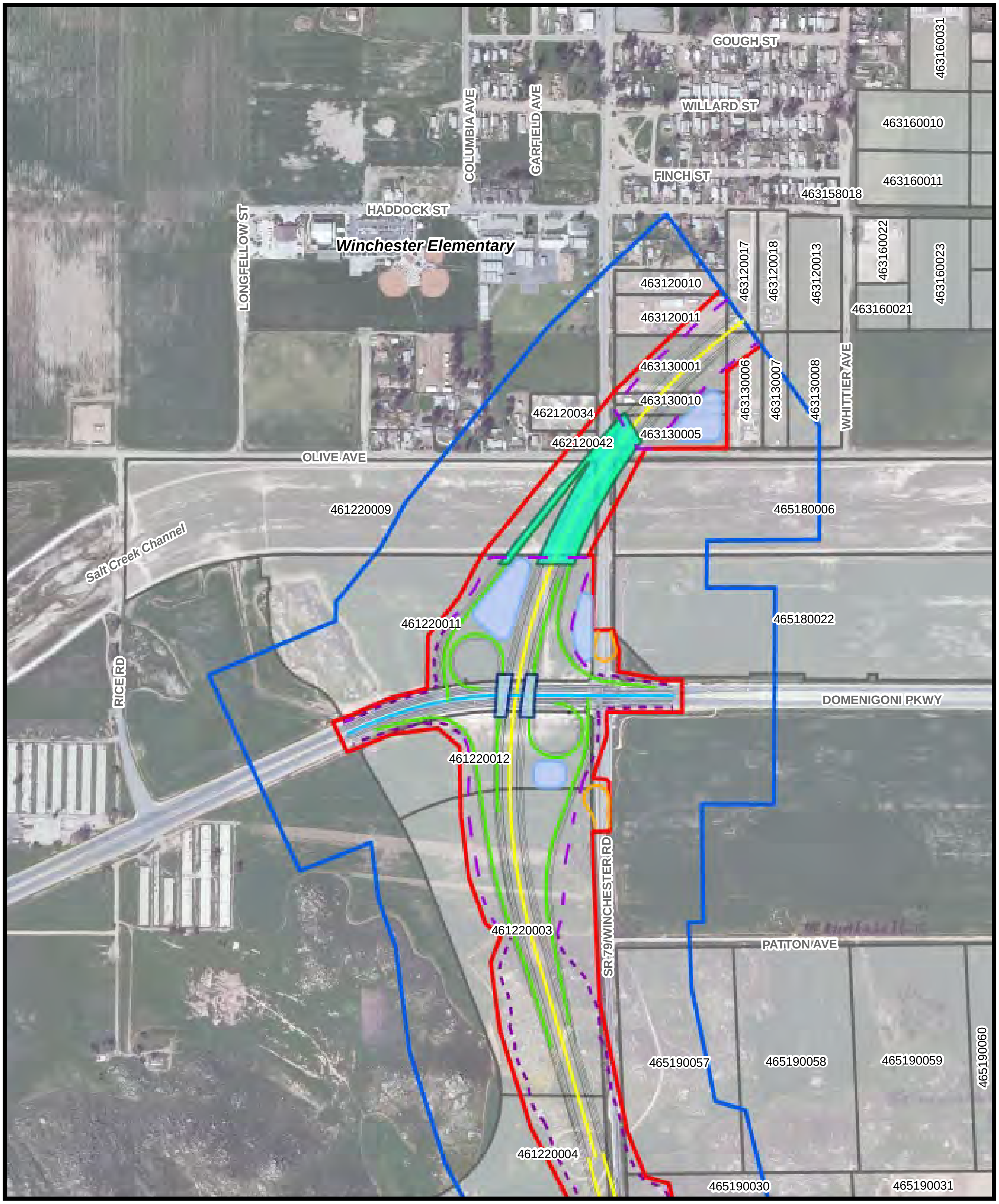
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8a 1 of 2
Roadway Segment A
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

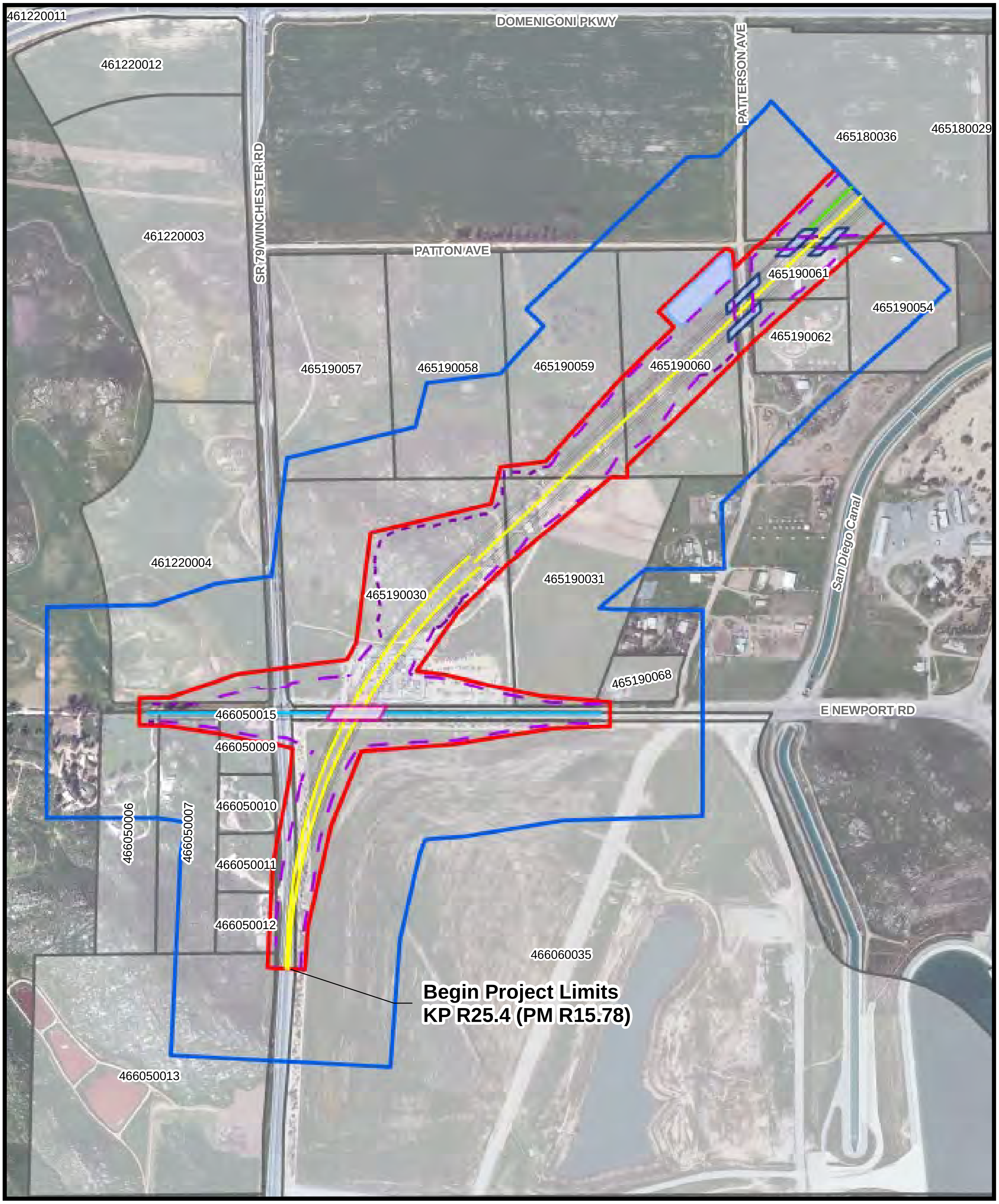
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8a 2 of 2
Roadway Segment A
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

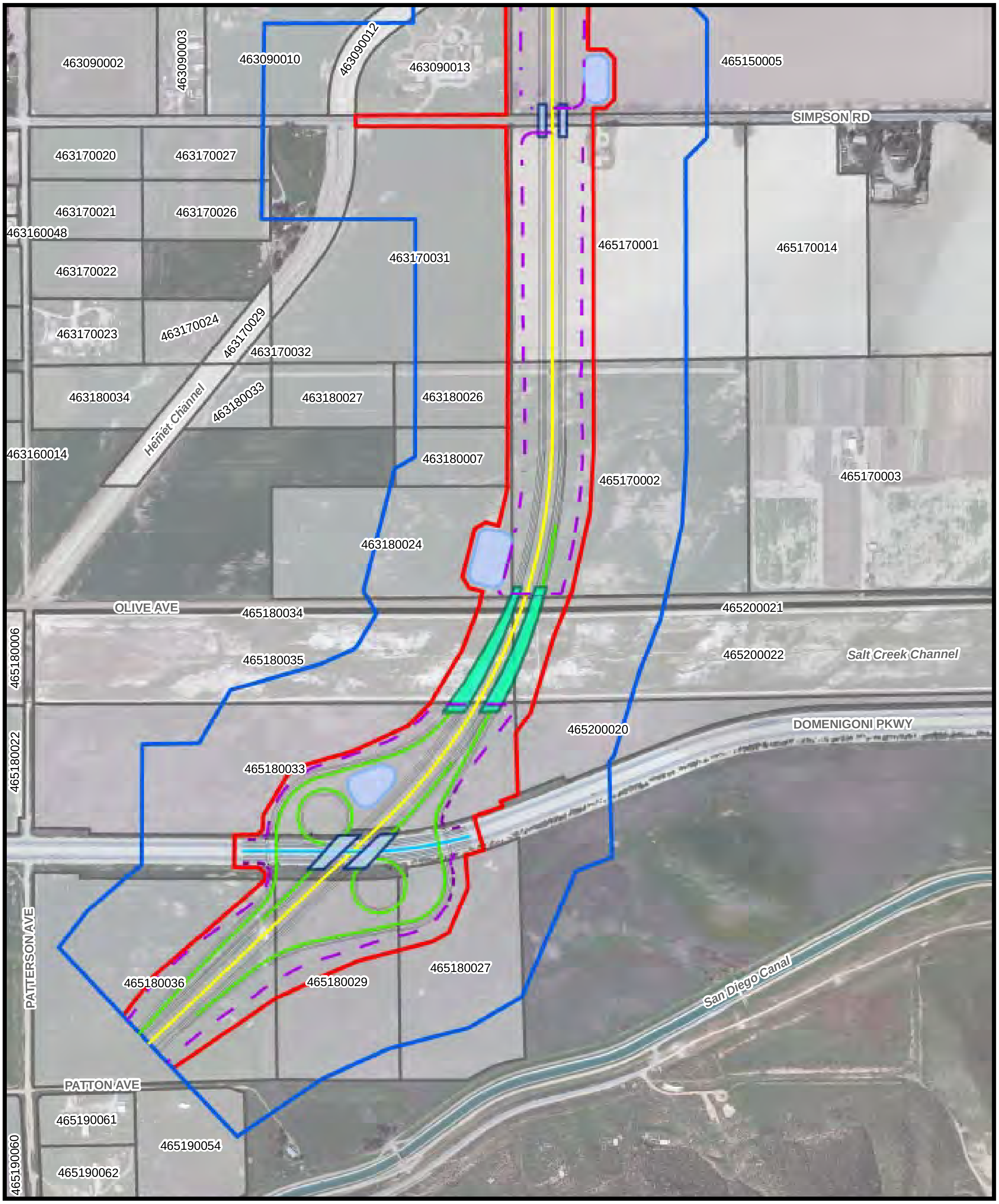
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8b 1 of 1
Roadway Segment B
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

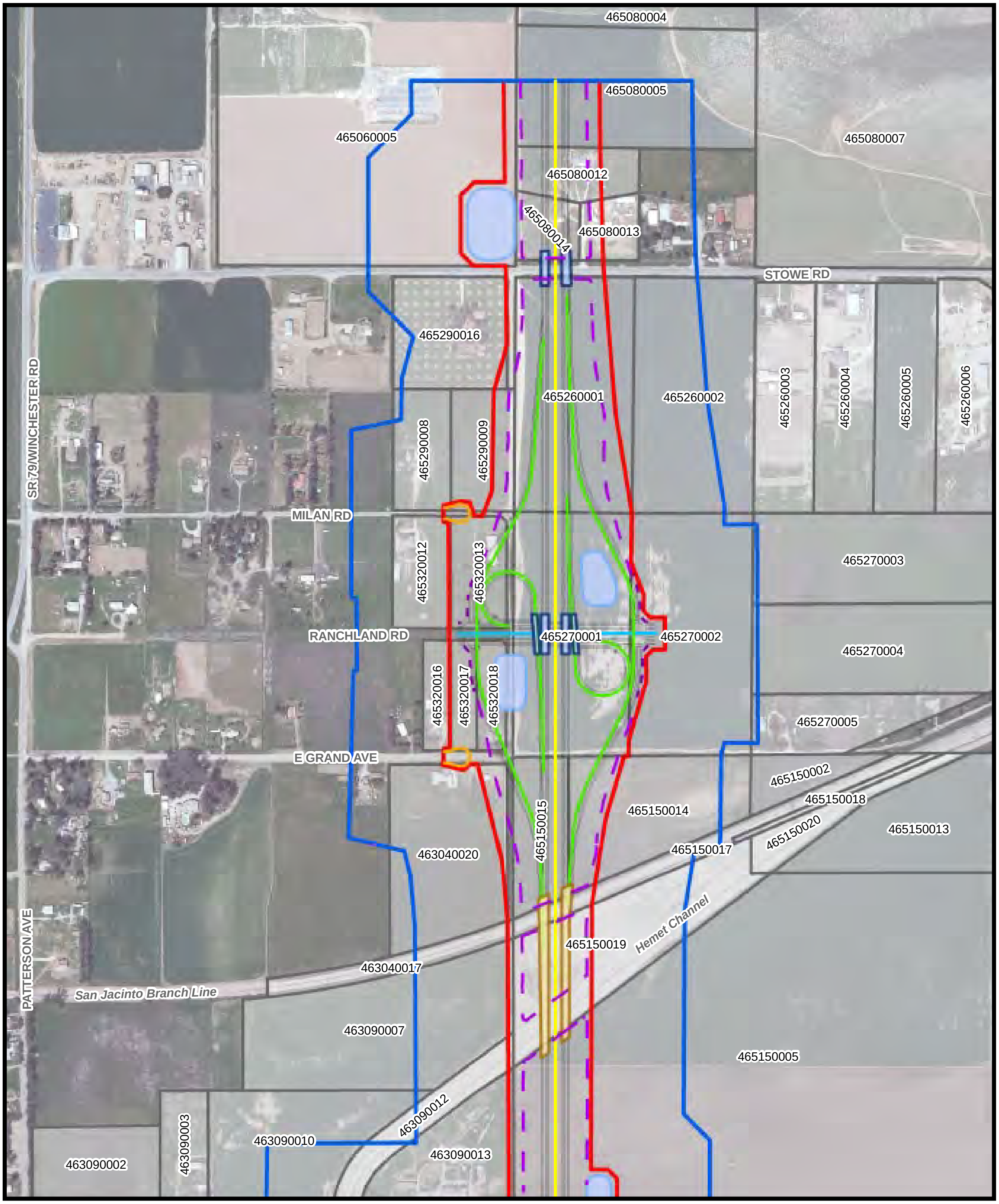
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8c 1 of 2
Roadway Segment C
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

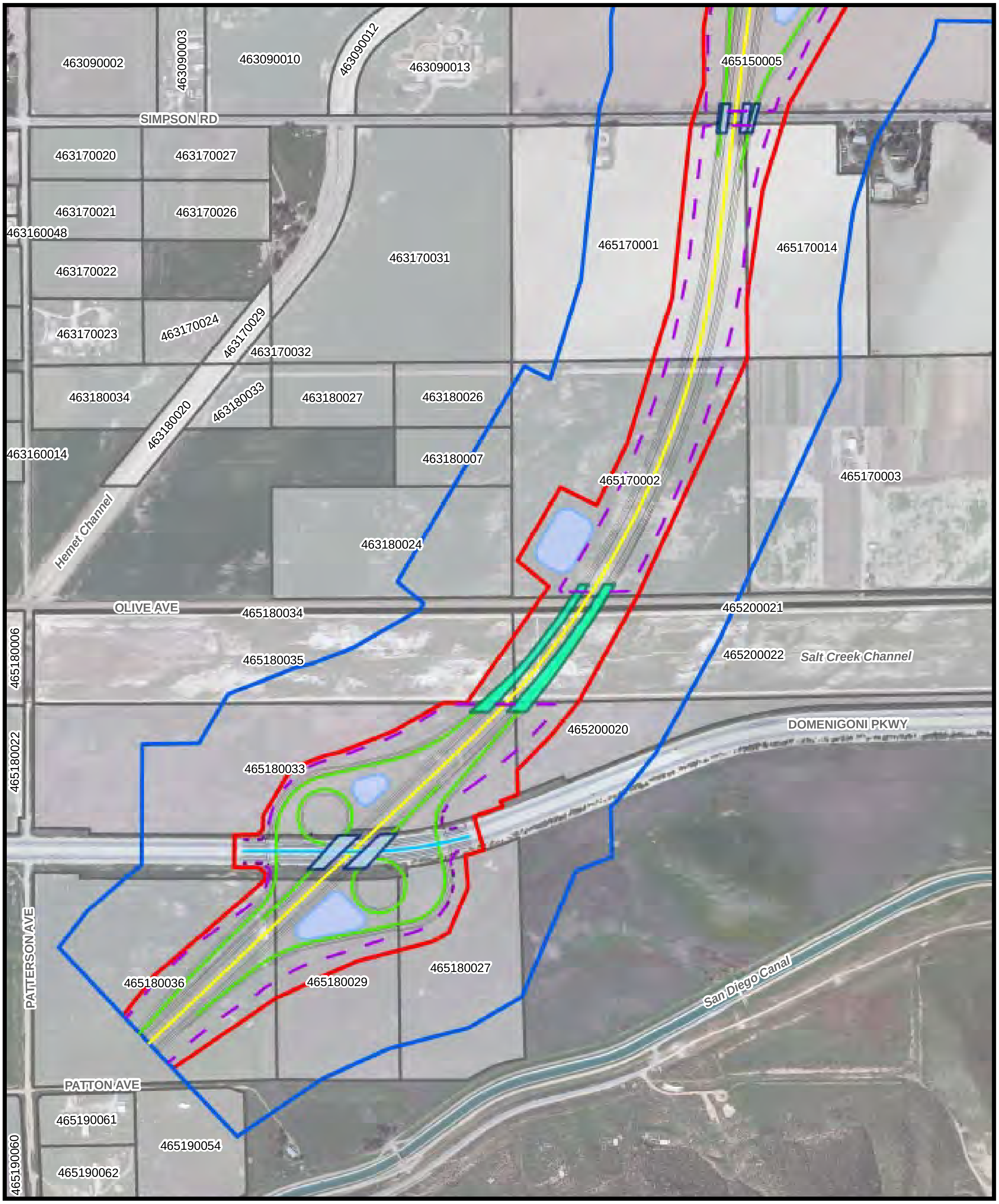
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8c 2 of 2
Roadway Segment C
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

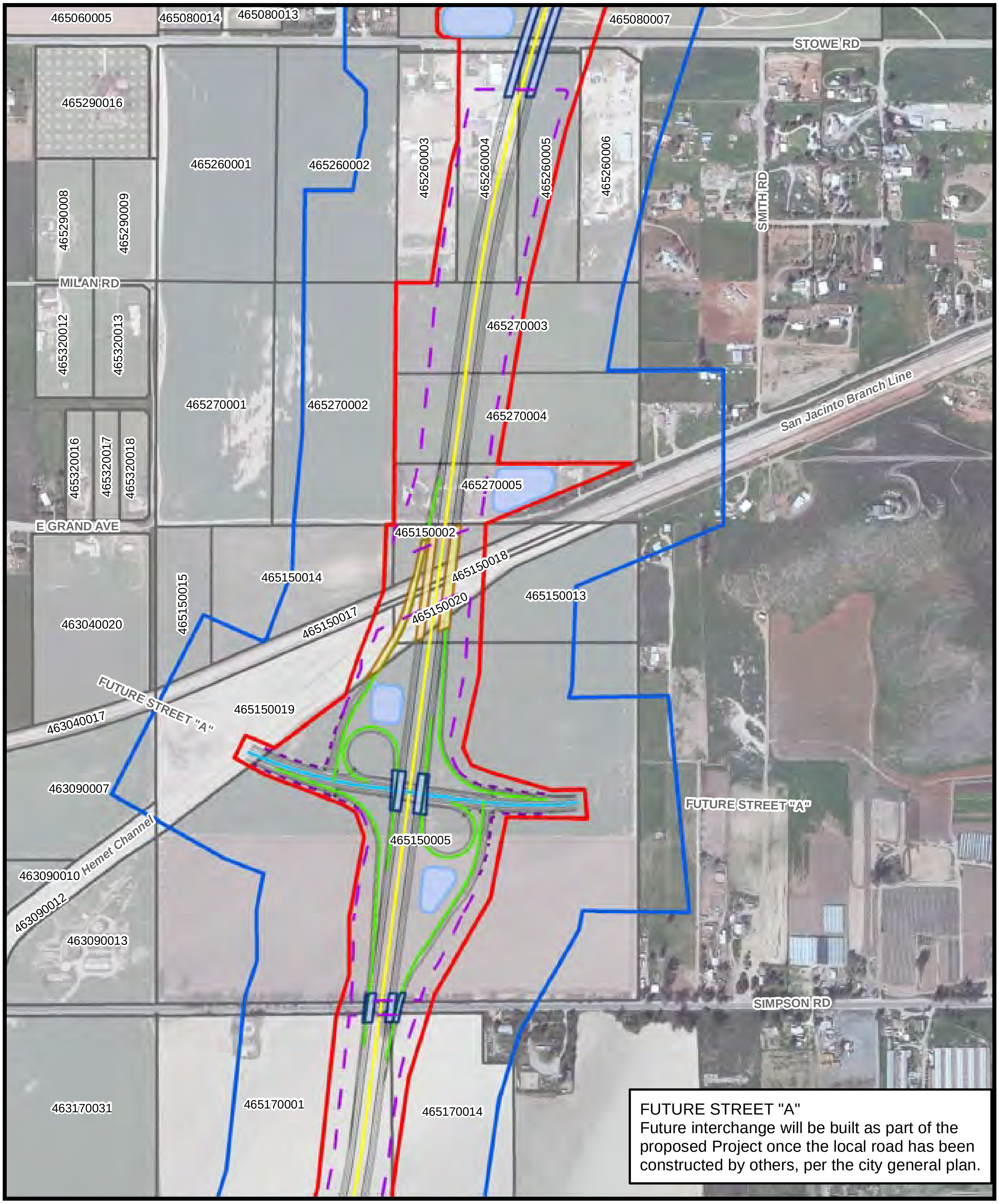
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8d 1 of 3
Roadway Segment D
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

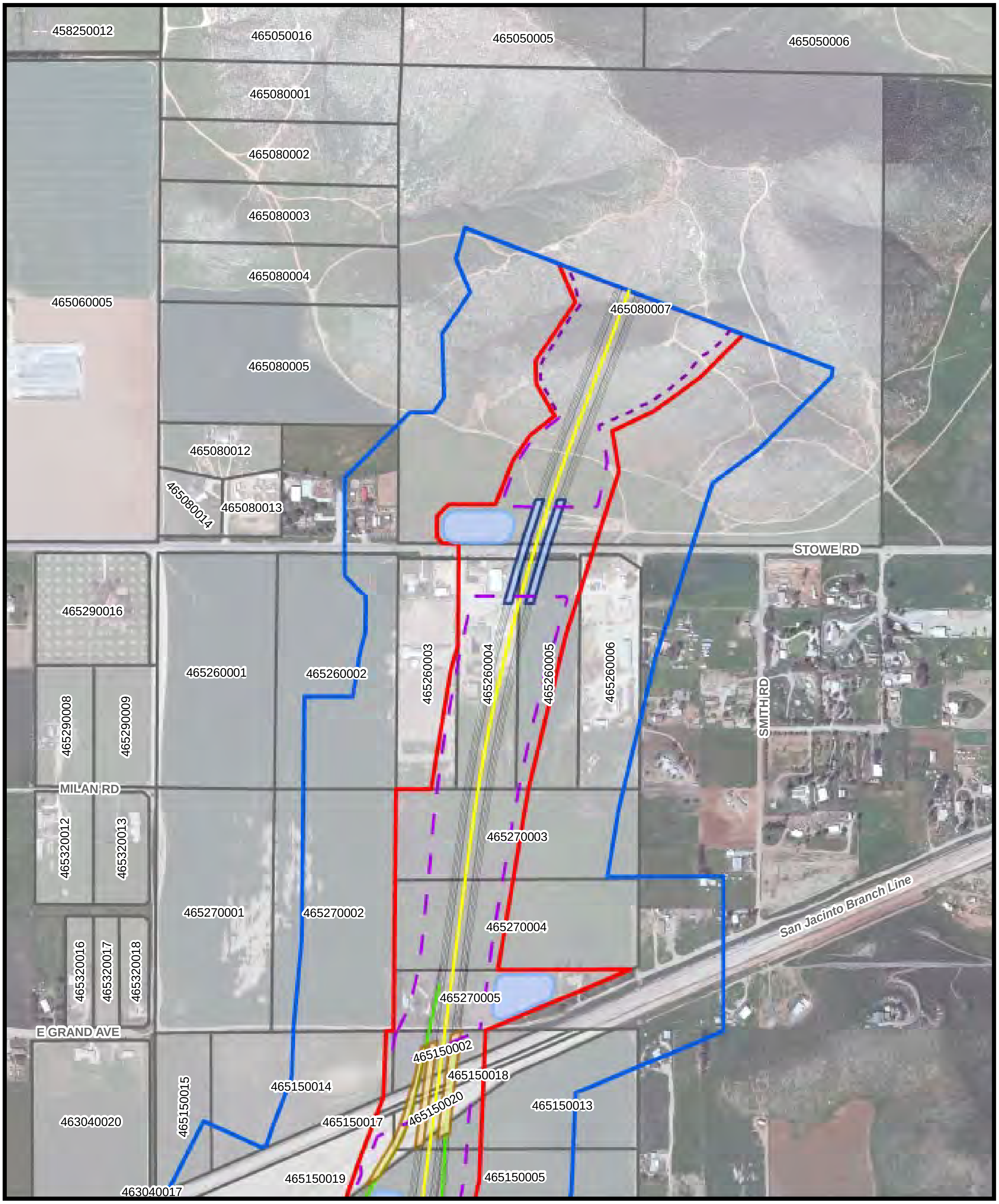
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8d 2 of 3
Roadway Segment D
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

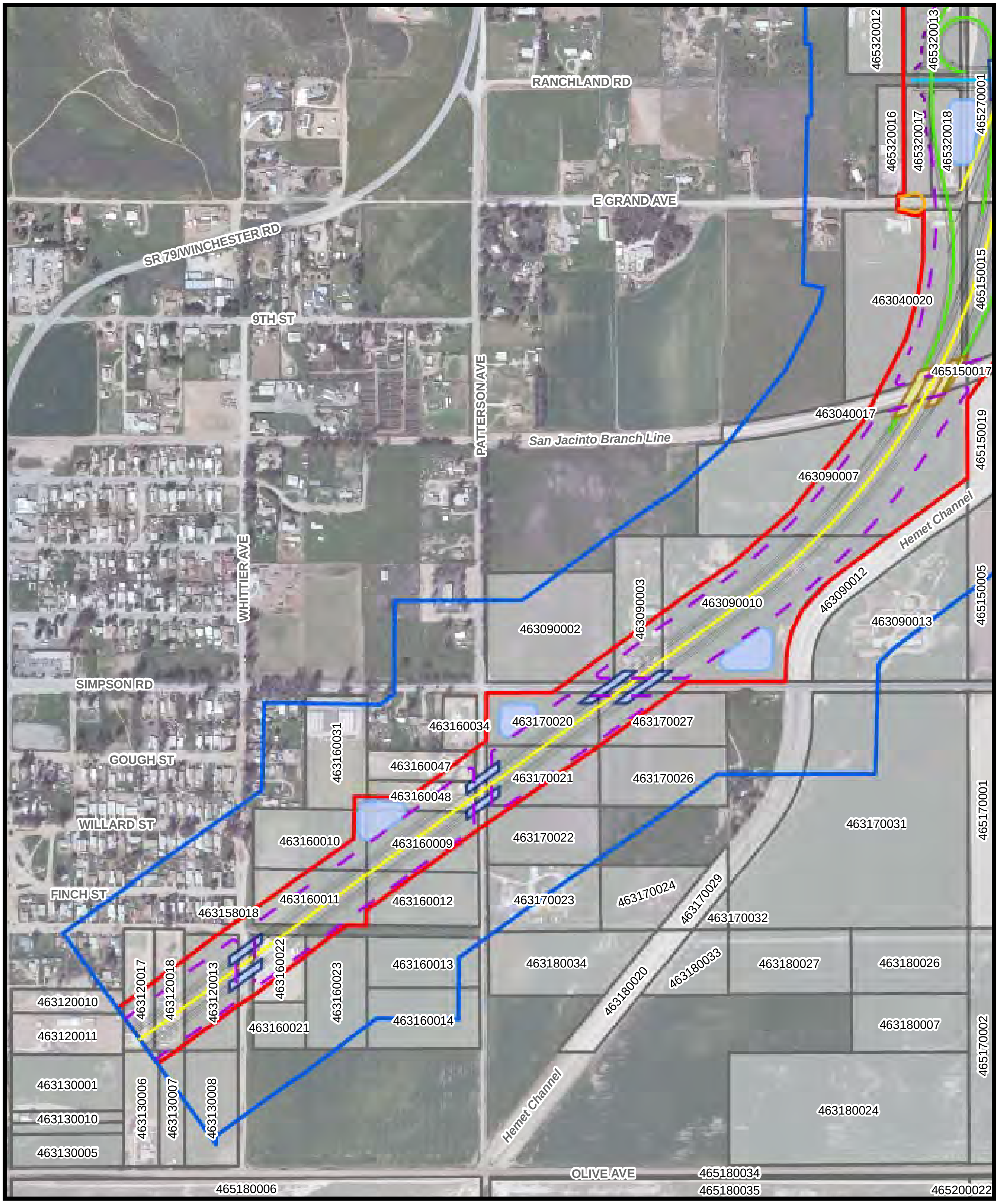
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8d 3 of 3
Roadway Segment D
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

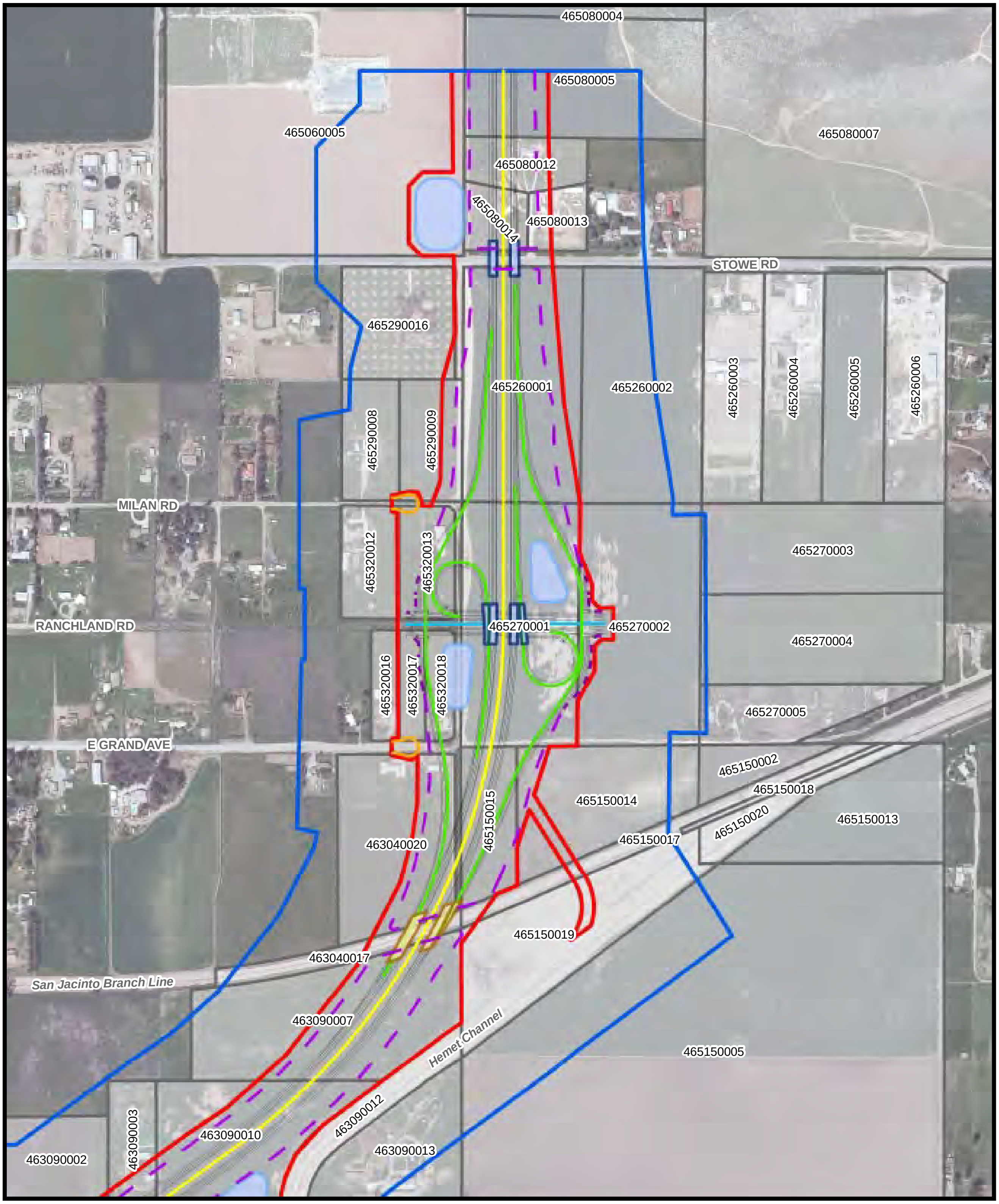
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8e 1 of 2
Roadway Segment E
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

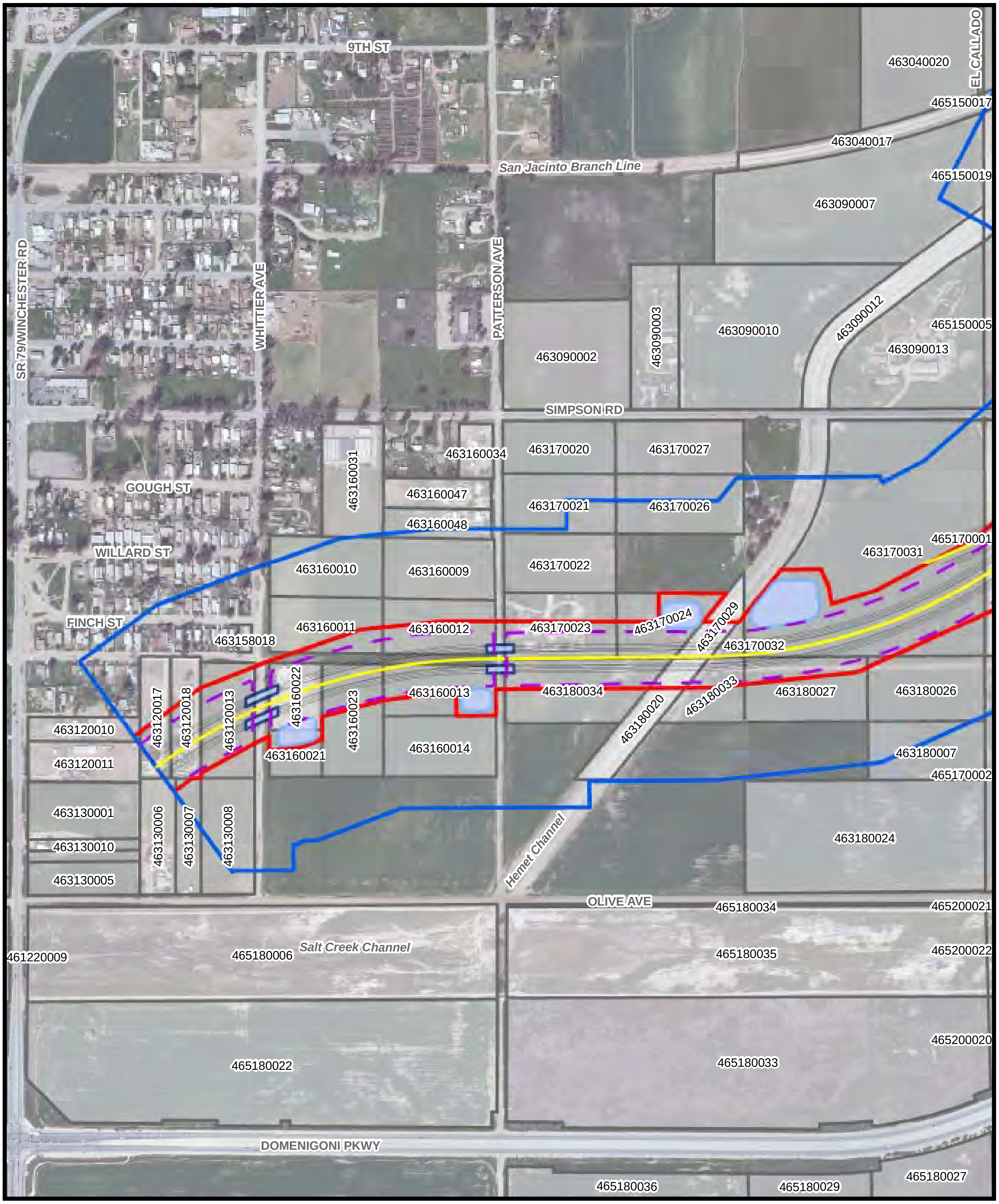
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8e 2 of 2
Roadway Segment E
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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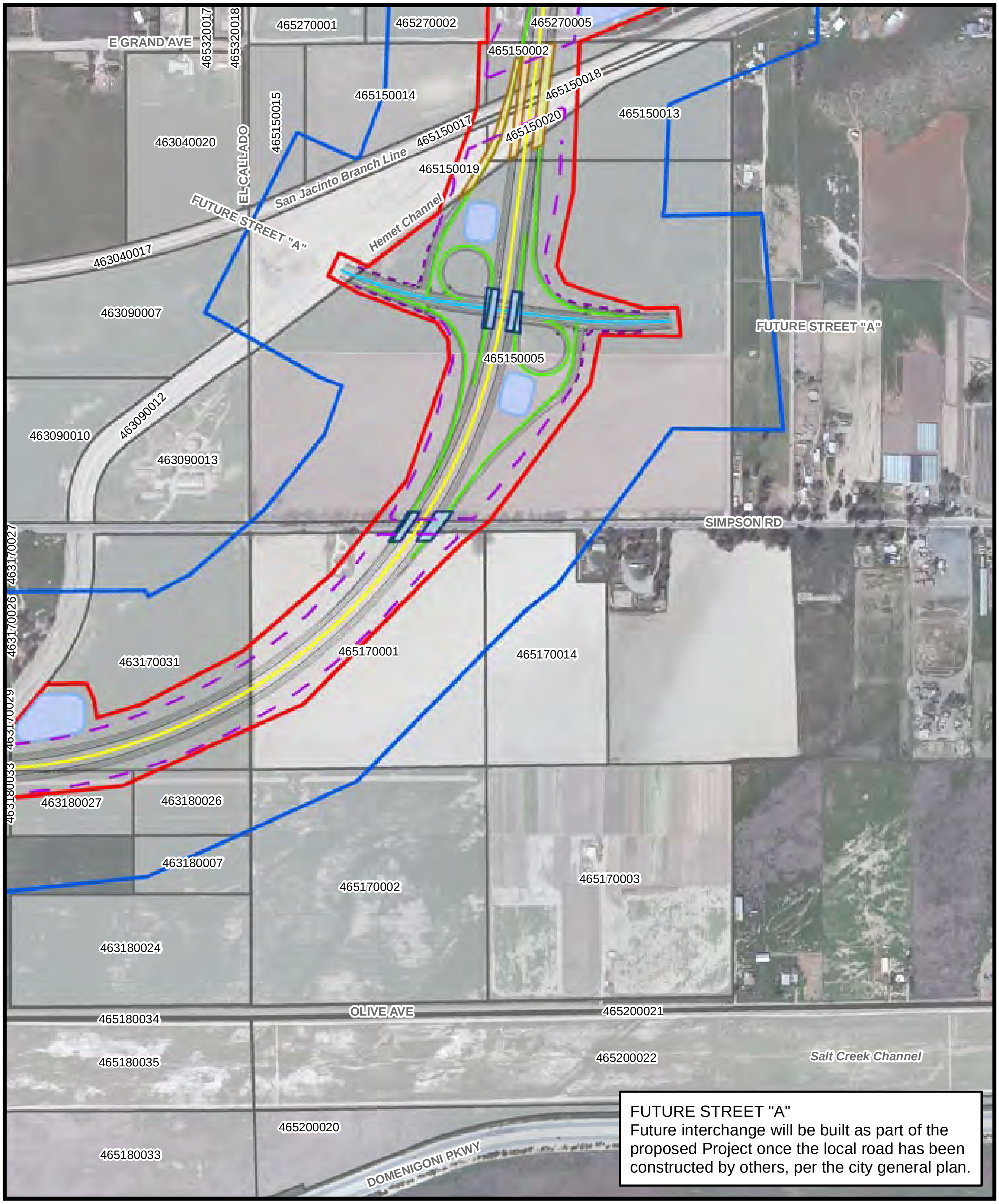
LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-8f 1 of 3
Roadway Segment F
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

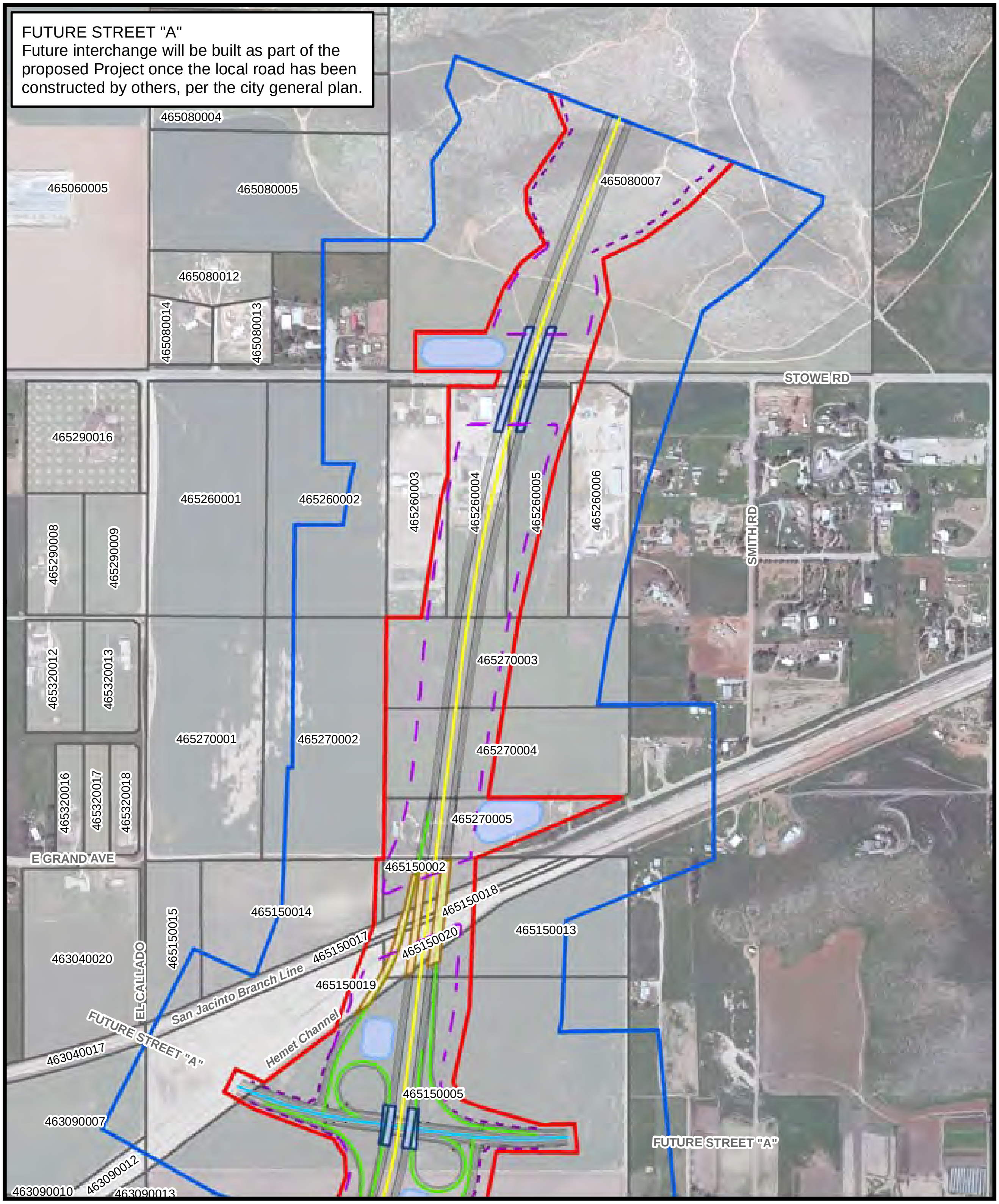
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8f 2 of 3
Roadway Segment F
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

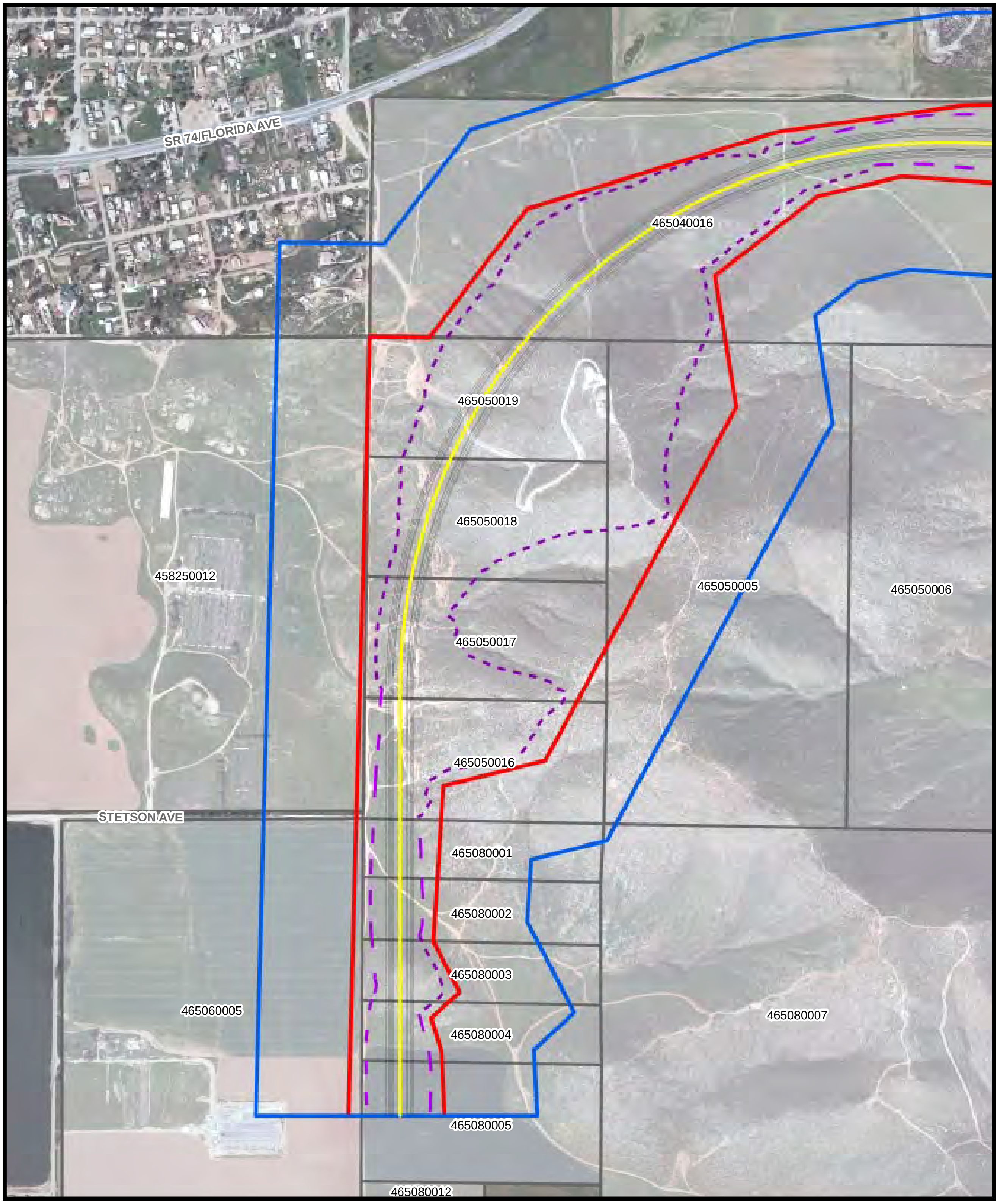
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8f 3 of 3
Roadway Segment F
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

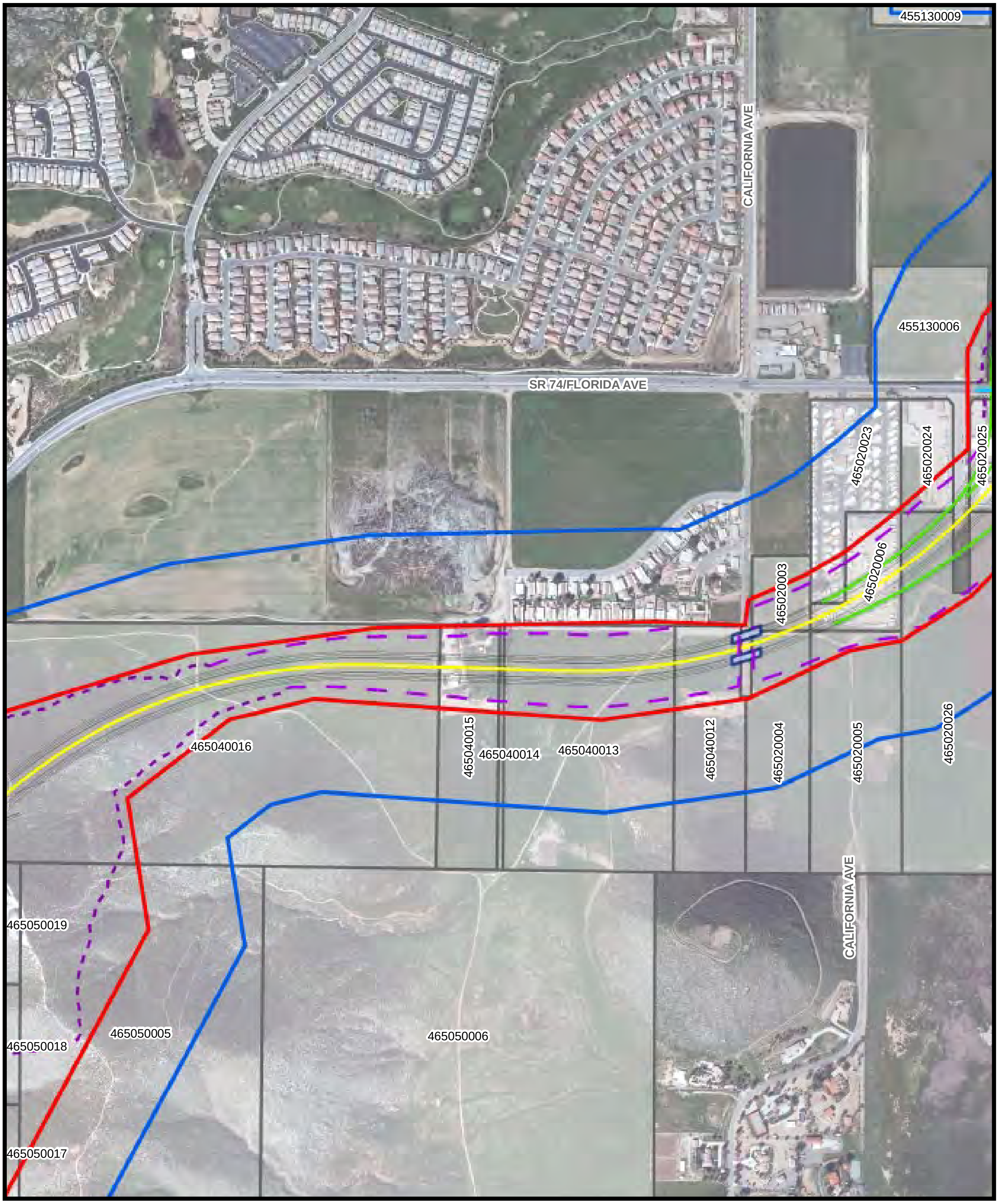
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8g 1 of 3
Roadway Segment G
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

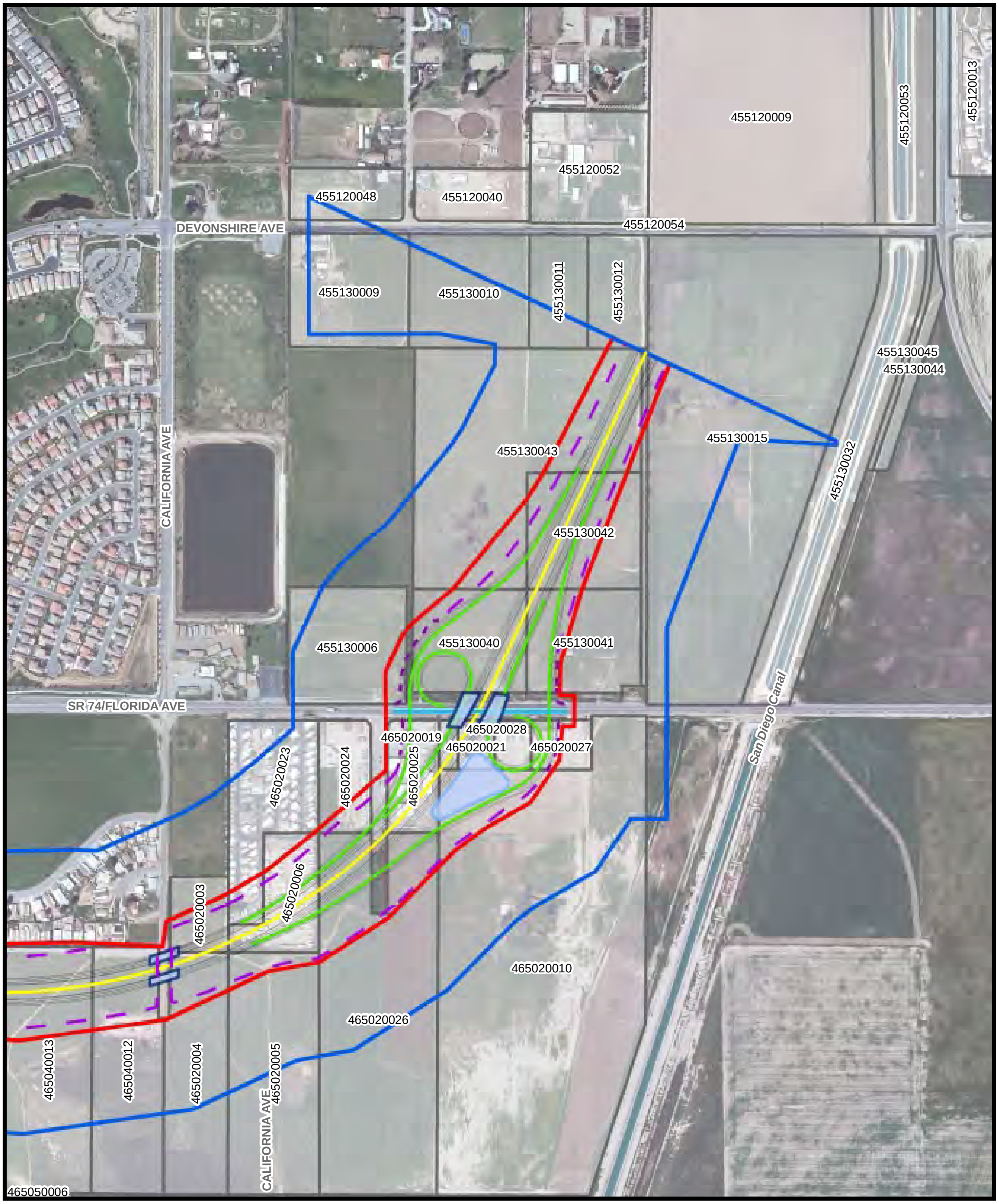
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8g 2 of 3
Roadway Segment G
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

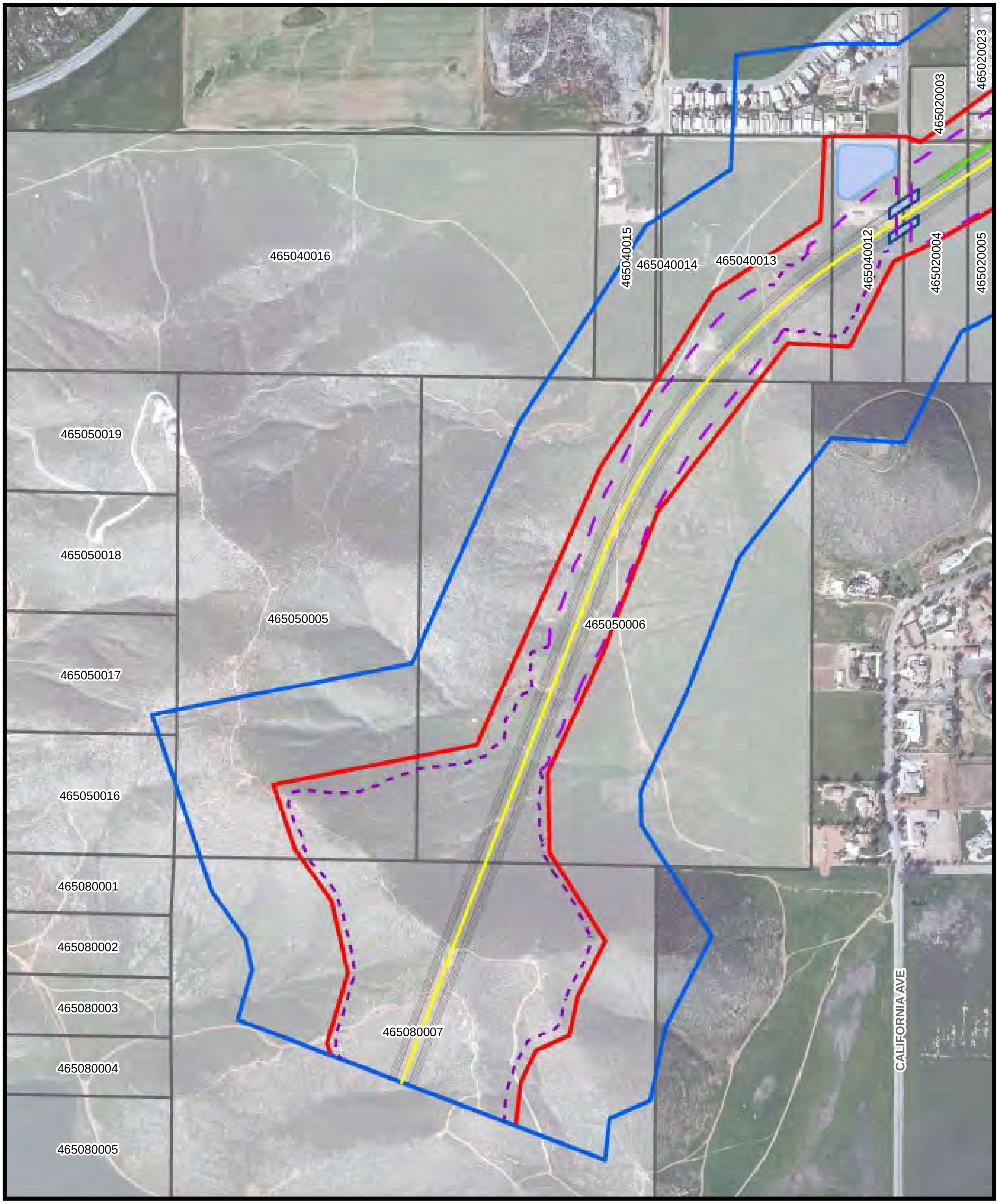
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8g 3 of 3
Roadway Segment G
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

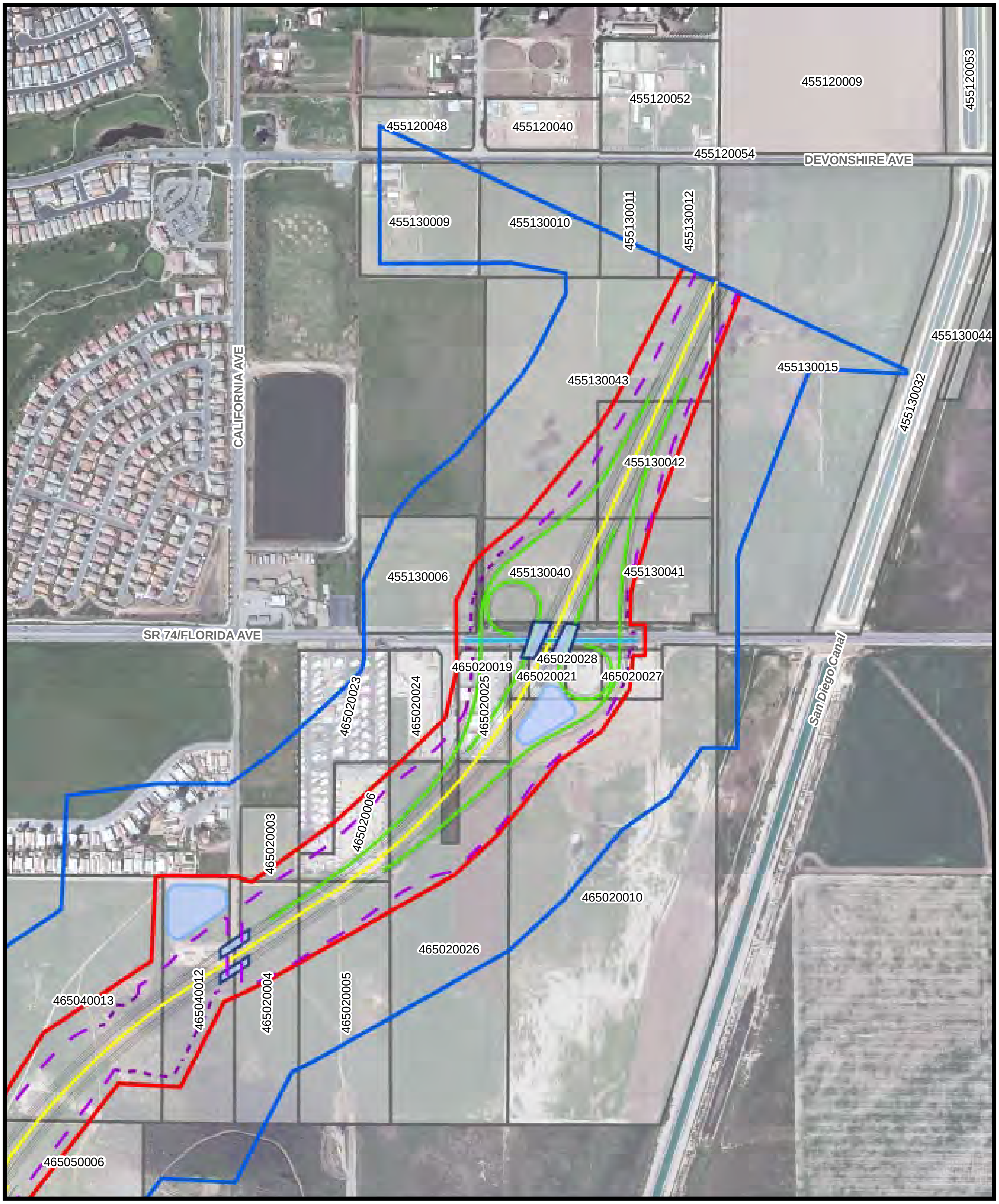
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8h 1 of 2
Roadway Segment H
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV_RWT_GRID_A.MXD PFV_RWT_GRID_A.PDF 01/16/2012

LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

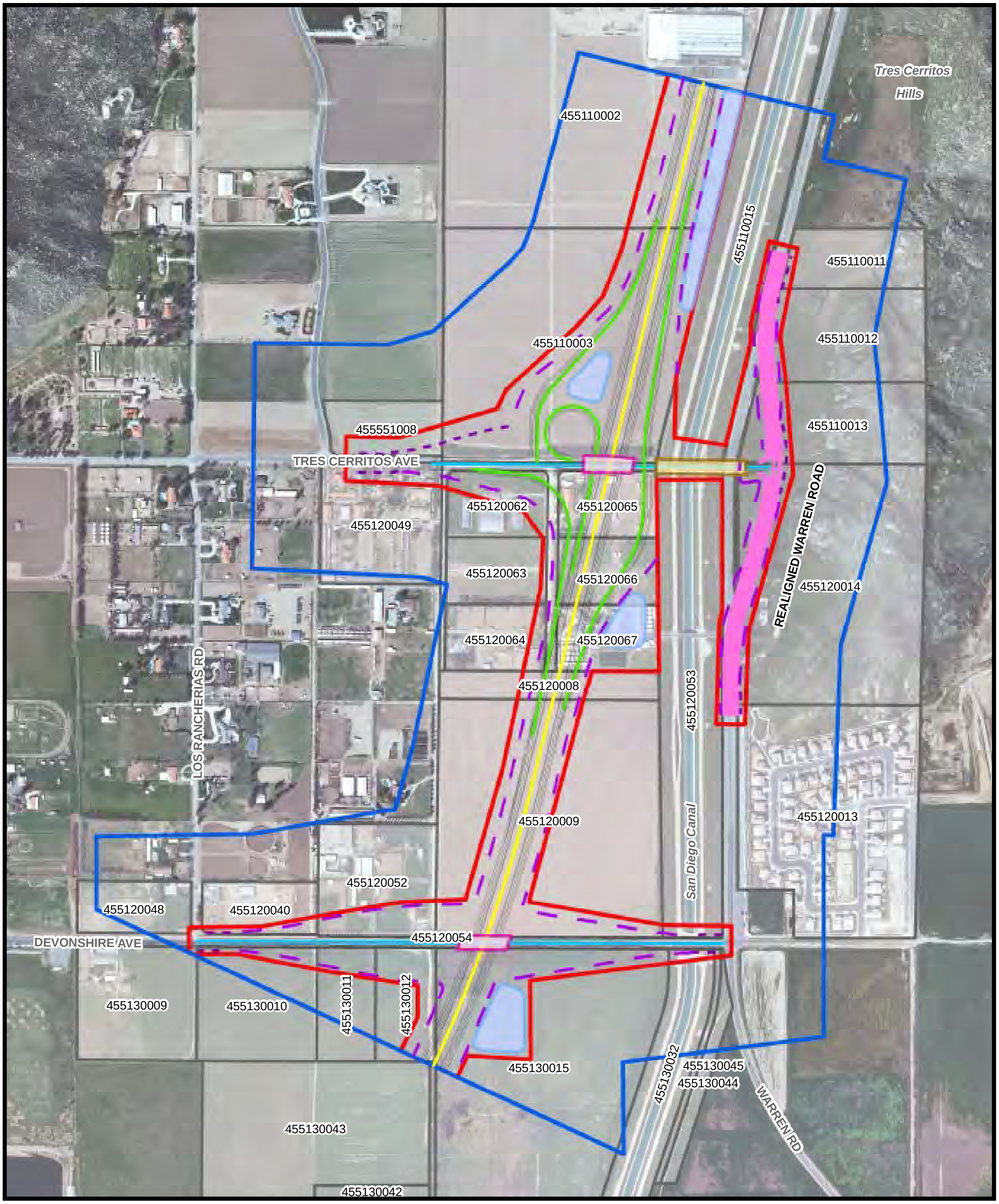
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8h 2 of 2
Roadway Segment H
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV_RWT_GRID_A.MXD PFV_RWT_GRID_A.PDF 01/16/2012

LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

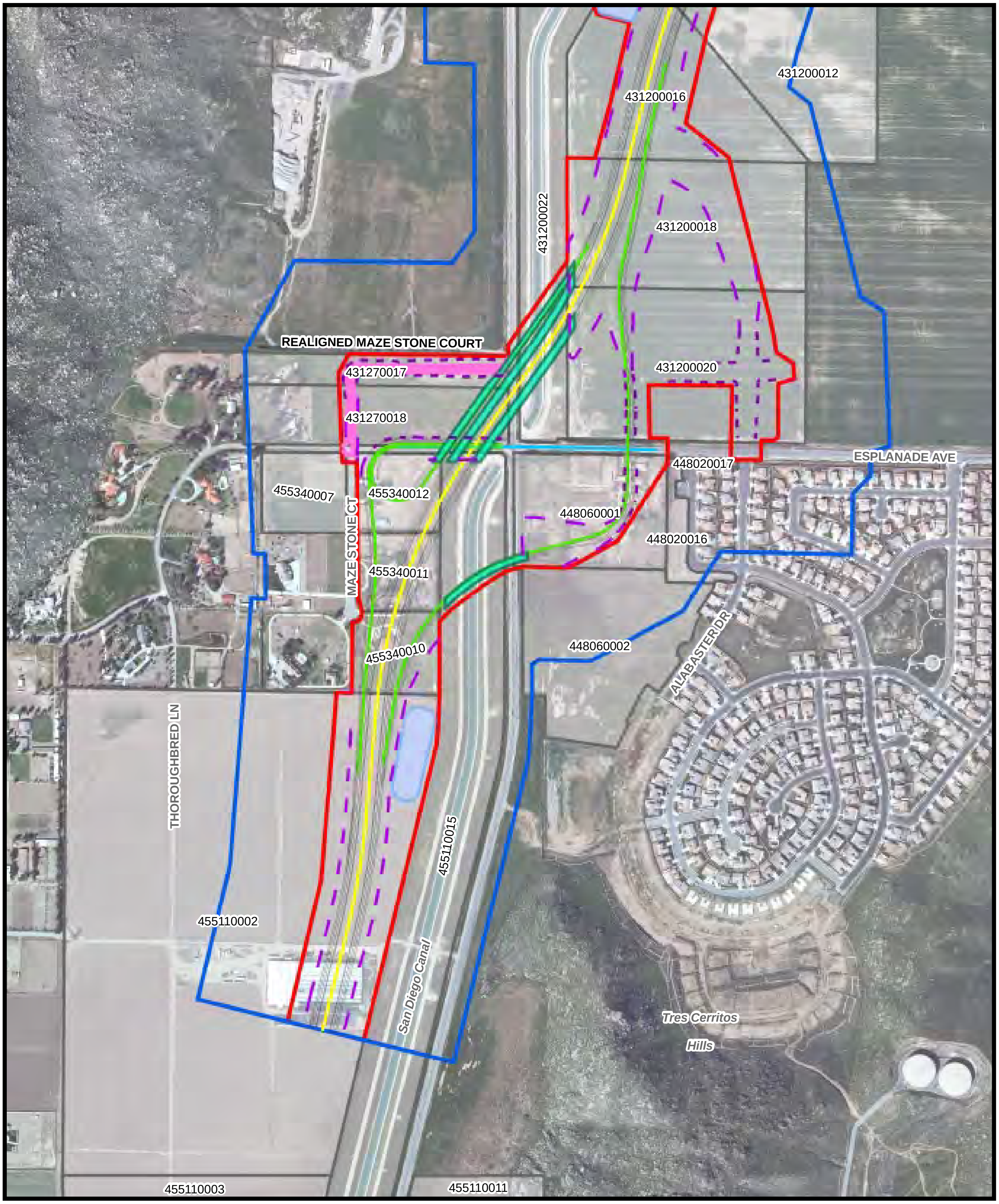
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8i 1 of 1
Roadway Segment I
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

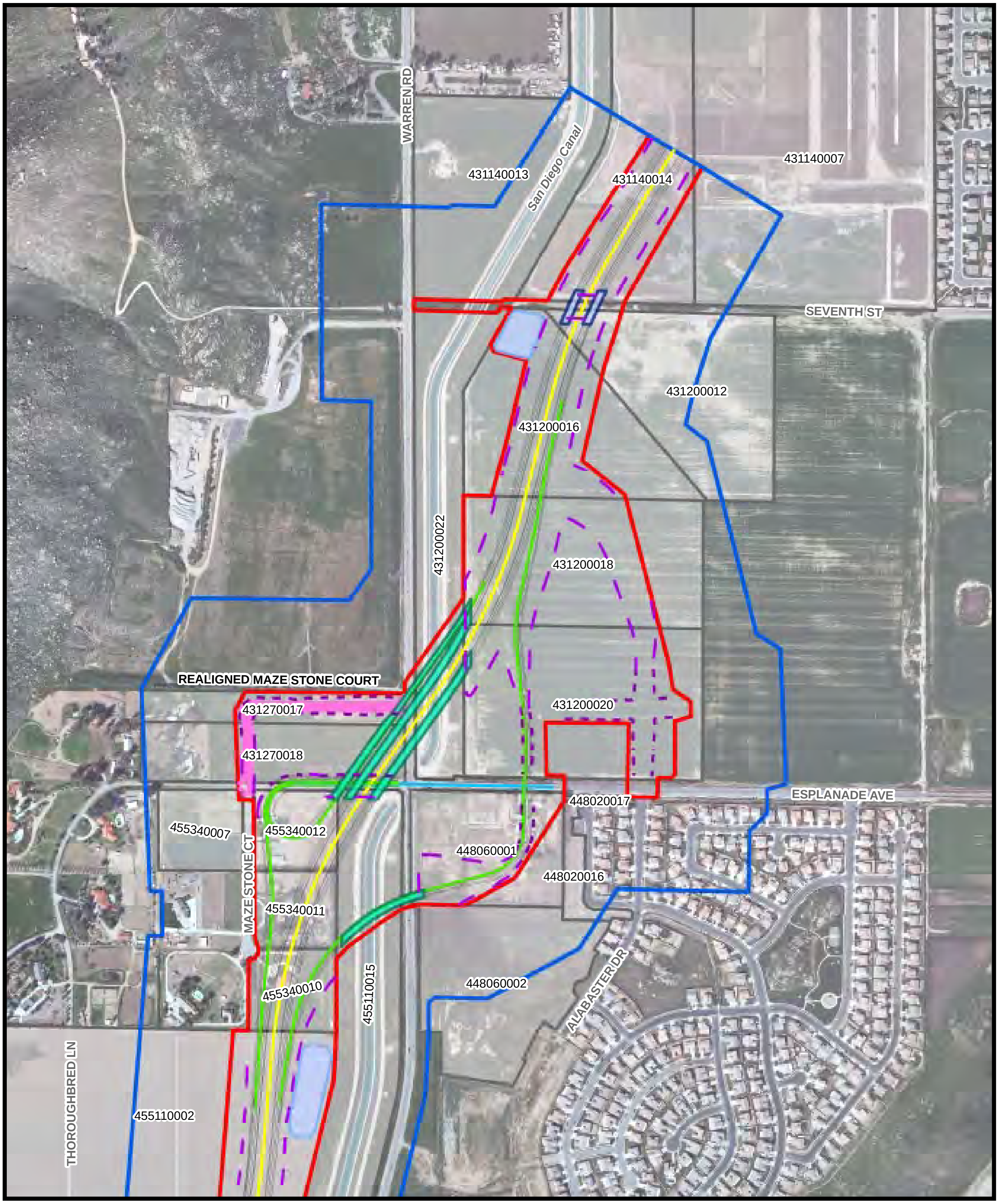
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8j 1 of 2
Roadway Segment J
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV_RWT_GRID_A.MXD PFV_RWT_GRID_A.PDF 01/16/2012

LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

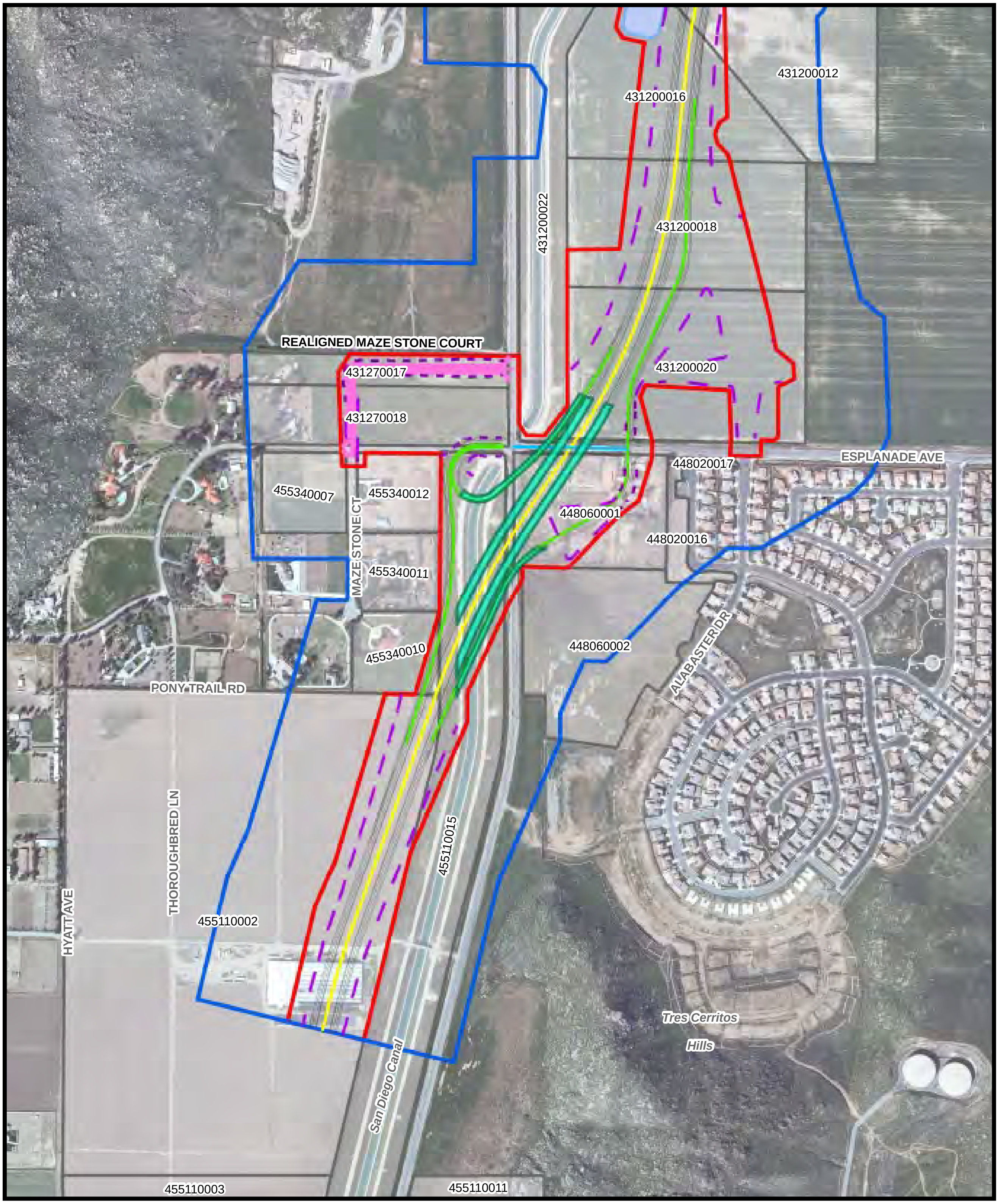
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8j 2 of 2
Roadway Segment J
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

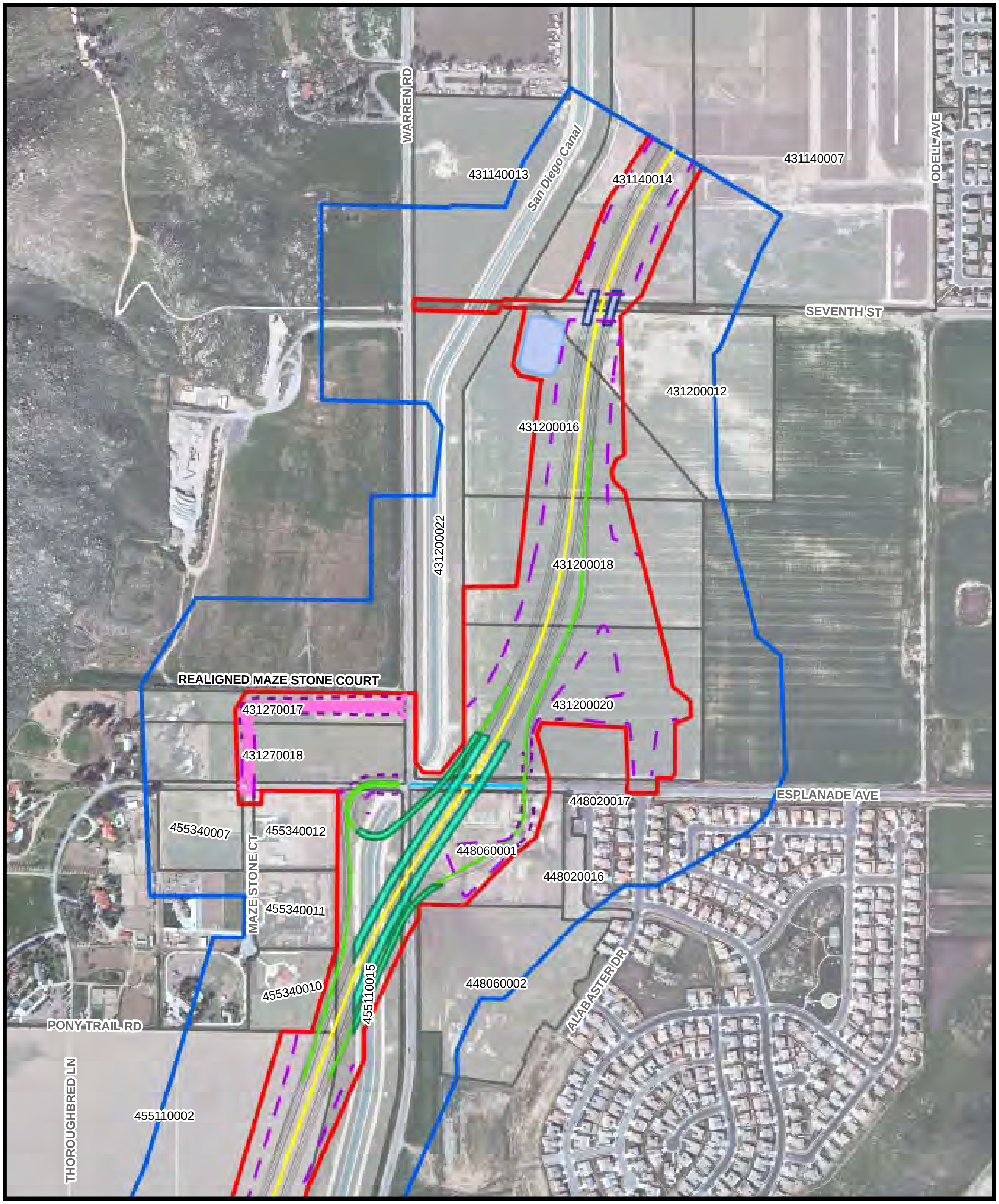
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8k 1 of 2
Roadway Segment K
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

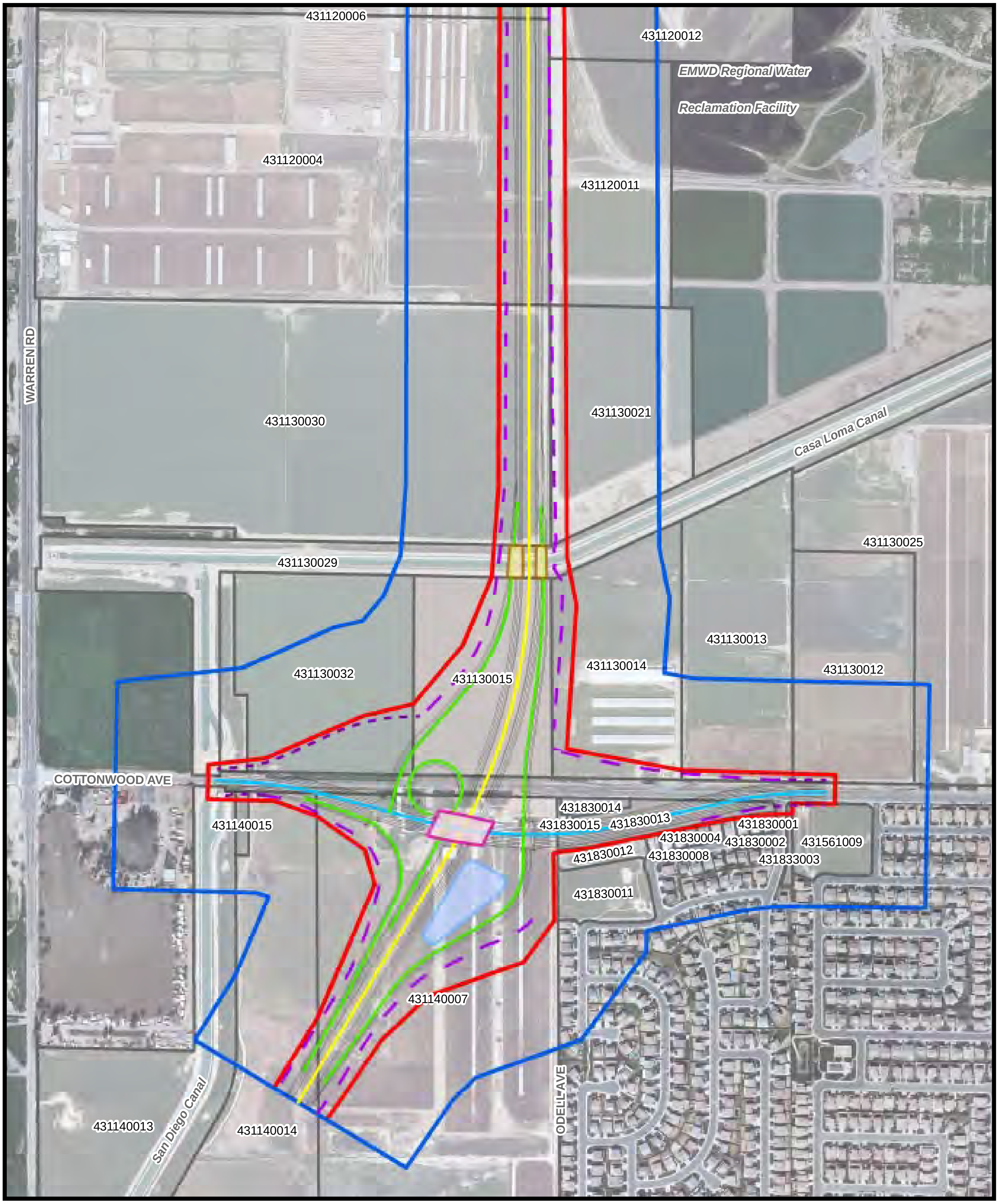
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8k 2 of 2
Roadway Segment K
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

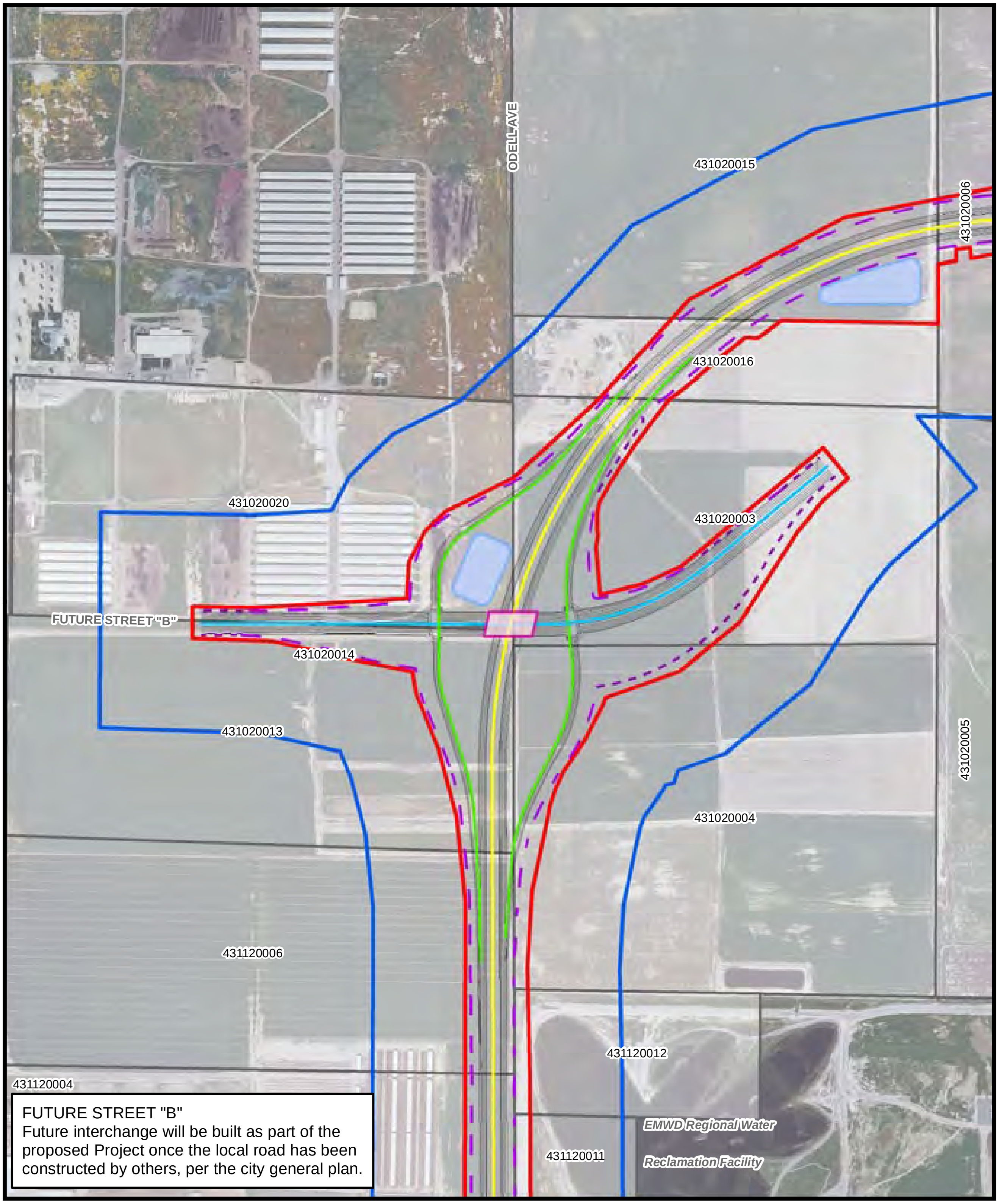
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8l 1 of 3
Roadway Segment L
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



FUTURE STREET "B"
Future interchange will be built as part of the proposed Project once the local road has been constructed by others, per the city general plan.

Aerial Date: June 2009, Lenska Aerial Images

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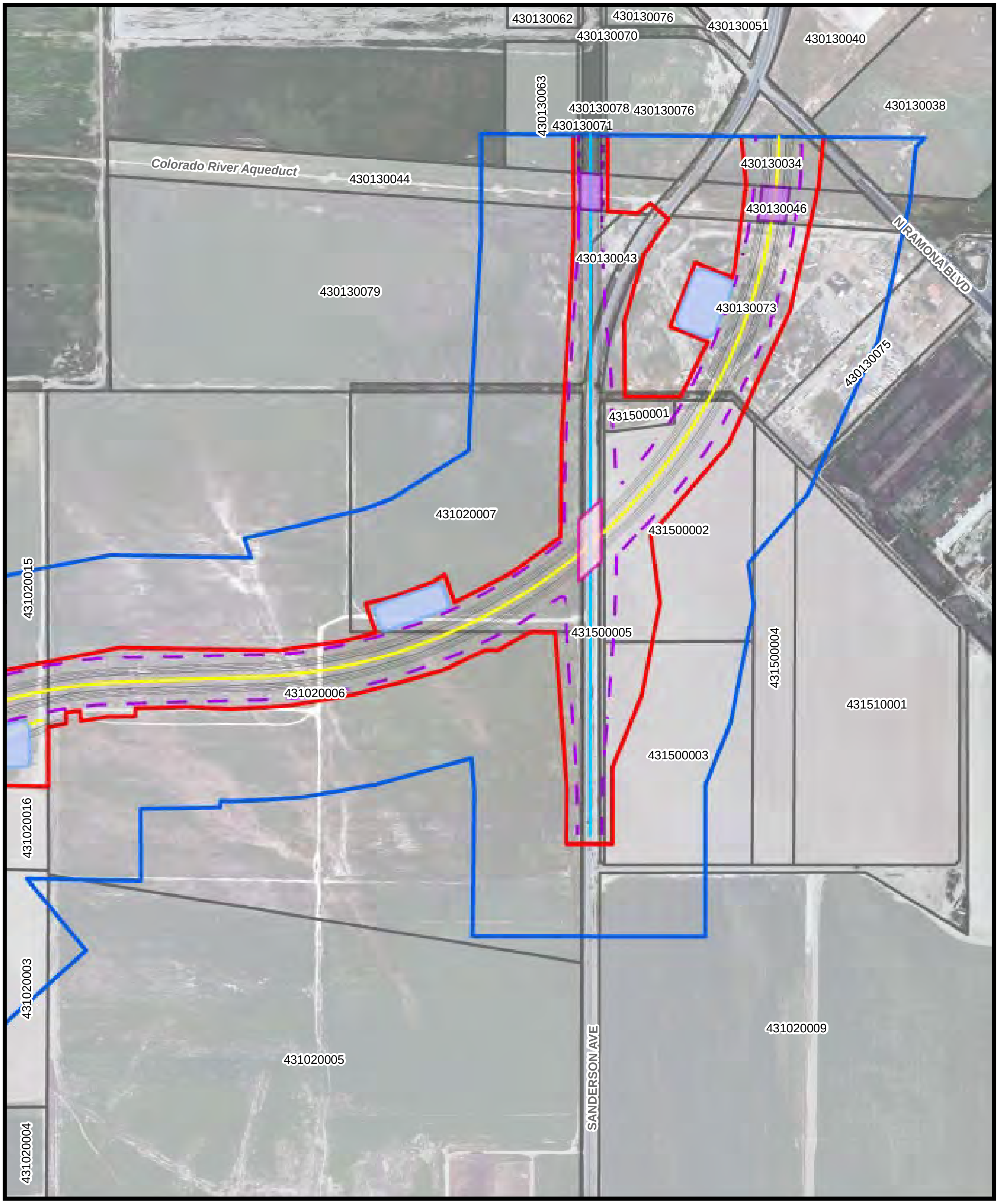
LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-8I 2 of 3
Roadway Segment L
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV_RWT_GRID_A.MXD PFV_RWT_GRID_A.PDF 01/16/2012

LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

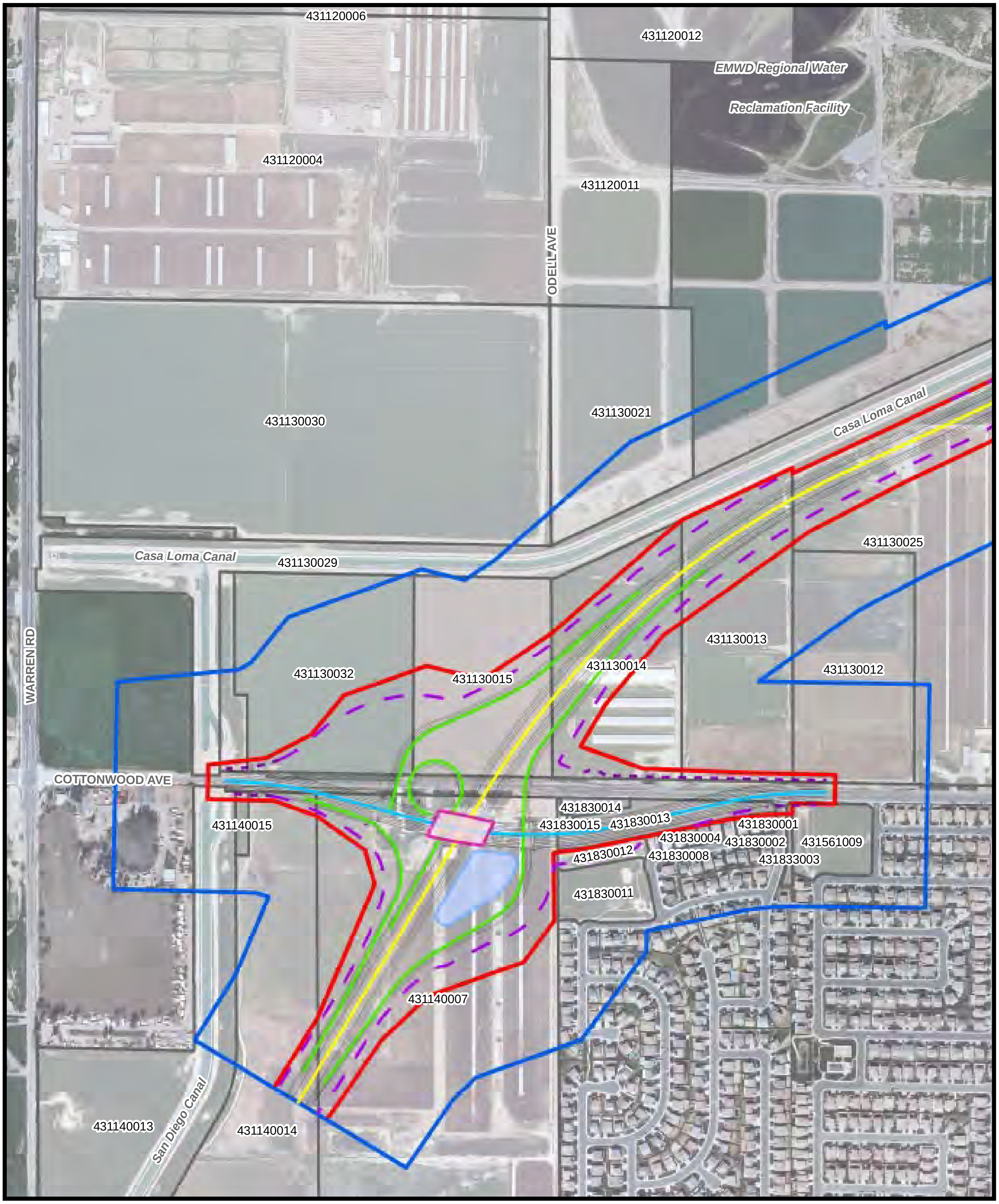
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8I 3 of 3
Roadway Segment L
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV_RWT_GRID_A.MXD PFV_RWT_GRID_A.PDF 01/16/2012

LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

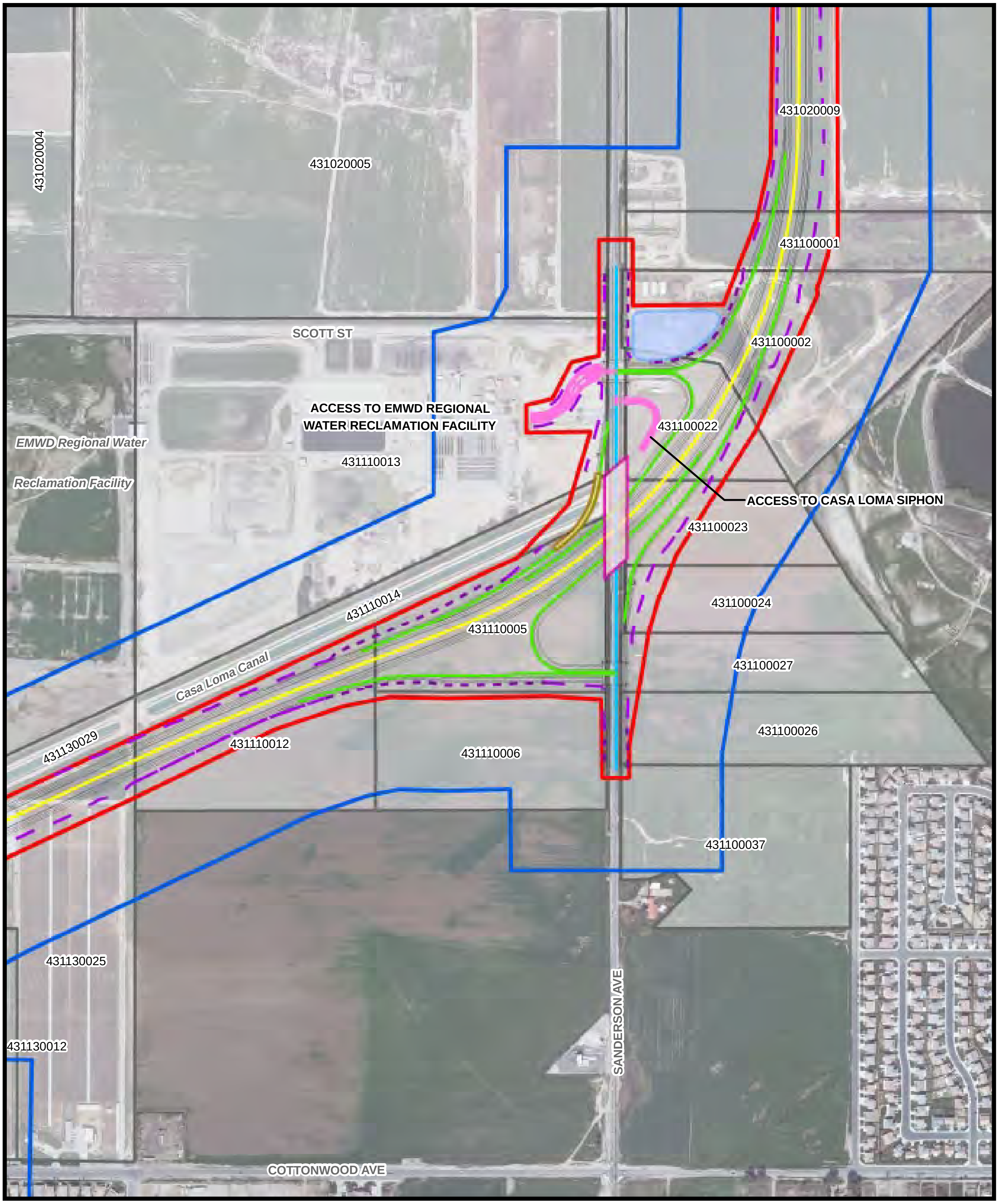
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8m 1 of 3
Roadway Segment M
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

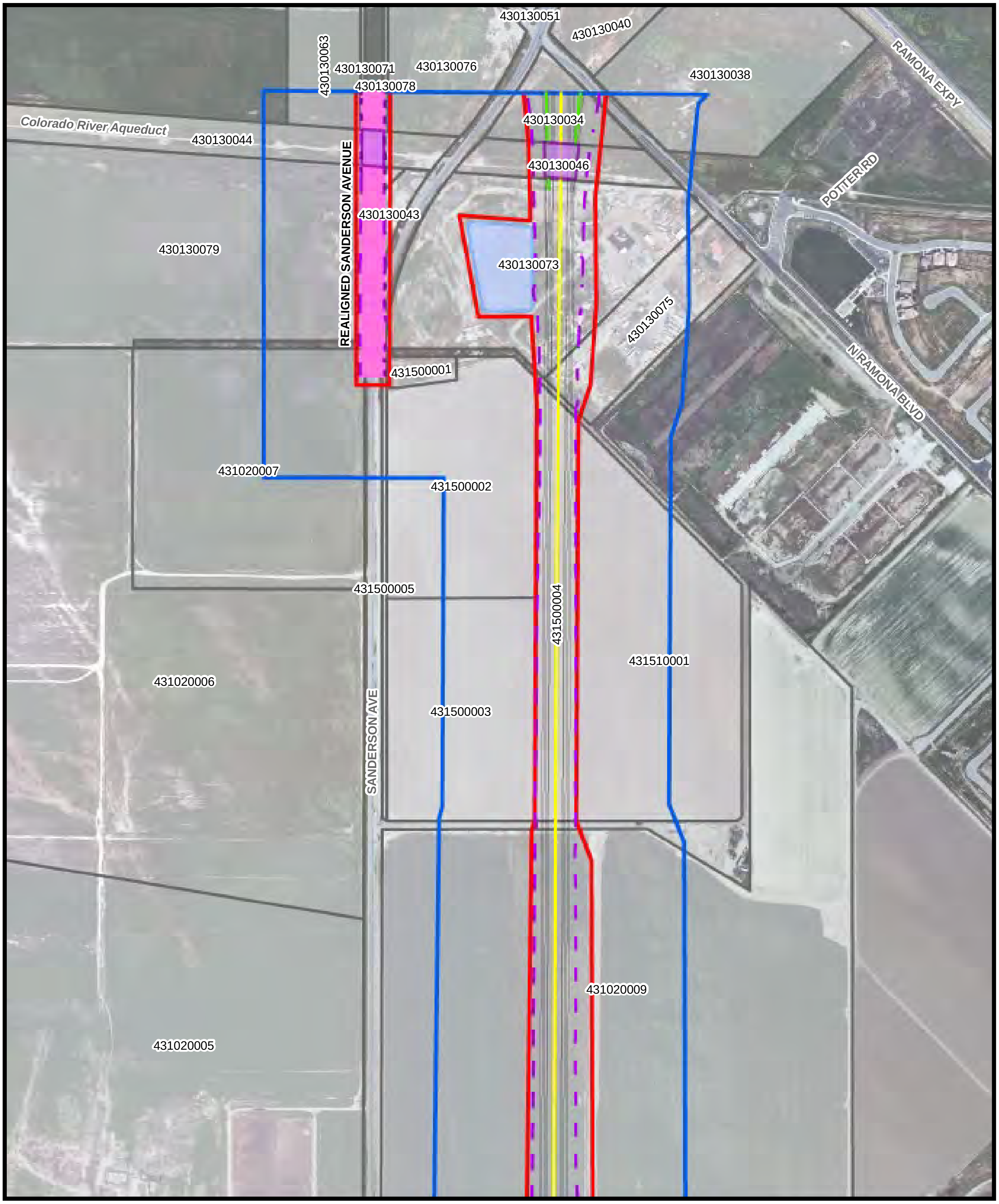
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-8m 2 of 3
Roadway Segment M
Base Condition
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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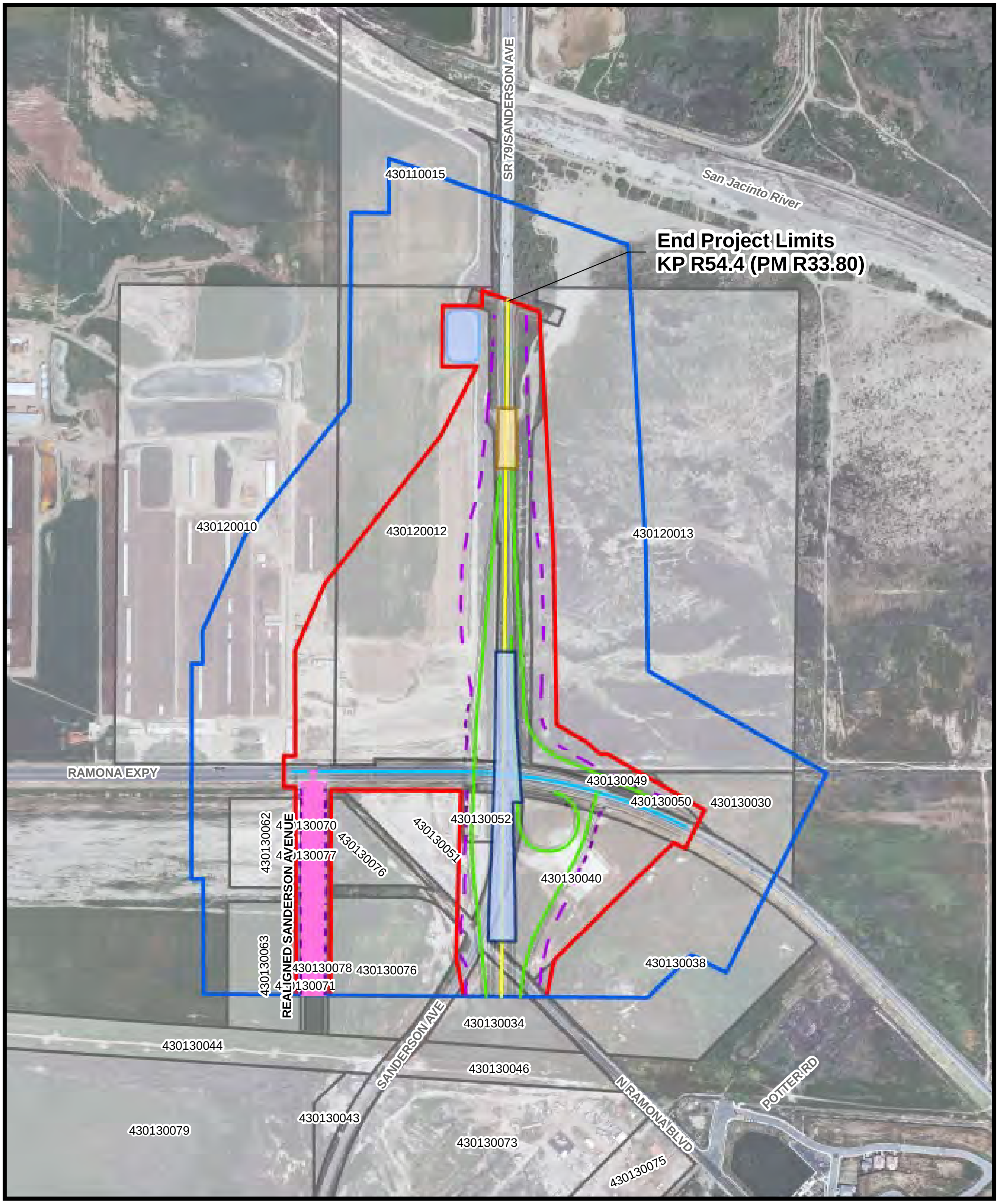
LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-8m 3 of 3
Roadway Segment M
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Cut Line
- Fill Line
- Project Impact Area
- Study Area
- Aqueduct Crossing
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- County Assessor's Parcel[CR]
- Best Management Practices (BMPs)

0 800 Feet

0 200 Meters

1:9,600

Source: CR - County of Riverside

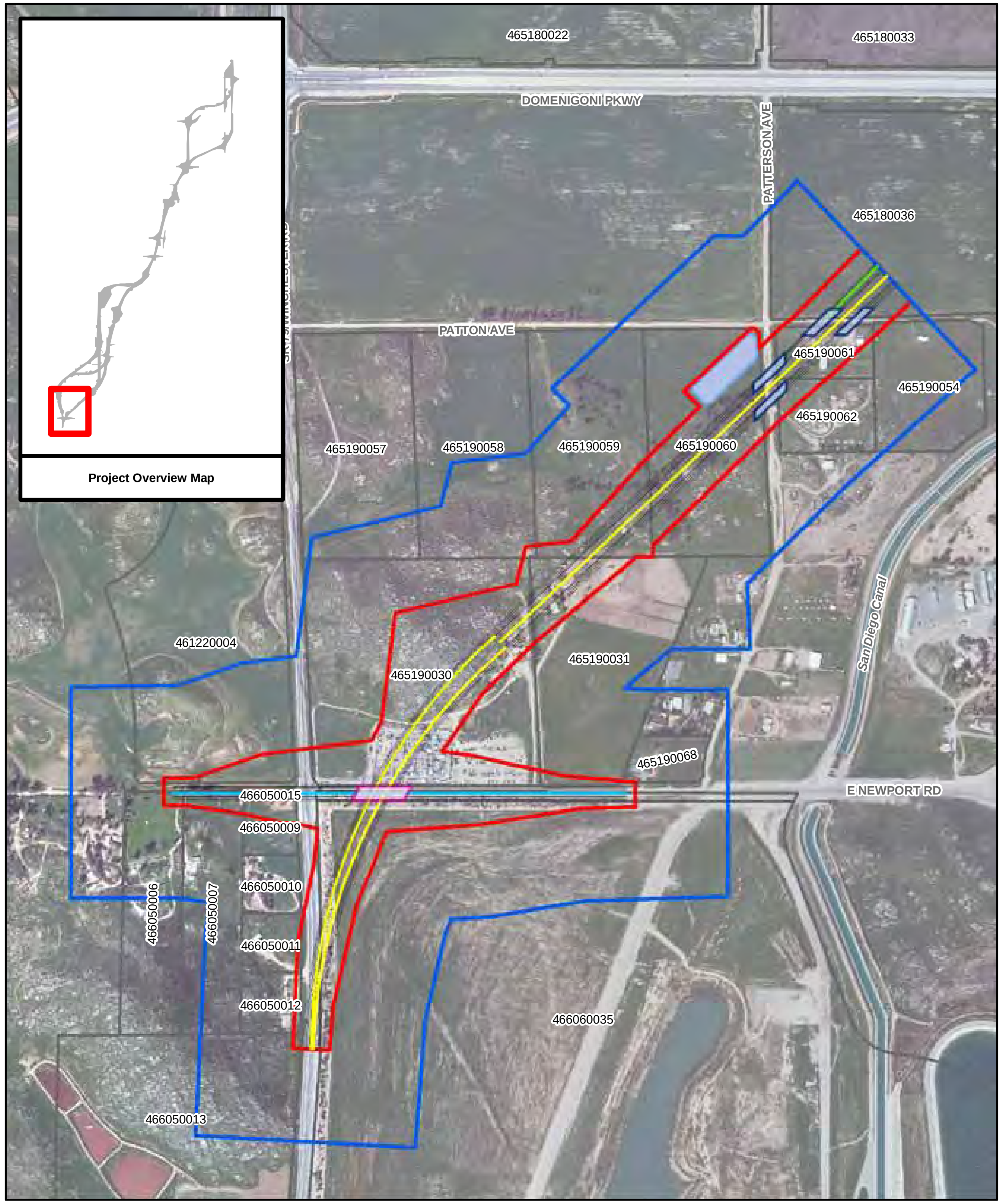
Figure 2.2-8n 1 of 1

Roadway Segment N

Base Condition

20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



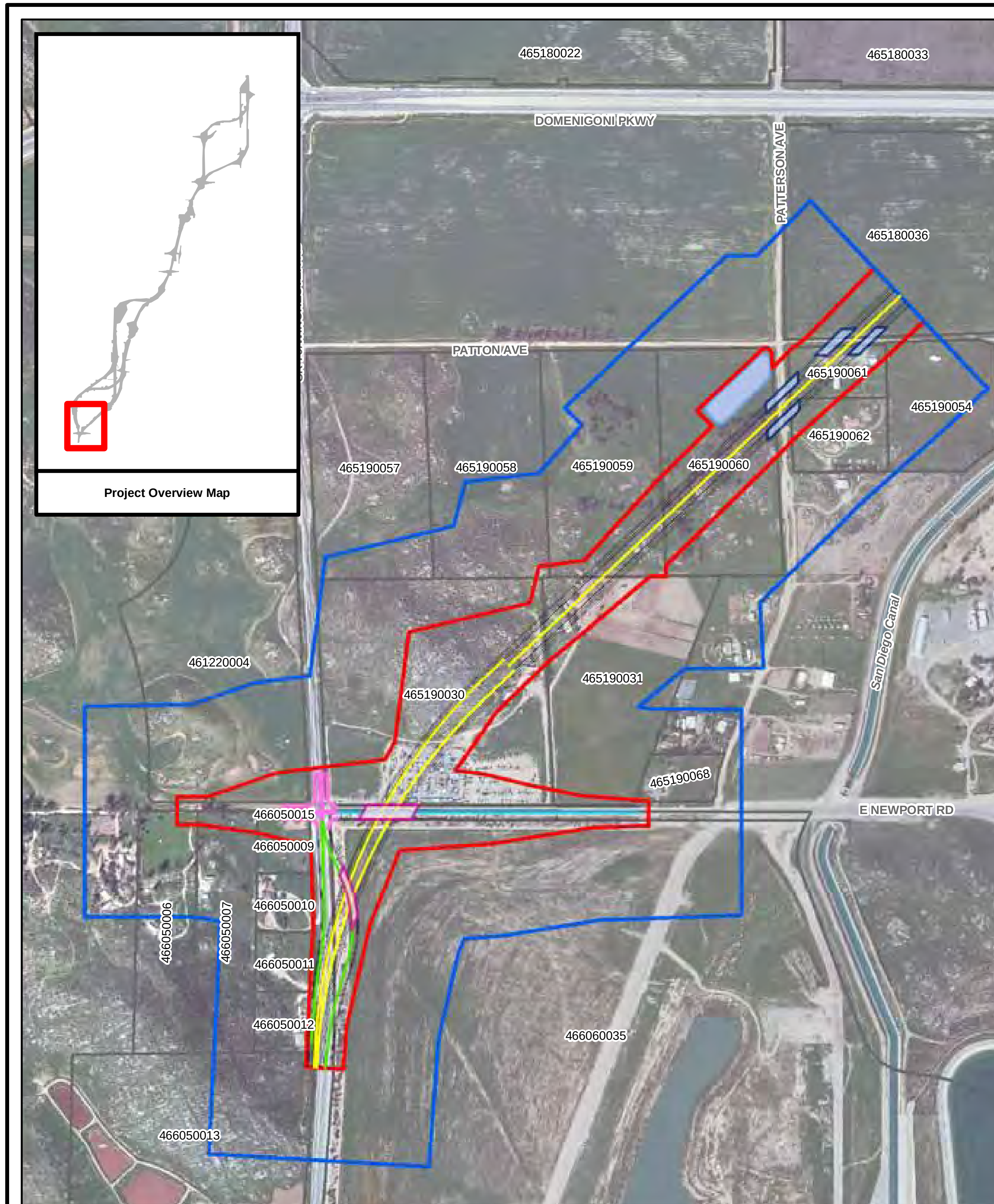
Aerial Date: June 2009, Lenska Aerial Images

LEGEND

- **Project Roadway**
- **Grade-Separated Interchange (Ramps)**
- **Local Cross Street**
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-9 1 of 2
Roadway Segment B
Base Condition
Build Alternatives 1b and 2b
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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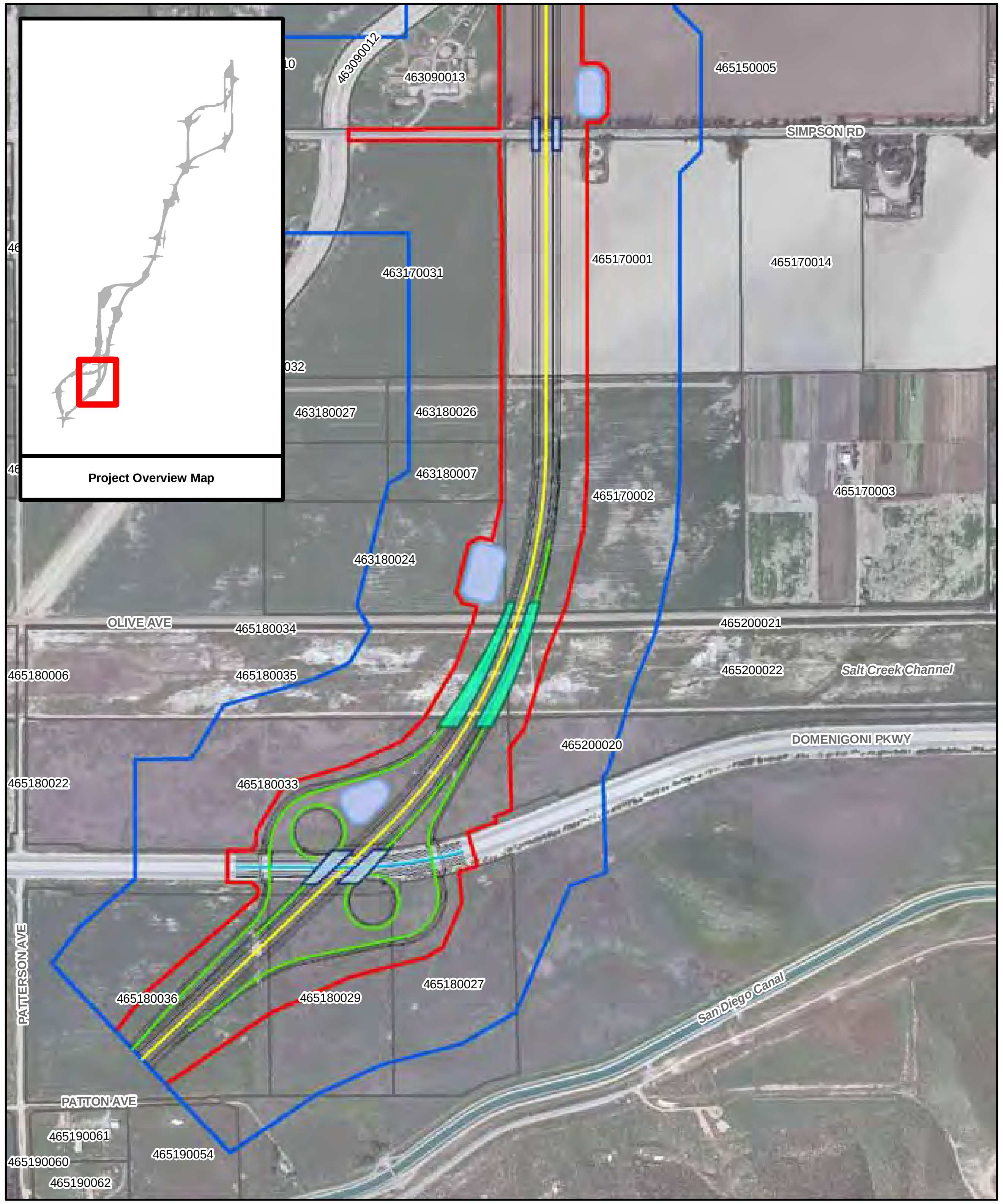
LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-9 2 of 2
Roadway Segment B
Design Options 1b1 and 2b1
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



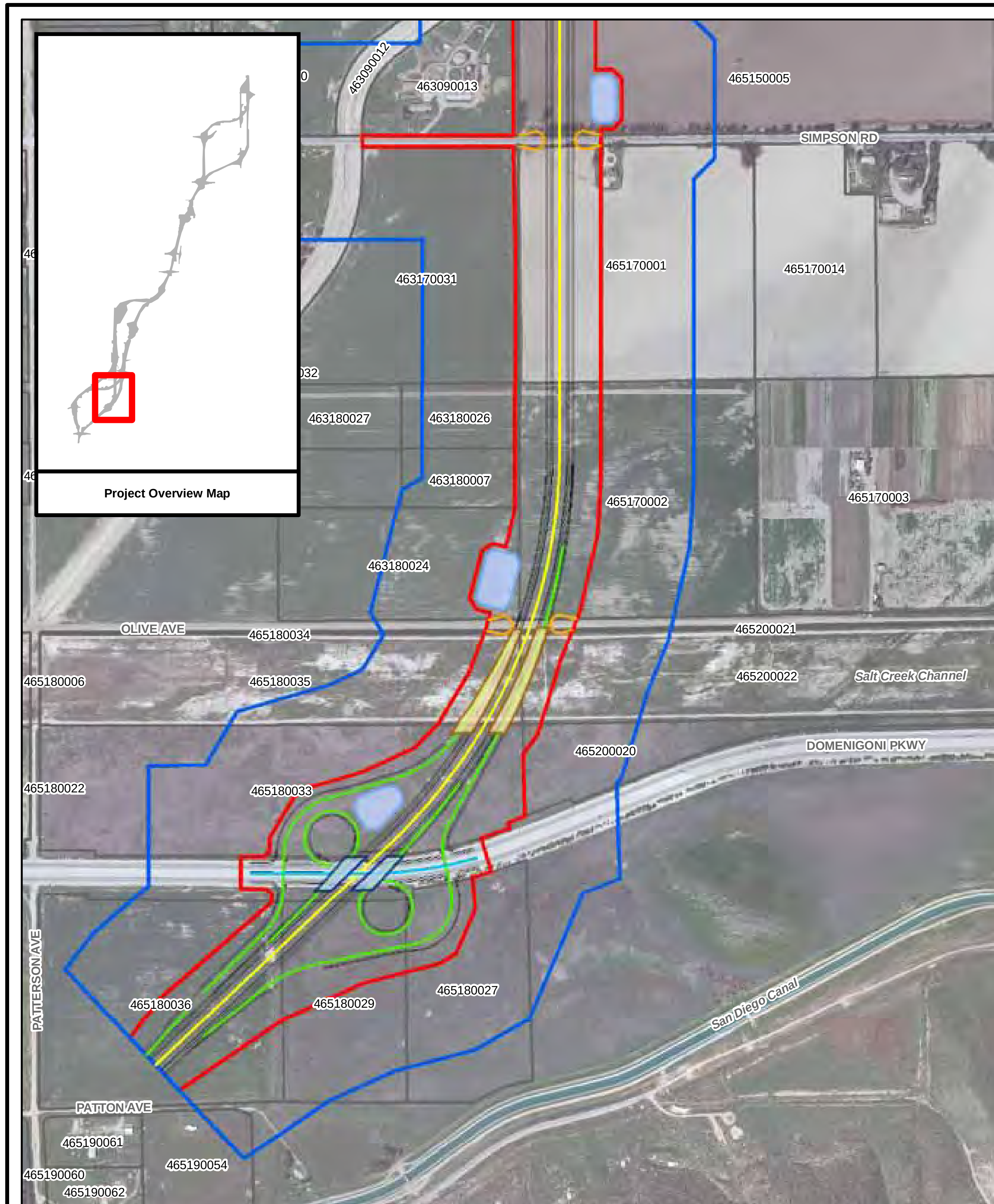
Aerial Date: June 2009, Lenska Aerial Images

LEGEND

- **Project Roadway**
- **Grade-Separated Interchange (Ramps)**
- **Local Cross Street**
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-10a 1 of 2
Roadway Segment C
Base Condition
Build Alternatives 1b
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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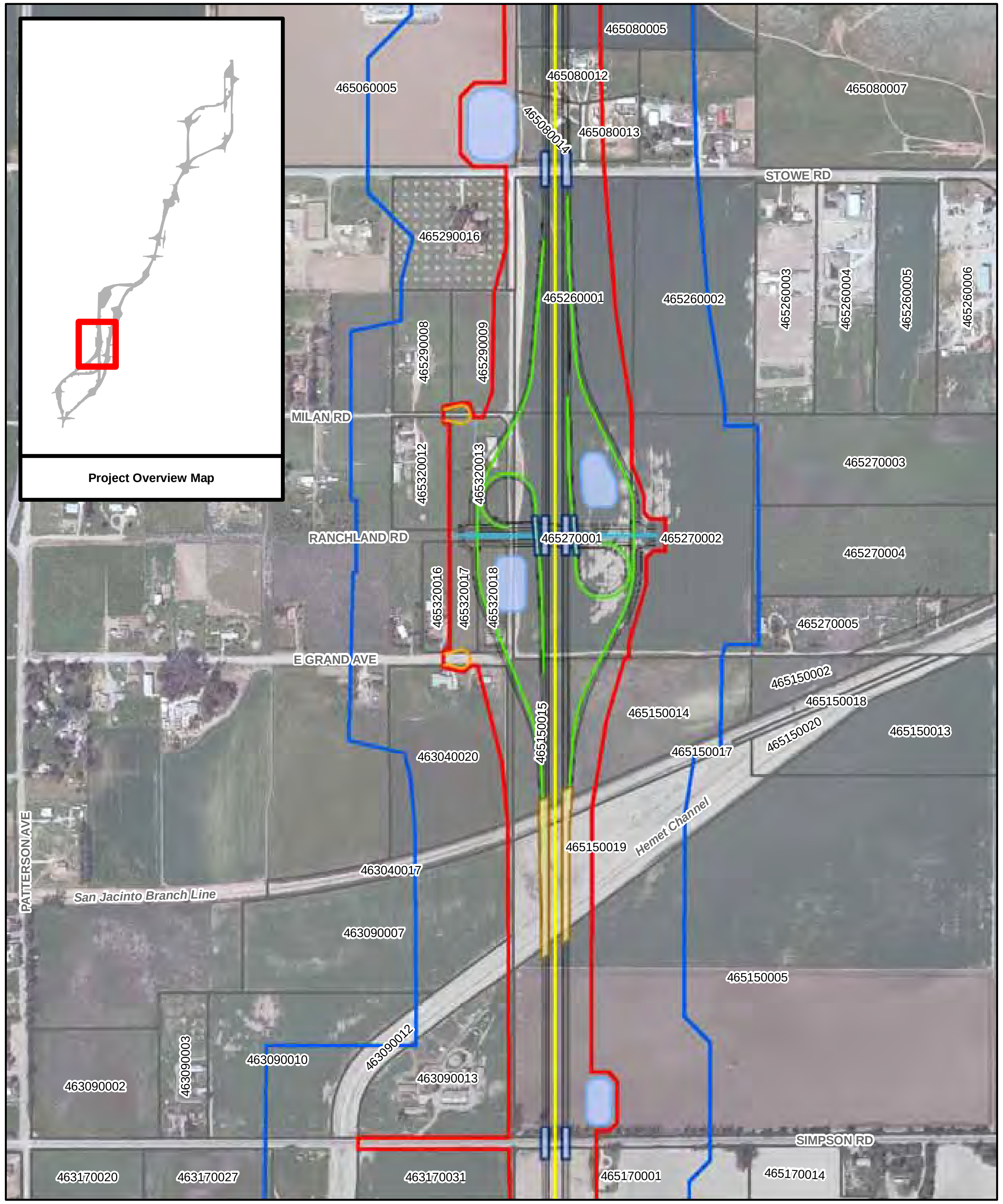
LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-10a 2 of 2
Roadway Segment C
Design Options 1b1
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



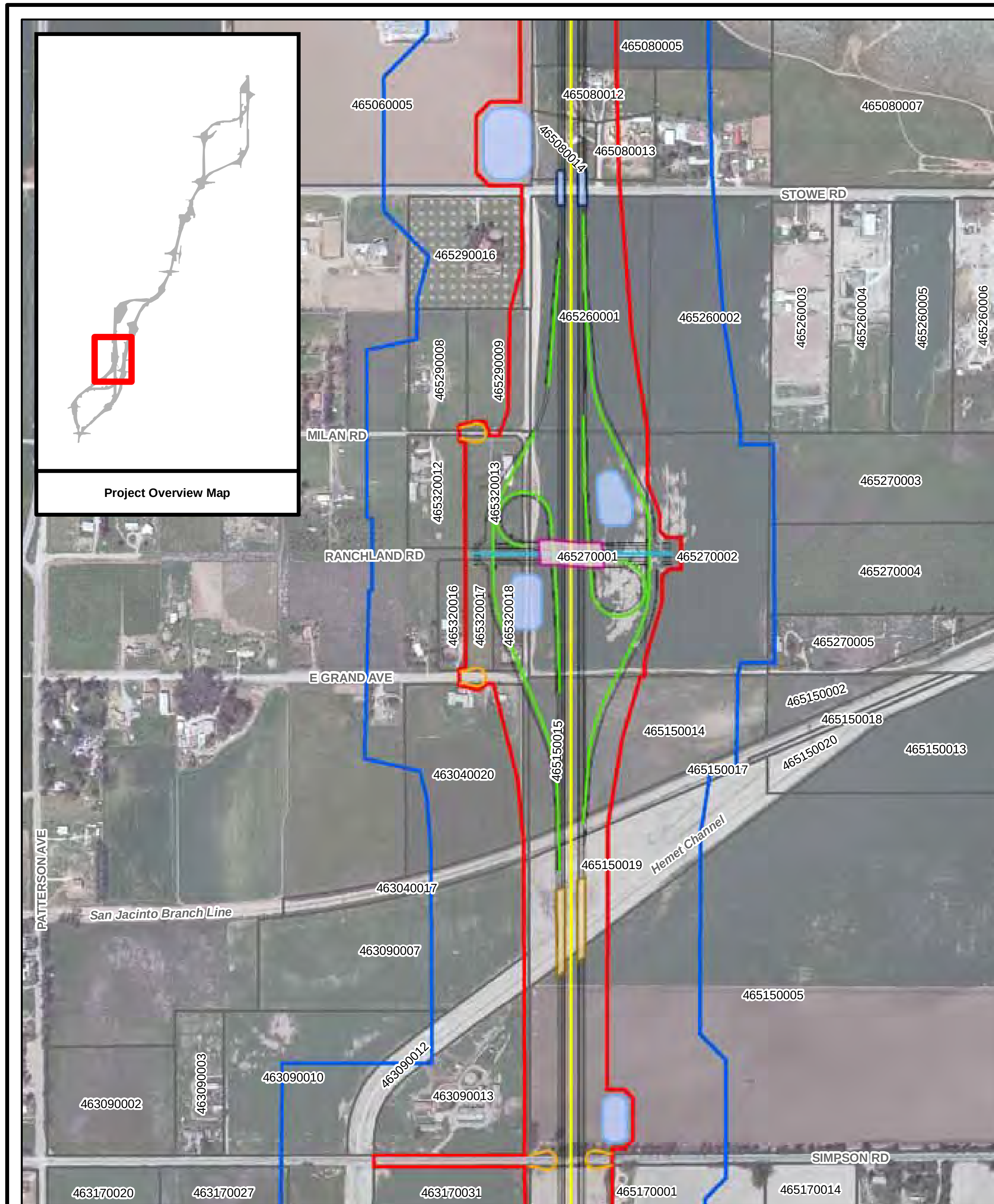
Aerial Date: June 2009, Lenska Aerial Images

LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-10b 1 of 2
Roadway Segment C
Base Condition
Build Alternatives 1b
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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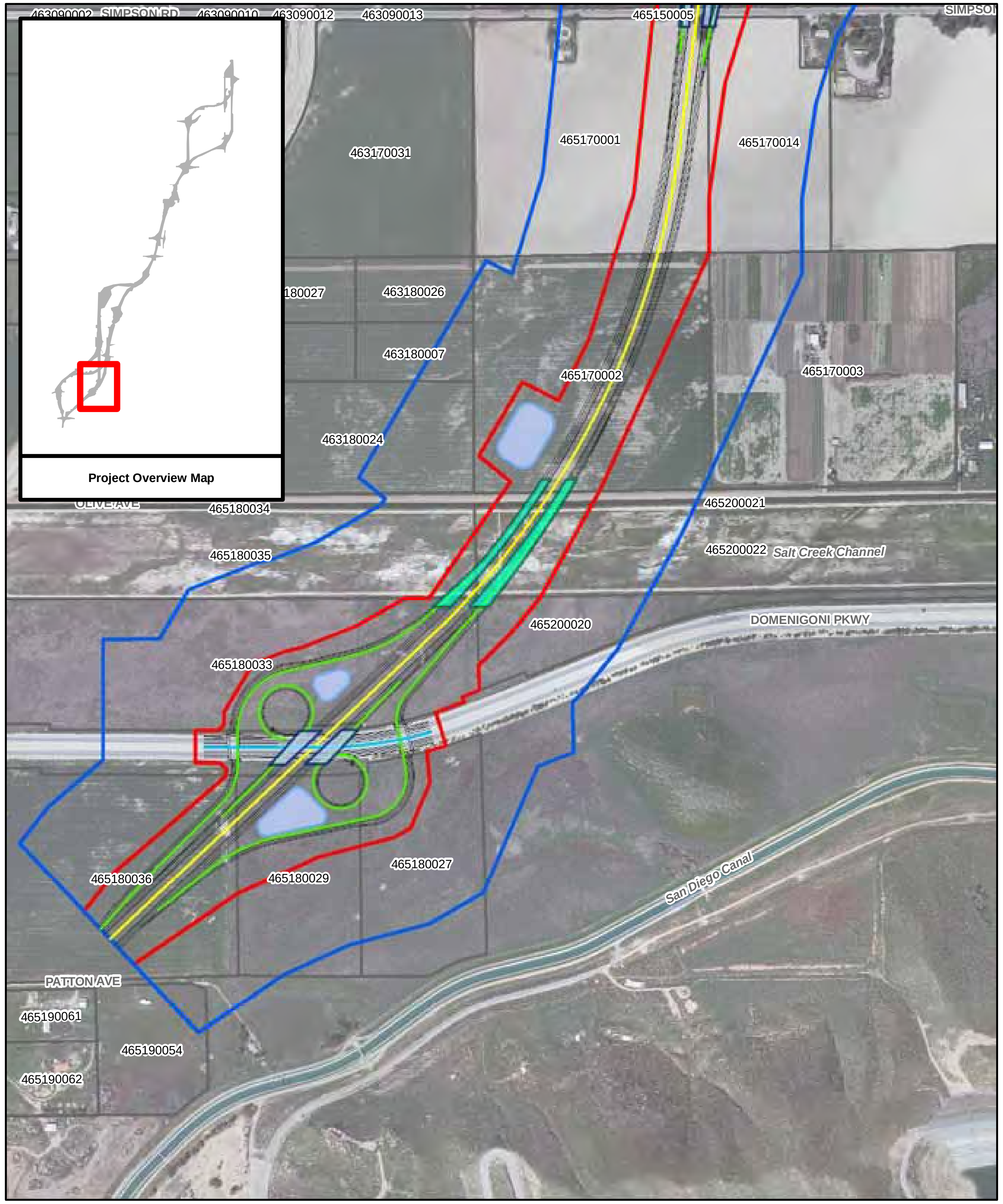
LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-10b 2 of 2
Roadway Segment C
Design Options 1b1
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



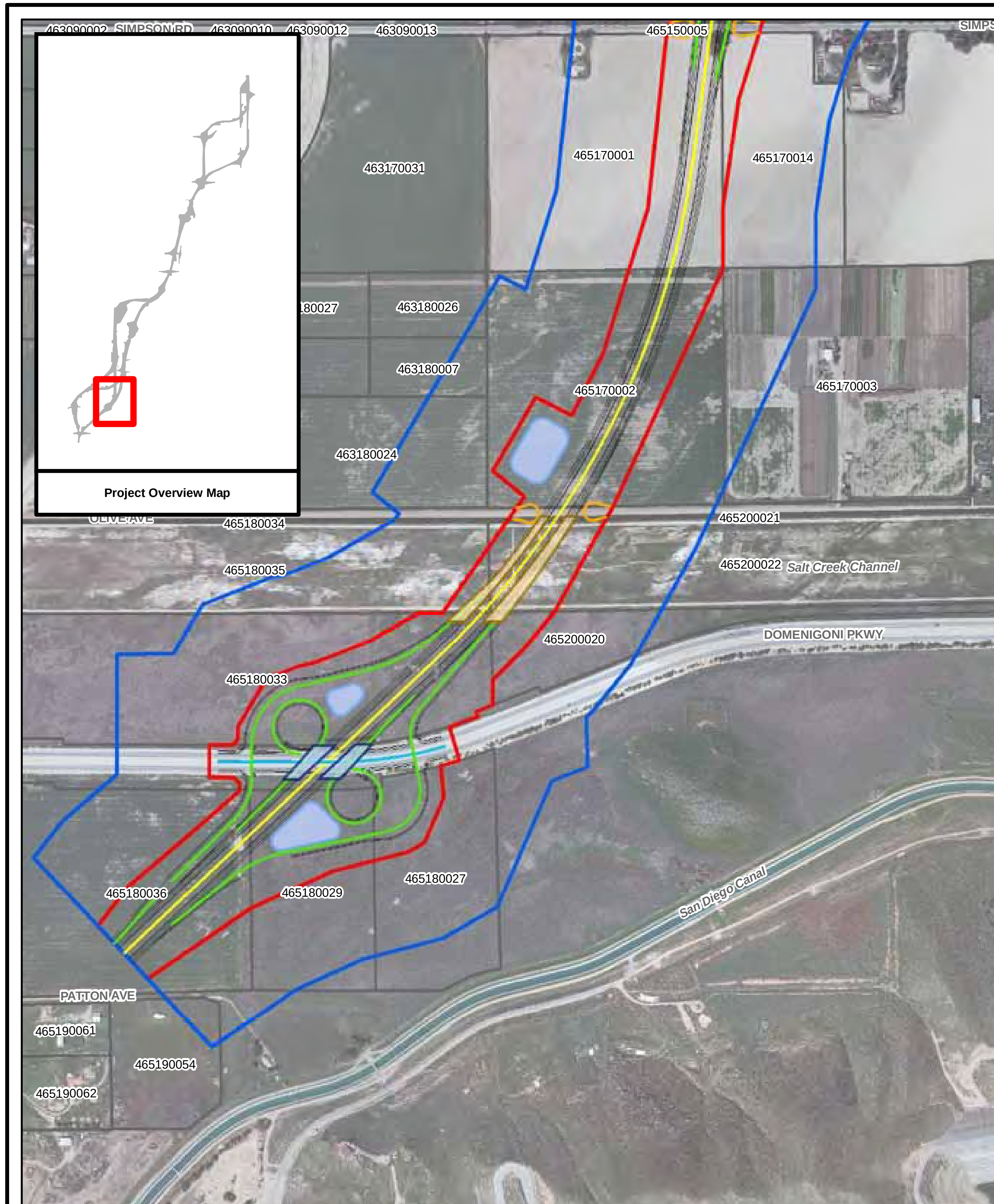
Aerial Date: June 2009, Lenska Aerial Images

LEGEND

- **Project Roadway**
- **Grade-Separated Interchange (Ramps)**
- **Local Cross Street**
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-11a 1 of 2
Roadway Segment D
Base Condition
Build Alternatives 2b
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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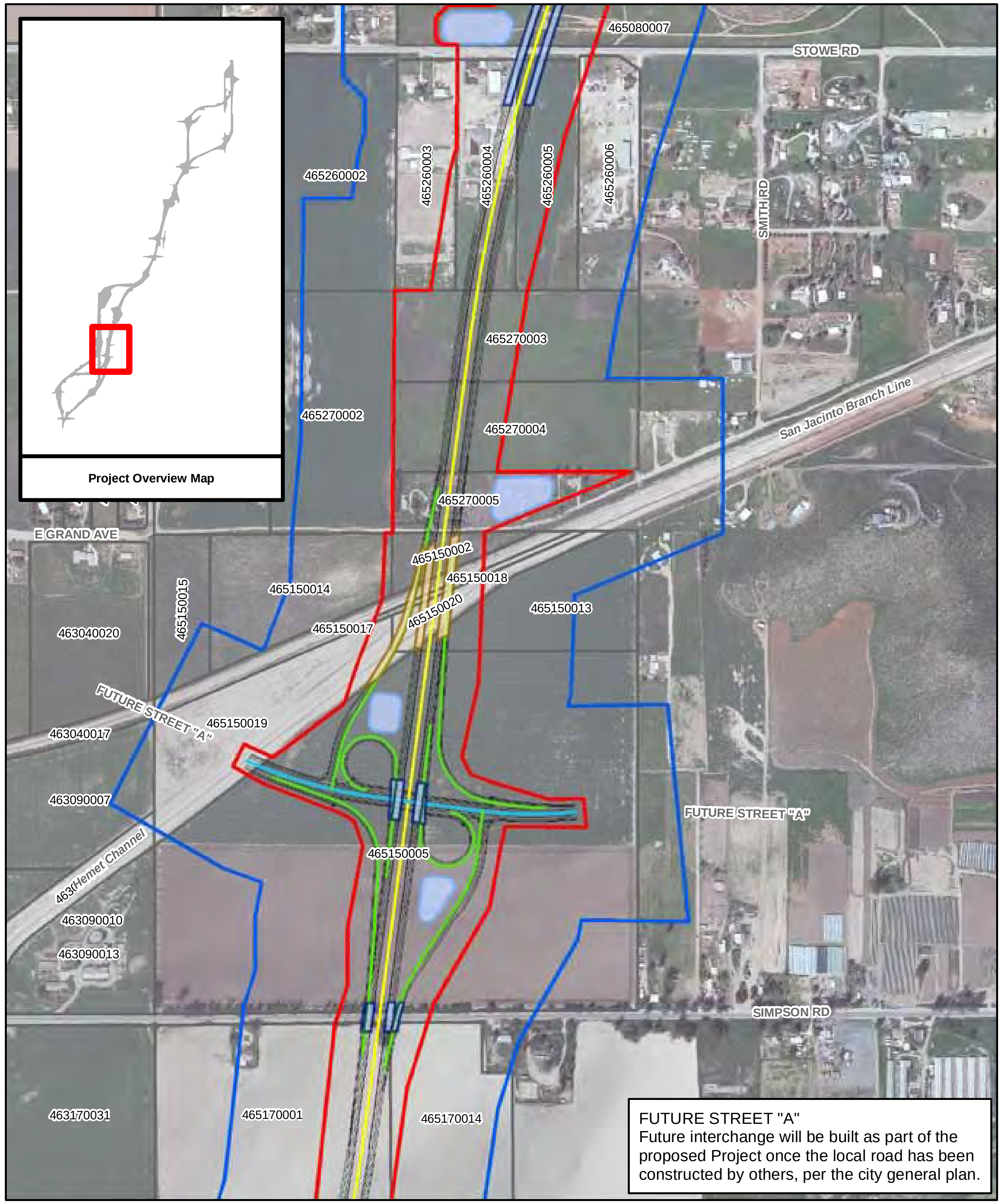
LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-11a 2 of 2
Roadway Segment D
Design Options 2b1
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



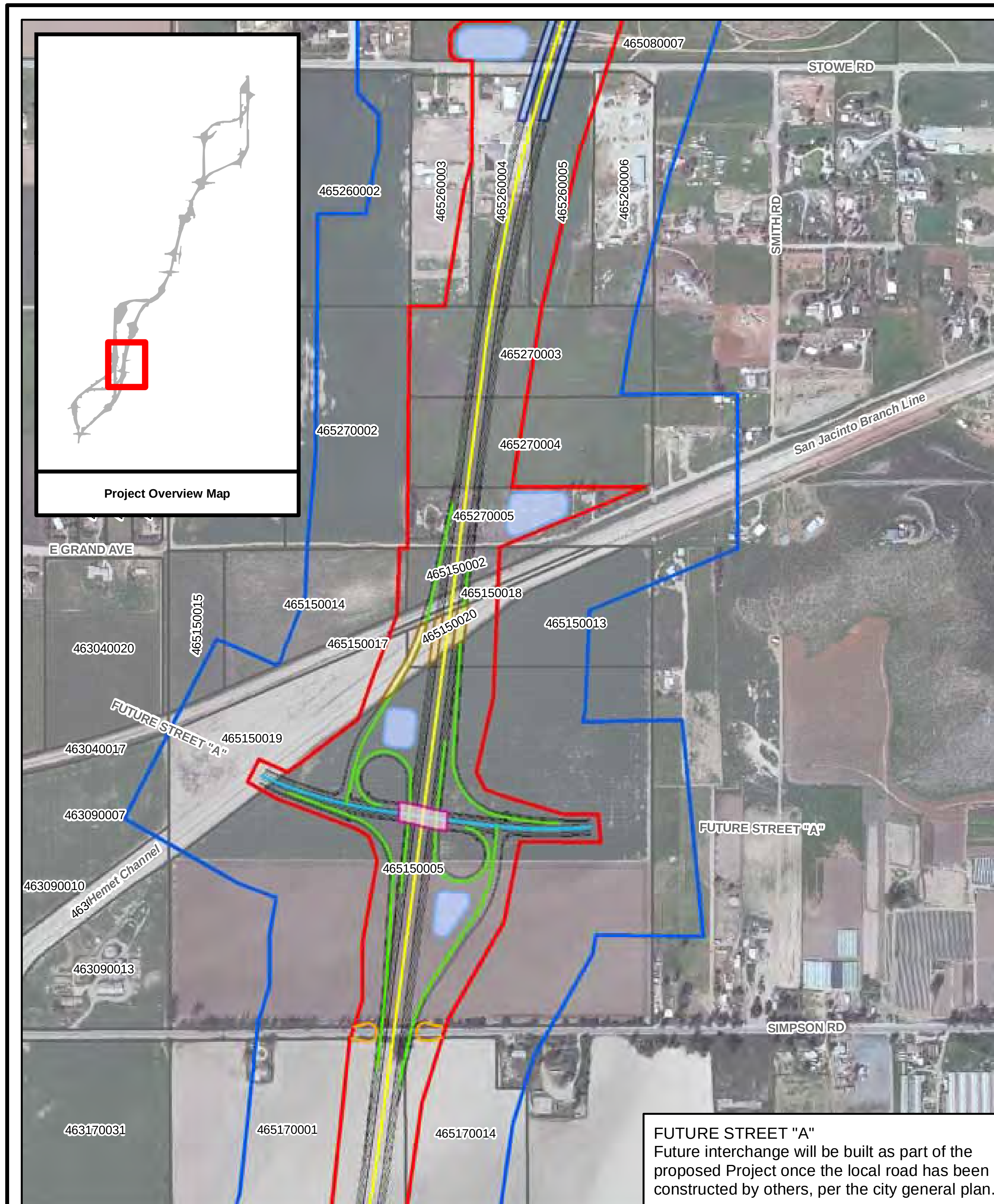
Aerial Date: June 2009, Lenska Aerial Images

LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-11b 1 of 2
Roadway Segment D
Base Condition
Build Alternatives 2b
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



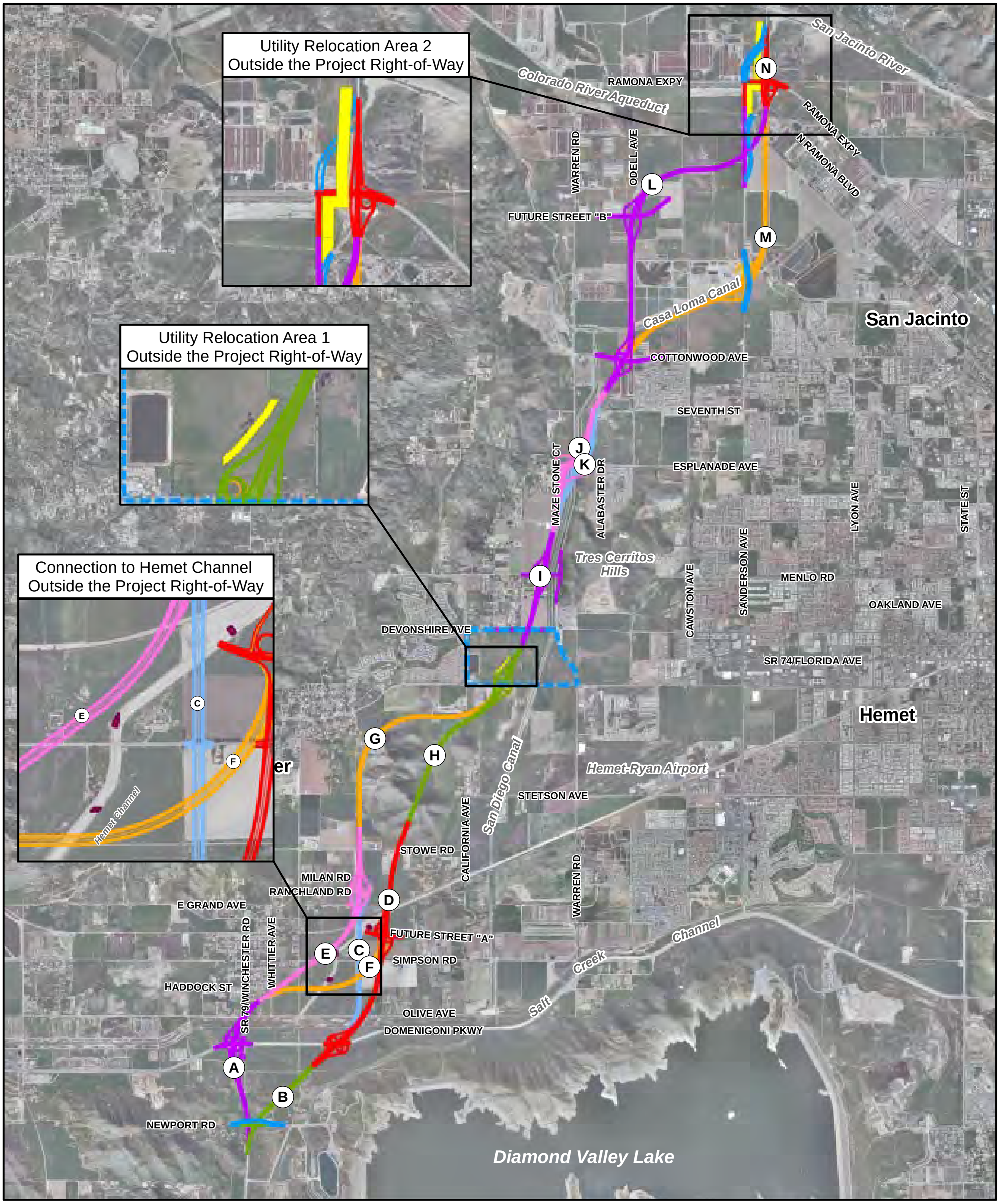
Aerial Date: June 2009, Lenska Aerial Images \\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\BASE_DO_SEGDB_B_V10.MXD BASE_DO_SEGDB_B_V10.PDF 09/25/2012

LEGEND

- Project Roadway
- Grade-Separated Interchange (Ramps)
- Local Cross Street
- Cul-de-Sac
- Local Road
- Project Impact Area
- Study Area
- County Assessor's Parcel[CR]
- Bridge over Local Street
- Bridge over Local Street and Other Feature
- Bridge over Other Feature
- Bridge over SR 79
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-11b 2 of 2
Roadway Segment D
Design Options 2b1
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PAD-PHZ_TD_A.MXD PAD-PHZ_TD_A.PDF 01/06/2012

LEGEND

- Long-Term Traffic Detour
- Constructed Traffic Detour
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

0 7,000 Feet

0 1,500 Meters

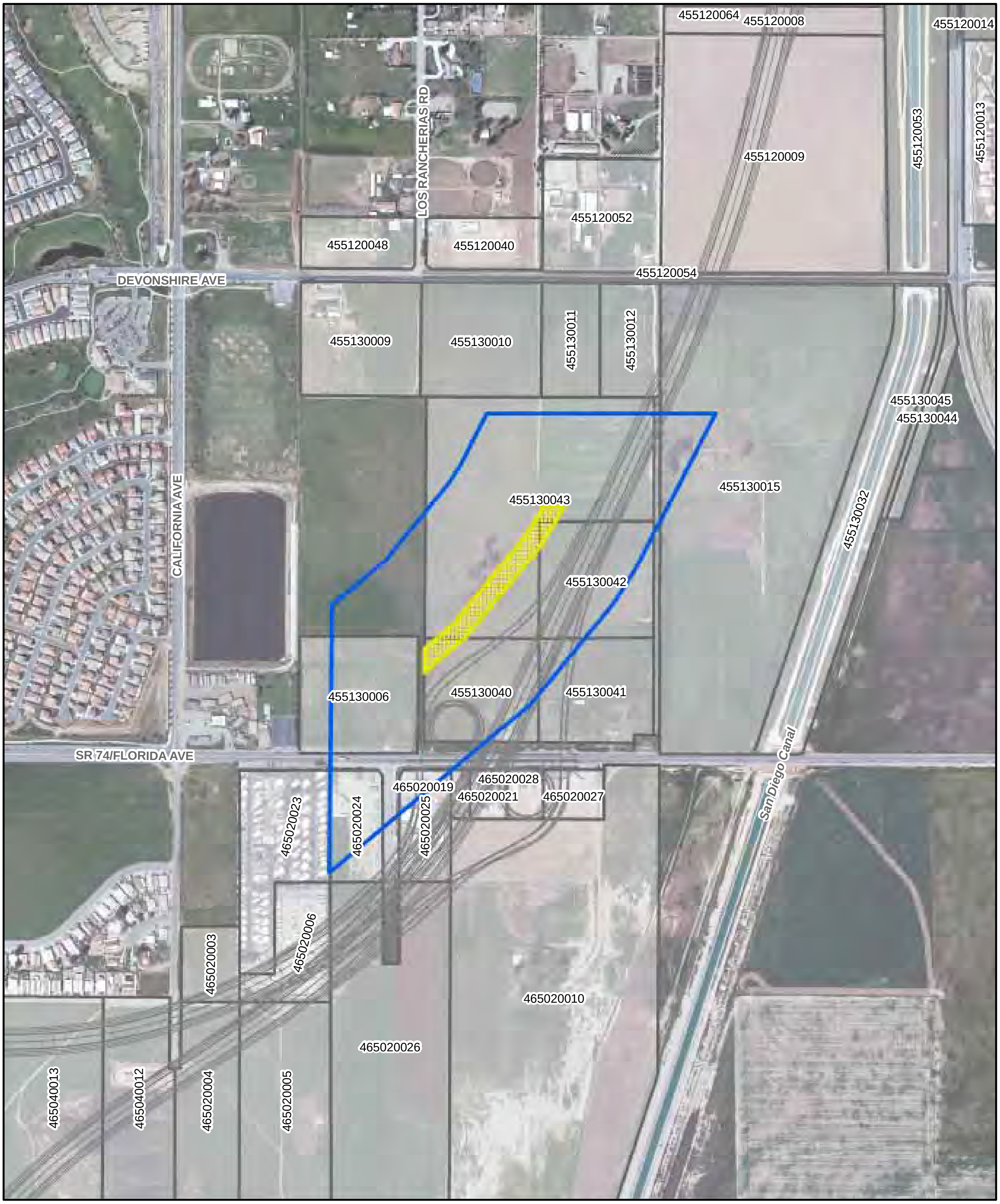
1:84,000

Source: Final Project Description, November 2007

Note: This figure depicts the proposed roadway alignment by roadway segment. The roadway segments are shown in multiple colors to differentiate them from each other.

Figure 2.2-12
Unique Design Features (including Long-Term Traffic Detours)

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

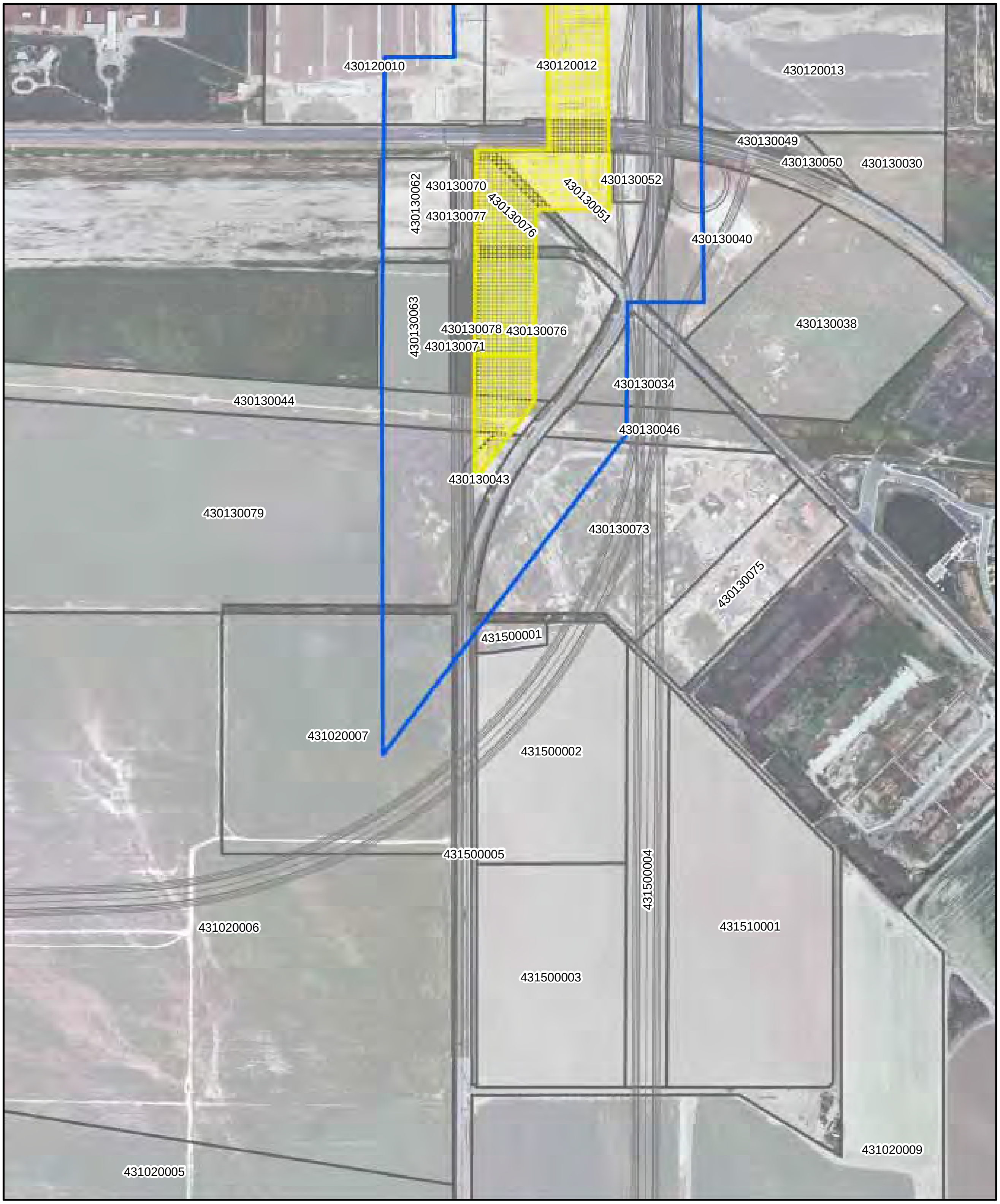
\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV_RWT_UT_A.MXD PFV_PWT_UT_A.PDF 01/06/2012

LEGEND

- Project Roadway and Local Street Improvements
- Utility Relocation Area
- Study Area
- County Assessor's Parcel[CR]

0 800 Feet
0 200 Meters
1:9,600
Source: CR - County of Riverside

Figure 2.2-13a
Utility Relocation Area 1 (Roadway Segments G and H)
20-Year Design Horizon
Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV_RWT_UT_A.MXD PFV_PWT_UT_A.PDF 01/06/2012

LEGEND

Project Roadway and Local Street Improvements

Utility Relocation Area

Study Area

County Assessor's Parcel[CR]

0 800 Feet

0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-13b 1 of 2
Utility Relocation Area 2
(Roadway Segments L, M, and N)
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV_RWT_UT_A.MXD PFV_PWT_UT_A.PDF 01/06/2012

LEGEND

- Project Roadway and Local Street Improvements
- Utility Relocation Area
- Study Area
- County Assessor's Parcel[CR]

0 800 Feet

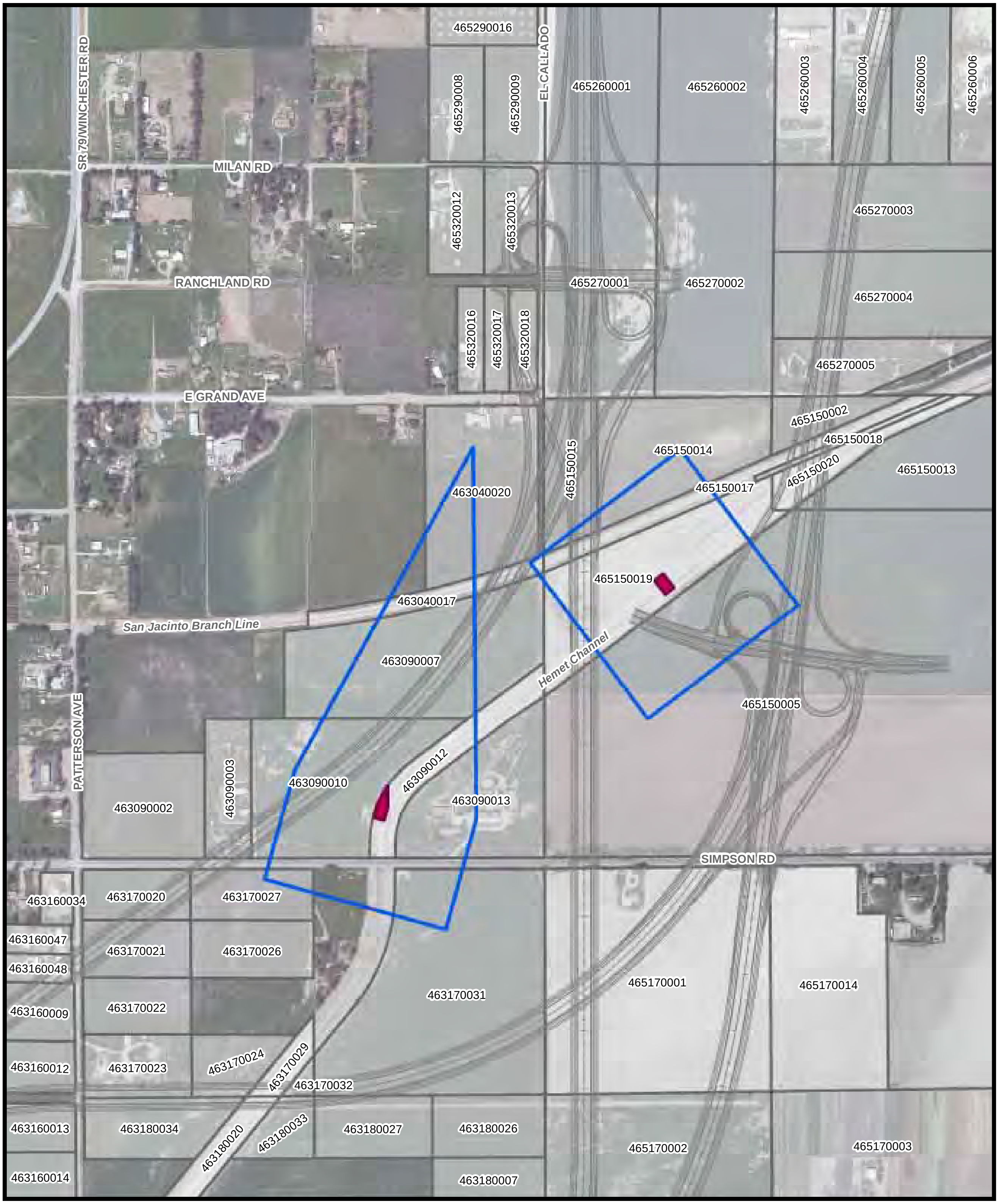
0 200 Meters

1:9,600

Source: CR - County of Riverside

Figure 2.2-13b 2 of 2
Utility Relocation Area 2 (Roadway Segments L, M, and N)
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV-RWT_CHCA_A.MXD PFV-RWT_CHCA_A.PDF 01/06/2012

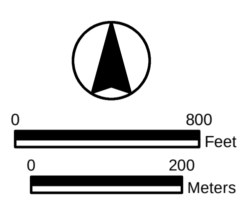
LEGEND

Project Roadway and Local Street Improvements

Connection to Hemet Channel Outside the Project Right-of-Way

Study Area

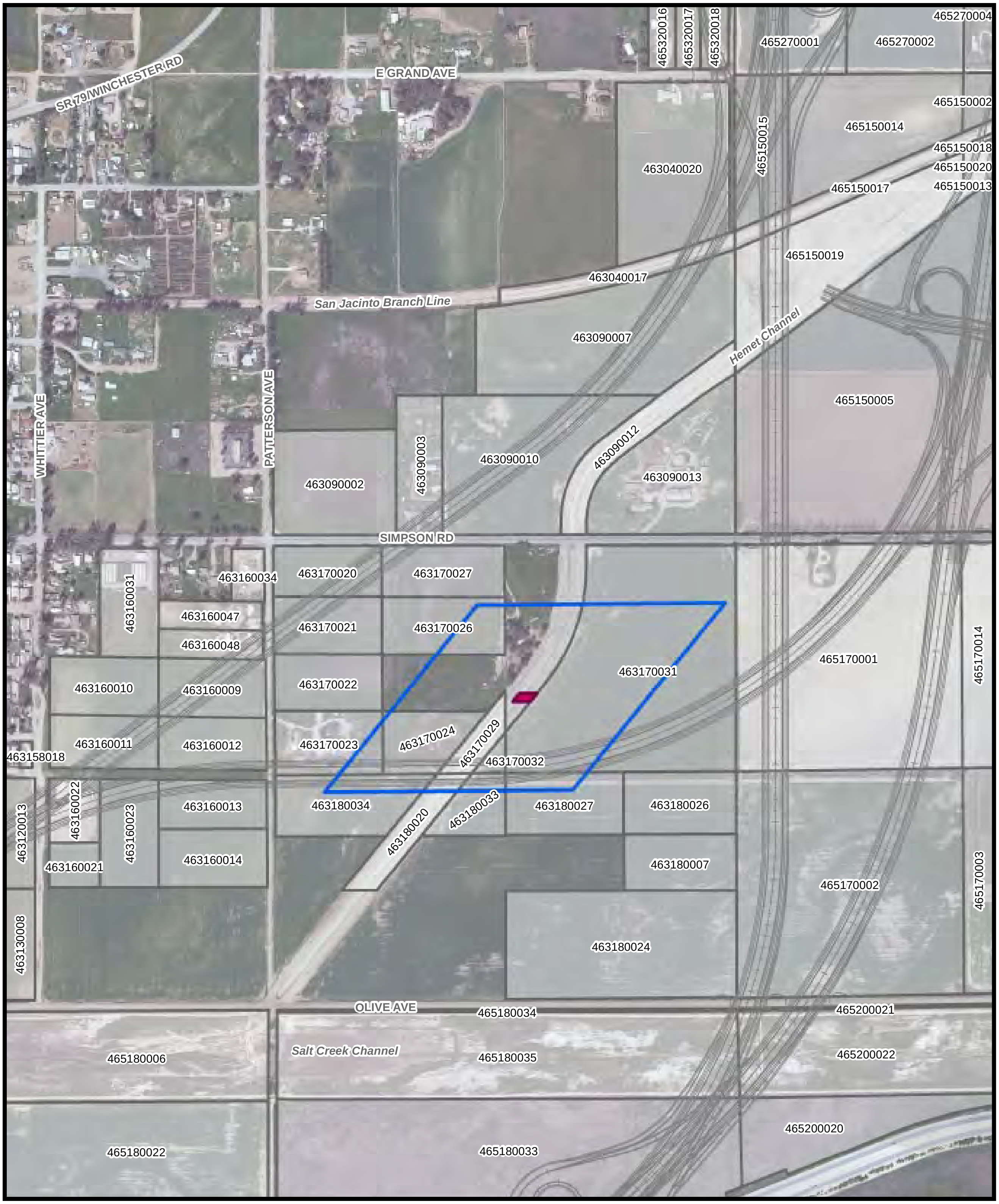
County Assessor's Parcel[CR]



Source: CR - County of Riverside

Figure 2.2-14a
Connections 1 and 2 to Hemet Channel Outside the Project Right-of-Way (Roadway Segment E)
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\PFV-RWT_CHCB_A.MXD PFV-RWT_CHCB_A.PDF 01/06/2012

LEGEND

Project Roadway and Local Street Improvements

Connection to Hemet Channel Outside the Project Right-of-Way

Study Area

County Assessor's Parcel[CR]

0 800 Feet

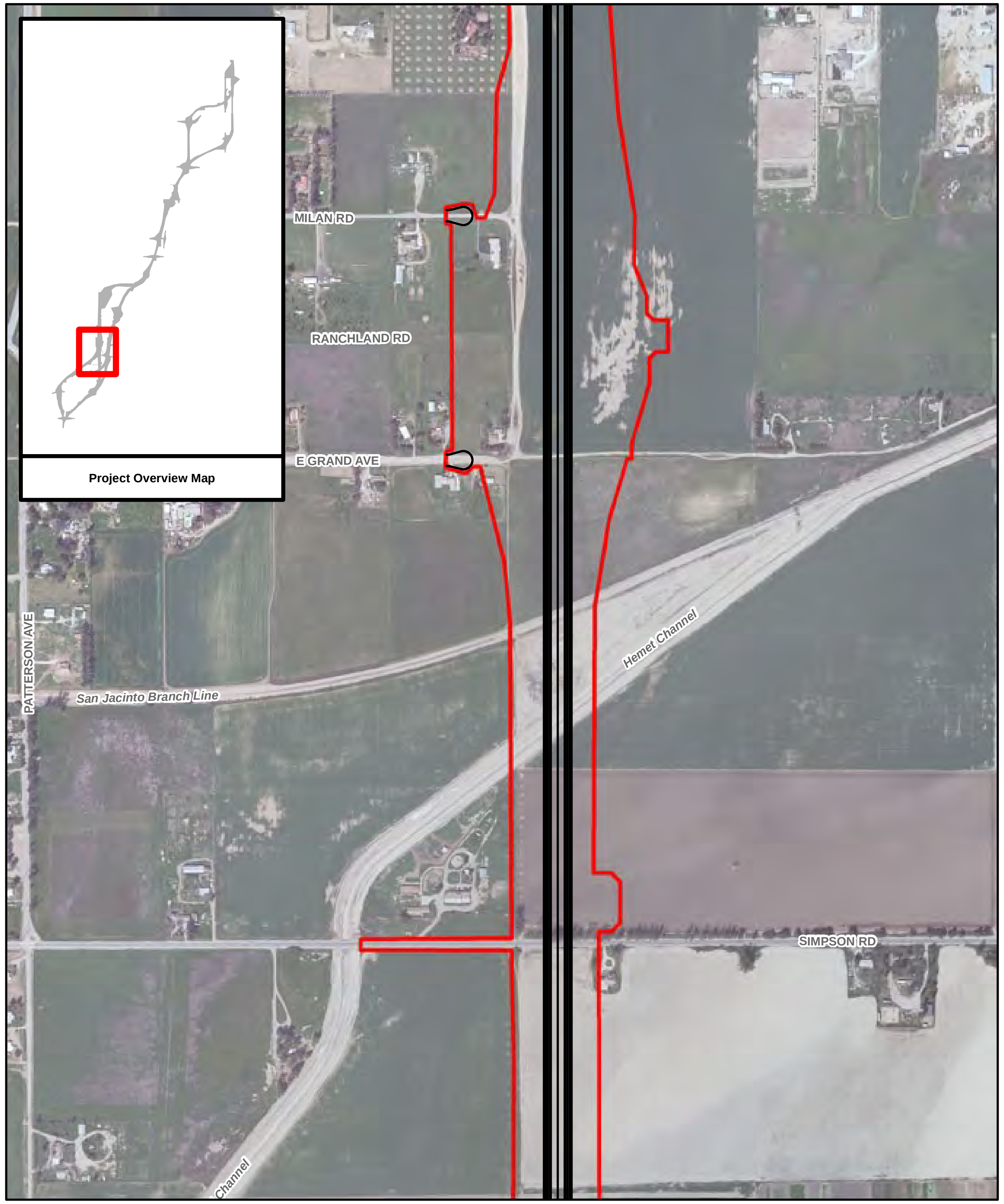
0 200 Meters

1:10,000

Source: CR - County of Riverside

Figure 2.2-14b
Connection 3 to Hemet Channel Outside the Project Right-of-Way (Roadway Segment F) 20-Year Design Horizon

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

LEGEND

Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon

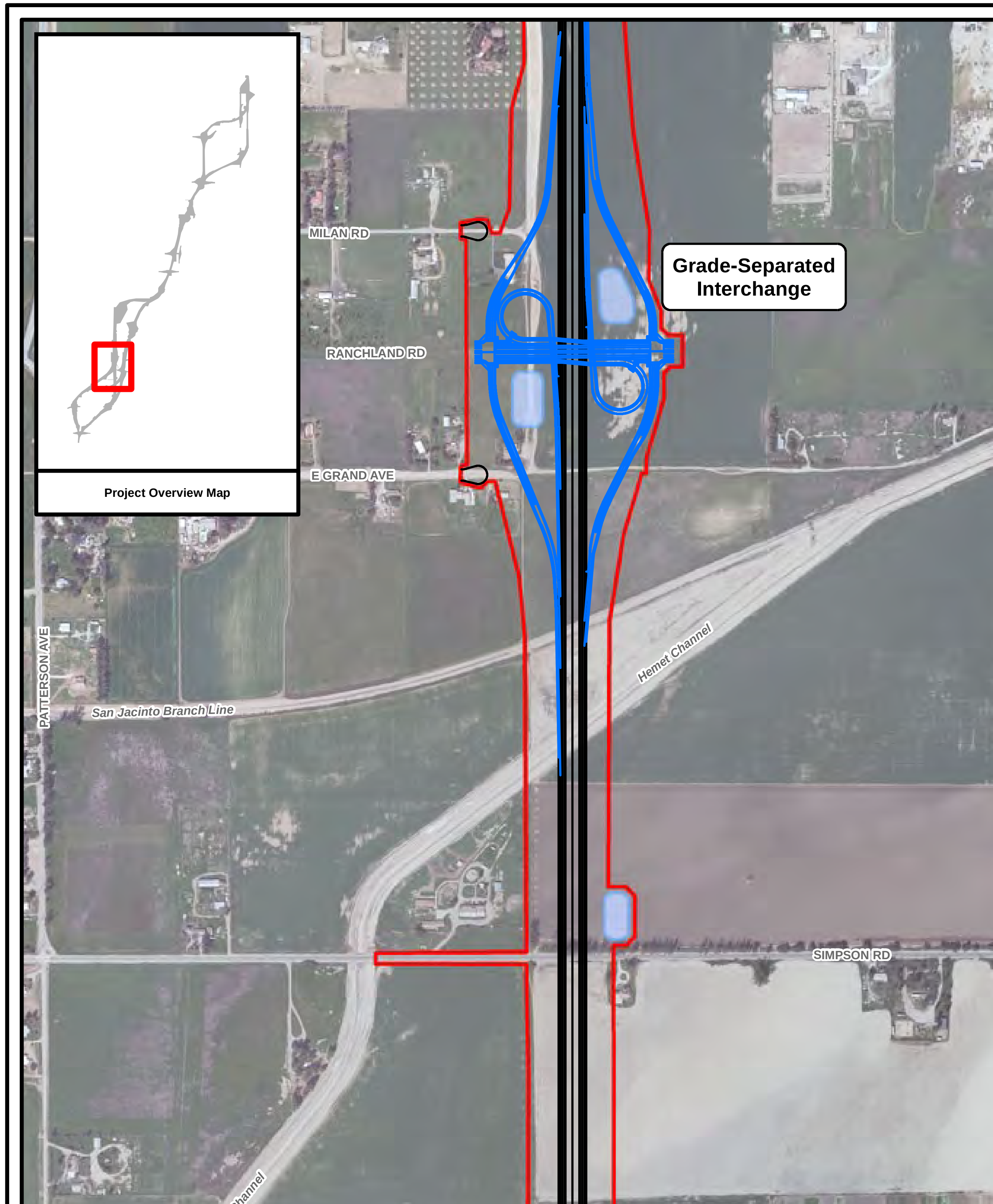
Opening Year (2015) Features to Remain at the 20-Year Design Horizon

Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-15 1 of 2
Roadway Segment C
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

Project Features to be Constructed prior to the 20-Year Design Horizon[CH]

Opening Day Features to Remain at the 20-Year Design Horizon[CH]

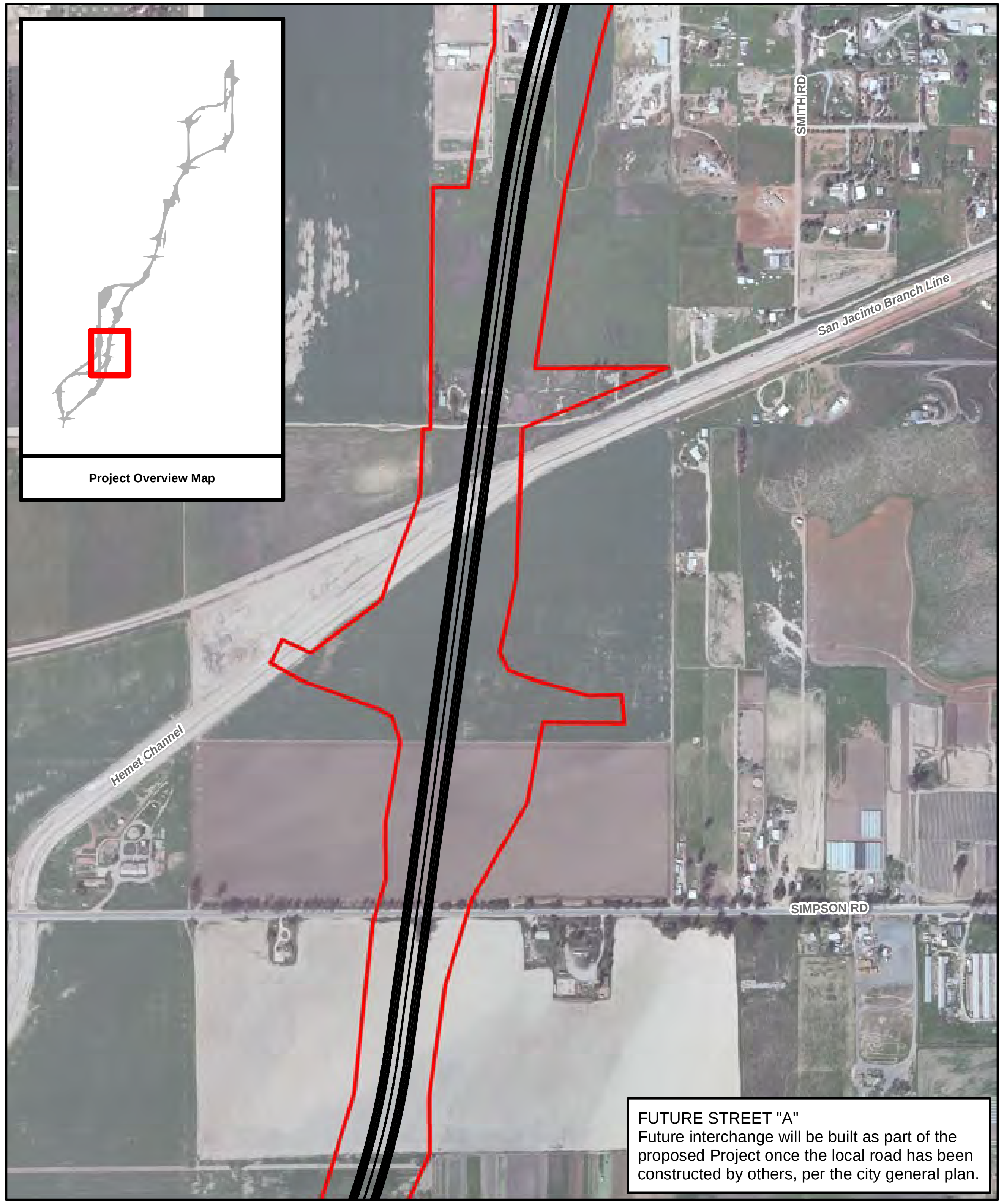
Project Impact Area

Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-15 2 of 2
Roadway Segment C
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

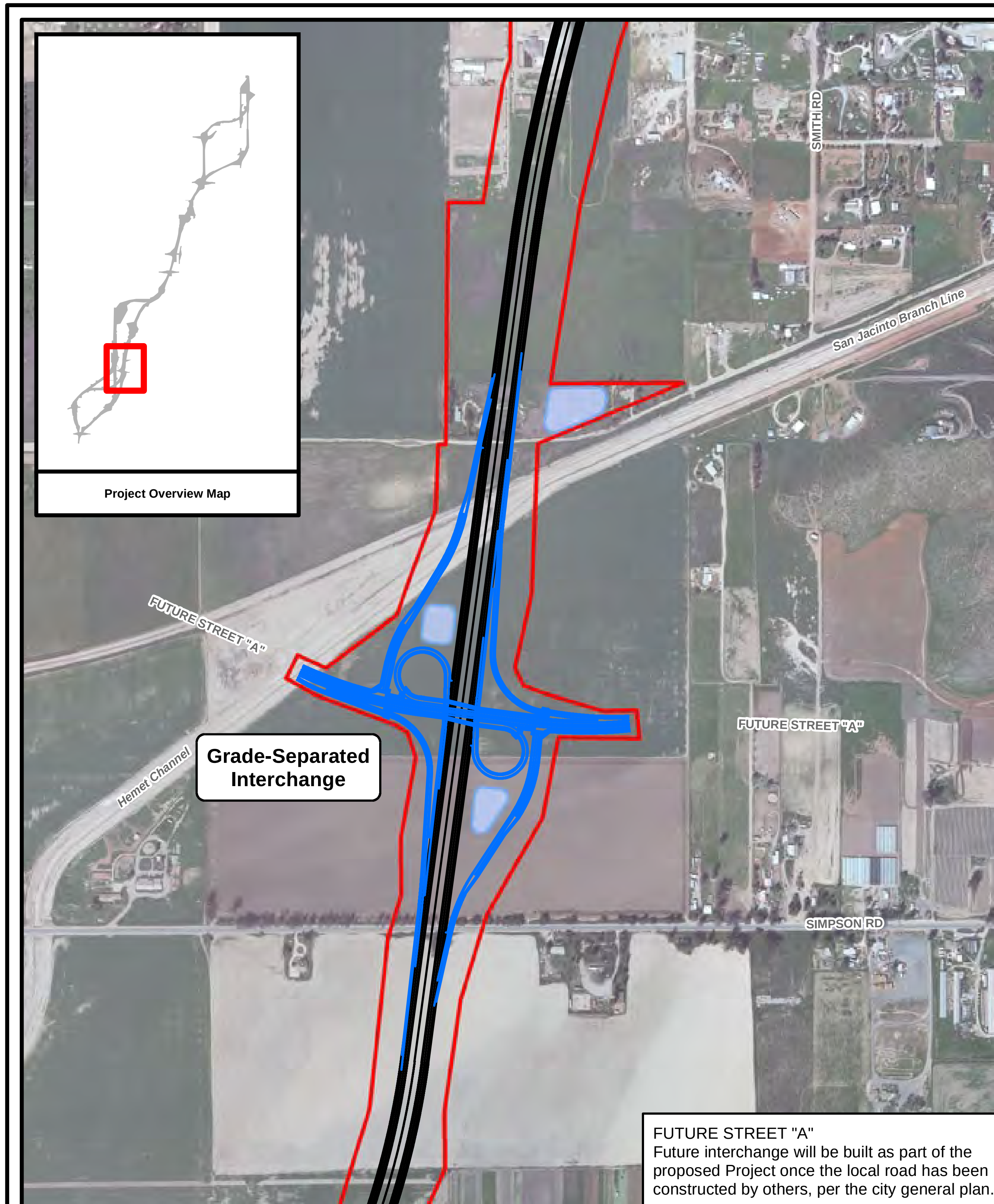
LEGEND

- Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon
- Opening Year (2015) Features to Remain at the 20-Year Design Horizon
- Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-16 1 of 2
Roadway Segment D
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\OVP_OP-PHZ_B.MXD OVP_OP-PHZ_B.PDF 11/12/2012

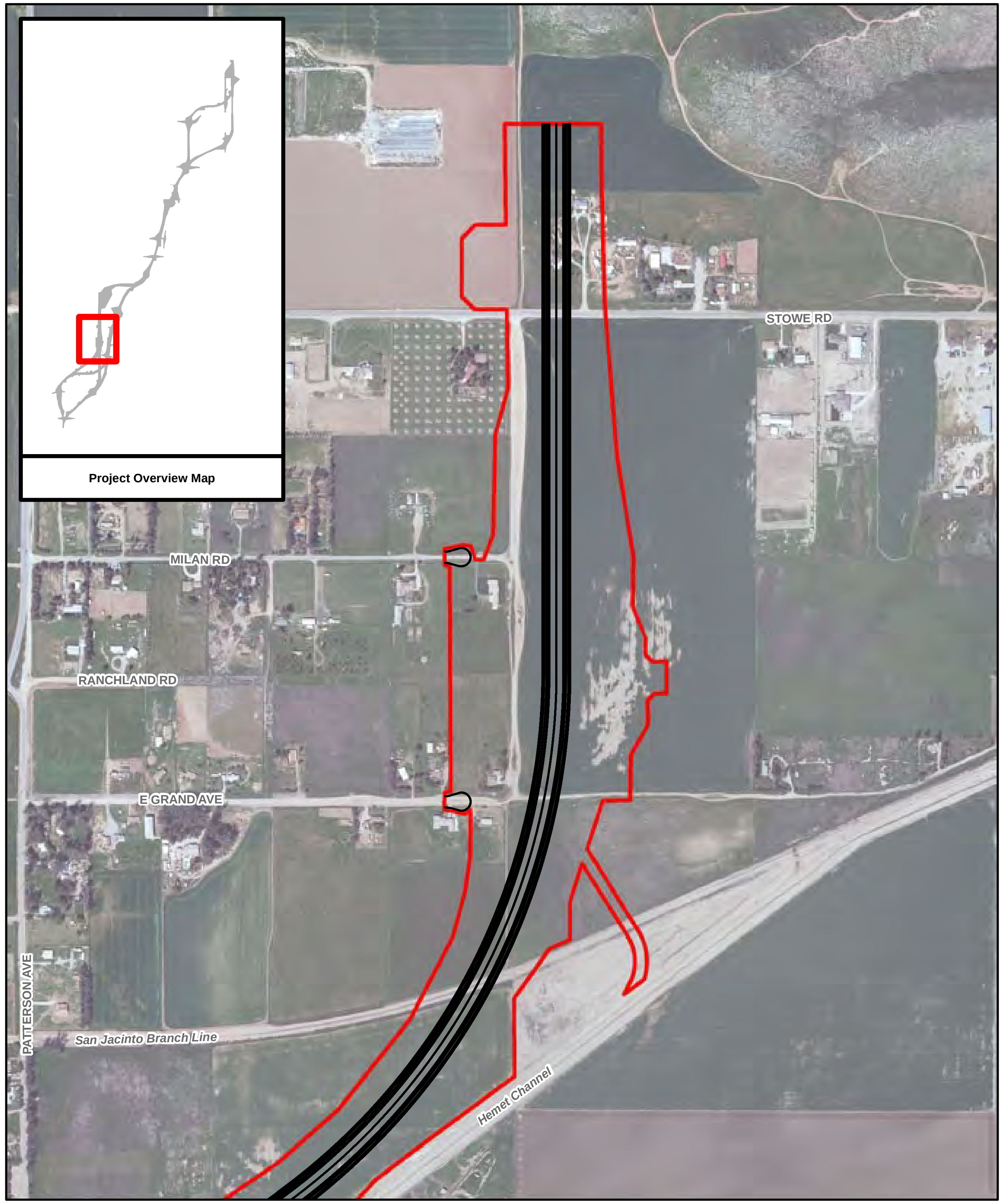
LEGEND

- Project Features to be Constructed prior to the 20-Year Design Horizon[CH]
- Opening Day Features to Remain at the 20-Year Design Horizon[CH]
- Project Impact Area
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-16 2 of 2
Roadway Segment D
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

LEGEND

Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon

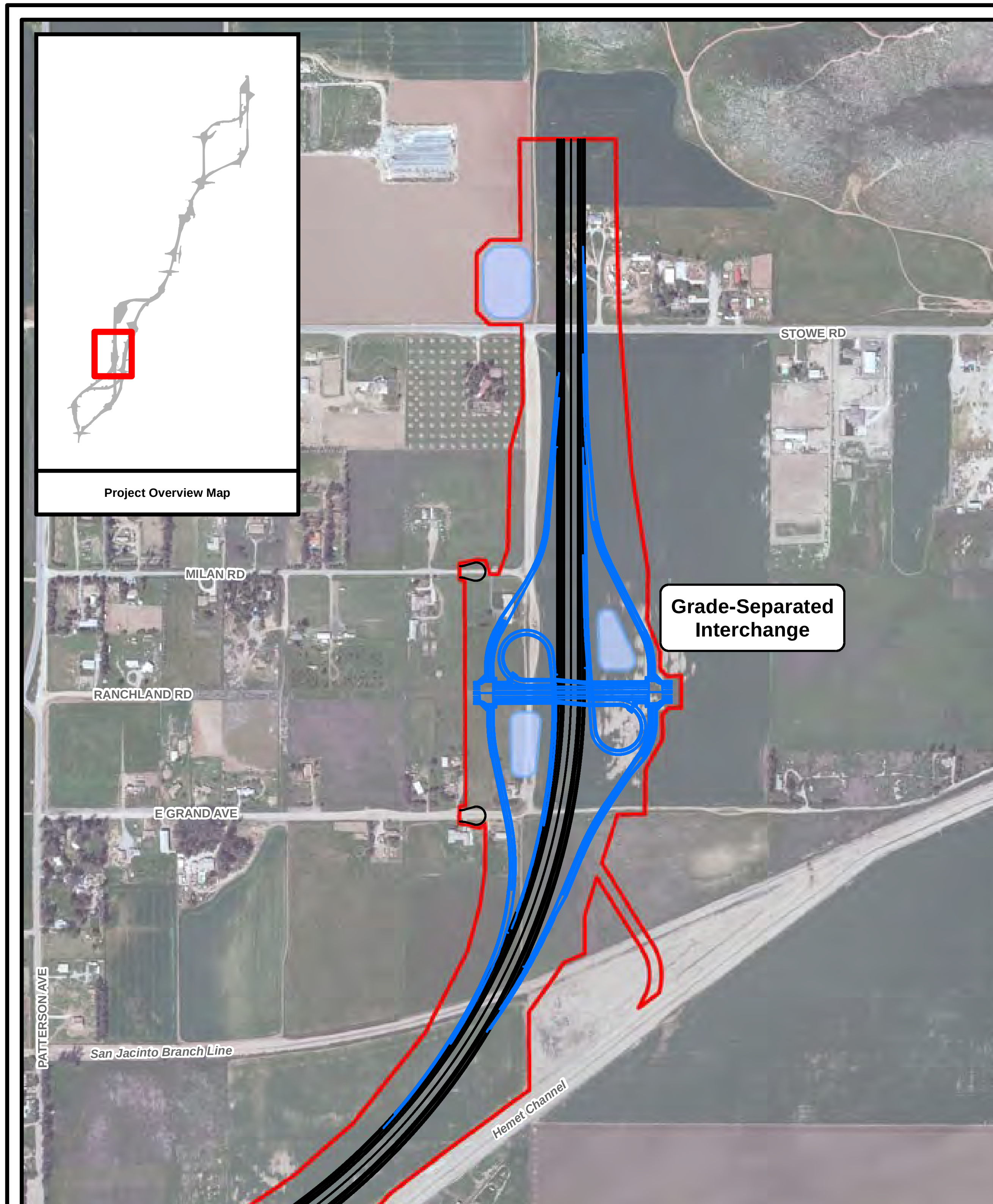
Opening Year (2015) Features to Remain at the 20-Year Design Horizon

Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-17 1 of 2
Roadway Segment E
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\OVP_OP-PHZ_B.MXD OVP_OP-PHZ_B.PDF 11/12/2012

LEGEND

Project Features to be Constructed prior to the 20-Year Design Horizon[CH]

Opening Day Features to Remain at the 20-Year Design Horizon[CH]

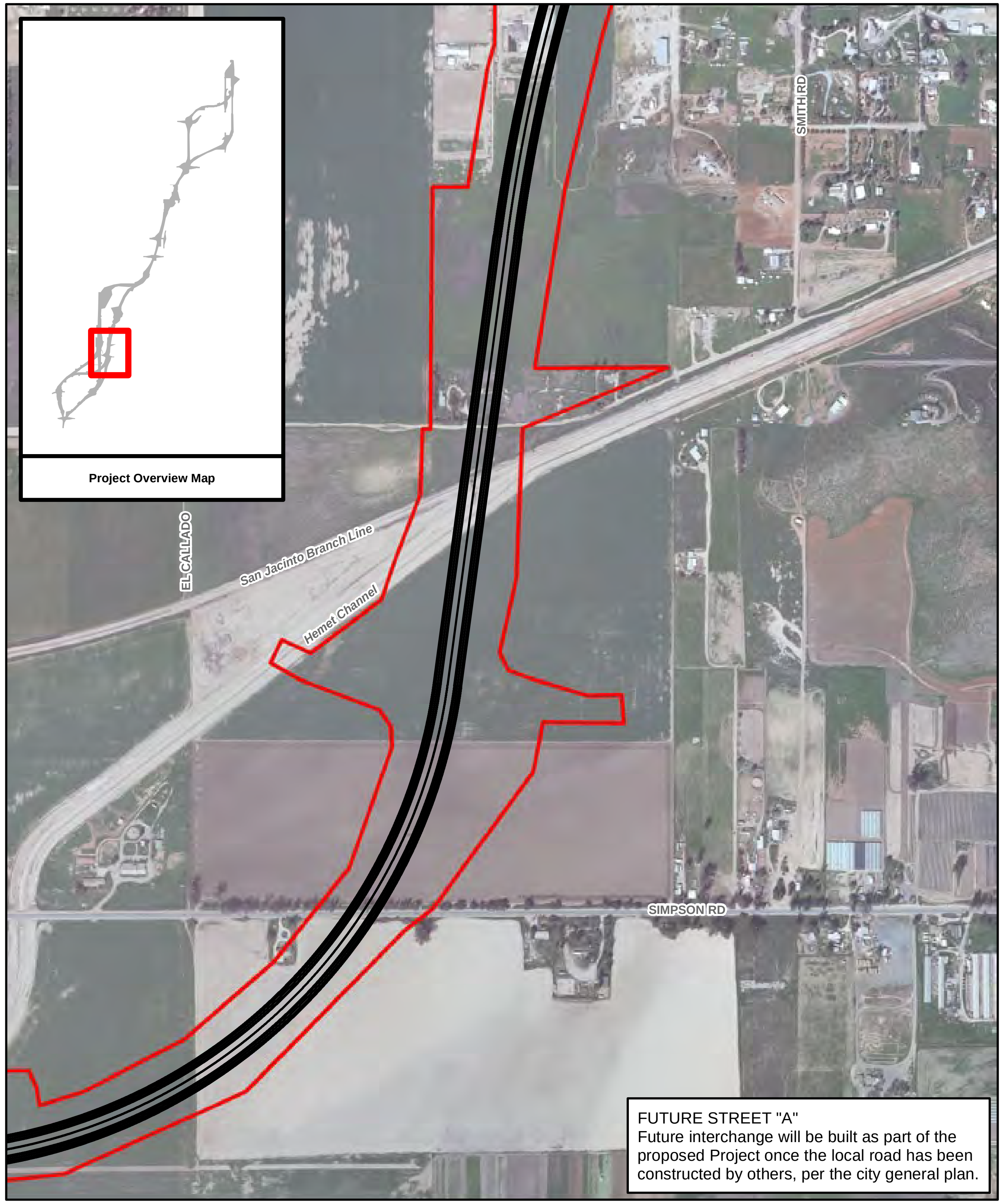
Project Impact Area

Best Management Practices (BMPs)

Source: Final Project Description, November 2007

0 800 Feet
0 200 Meters
1:9,600

Figure 2.2-17 2 of 2
Roadway Segment E
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

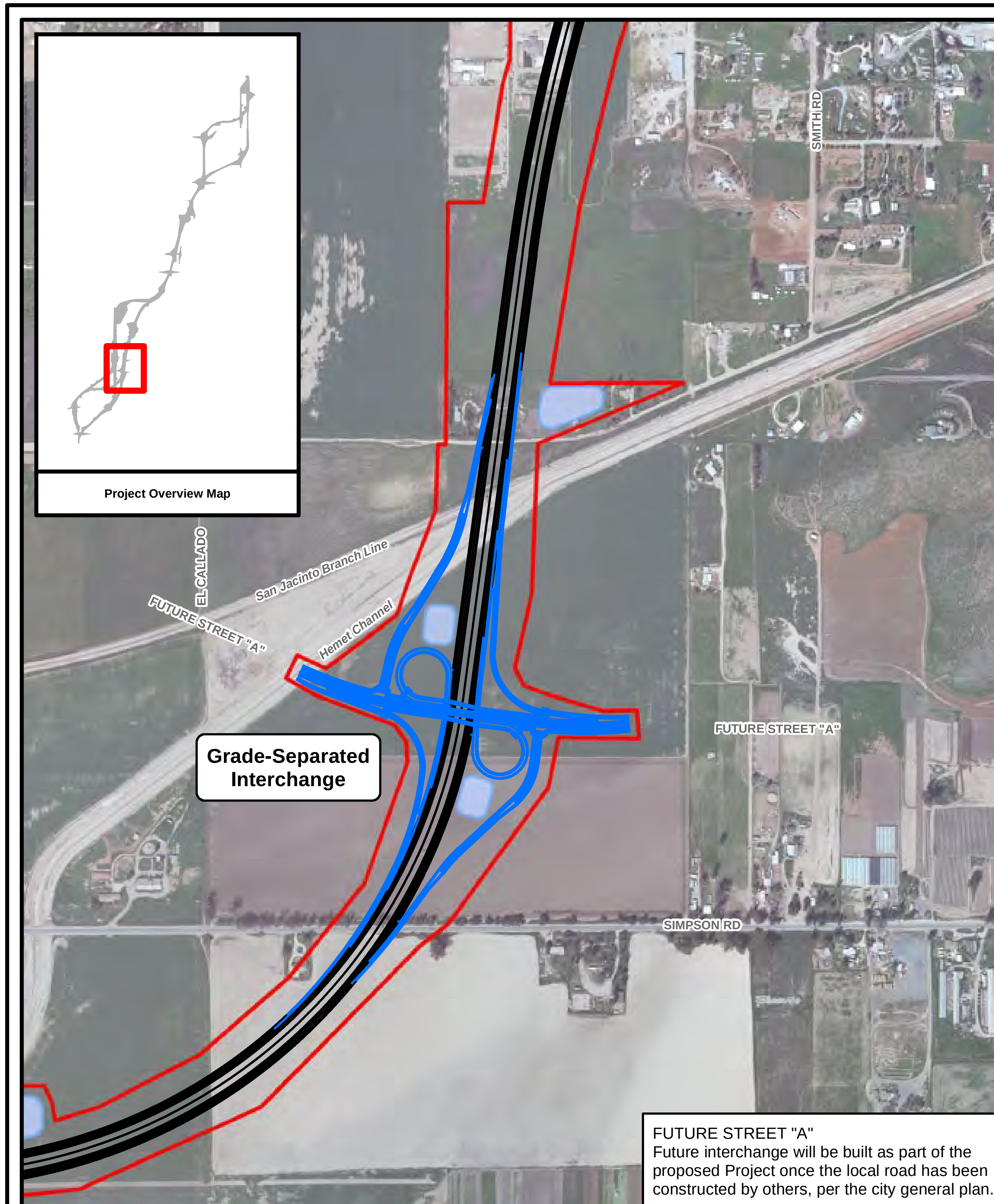
LEGEND

- Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon
- Opening Year (2015) Features to Remain at the 20-Year Design Horizon
- Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-18 1 of 2
Roadway Segment F
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images \\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\OVP_OP-PHZ_B.MXD OVP_OP-PHZ_B.PDF 11/12/2012

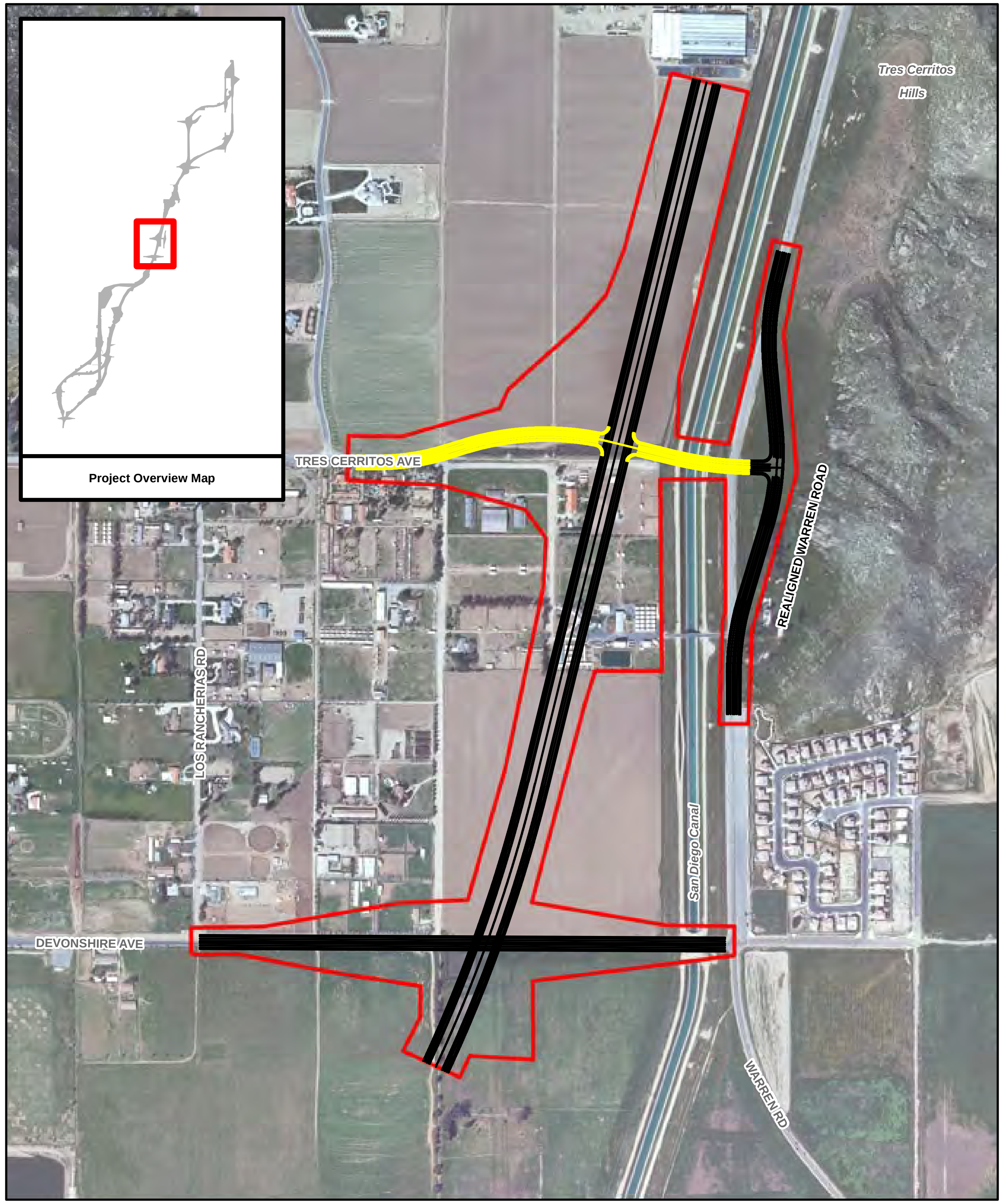
LEGEND

- Project Features to be Constructed prior to the 20-Year Design Horizon[CH]
- Opening Day Features to Remain at the 20-Year Design Horizon[CH]
- Project Impact Area
- Best Management Practices (BMPs)

Source: Final Project Description, November 2007

0 800 Feet
0 200 Meters
1:9,600

Figure 2.2-18 2 of 2
Roadway Segment F
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

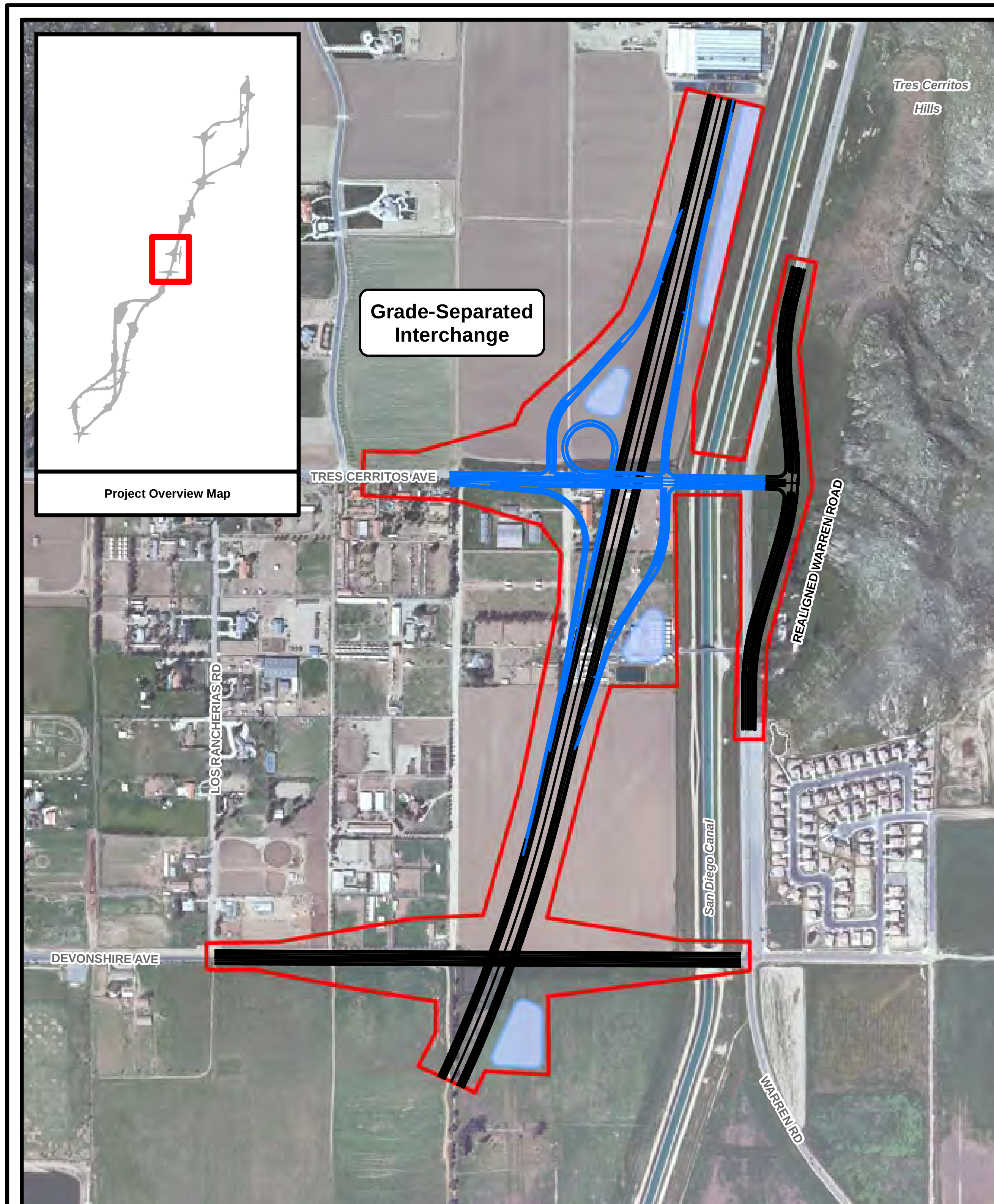
LEGEND

- Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon
- Opening Year (2015) Features to Remain at the 20-Year Design Horizon
- Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-19 1 of 2
Roadway Segment I
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\OVP_OP-PHZ_B.MXD OVP_OP-PHZ_B.PDF 11/12/2012

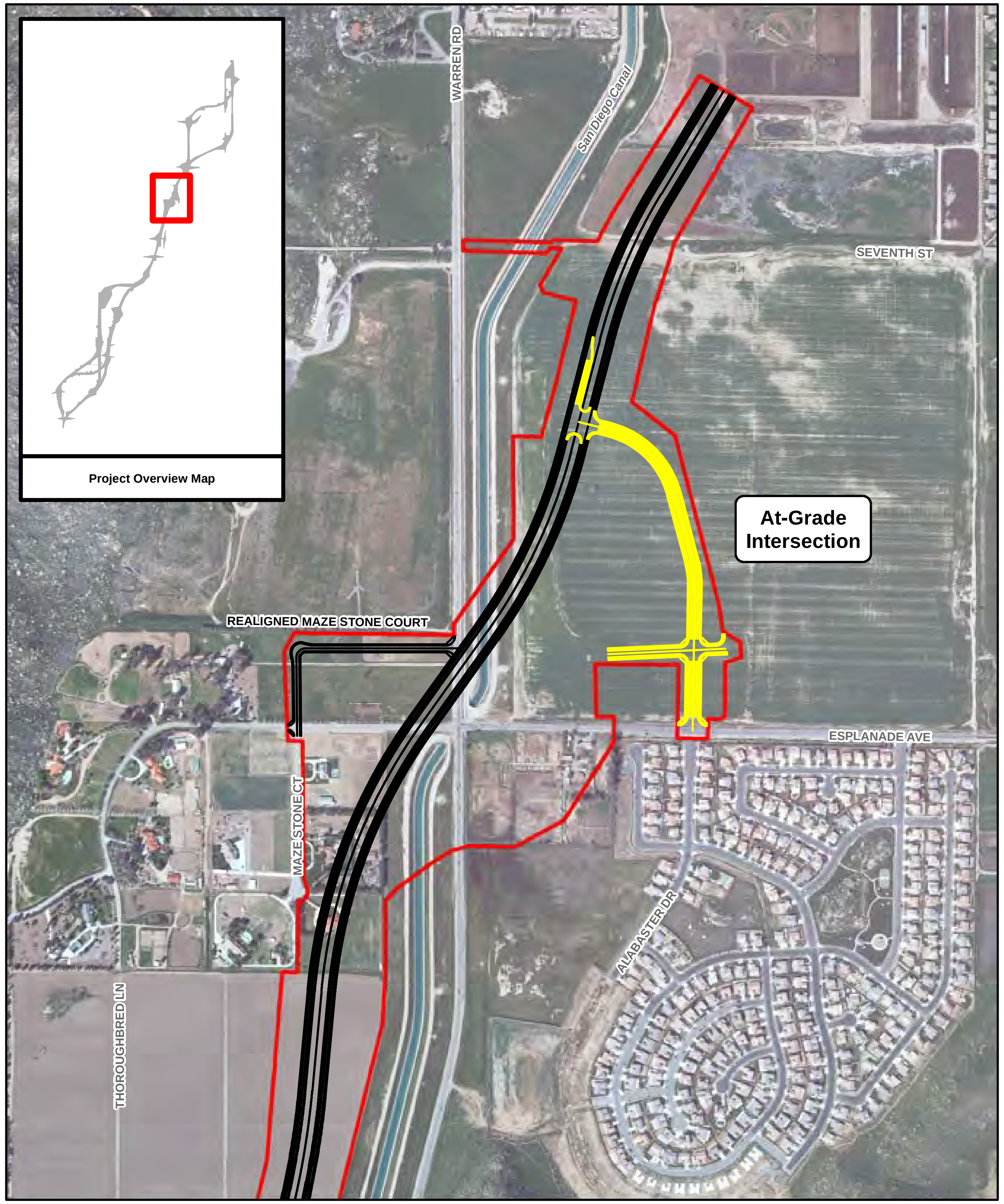
LEGEND

- Project Features to be Constructed prior to the 20-Year Design Horizon[CH]
- Opening Day Features to Remain at the 20-Year Design Horizon[CH]
- Project Impact Area
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-19 2 of 2
Roadway Segment I
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

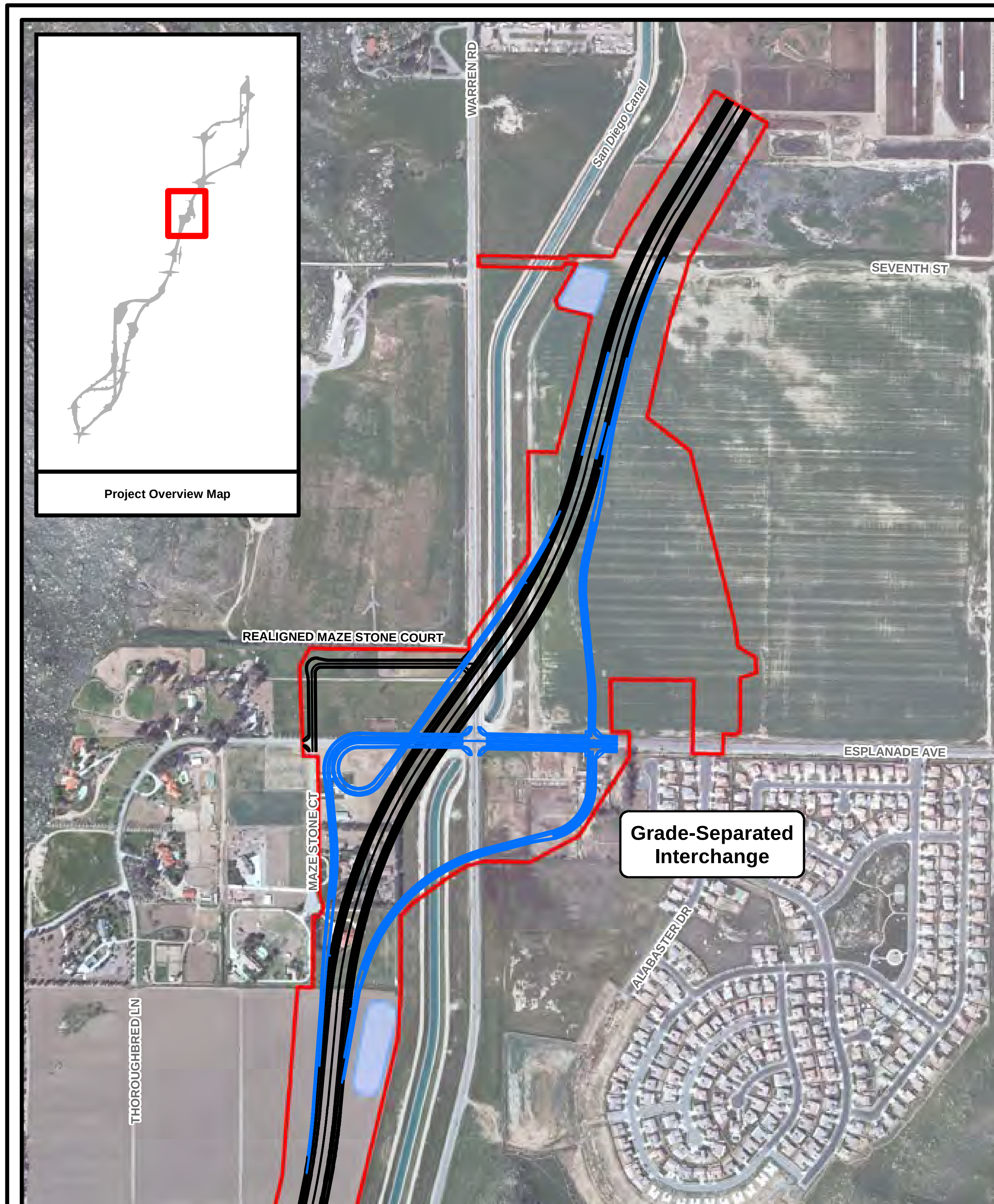
LEGEND

- Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon
- Opening Year (2015) Features to Remain at the 20-Year Design Horizon
- Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-20 1 of 2
Roadway Segment J
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images \\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\OVP_OP-PHZ_B.MXD OVP_OP-PHZ_B.PDF 11/12/2012

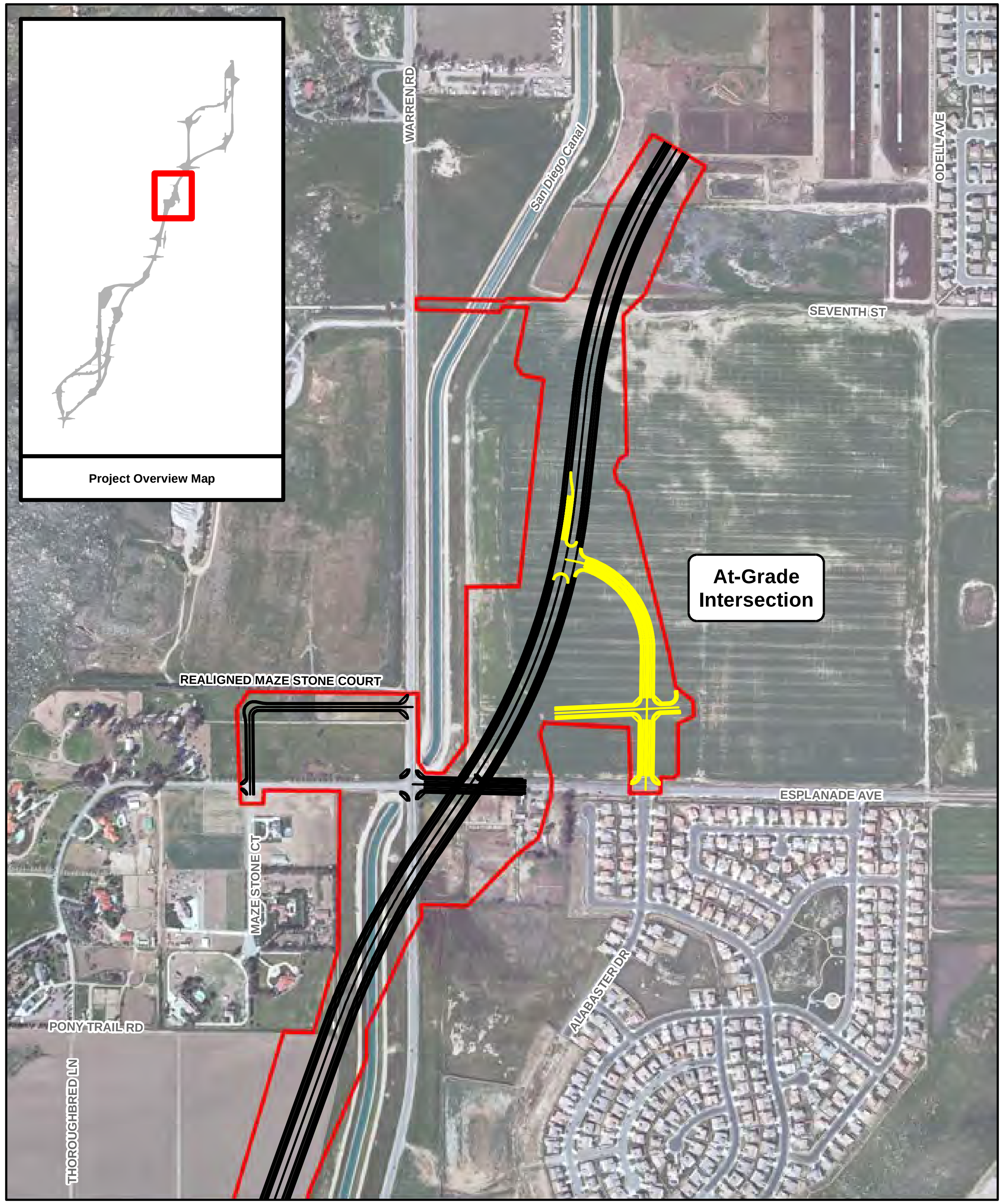
LEGEND

- Project Features to be Constructed prior to the 20-Year Design Horizon[CH]
- Opening Day Features to Remain at the 20-Year Design Horizon[CH]
- Project Impact Area
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-20 2 of 2
Roadway Segment J
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

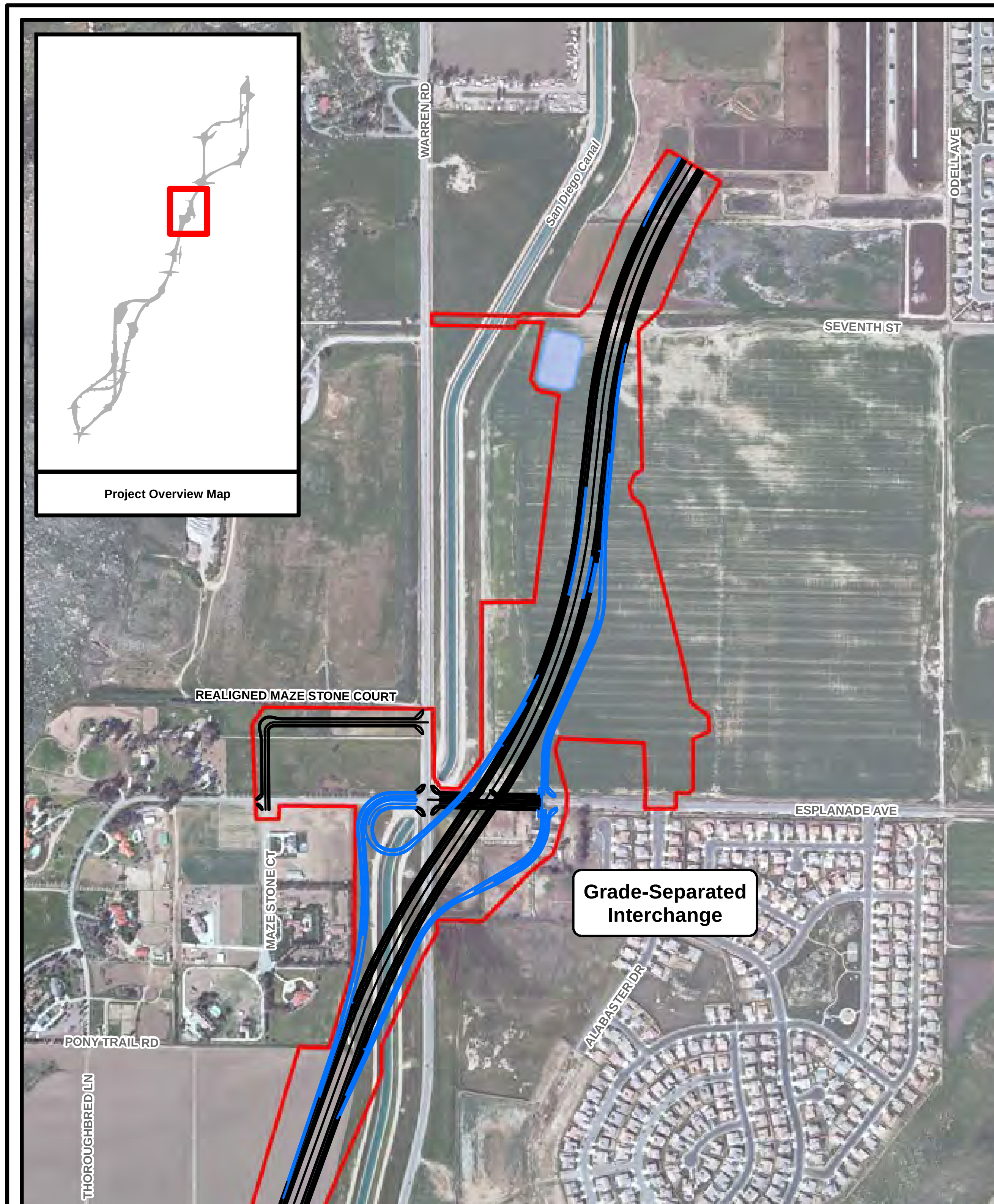
LEGEND

- Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon
- Opening Year (2015) Features to Remain at the 20-Year Design Horizon
- Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-21 1 of 2
Roadway Segment K
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\OVP_OP-PHZ_B.MXD OVP_OP-PHZ_B.PDF 11/12/2012

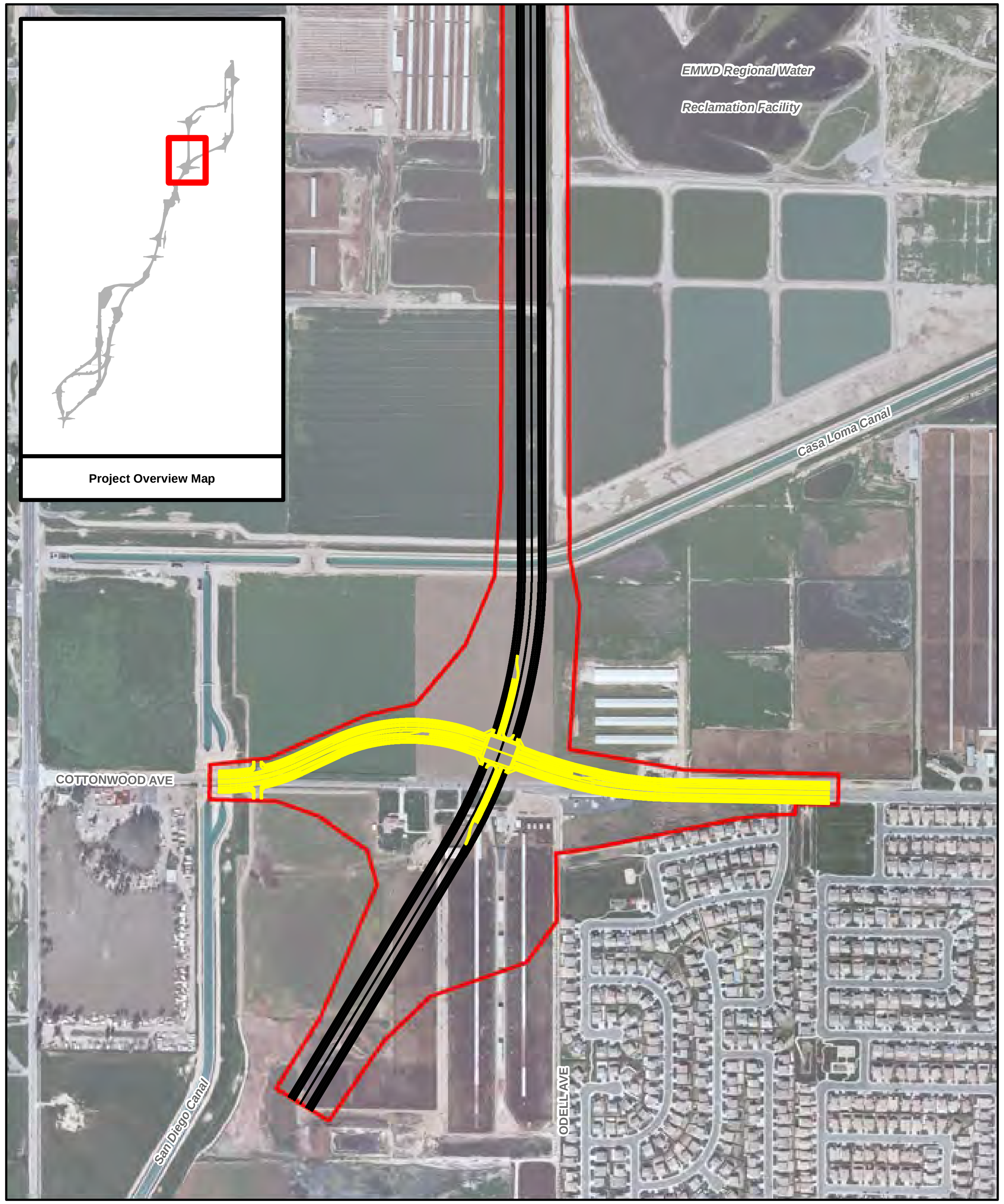
LEGEND

- Project Features to be Constructed prior to the 20-Year Design Horizon[CH]
- Opening Day Features to Remain at the 20-Year Design Horizon[CH]
- Project Impact Area
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-21 2 of 2
Roadway Segment K
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

LEGEND

Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon

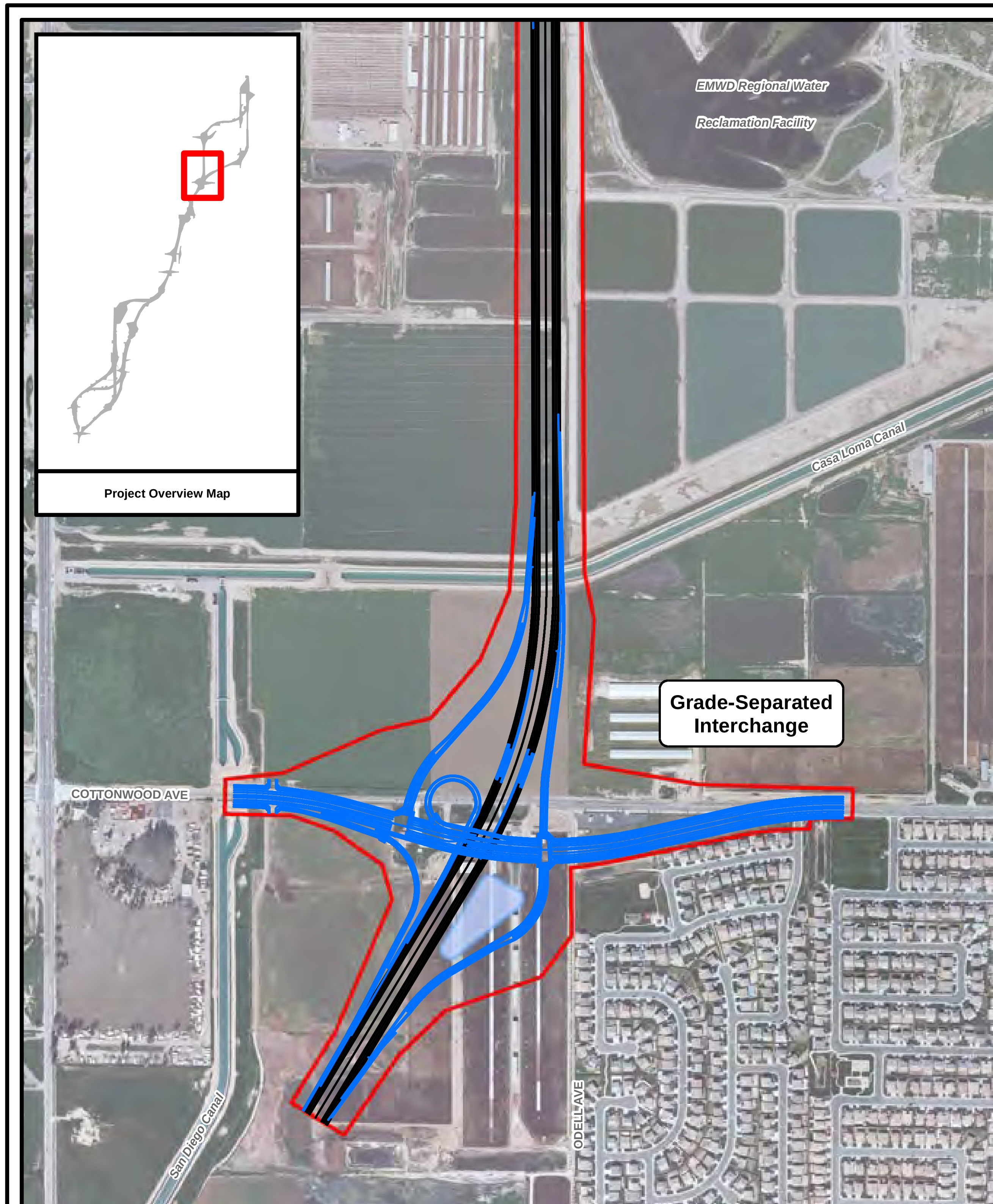
Opening Year (2015) Features to Remain at the 20-Year Design Horizon

Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-22 1 of 4
Roadway Segment L
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images \\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\OVP_OP-PHZ_B.MXD OVP_OP-PHZ_B.PDF 11/12/2012

LEGEND

Project Features to be Constructed prior to the 20-Year Design Horizon[CH]

Opening Day Features to Remain at the 20-Year Design Horizon[CH]

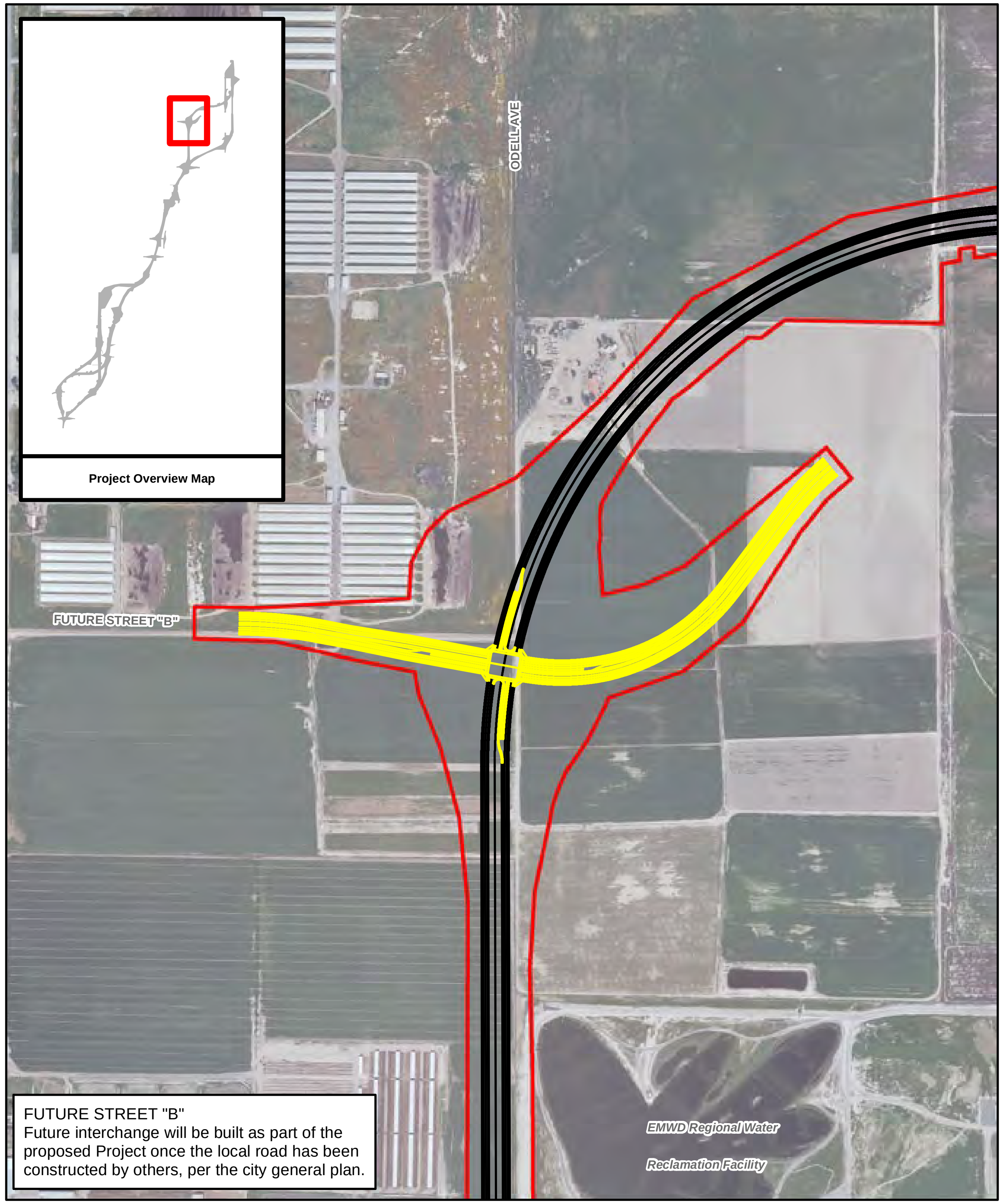
Project Impact Area

Best Management Practices (BMPs)

Source: Final Project Description, November 2007

0 800 Feet
0 200 Meters
1:9,600

Figure 2.2-22 2 of 4
Roadway Segment L
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

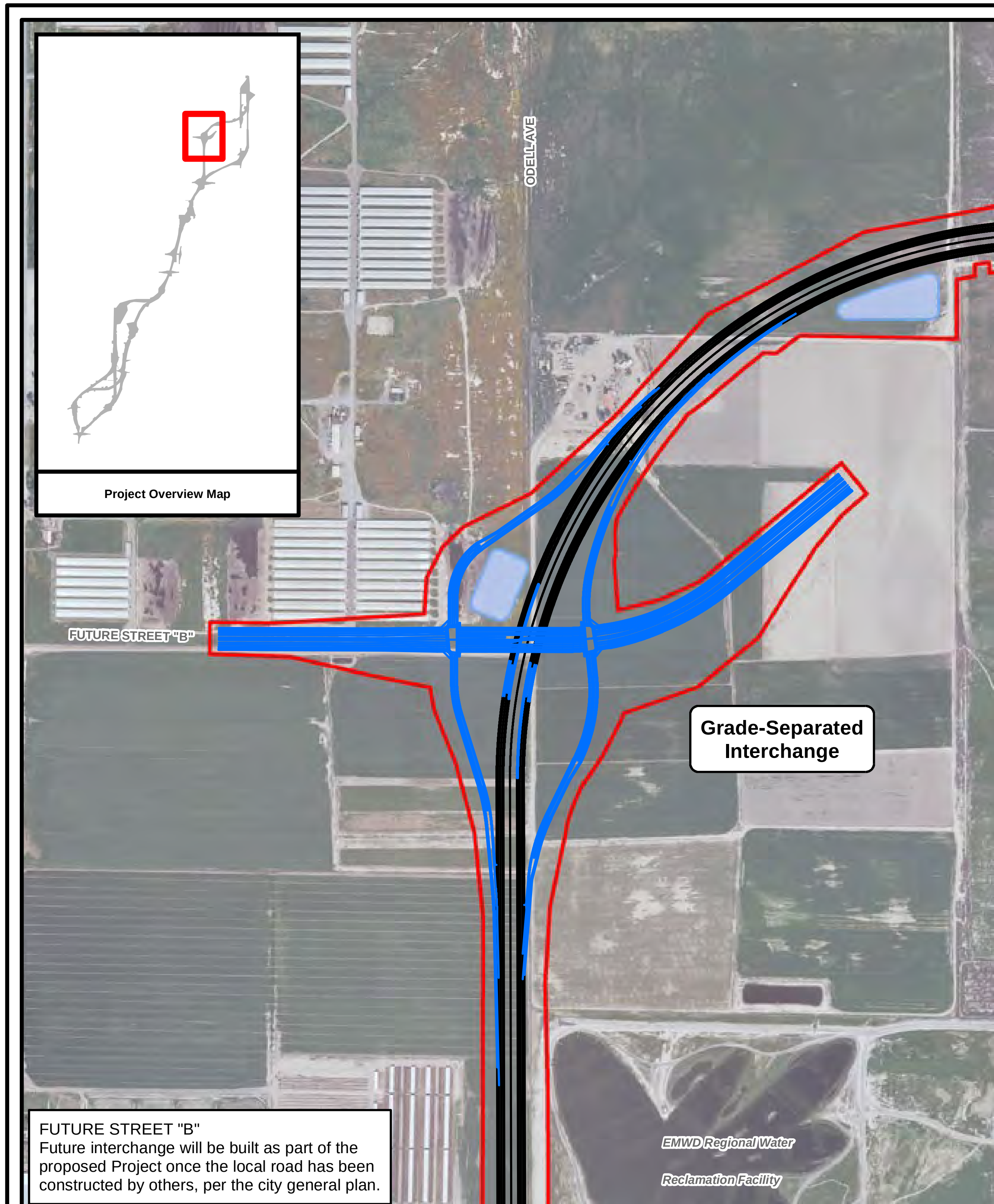
LEGEND

- Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon
- Opening Year (2015) Features to Remain at the 20-Year Design Horizon
- Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-22 3 of 4
Roadway Segment L
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images
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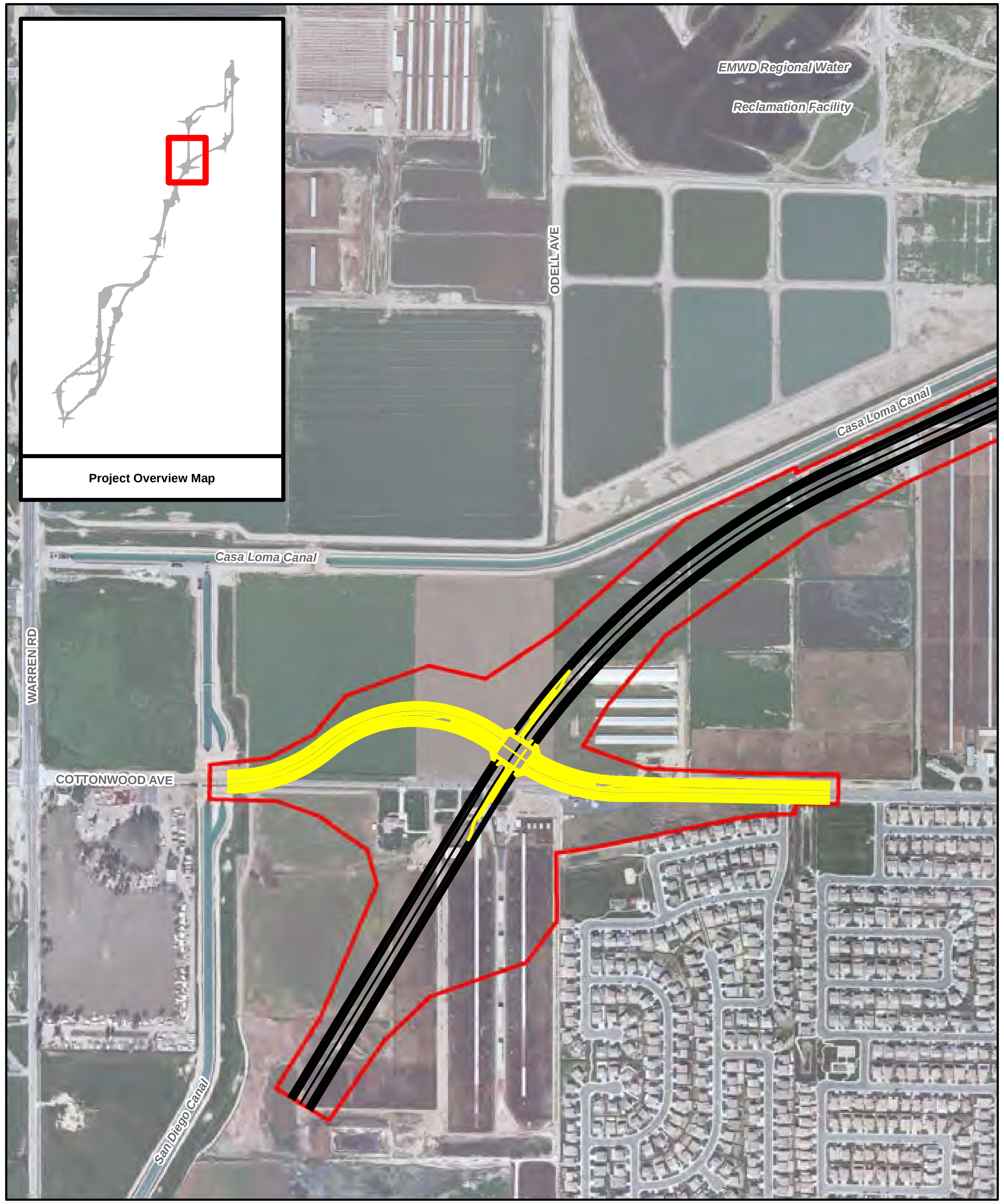
LEGEND

- Project Features to be Constructed prior to the 20-Year Design Horizon[CH]
- Opening Day Features to Remain at the 20-Year Design Horizon[CH]
- Project Impact Area
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-22 4 of 4
Roadway Segment L
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

LEGEND

Opening Year (2015) Features to be Removed Prior to the 20-Year Design Horizon

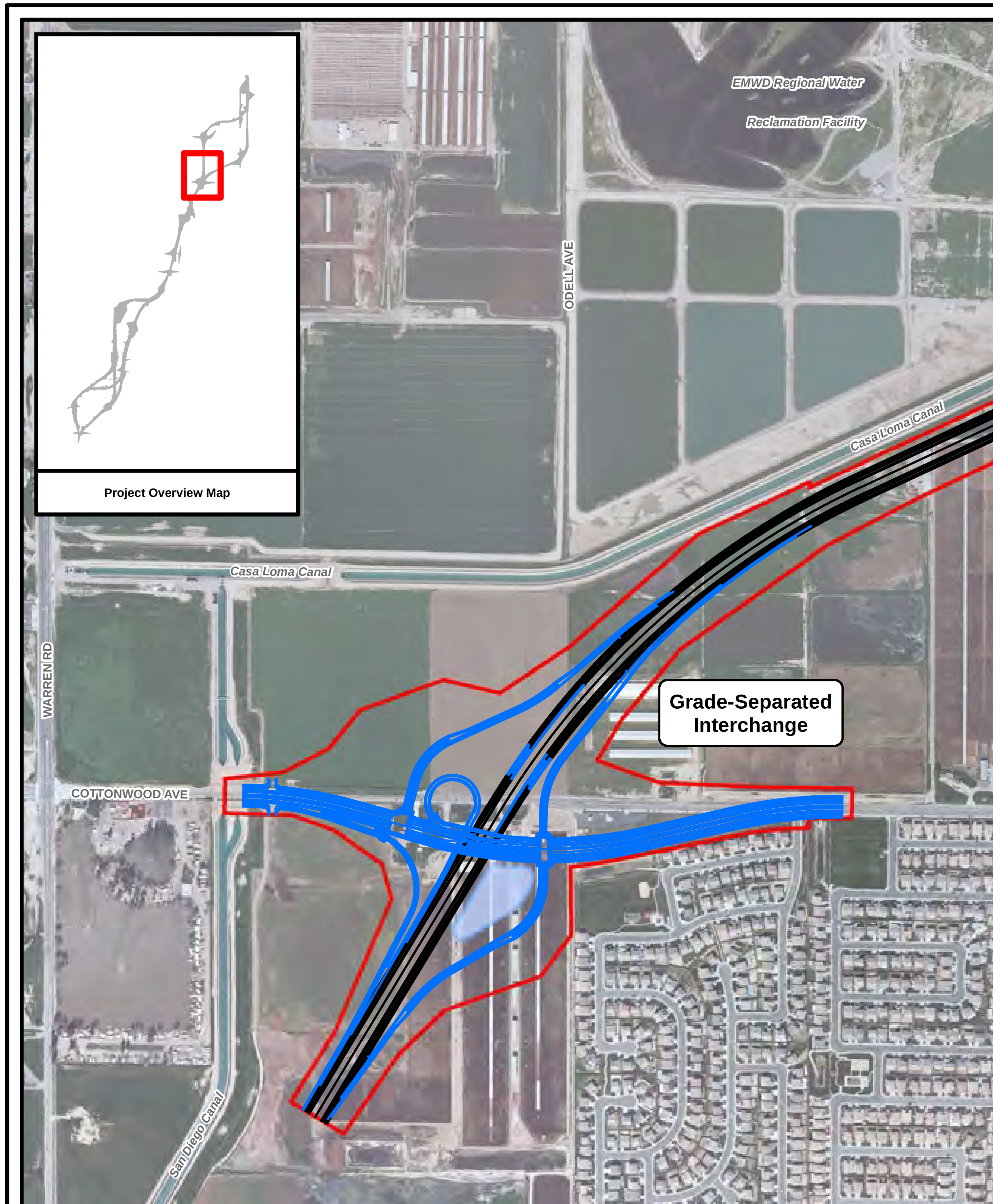
Opening Year (2015) Features to Remain at the 20-Year Design Horizon

Project Impact Area

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-23 1 of 2
Roadway Segment M
Base Condition
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CH1\OVP_OP-PHZ_B.MXD OVP_OP-PHZ_B.PDF 11/12/2012

LEGEND

Project Features to be Constructed prior to the 20-Year Design Horizon[CH]

Opening Day Features to Remain at the 20-Year Design Horizon[CH]

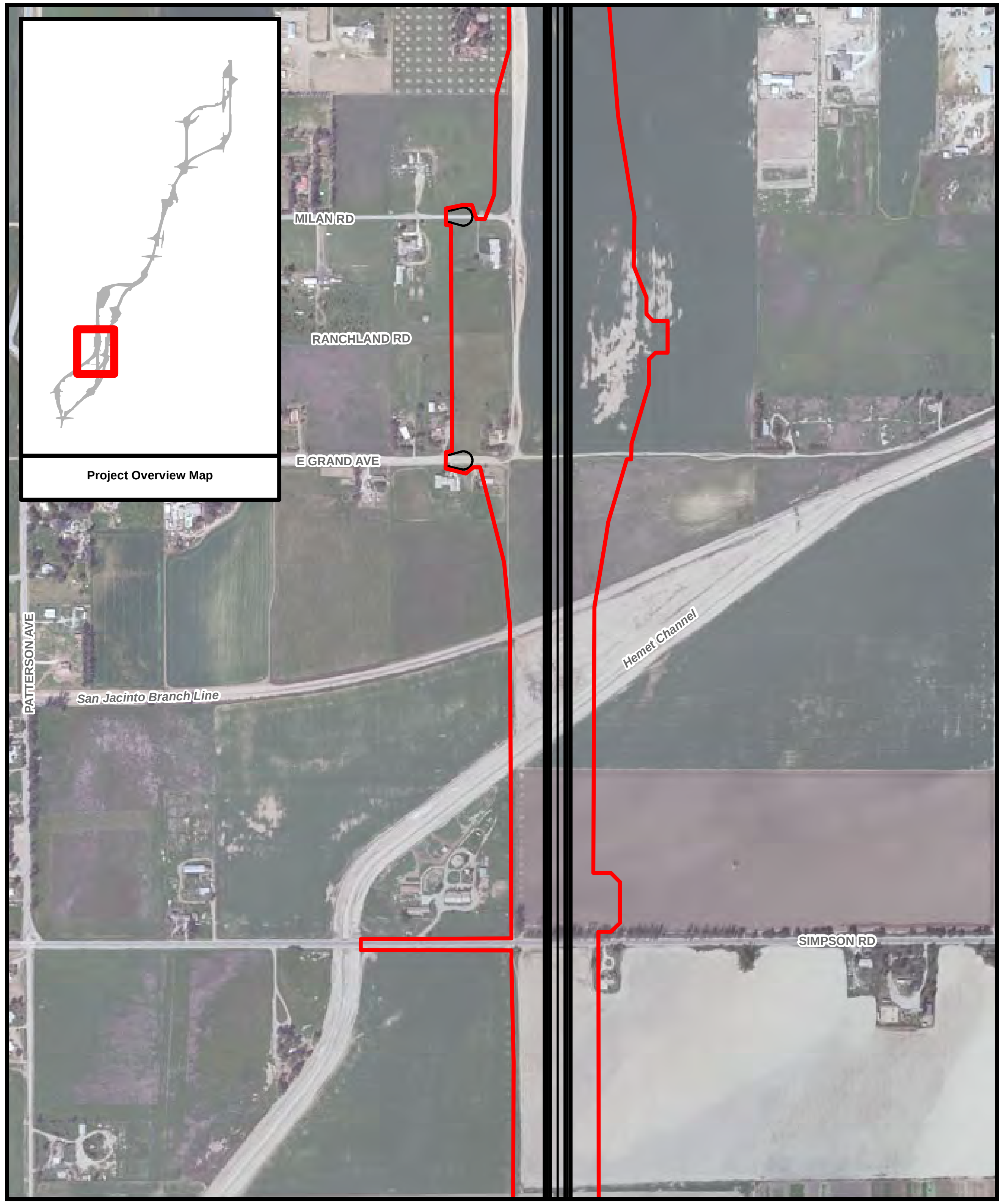
Project Impact Area

Best Management Practices (BMPs)

0 800 Feet
0 200 Meters
1:9,600

Source: Final Project Description, November 2007

Figure 2.2-23 2 of 2
Roadway Segment M
Base Condition
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

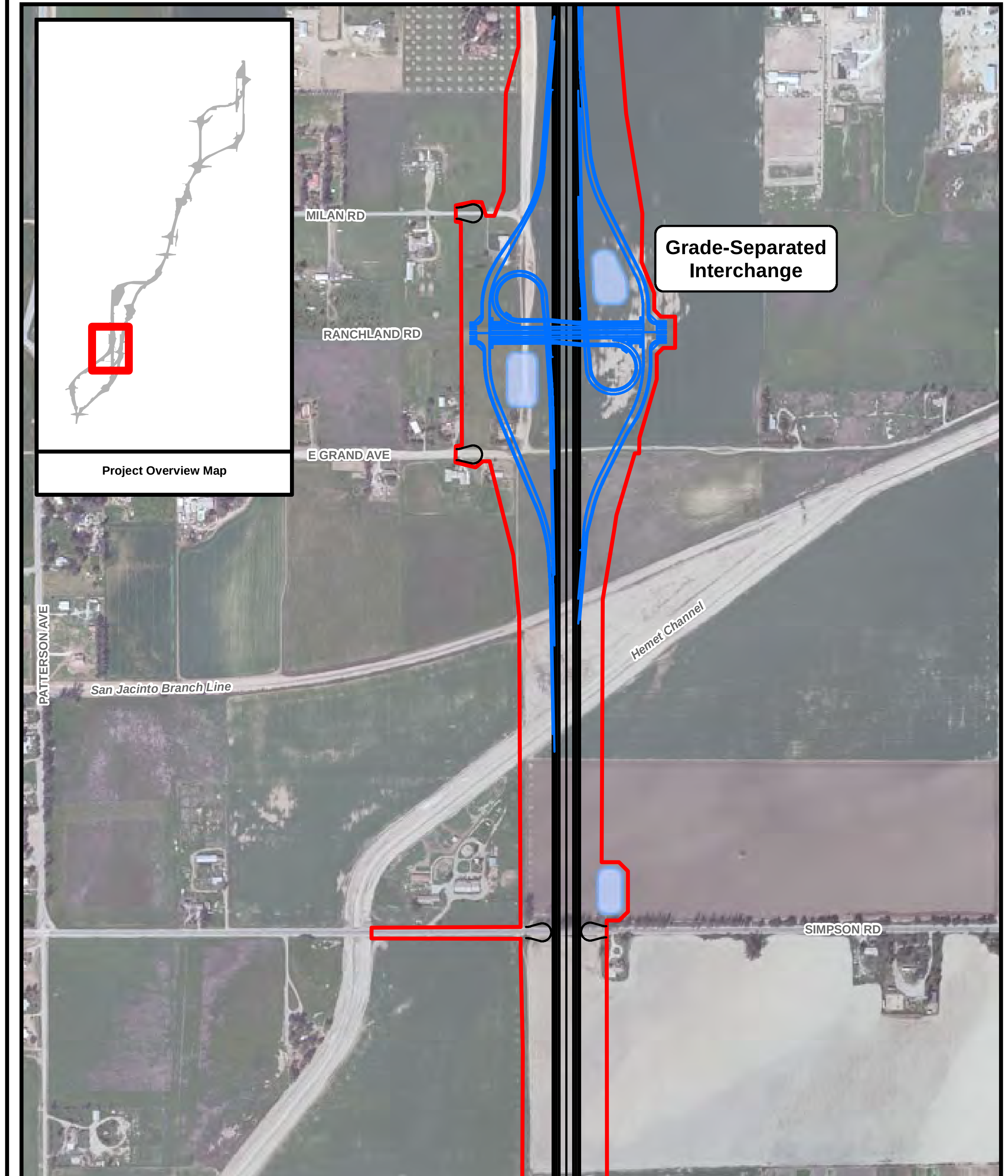
LEGEND

- Opening Year Features to be Removed Prior to 20-Year Design Horizon
- Opening Year Features to Remain at 20-Year Design Horizon
- Project Impact Area

0 800 Feet
0 200 Meters

Source: Final Project Description, November 2007

Figure 2.2-24 1 of 2
Roadway Segment C
Design Option 1b1
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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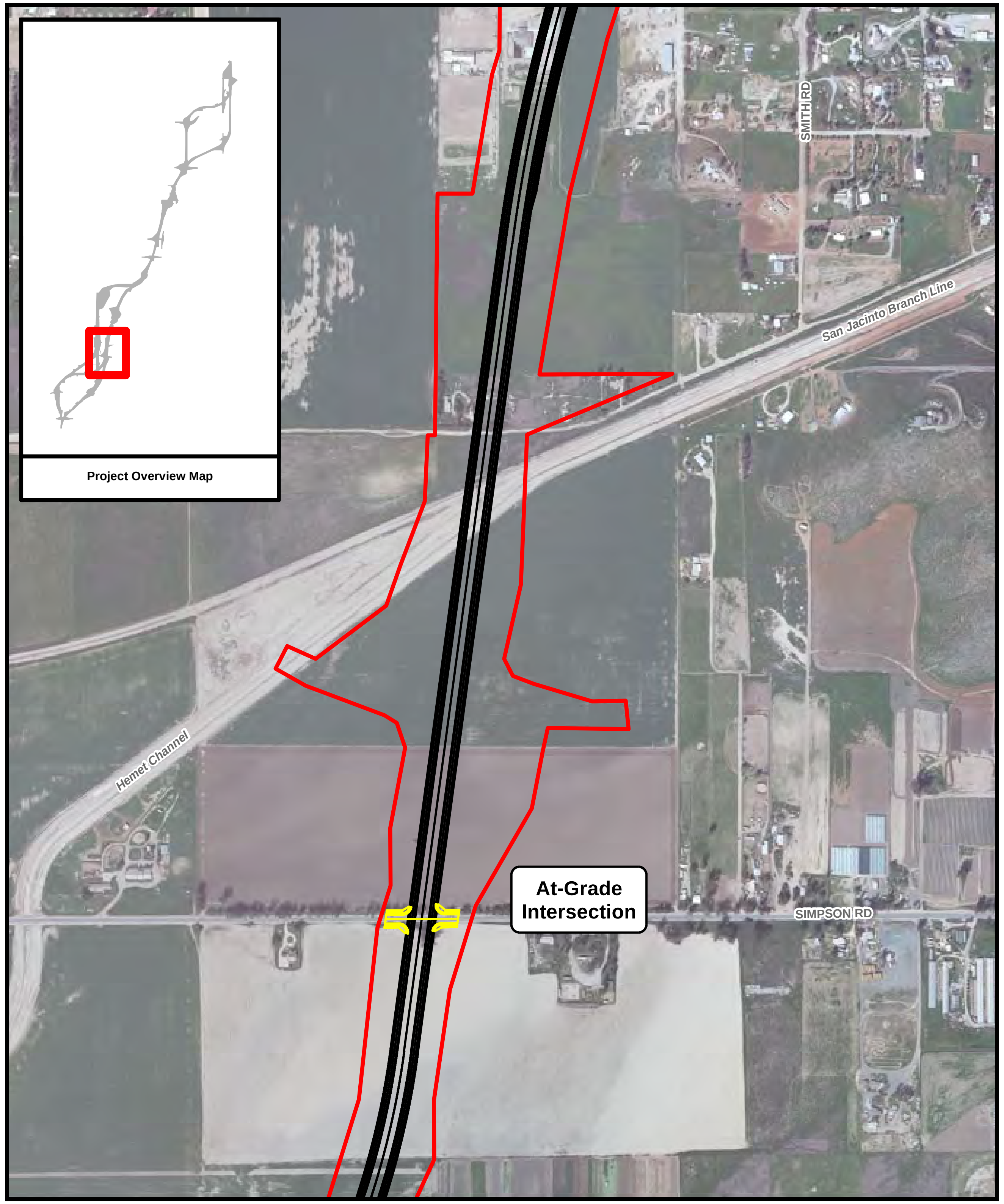
LEGEND

- Project Features to be Constructed Prior to 20-Year Design Horizon
- Opening Year Features to Remain at 20-Year Design Horizon
- Project Impact Area
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters

Source: Final Project Description, November 2007

Figure 2.2-24 2 of 2
Roadway Segment C
Design Option 1b1
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

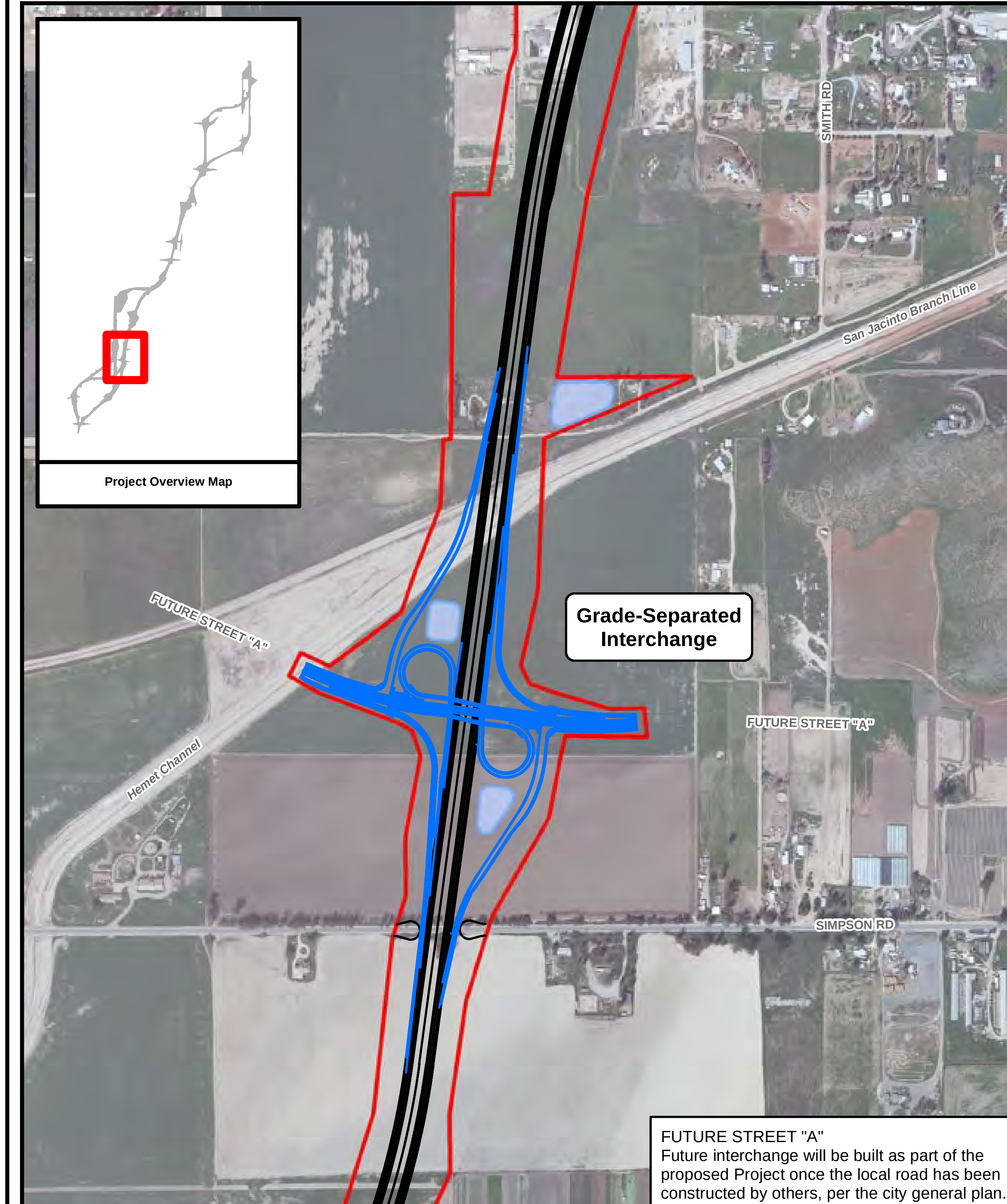
LEGEND

- Opening Day Features to be Removed Prior to 20-Year Design Horizon
- Opening Day Features to Remain at 20-Year Design Horizon
- Project Impact Area

0 800 Feet
0 200 Meters

Source: Final Project Description, November 2007

Figure 2.2-25 1 of 2
Roadway Segment D
Design Option 2b1
Opening Year (2015)
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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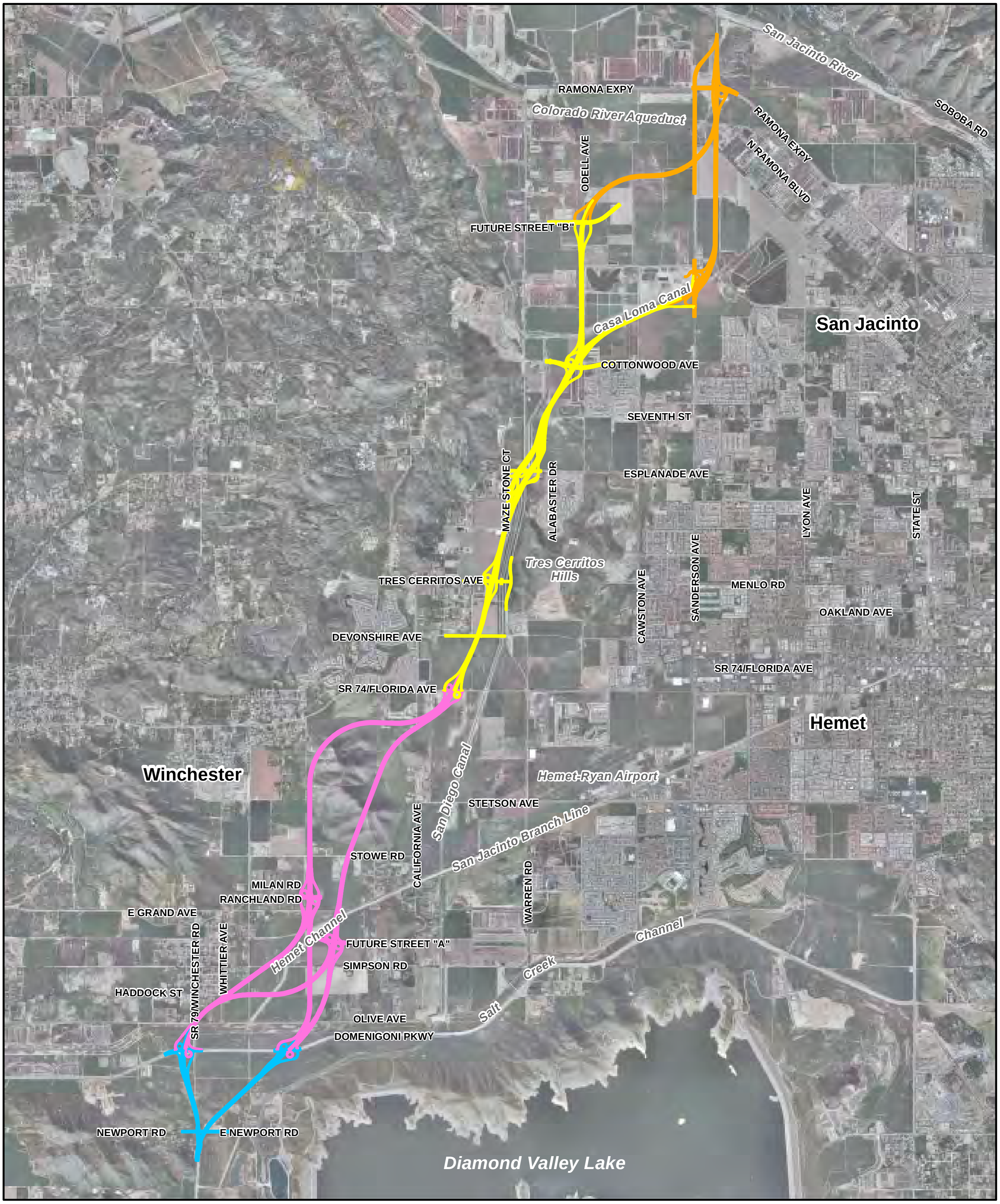
LEGEND

- Project Features to be Constructed Prior to 20-Year Design Horizon
- Opening Day Features to Remain at 20-Year Design Horizon
- Project Impact Area
- Best Management Practices (BMPs)

0 800 Feet
0 200 Meters

Source: Final Project Description, November 2007

Figure 2.2-25 2 of 2
Roadway Segment D
Design Option 2b1
20-Year Design Horizon
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Phase 1
- Phase 2
- Phase 3
- Phase 4

0 7,000 Feet

0 1,500 Meters

1:84,000

Figure 2.2-26
Phasing Key
SR 79 Construction Phasing
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

Phase 1 Construction

Project Impact Area

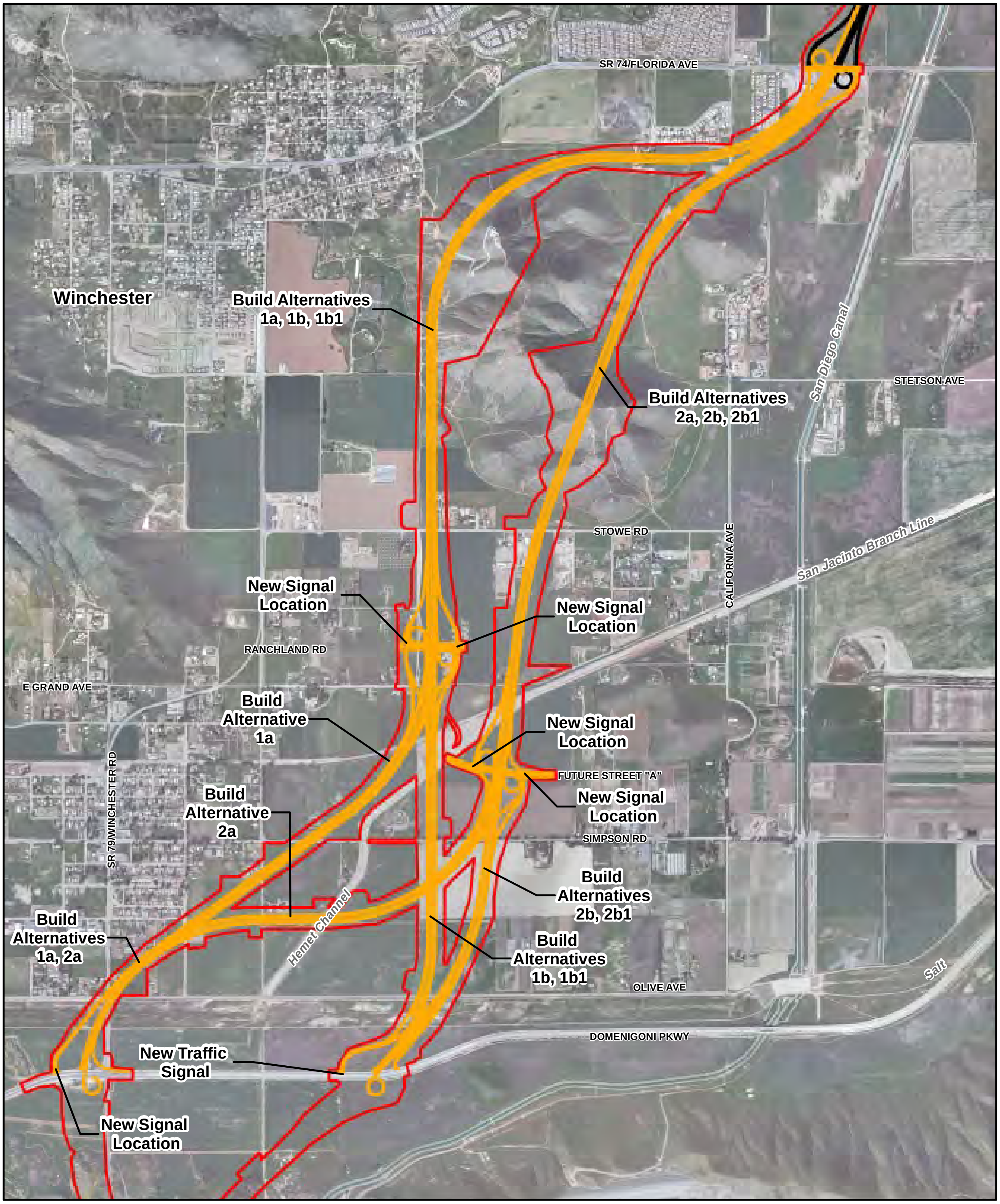
0 3,500 Feet

0 750 Meters

1:42,000

Figure 2.2-27a
Phase 1
SR 79 Construction Phasing
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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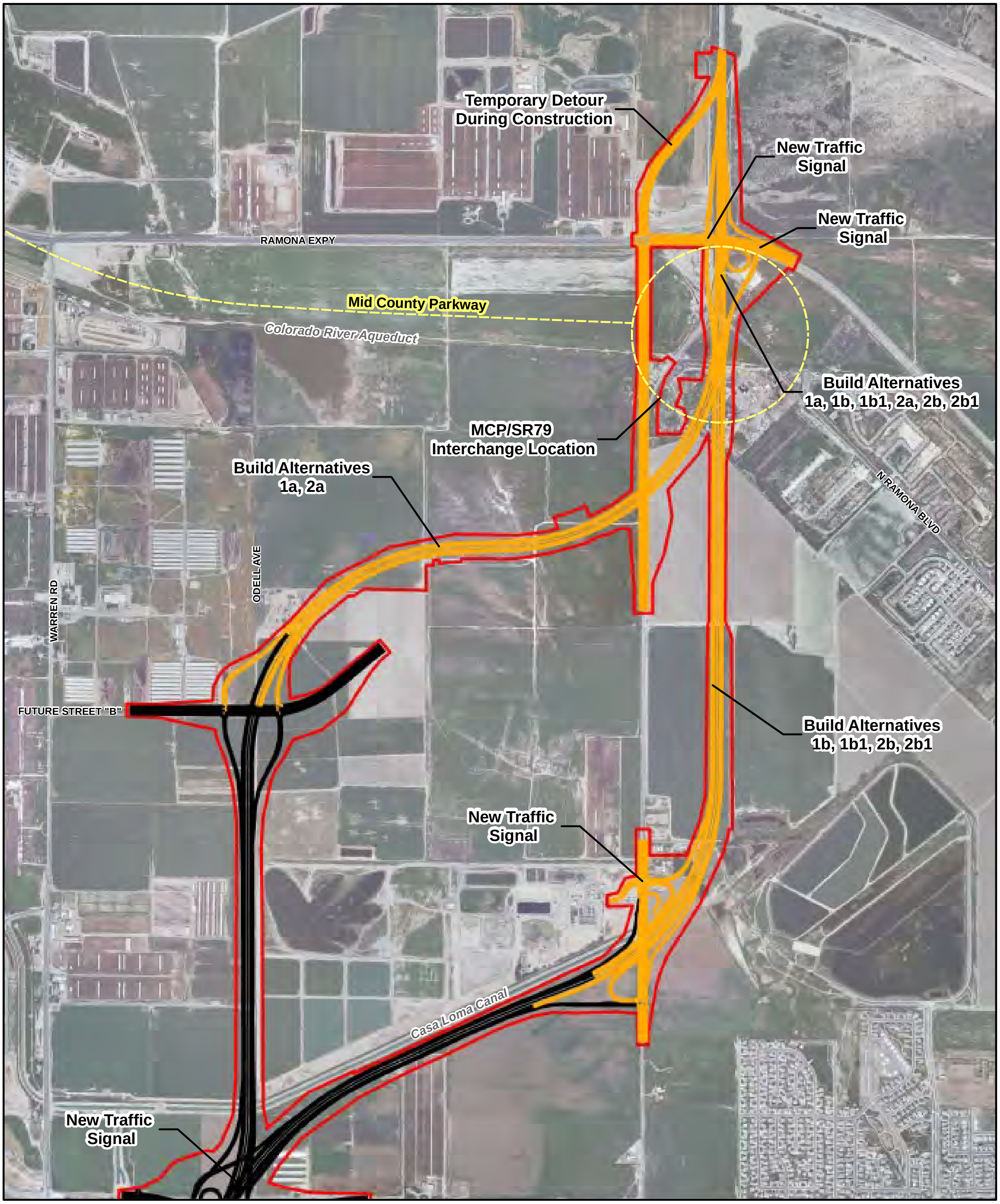
LEGEND

- Under Construction
- Phase 1 Completed
- Project Impact Area

0 2,500 Feet
0 600 Meters
1:30,000

Figure 2.2-27b
Phase 2
SR 79 Construction Phasing
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Under Construction
- Phase 1 Completed
- Mid County Parkway (MCP)
- Project Impact Area

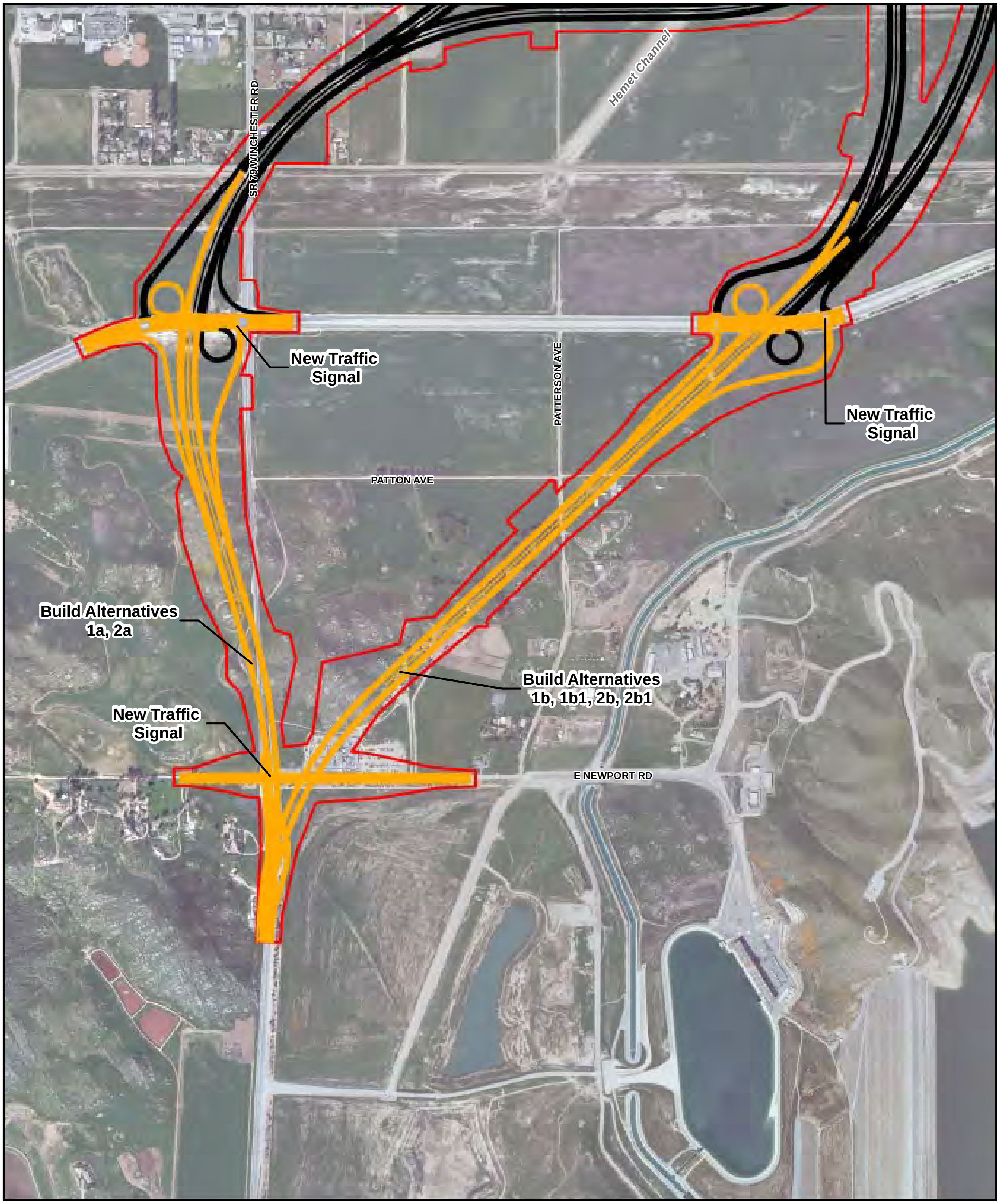
0 2,000 Feet

0 500 Meters

1:24,000

Figure 2.2-27c
Phase 3
SR 79 Construction Phasing
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Under Construction
- Phase 2 Completed
- Project Impact Area

0 1,250 Feet

0 300 Meters

1:15,000

Figure 2.2-27d
Phase 4
SR 79 Construction Phasing
20-Year Design Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Chapter 3 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

The affected environment is the environmental condition against which the environmental consequences of the State Route 79 (SR 79) Realignment Project Build alternatives are evaluated. Information about the affected environment for every resource was collected according to the Project baseline date of January 30, 2007. This date was established as a result of the City of Hemet's adoption of Resolution No. 4137 (Hemet 2007), which was the final action taken to define the Project Build alternatives and when the environmental technical studies were initiated. The only exception was that the existing conditions traffic data was collected in 2004, the same year as the Notice of Preparation (NOP) (September 10, 2004) and is noted in Section 3.1.6 (page 3-167), and thus the baseline for the existing conditions traffic data is September 10, 2004. In addition, resources requiring existing conditions traffic data as part of their analysis (air quality, greenhouse gases, noise, traffic) also utilized the 2004 data. Because the Project baseline date was January 30, 2007, the following analysis is based on the 1992 City of Hemet General Plan. However, this general plan was recently revised and adopted in January 2012. The revised general plan will be analyzed after the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) is circulated, which may require a supplemental EIR/EIS to be recirculated, at least in part, if the general plan presents significant new information.

As part of the scoping and environmental analysis conducted for the Project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document:

- Coastal Resources, Coastal Barriers, and Coastal Zone Impacts: The Project area is located approximately 60 kilometers (km) (40 miles [mi]) east of the Pacific Ocean and, therefore, would not have an effect on coastal resources.
- Wild and Scenic Rivers: There are no rivers listed in the National Inventory of Wild and Scenic Rivers located near the Project.
- Timberlands: There are no contracts involving Timber Production Zones in the study area for the Project.

Organization of this Chapter

Chapter 3 is a discussion of the potential environmental impacts from the No Build Alternative and the four Build alternatives and two design options that were introduced in Chapter 2. The discussion is divided into three general topic areas.

- Human Environment
- Physical Environment
- Biological Environment

Three other major topics at the end of the chapter are derived from the discussion that precedes them. They are:

- The Relationship Between Local Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity
- Irreversible and Irretrievable Commitments of Resources that Would Be Involved in the Proposed Project
- Cumulative Impacts

All of these topic areas are shown in the Table of Contents. Associated figures follow each section.

The three environment topic areas are divided into resource-specific discussions about the existing conditions in the Project study area and how they would be affected by each alternative.

- The Human Environment topic area includes:
  - Land Use
  - Growth
  - Farmlands/Timberlands
  - Community Impacts
  - Utilities/Emergency Services
  - Traffic and Transportation/Pedestrian and Bicycle Facilities
  - Visual/Aesthetics
  - Cultural Resources
- The Physical Environment topic area includes:
  - Hydrology and Floodplain
  - Water Quality and Storm Water Runoff
  - Geology/Soils/Seismic/Topography
  - Paleontology
  - Hazardous Waste/Materials
  - Air Quality
  - Noise and Vibration
  - Energy
- The Biological Environment topic area includes:
  - Natural Communities
  - Wetlands and Other Waters
  - Plant Species
  - Animal Species
  - Threatened and Endangered Species
  - Invasive Species

All of these topics are shown in the Table of Contents. Except for Land Use, Growth, and Community Impacts, the resource-specific discussions are organized the same way and contain the following headings.

- Regulatory Setting
- Affected Environment
- Environmental Consequences
- Avoidance, Minimization, and/or Mitigation Measures

The Regulatory Setting section explains why we analyze issues the way we do in an environmental document. The Affected Environment section includes data, information, issues, and values that will have a bearing on possible impacts, environmental commitments, or alternative analysis. The Environmental Consequences section includes comparisons of the impacts expected from each of the Project alternatives. The Avoidance, Minimization, and/or Mitigation Measures section includes the measures that have been proposed to lessen or compensate for Project impacts to the environment.

Technical Studies

Preparation of this Draft EIR/EIS included a number of special technical studies that are incorporated by reference. The studies include:

Early Development Reports

Route Concept Report, 1992

Final State Route 79 Realignment Study Report, January 1998

Route Concept Report, November 1999

Final Purpose and Need, December 2003

Final Project Criteria and Alternatives Selection for Preliminary Agreement, June 2004

Supplemental Information for Project Criteria and Alternatives Selection for Updated Preliminary Agreement, May 2005

Request for Updated Preliminary Agreement for Project Criteria and Alternatives Selection and Responses, August 2005

Final Project Description, November 21, 2007

Scoping Reports

Final Scoping Summary Report, September 2005

Final Meeting Summary, Winchester Homeowners Association Meeting, October 6, 2005

Final Hemet Public Information Meeting Summary Report, October 2005

Engineering Reports

Value Analysis Study Report, March 2006

Project Study Report (Project Development Support), January 2002

Construction Staging Analysis Report, January 9, 2009

Draft Project Report, January 2013

Human Environment

Community Impacts

Draft Relocation Impact Report, July 2010

Community Impact Assessment, August 2010

Technical Report Addendum Memorandum, Community Impact Assessment, August 2010

Traffic

Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Technical Report Addendum Memorandum, Traffic Analysis, July 2010

Traffic Study for SR 79 Realignment Project Memorandum, October 2012

Visual/Aesthetics

Final Visual Impact Assessment, June 2009

Technical Report Addendum Memorandum, Visual Impact Assessment, June 2010

Cultural Resources

Extended Phase I Proposal, September 2007

Final Archaeological Survey Report, March 2008

Extended Phase I Report, February 2009

Final Historical Resources Evaluation Report, March 2010

Historic Property Survey Report, June 2010

Physical Environment

Hydrology and Floodplain

Final Location Hydraulic Study – San Jacinto River Report, March 21, 2008

Final Location Hydraulic Study – Sanderson Avenue Floodplain Report, March 21, 2008

Final Location Hydraulic Study – Hemet Channel Report, March 24, 2008

Final Location Hydraulic Study – Salt Creek Channel Report, March 24, 2008

Preliminary Hydraulic Report – Hemet Channel, September 24, 2008

Final Floodplain Evaluation Report, May 7, 2008

Technical Report Addendum Memorandum, Final Floodplain Evaluation Report, June 2010

Preliminary Drainage Report, March 25, 2008

Technical Report Addendum Memorandum, Preliminary Drainage Report, June 2010

Water Quality and Storm Water Runoff

Final Water Quality Assessment Report, May 2008

Technical Report Addendum Memorandum, Final Water Quality Assessment Report, June 2010

Impervious Surface Area Summary Memorandum, August 2012

Conceptual Storm Water Data Report, March 25, 2008

Technical Report Addendum Memorandum, Conceptual Storm Water Data Report, June 2010

Paleontology

Final Paleontological Identification and Paleontological Evaluation Report, January 2008

Technical Report Addendum Memorandum, Paleontological Identification and Paleontological Evaluation Report, June 2010

Hazardous Waste/Materials

Final Initial Site Assessment Report, June 2008

Technical Report Addendum Memorandum, Final Initial Site Assessment, June 2010

Air Quality

Final Air Quality Technical Report, September 2009

Technical Report Addendum Memorandum, Final Air Quality Technical Report, June 2010

Noise and Vibration

Noise Study Report, July 2010

Technical Report Addendum Memorandum, Noise Study Report, August 2010

Noise Abatement Decision Report, July 2010

Biological Environment

Natural Environment Study, April 2010

Technical Report Addendum Memorandum, Natural Environment Study, August 2010

Biological Field Survey Reports

Final Sensitive Wildlife Survey Report, December 4, 2007

Final Burrowing Owl Survey Report, December 4, 2007

Final Sensitive Small Mammal Focused Survey Report, December 4, 2007

Final Riparian Bird Survey Report, December 4, 2007

Final Rare Plant Survey Report, December 4, 2007

Final Vernal Pool Branchiopod Survey Report, December 4, 2007

Final Jurisdictional Wetland and Other Waters Delineation Report, September 2008

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3.1 Human Environment

3.1.1 Land Use

The discussion and analysis of land use is based on the environmental review and conclusions presented in the Community Impact Assessment (CIA) of August 2010. Coordination for the Project, such as Project Development Team (PDT) meetings, interagency coordination meetings, and focused discipline-specific technical meetings, established a minimum study area beyond the Project Impact Area (PIA) for each Build alternative. In that coordination, a resource-specific study area was defined for land use. It was determined that the resource-specific study area for land use would include the direct impact areas of the Project (the PIA), plus all land use within 152.4 meters (m) (500 feet [ft]) of the PIA. This is because the distance of 152.4 m (500 ft) from the PIA encompasses sufficient area adjacent to the Project to accommodate variations in topography and land use patterns. Because of this, the Project study area was deemed suitable to assess both direct and indirect land use impacts from the Project. The PIA includes the Project right-of-way (ROW) and Project-related improvements to local streets, utility relocation areas, connections to Hemet Channel outside the Project ROW, and long-term traffic detours. As shown in Figure 3.1-2, the land use study area encompasses more than 2,630 hectares (ha) (6,500 acres [ac]) in unincorporated western Riverside County, the city of Hemet, and the city of San Jacinto. More than half of this land is currently used for agriculture. However, the area is changing rapidly, and much of the existing agricultural land is planned for future development, primarily residential uses (County 2003a, Hemet 1992, San Jacinto 2006).[3]

This Draft EIR/EIS relies on the previous efforts by local authorities to analyze their communities and plan for their future. It incorporates by reference the General Plans of Riverside County, the City of Hemet, and the City of San Jacinto (County 2003a, Hemet 1992, San Jacinto 2006).

3.1.1.1 Existing and Future Land Use

The analysis of existing and future land use considers current development trends and applicable comprehensive government plans and policies in accordance with the National Environmental Policy Act (NEPA) and local land use policies and regulations developed in accordance with state laws.

Affected Environment

Existing Land Use

To develop an accurate inventory of existing land uses, a reconnaissance of the land use study area was conducted in April 2007 and again in December 2009, supplemented with mapping and geographic information system (GIS) data and in consideration of the planned land use categories designated by Riverside County and the Cities of Hemet and San Jacinto. The land use conditions in April 2007 are considered to be representative of those present at the time of the Project baseline (January 30, 2007). In general, a single land use was assigned to each assessor's

[3]Complete references for all citations are in Chapter 8.

tax parcel that is in the study area. Exceptions to this include the steep rocky hillsides that dominate some parcels (not the main use of the parcel) and large parcels that contain more than one land use. In these cases, the land use inventory extends beyond the limits of the assessor's tax parcel to define the existing land use more accurately.

The existing land uses are described to provide a sense of the physical setting and the nature of current development. The categories below were established to describe the existing land uses that occur in the study area by using the methods listed above.

- Agricultural
  This category includes areas currently being used for commercial agriculture. This includes dairies, hay fields, pastures, poultry farms, orchards, row crops, and stockyards.

- Commercial/Industrial
  This category includes nonfarm-product businesses and light industrial operations, such as retail stores and warehousing or distribution centers. The key distinction used for this category is whether the operation is sales or service oriented. Most of the commercial and industrial property in the study area is concentrated along State Route 74 (SR 74)/Florida Avenue in Hemet.

- Parks and Designated Open Space
  This category includes parks and open-space areas such as picnic areas, playgrounds, and outdoor sports courts and fields that are used for public recreation. These areas may be either privately or publicly owned.

- Residential
  This category includes residential development and includes low-density, single-family neighborhoods and mobile home communities. In all cases, animal tending is discouraged or impractical, which distinguishes this land use from rural residential.

- Rural Residential
  This category includes homes or farmsteads that may have agricultural uses such as horse farms, farm markets, farm equipment storage, barns/silos, irrigation infrastructure, nurseries, pens/stalls, and incidental crop land. These properties are small, private properties that are not operated as commercial farms.

- Services/Facilities
  This category includes public and semipublic land uses that provide community-related services. Lands categorized as services/facilities contain schools, utility substations, water conveyance facilities such as the San Diego Canal, and transportation uses (roadways, railroads, and airports).

- Undeveloped
  This category includes vacant parcels within the study area. Undeveloped areas include fallow land where there is no evidence of agricultural activities and rocky outcroppings on steep slopes.

Consistent with the historical nature of the area, agriculture is the predominant land use, as shown in Figures 3.1-1a through 3.1-1c. Cropland, dairies, and horse and poultry farms are the most common types of agriculture. Rural residential farmsteads are common, especially in unincorporated Riverside County. The construction of modern single-family and low- to medium-density residential subdivisions is active in both Hemet and San Jacinto. A concentrated commercial area exists along State Route 74 (SR 74)/Florida Avenue.

Two highways traverse the study area; SR 79 travels north-south, and SR 74/Florida Avenue travels east-west. Local roads, both paved and unpaved, crisscross the landscape. Other major transportation uses in the vicinity of the Project include the Hemet-Ryan Airport[4] and the San Jacinto Branch Line. The Hemet-Ryan Airport is a County of Riverside owned public-use airport. The San Jacinto Branch Line is owned by the Riverside County Transportation Commission (RCTC) and has not been in operation over the past 5 years. Another prominent land use feature is the series of water-conveyance systems that cross the area. The Colorado River Aqueduct crosses near the northern Project limit, and the San Diego Canal roughly parallels the entire length of the study area. The Salt Creek Channel, which drains into Diamond Valley Lake, crosses perpendicular to the Project near the southern Project limit. Large rocky hillsides punctuate the landscape: Double Butte, Lakeview Mountains, Tres Cerritos Hills, and West Hemet Hills. The characteristics of existing land uses specific to local jurisdictions are discussed below.

Riverside County

Riverside County extends along an east-west axis southeast of Los Angeles, encompassing 18,666 square kilometers (km^2) (7,207 square miles [mi^2]). Roughly, the southern half of the Project and a small area at the northern Project limit are in unincorporated western Riverside County, as shown in Figure 3.1-2.

The portions of the study area in unincorporated Riverside County are predominately agricultural or undeveloped, interspersed with rural residential farmsteads, as shown in Figures 3.1-1a through 3.1-1c. Many rural residential farmsteads are associated with horse farms, and some support orchards, farm markets, and nurseries. In the central portions of the study area near Tres Cerritos and Esplanade Avenues, horse farms are common. The typical rural residence is a house combined with paddocks, barns, and training equipment. A concentration of residential land uses is present in the unincorporated community of Winchester, which is on the western edge of the study area near the southern Project limit. This community encompasses approximately 12 km^2 (5 mi^2) and is characterized by a small, western-themed town center at the intersection of SR 79/Winchester Road and Simpson Road (USA Cities 2008). Small homes on large parcels surround the town center along a grid pattern of north-south local streets named for United States presidents (County 2003b).

City of Hemet

The city of Hemet encompasses approximately 67 km^2 (26 mi^2) in western Riverside County (Hemet 1992). The central portion of the Project would be located in Hemet, from Florida Avenue in the south to Esplanade Avenue in the north, as shown in Figure 3.1-2.

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[4]Hemet-Ryan Airport (except the traffic management zone) is outside the land use study area. However, this transportation feature plays a large role in land use planning, goals, and policies in the general area.

The portion of the land use study area in Hemet contains a relatively even distribution of agricultural, commercial, residential, and rural residential uses, as shown in Figure 3.1-1b. The center of Hemet is the intersection of SR 74/Florida Avenue and State Street, approximately 6 km (3.7 mi) east of the study area. Commercial uses are clustered along SR 74/Florida Avenue. The Hemet-Ryan Airport is located inside the Hemet city limits, but is about 3.2 km (2 mi) east of the study area. The San Diego Canal roughly parallels the Project roadway between Florida Avenue and Esplanade Avenue.

City of San Jacinto

San Jacinto is one of the oldest incorporated cities in Riverside County and encompasses approximately 70 km^2 (27 mi^2) in western Riverside County (San Jacinto 2008). The northern portion of the land use study area is in San Jacinto, from Esplanade Avenue in the south to the San Jacinto River in the north, as shown in Figure 3.1-2.

The portion of the study area located in the city of San Jacinto is primarily agricultural, consisting of large dairies, poultry farms, and sod farms, as shown in Figure 3.1-1c. Low-density residential developments are actively being constructed along Cottonwood and Esplanade Avenues. The Colorado River Aqueduct and Casa Loma Canal intersect the study area, and the San Diego Canal roughly parallels the Project roadway between Esplanade and Cottonwood Avenues inside the city limits.

Future Land Use

Planned land use in the study area is designated by the general plans of the local jurisdictions (County 2003a, Hemet 1992, San Jacinto 2006). California law requires that all of a jurisdiction's general plan elements be consistent with one another and that the jurisdiction's implementation tools, such as zoning and specific plans, be consistent with the general plan overall. Land use development, guided by the general plans and approved zoning for Riverside County and the City of San Jacinto, was consistent as of the Project baseline date of January 30, 2007. Planned land uses approved by these jurisdictions are shown in Figures 3.1-3a through 3.1-3c and Figure 3.1-4a. The land use designations identified in the 1992 City of Hemet General Plan are not consistent with the City's zoning approved in January 2007. The Project's analysis of consistency with future Hemet land uses considers the more recently approved zoning designations shown in Figure 3.1-5a, as they represent the City's most recent consideration of the issue, even though they are inconsistent with the general plan. The City did update its general plan in 2012, and an analysis of the general plan will be performed after the circulation of this Draft EIR/EIS, and a supplemental EIR/EIS may need to be recirculated, at least in part, if the updated general plan is determined to be significant new information. Analysis of the updated general plan will be included in the Final EIR/EIS. Future land uses in the local jurisdictions are discussed in more detail below. Future land uses are also discussed in Section 3.1.2 (page 3-66) and Section 3.6 (Volume 2, page 3-691) and listed in Appendix H (Volume 2).

Riverside County

Area plans developed as part of the Riverside County General Plan (County 2003a) to guide development in specific areas recognize the unique character of each of the communities. The Harvest Valley/Winchester Area Plan (HVWAP) (County 2003b) and the San Jacinto Valley Area Plan (SJVAP) (County 2003c) guide land use planning for the Project area. As shown in Figure 3.1-2, the HVWAP encompasses the study area from the southern Project terminus to SR 74/Florida Avenue. The SJVAP encompasses the study area from SR 74/Florida Avenue to the northern Project terminus at the San Jacinto River. Planned land use designated by these area plans is discussed below.

Harvest Valley/Winchester Area Plan

The Riverside County HVWAP will transition the existing rural character of the area to a mixture of urban, suburban, and rural uses focused around unique features, such as Diamond Valley Lake. The Riverside County HVWAP land use designations in the study area include:

- Community Development
  - Commercial Retail (CR)
  - Commercial Tourist (CT)
  - Low Density Residential (LDR)
  - Medium Density Residential (MDR)
  - Medium High Density Residential (MHDR)
  - High Density Residential (HDR)
  - Light Industrial (LI)
  - Public Facilities (PF)
- Open Space
  - Conservation (C)
  - Conservation Habitat (CH)
  - Recreation (R)
- Rural
  - Rural Mountainous (RM)
  - Rural Residential (RR)
- Rural Community
  - Estate Density Residential (RC-EDR)
  - Low Density Residential (RC-LDR)

These designations are defined in Table 3.1-1 (page 3-13) and shown in Figures 3.1-3a through 3.1-3c.

The Riverside County HVWAP identifies policy areas for locations of special significance to residents, as well as specific plans (termed Community Development Specific Plans) to provide customized land use and development policy to address unique community development areas. The land use goals and policies for these areas that are in the study area have been evaluated for consistency with the Project and are discussed below.

Policy Areas

Riverside County HVWAP policy areas that are in the study area include Winchester Road/Newport Road Policy Area, Diamond Valley Lake Policy Area, Winchester Policy Area, SR 79 Policy Area, and Hemet-Ryan Airport Influence Area (County 2003b).

The Winchester Road/Newport Road Policy Area protects the scenic value of the topographic features within the policy area, as seen by travelers along Winchester Road. The general plan manages land use in light of topographic constraints and proximity to Diamond Valley Lake. Commercial land uses are directed to low-lying areas, and hilltop development is managed to protect scenic resources.

The Diamond Valley Lake Policy Area encourages development of the recreation opportunities and commercial services offered by Diamond Valley Lake, in cooperation with Metropolitan Water District of Southern California (MWD) and the City of Hemet. In support of these recreational facilities, the general plan indicates that tourist-oriented services and commercial uses are expected to be developed in the future pursuant to one or more specific plans for the policy area.

The Winchester Policy Area is expected to become the "gateway to the Diamond Valley," to "accommodate significant intensification of land usage," and to "capitalize on the proximity of the community to Diamond Valley Lake." Winchester has the potential to serve as an important tourist and transit hub for the region. To take advantage of these opportunities, the general plan designates a mixture of commercial, office, and residential uses to be developed.

The SR 79 Policy Area addresses transportation infrastructure capacity.

The Hemet-Ryan Airport Influence Area identifies safety zones surrounding Hemet-Ryan Airport to regulate development intensity, density, height of structures, and noise.

Specific Plans

Riverside County HVWAP specific plans that are in the study area include (1) a small commercial area, The Crossroads, in Winchester, located south of Salt Creek Channel and west of SR 79/Winchester Road, and (2) the undeveloped BSA Properties (property owner), located east and west of SR 79/Winchester Road and south of Patton Avenue.

San Jacinto Valley Area Plan

The Riverside County SJVAP focuses on preserving the unique features of the San Jacinto Valley area and is designed to maintain the predominantly rural, agricultural, and open space character of the area (County 2003c). The Riverside County SJVAP land use designations in the study area include Agriculture, Rural Residential, and Conservation. These designations are defined in Table 3.1-1 (page 3-13) and are shown in Figures 3.1-3a through 3.1-3c.

Table 3.1-1 Riverside County Land Use Designations within the Study Area

Land Use Designation	Building Intensity (DU/Hectare [Acre] or FAR)[a]	Description	Amount Present within Study Area	
			Hectares (Acres)	Percentage
Agriculture				
Agriculture (AG)	4.05 ha (10 ac) minimum	Agricultural land, including row crops, nurseries, dairies, poultry farms, processing plans, and other related uses. One single-family residence allowed per 4.05 ha (10 ac) except as otherwise specified by a policy or an overlay.	80.65 ha (199.28 ac)	7.43%
Community Development				
Commercial Retail (CR)	0.20 to 0.35 FAR	Local and regional, serving retail and service uses. The amount of land designated for Commercial Retail exceeds the amount anticipated to be necessary to serve the County's population at build out. When build out of Commercial Retail reaches the 40 percent level with any Area Plan, additional studies will be required before Community Retail development will be permitted.	52.74 ha (130.32 ac)	4.86%
Commercial Tourist (CT)	0.20 to 0.35 FAR	Tourist-related commercial, including hotels, golf courses, and recreation/amusement activities.	28.40 ha (70.18 ac)	2.61%
Low-Density Residential (LDR)	0.20 ha (0.50 ac) minimum	Single-family detached residences on large parcels of 0.20 to 0.40 ha (0.50 to 1 ac). Limited agriculture and animal keeping is permitted; however, intensive animal keeping is discouraged.	69.16 ha (170.90 ac)	6.37%
Medium-Density Residential (MDR)	5 to 12.5 DU/ha (2 to 5 DU/ac)	Single-family detached and attached residences with a density range of 5 to 12.5 DU/ha (2 to 5 DU/ac). Limited agriculture and animal keeping is permitted; however, intensive animal keeping is discouraged. Lot sizes range from 510.97 to 1,858.06 m^2 (5,500 to 20,000 ft^2), typical 668.90 m^2 (7,200 ft^2) lots allowed.	244.56 ha (604.33 ac)	22.52%
Medium-High-Density Residential (MHDR)	12.5 to 20 DU/ha (5 to 8 DU/ac)	Single-family attached and detached residences with a density range of 12.5 to 20 DU/ha (5 to 8 DU/ac). Lot sizes range from 371.61 to 603.87 m^2 (4,000 to 6,500 ft^2).	27.27 ha (67.39 ac)	2.51%
High-Density Residential (HDR)	20 to 35 DU/ha (8 to 14 DU/ac)	Single-family attached and detached residences, including townhouses, stacked flats, courtyard homes, patio homes, townhouses, and zero lot line homes.	8.13 ha (20.08 ac)	Less than 1% 0.75%
Light Industrial (LI)	0.25 to 0.60 FAR	Industrial and related uses, including warehousing/distribution, assembly and light manufacturing, repair facilities, and supporting retail uses.	8.60 ha (21.24 ac)	0.79%
Public Facilities (PF)	0.60 FAR maximum	Civic uses such as county administrative buildings and schools.	47.77 ha (118.05 ac)	4.40%
Open Space				
Conservation (C)	N/A	The protection of open space for natural hazard protection and natural and scenic resource preservation. Existing agriculture is permitted.	29.91 ha (73.92 ac)	2.75%

Table 3.1-1 Riverside County Land Use Designations within the Study Area

Land Use Designation	Building Intensity (DU/Hectare [Acre] or FAR)[a]	Description	Amount Present within Study Area	
			Hectares (Acres)	Percentage
Conservation Habitat (CH)	N/A	Applies to public and private lands conserved and managed in accordance with adopted Multi-Species Habitat and other Conservation Plans.	19.45 ha (48.06 ac)	1.79%
Recreation (R)	N/A	Recreational uses, including parks, trails, athletic fields, and golf courses. Neighborhood parks are permitted within residential land uses.	47.21 ha (116.65 ac)	4.35%
Rural				
Rural Mountainous (RM)	4.05 ha (10 ac) minimum	Single-family residential uses with a minimum lot size of 4.05 ha (10 ac). Areas of at least 4.05 ha (10 ac) where a minimum of 70 percent of the area has slopes of 25 percent or greater. Allows limited animal keeping, agriculture, recreational uses, compatible resource development (which may include the commercial extraction of mineral resources) with approval of a storm water management plan (SWMP) and associated uses, and governmental uses.	125.14 ha (309.23 ac)	11.52%
Rural Residential (RR)	2.02 ha (5 ac) minimum	Single-family residences with a minimum lot size of 2.02 ha (5 ac). Allows limited animal keeping and agricultural uses, recreational uses, compatible resource development (not including the commercial extraction of mineral resources) and associated uses, and governmental uses.	95.12 ha (235.04 ac)	8.76%
Rural Community				
Estate Density Residential (RC-EDR)	0.81 ha (2 ac) minimum	Single-family detached residences on large parcels of 0.81 to 2.02 ha (2 to 5 ac). Limited agriculture and intensive equestrian and animal keeping uses are expected and encouraged.	199.52 ha (493.03 ac)	18.37%
Low Density Residential (RC-LDR)	0.20 ha (0.50 ac) minimum	Single-family detached residences on large parcels of 0.20 to 0.40 (0.50 to 1 ac). Limited agriculture and intensive equestrian and animal keeping uses are expected and encouraged.	2.41 ha (5.96 ac)	Less than 0.22%

Source: Riverside County General Plan (County 2003a), Harvest Valley/Winchester Area Plan (County 2003b), and San Jacinto Valley Area Plan (County 2003c).

Notes: This table presents land use designation information for Riverside County. Land use designation information for the Cities of Hemet and San Jacinto is provided in separate tables in this section.

ft^2 = square feet

m^2 = square meters

N/A = not applicable

[a]Dwelling units per acre (DU/ac) is the measurement of the number of residential units per acre. Floor area ratio (FAR) is the measurement of the amount of nonresidential building square footage in relation to the size of the lot.

The Riverside County SJVAP also identifies policy areas for locations of special significance to residents, as well as specific plans, termed Community Development Specific Plans, to provide customized land use and development policy to address unique community development areas. The land use goals and policies for the areas in the study area have been evaluated for the Project and are discussed in more detail below. The Riverside County SJVAP specific plans are approximately 10.4 km (6.5 mi) east and outside the Project study area and are not discussed further. The closest specific plan (Specific Plan 322) is approximately 3.2 km (2.0 mi) east of the study area.

Policy Areas

Riverside County SJVAP policy areas in the study area include the Hemet-Ryan Airport Influence Area and San Jacinto River Policy Area. The policy area for the Hemet-Ryan Airport is the same as discussed for the Riverside County HVWAP. The San Jacinto River Policy Area protects the riparian corridor along the river and addresses floodplain, seismic, and San Jacinto Mountain slope stability hazards (County 2003c).

City of Hemet

The Hemet General Plan (Hemet 1992) serves as a comprehensive strategy for the management of future growth and change. The plan envisions a regionally balanced community providing commercial, government, retail, social, and senior-oriented services, while maintaining the city's unique character as a small, friendly, and quiet retirement community nestled in a picturesque agricultural valley. As previously discussed, the Hemet land use designations identified in the 1992 Hemet General Plan are not consistent with more recently approved zoning designations identified for areas within the land use study area. Therefore, the assessment of Project consistency with future land uses focuses on the zoning designations approved in January 2007.

Agriculture

The Hemet General Plan states that agriculture designations are intended to represent the area identified by Riverside County's Growth Management Plan for agricultural use. The City of Hemet recognizes that commercial agriculture is not, however, likely to be a viable long-term use in the valley and therefore intends to work with Riverside County and area landowners to formulate a clear plan for the conversion of lands in this designation to urban and rural residential uses. Conversion of lands from agriculture to other uses, such as urban and residential, is noted in the City of Hemet Zoning (Hemet 2007). These areas would be converted due to other conditions even if the Project did not proceed. Agriculture zoning designations in the land use study area include Heavy Agricultural (4.05 ha [10 ac] minimum) (A-10).

Commercial

Commercial designations provide appropriately located shopping and other commercial areas for residents and workers. Typical uses include retail, markets, commercial services, restaurants, automotive repair and service, hardware and home improvement centers, commercial recreation, professional and business offices, financial institutions, and automotive sales. Commercial zoning designations in the land use study area include General Commercial (C-2).

Residential

Residential designations are intended to provide properly located family living areas based on a wide range of population densities. These types of land designations vary from rural low-density uses such as residential agriculture to multifamily high-density uses. Residential zoning designations in the land use study area include Multiple Family Residential (R-3).

Specific Plan

The City-sponsored Specific Plan 88-13 was approved in 1988 for approximately 80.9 ha (200 ac) of development in West Hemet, east of California Avenue between Florida and Devonshire Avenues. The specific plan designation encompasses the full range of land uses permitted by the General Plan.

The zoning designations are defined in Table 3.1-2 and are shown in Figures 3.1-5a through 3.1-5c.

The 1992 Hemet General Plan identifies a Locally Preferred Alternative for the Project. However, the 1992 Locally Preferred Alternative is inconsistent with the Project as currently defined. This inconsistency was addressed in City of Hemet Resolution No. 4216, dated May 13, 2008, wherein the City of Hemet identified a Locally Preferred Alternative, based on information received to that date, to replace the now-eliminated Locally Preferred Alternative specified in the 1992 Hemet General Plan. The resolution goes on to direct the Hemet City Manager or his designee to work cooperatively with RCTC as part of its Project Design Team process to continue review of the final two alternatives and to present the City's final preferred alternative, when appropriate. Within City jurisdiction, the Locally Preferred Alternative traverses the community in a generally north-south direction west of the San Diego Canal, from SR 74/Florida Avenue north to Devonshire Avenue (see Figure 3.1-6) (Hemet 2006a).

Table 3.1-2 City of Hemet Zoning Designations in the Study Area

Zoning Designation	Maximum Land Use Intensity (DU/Hectare [Acre] or FAR)[a]	Description	Amount Present within Study Area	
			Hectares (Acres)	Percentage
Agriculture				
Heavy Agricultural – 5 ac min (A-5)	None	To provide for the orderly development of large areas of open land that will have a definite public value as open space or that have been intended for eventual development (pending proper timing for the economical provision of utilities, major streets, and other facilities) so that orderly development will occur. It is also the purpose to provide appropriate areas for the establishment of light agricultural uses.	1.69 ha (4.18 ac)	1.02%
Heavy Agriculture (A-10)	None	To provide for the orderly development of large areas of open land that will have a definite public value as open space or that have been intended for eventual development (pending proper timing for the economical provision of utilities, major streets, and other facilities) so that orderly development will occur. It is also the purpose to provide appropriate areas for the establishment of light agricultural uses.	42.19 ha (104.26 ac)	25.53%

Table 3.1-2 City of Hemet Zoning Designations in the Study Area

Zoning Designation	Maximum Land Use Intensity (DU/Hectare [Acre] or FAR)[a]	Description	Amount Present within Study Area	
			Hectares (Acres)	Percentage
Heavy Agricultural with County Compliance (A-2, C-10)	None	To provide appropriate areas for the establishment of heavy agricultural land uses in a manner consistent with County standards.	3.44 ha (8.50 ac)	2.08%
Commercial				
General Commercial (C-2)	N/A	To provide appropriate areas in the locations shown in the general plan for the development of commercial districts that would have a wide range of offices, services, retail stores, recreation, and transient accommodations.	14.70 ha (36.32 ac)	8.89%
Manufacturing				
Heavy Manufacturing (M-2)	N/A	To reserve appropriately located areas, as shown in the general plan, to provide sites for general manufacturing and industrial uses that will not adversely affect the residential character of the city.	2.55 ha (6.31 ac)	1.54%
Residential				
Singe Family (R-1)	17.5 DU/ha (7 DU/ac)	To provide for the development of single-family homes.	13.68 ha (33.80 ac)	8.27%
Multiple Family (R-3)	62.5 DU/ha (25 DU/ac)	To provide for the development of medium-density, multiple-family residential uses.	0.76 ha (1.89 ac)	0.46%
Specific Plan (SP)				
Specific Plan (SP 87-28)	N/A	Intended for properties that, because of size, design innovation, location, or urban service conditions, require special consideration. This designation is intended to provide the private development sector with a greater degree of flexibility in developing innovative projects while also incorporating special development and design objectives.	1.42 ha (3.51 ac)	0.86%
Specific Plan (SP 88-01)	N/A		12.84 ha (31.72 ac)	7.77%
Specific Plan (SP 88-13)	N/A		66.80 ha (165.06 ac)	40.41%
Specific Plan (SP 89-19)	N/A		5.22 ha (12.90 ac)	3.16%

Source: Hemet General Plan, 1992 and City of Hemet, 2007.

Note: The land use designations identified in the 1992 City of Hemet General Plan are not consistent with the City's zoning that was approved in January 2007.

N/A = Not applicable. Commercial and manufacturing zones are not subject to maximum land use intensities. Land use intensities within specific plan zones encompass the full range of land uses permitted by the general plan.

[a]Dwelling units per acre (DU/ac) is the measurement of the number of residential units per acre. Floor area ratio (FAR) is the measurement of the amount of nonresidential building square footage in relation to the size of the lot.

City of San Jacinto

The San Jacinto General Plan focuses on managing the continued expansion of urban development. The general plan states that San Jacinto is primarily a residential community that will continue to have a substantial portion of its land devoted to housing. The general plan attempts to balance land uses to ensure fiscal stability and create a desirable community in which people can work, shop, reside, and enjoy a range of recreational opportunities. The San Jacinto land use designations in the study area include:

- Commercial
  - Community Commercial (CC)

- Open Space
  - General Open Space (OS)
  - Open Space – Recreation (OS-R)
  - Parks (P)
- Public Institutional
  - Public Institutional (PI)
- Residential
  - Low Density Residential (LDR)
  - Medium Density Residential (MDR)
  - High Density Residential (HDR)
  - Very High Density Residential (VHDR)
- Specific Plan
  - Gateway Specific Plan

These designations are defined in Table 3.1-3 (page 3-19) and are shown in Figures 3.1-4a and 3.1-4b.

The Gateway Specific Plan is being developed by the City of San Jacinto to help achieve its goals for providing "additional quality employment, civic, and housing opportunities" for this area. Located at the northern Project limit at the intersection of SR 79 and Ramona Expressway, the 688-ha (1,700-ac) Gateway area is intended to be the primary entryway to San Jacinto. The breakdown of land uses will include 20 percent residential, with the balance made up of land uses for Regional Commercial (for large-scale commercial development) and Industrial (for office parks that provide community-serving businesses in single-tenant and multiple-tenant office configurations and business parks that provide general business uses) (San Jacinto 2006). The 5-year implementation plan is from 2009/2010 through 2013/2014.

The San Jacinto General Plan identifies a Locally Preferred Alternative for the SR 79 Project (Build Alternative 1b or 2b) (see Figure 3.1-6). While the City of San Jacinto acknowledges corridors for the Project in its general plan, should the selected Build alternative differ from the Project identified in the approved general plan, the City of San Jacinto has committed to amending the circulation element of its general plan as well. Within City jurisdiction, the Locally Preferred Alternative traverses the community in a generally north-south direction east of Sanderson Avenue, from the San Jacinto River to the San Jacinto Reservoir. In the vicinity of the reservoir, SR 79 curves west and traverses Sanderson Avenue, ultimately crossing Esplanade Avenue at the southwestern corner of the community (San Jacinto 2006).

Table 3.1-3 City of San Jacinto Land Use Designations in the Study Area

Land Use Designation	Maximum Land Use Intensity (DU/Hectare [Acre] or FAR)[a]	Description	Amount Present within Study Area	
			Hectares (Acres)	Percentage
Commercial				
Community Commercial (CC)	0.40 FAR	The Community Commercial land use designation provides for a variety of retail and service-oriented business activities, including office uses, at various intensities to serve the local community and population, as well as the broader market area.	98.50 ha (243.39 ac)	15.42%
Open Space				
General Open Space (OS)	1 DU/16.19 ha (1 DU/40 ac) 0.10 FAR	The Open Space designation allows for open space areas, hiking, biking, and equestrian trails, outdoor recreation, and extremely low-density single-family dwellings. This designation provides for the conservation of natural and scenic resources and the protection of property from natural hazards.	37.86 ha (93.54 ac)	5.93%
Open Space – Recreation (OS-R)	0.10 FAR	The Open Space Recreation designation provides for outdoor recreational facilities, including golf courses, swimming schools, tennis clubs, equestrian clubs, and caretaker facilities.	0.67 ha (1.67 ac)	Less than 1%
Parks (P)	0.15 FAR	The Park designation allows for passive and active recreation sites operated by the City and regional agencies. These parks may include areas for active sports play, including large multipurpose fields for community events and informal recreation, sports fields and courts, concessions, tots lots, picnic areas, support facilities, and caretaker facilities.	1.63 ha (4.02 ac)	Less than 1%
Public Institutional				
Public Institutional (PI)	0.50 FAR	The Public Institutional designation provides for publicly owned properties and facilities, including schools, fire stations, police stations, community centers, utility substations, water facilities, administrative offices, and City government office complexes. Other uses that are determined to be compatible with primary uses may also be allowed.	53.62 ha (132.50 ac)	8.39%
Residential				
Low Density Residential (LDR)	12.5 DU/ha (5 DU/ac)[b]	The Low Density Residential designation is primarily for single-family detached residential uses and accessory buildings. Uses such as mobile and modular homes, townhouses and condominiums, public facilities, and other uses that are compatible with and oriented toward serving the needs of low-density single-family neighborhoods may also be allowed.	86.89 ha (214.60 ac)	13.59%
Medium Density Residential (MDR)	25 DU/ha (10 DU/ac)[b]	The Medium Density Residential land use designation allows for a range of housing types, including single-family attached and detached units, duplexes, triplexes, fourplexes, condominiums, townhouses, and mobile home parks, as well as accessory structures. Uses such as mobile and modular homes, second dwelling units, public facilities, and other uses that are compatible with and oriented toward serving the needs of medium-density neighborhoods may also be allowed.	196.17 ha (484.74 ac)	30.70%

Table 3.1-3 City of San Jacinto Land Use Designations in the Study Area

Land Use Designation	Maximum Land Use Intensity (DU/Hectare [Acre] or FAR)[a]	Description	Amount Present within Study Area	
			Hectares (Acres)	Percentage
High Density Residential (HDR)	35 DU/ha (14 DU/ac)[b]	The High Density Residential land use designation provides for a variety of multifamily housing types, including garden style units, apartments, condominiums, townhouses, and mobile home parks. Uses such as mobile and modular homes, second dwelling units, public facilities, and others that are compatible with and oriented toward serving the needs of high-density single-family neighborhoods may also be allowed.	20.20 ha (49.92 ac)	3.16%
Very High Density Residential (VHDR)	55 DU/ha (22 DU/ac)[b]	The Very High Density Residential land use designation is intended primarily for apartment units, senior housing, and housing affordable to low- and moderate-income families.	24.31 ha (60.08 ac)	3.81%
Specific Plan				
Gateway Specific Plan (SP-G)	N/A	The 688-ha (1,700-ac) Gateway Specific Plan area is strategically located around the SR 79 and the Ramona Expressway corridor. As the primary entryway to San Jacinto from the north, extensive scenic views of the city and the valley are available from this area. A specific plan is being developed for this area that will help the City achieve its goals for providing additional quality employment, civic, and housing opportunities in this area. Although the Gateway Specific Plan will further refine the land uses in this area, the projected breakdown of land uses in the Gateway Specific Plan area is as follows: Regional Commercial land uses will consist of 15 percent of the net area, Office Park land uses will consist of 30 percent of the net area, Business Park land uses will consist of 35 percent of the net area, and Residential land uses will consist of 20 percent of the net area.	119.09 ha (294.28 ac)	18.69%

Source: City of San Jacinto, San Jacinto General Plan, January 2006.

Note: This table presents land use designation information for the City of San Jacinto. Land use designation information for the County of Riverside and City of Hemet is provided in separate tables in this section.

N/A = Not Applicable. The Gateway Specific Plan does not provide provisional building intensity at this time. The percentage breakdown of land uses is stated in the “description” column under the Gateway Specific Plan Land Use Designation above.

[a] Dwelling units per acre (du/ac) is the measurement of the number of residential units in a given acre. Floor area ratio (FAR) is the measurement of the amount of nonresidential building square footage in relation to the size of the lot.

[b] The maximum density of this land use designation may be exceeded to complement General Plan Housing Element policy in accordance with the density bonus provisions of Section 65915 of the California Code of Regulations and as an incentive for planned developments.

Environmental Consequences

Impacts to land use are defined as (1) the conversion of existing land uses to land needed to be acquired for construction of the transportation project or (2) the use of lands inconsistent with applicable plans or programs. The land uses addressed include, but are not limited to, residential, commercial, industrial, and recreation. Because the roadway is proposed along an entirely new alignment, all land uses within the direct impact area of the Project have the potential to be affected.

Permanent Impacts

The following land use impacts are considered to be permanent and direct. These impacts are discussed by Project alternative in the sections that follow.

No Build Alternative

The No Build Alternative assumes that no roadway improvements would be made to the portion of SR 79 between Domenigoni Parkway and Gilman Springs Road, except those projects currently included in the general plans of the County and the Cities of Hemet and San Jacinto. Because the local general plans anticipate a relocated SR 79 and the Cities identify Locally Preferred Alternatives, the No Build Alternative would not be consistent with these plans.

All Build Alternatives and Design Options

All of the Build alternatives and design options would impact existing agricultural, commercial/industrial, residential, rural residential, services/facilities, and undeveloped land uses. The areas of impact to existing land uses in each jurisdiction are presented in Table 3.1-4 (page 3-22). Although the Project has been closely coordinated with Riverside County and the Cities of Hemet and San Jacinto, it would introduce a new highway into areas of Hemet and San Jacinto that have been designated for uses that are generally incompatible with a major transportation facility. The County Circulation Element includes all of the alignments, so no inconsistency would occur.

Build Alternative 1a

Build Alternative 1a would include Roadway Segment L, which would not be consistent with the San Jacinto Locally Preferred Alternative. Build Alternative 1a would also include Roadway Segments A, E, and G, all of which are inconsistent with the Locally Preferred Alternative identified by the City of Hemet. In both cases, selection of Build Alternative 1a would require the differences between the Project and the general plans of the two cities to be mutually resolved before the Project moves forward.

Table 3.1-4 Permanent Land Use Impacts for Project Alternatives

Jurisdiction and Land Use Type	Project Alternative				
	No Build Alternative[a]	Build Alternative 1a[b] (Hectares [Acres])	Build Alternative 1b (including Design Option 1b1)[c, f] (Hectares [Acres])	Build Alternative 2a[d] (Hectares [Acres])	Build Alternative 2b (including Design Option 2b1)[e, f] (Hectares [Acres])
Agricultural					
Riverside County	N/A	91.54 ha (226.19 ac)	75.94 ha (187.64 ac)	89.80 ha (221.90 ac)	71.57 ha (176.86 ac)
City of Hemet	N/A	17.42 ha (43.05 ac)	17.42 ha (43.05 ac)	17.42 ha (43.06 ac)	17.42 ha (43.06 ac)
City of San Jacinto	N/A	132.92 ha (328.44 ac)	109.88 ha (271.52 ac)	131.33 ha (324.53 ac)	111.46 ha (275.43 ac)
TOTAL	N/A	241.88 ha (597.68 ac)	203.24 ha (502.21 ac)	238.55 ha (589.49 ac)	272.02 ha (495.35 ac)
Commercial/Industrial					
Riverside County	N/A	6.68 ha (16.49 ac)	6.24 ha (15.42 ac)	6.76 ha (16.71 ac)	5.94 ha (14.67 ac)
City of Hemet	N/A	N/A	N/A	N/A	N/A
City of San Jacinto	N/A	7.43 ha (18.35 ac)	7.43 ha (18.35 ac)	7.43 ha (18.35 ac)	7.43 ha (18.35 ac)
TOTAL	N/A	14.11 ha (34.84 ac)	13.67 ha (33.77 ac)	14.19 ha (35.06 ac)	13.37 ha (33.02 ac)
Parks and Designated Open Space					
Riverside County	N/A	N/A	N/A	N/A	N/A
City of Hemet	N/A	N/A	N/A	N/A	N/A
City of San Jacinto	N/A	N/A	N/A	N/A	N/A
TOTAL	N/A	N/A	N/A	N/A	N/A
Residential					
Riverside County	N/A	0.95 ha (2.34 ac)	0.79 ha (1.96 ac)	0.76 ha (1.88 ac)	0.61 ha (1.50 ac)
City of Hemet	N/A	0.06 ha (0.15 ac)	0.06 ha (0.15 ac)	0.06 ha (0.15 ac)	0.06 ha (0.15 ac)

Table 3.1-4 Permanent Land Use Impacts for Project Alternatives

Jurisdiction and Land Use Type	Project Alternative				
	No Build Alternative[a]	Build Alternative 1a[b] (Hectares [Acres])	Build Alternative 1b (including Design Option 1b1)[c, f] (Hectares [Acres])	Build Alternative 2a[d] (Hectares [Acres])	Build Alternative 2b (including Design Option 2b1)[e, f] (Hectares [Acres])
City of San Jacinto	N/A	0.18 ha (0.44 ac)	0.18 ha (0.44 ac)	0.18 ha (0.44 ac)	0.18 ha (0.44 ac)
TOTAL	N/A	1.19 ha (2.93 ac)	1.03 ha (2.55 ac)	1.00 ha (2.47 ac)	0.85 ha (2.09 ac)
Rural Residential					
Riverside County	N/A	42.19 ha (104.26 ac)	31.86 ha (78.72 ac)	35.06 ha (86.64 ac)	37.43 ha (92.50 ac)
City of Hemet	N/A	3.82 ha (9.45 ac)	3.40 ha (8.41 ac)	3.40 ha (8.41 ac)	3.82 ha (9.45 ac)
City of San Jacinto	N/A	2.48 ha (6.13 ac)	8.43 ha (20.84 ac)	2.48 ha (6.13 ac)	8.43 ha (20.84 ac)
TOTAL	N/A	48.49 ha (119.84 ac)	43.69 ha (107.97 ac)	40.94 ha (101.18 ac)	49.68 ha (122.79 ac)
Services/Facilities					
Riverside County	N/A	30.45 ha (75.24 ac)	32.54 ha (80.40 ac) OR 32.85 ha (81.17 ac)	32.72 ha (80.85 ac)	27.64 ha (68.31 ac) OR 27.98 ha (69.13 ac)
City of Hemet	N/A	3.35 ha (8.27 ac)	3.31 ha (8.19 ac)	3.31 ha (8.19 ac)	3.82 ha (9.45 ac)
City of San Jacinto	N/A	26.42 ha (65.29 ac)	22.95 ha (56.71 ac)	24.51 ha (60.55 ac)	24.87 ha (61.45 ac)
TOTAL	N/A	60.22 ha (148.80 ac)	58.80 ha (145.30 ac) OR 59.11 ha (146.07 ac)	60.54 ha (149.59 ac)	55.33 ha (139.21 ac) OR 56.67 ha (140.03 ac)
Undeveloped					
Riverside County	N/A	71.96 ha (177.81 ac)	88.26 ha (218.09 ac)	58.39 ha (144.28 ac)	75.17 ha (185.74 ac)
City of Hemet	N/A	3.26 ha (8.06 ac)	3.26 ha (8.06 ac)	3.26 ha (8.06 ac)	3.26 ha (8.06 ac)

Table 3.1-4 Permanent Land Use Impacts for Project Alternatives

Jurisdiction and Land Use Type	Project Alternative				
	No Build Alternative[a]	**Build Alternative 1a**[b] **(Hectares [Acres])**	**Build Alternative 1b (including Design Option 1b1)**[c, f] **(Hectares [Acres])**	**Build Alternative 2a**[d] **(Hectares [Acres])**	**Build Alternative 2b (including Design Option 2b1)**[e, f] **(Hectares [Acres])**
City of San Jacinto	N/A	7.77 ha (19.20 ac)	7.27 ha (17.96 ac)	7.77 ha (19.20 ac)	7.27 ha (17.96 ac)
TOTAL	N/A	82.99 ha (205.07 ac)	98.79 ha (244.11 ac)	69.42 ha (171.54 ac)	85.70 ha (211.76 ac)

Source: Community Impact Assessment, August 2010

Note: N/A – Not Applicable. See Note [a].

[a]Existing land uses associated with the No Build Alternative would not change because of the Project. Therefore, no impacts would occur.

[b]Build Alternative 1a is composed of Roadway Segments A, E, G, I, J, L, and N, Utility Relocation Areas 1 and 2, Connections 1 and 2 to Hemet Channel Outside the Project ROW, and short-term and long-term traffic detours.

[c]Build Alternative 1b and Design Option 1b1 are composed of Roadway Segments B, C, G, I, K, M, and N, Utility Relocations Areas 1 and 2, and short-term and long-term traffic detours.

[d]Build Alternative 2a is composed of Roadway Segments A, F, H, I, K, L, N, Utility Relocation Areas 1 and 2, Connection 3 to Hemet Channel Outside the Project ROW, and short-term and Long-term traffic detours.

[e]Build Alternative 2b and Design Option 2b1 are composed of Roadway Segments B, D, H, I, J, M, N, Utility Relocation Areas 1 and 2, and short-term and long-term traffic detours.

[f]Permanent land use impacts for Build alternatives are presented first for the base condition followed by design options. If there is no variation between the base condition and design option, the information is given only once.

Build Alternative 1b

San Jacinto has identified the portion of Build Alternative 1b in its jurisdiction as the Locally Preferred Alternative, so Build Alternative 1b would be consistent with its currently planned land uses. However, Build Alternative 1b would not be consistent with the Locally Preferred Alternative identified by the City of Hemet. Identification of Build Alternative 1b as the Preferred Alternative would require the differences to be mutually resolved with the City of Hemet before the Project moves forward.

Build Alternative 2a

Build Alternative 2a would not be consistent with the general plan land use or circulation elements of the County or either City. Identification of Build Alternative 2a as the Preferred Alternative would require the differences to be mutually resolved among all parties before the Project moves forward.

Build Alternative 2b

Build Alternative 2b would coincide with the Locally Preferred Alternatives in both Hemet and San Jacinto.

Design Options 1b1 and 2b1

The impacts associated with Design Options 1b1 and 2b1 would be the same as those presented for Build Alternatives 1b and 2b, except that the design options would include cul-de-sacs on Olive Avenue and Simpson Road on the east and west sides of SR 79.

The access modifications to Olive Avenue and Simpson Road would permanently sever a County-designated "Collector" and "Major Roadway," respectively. Even though Olive Avenue is a dirt road and both roads have very low traffic volume and very few homes or businesses, severing them would require coordination with Riverside County to assess appropriate actions related to the classification (or reclassification) of these roadways as part of the County's approved circulation system.

Temporary Impacts

All Project impacts to existing and future land use are considered to be permanent and direct. Consequently, there is no discussion of temporary impacts.

Avoidance, Minimization, and/or Mitigation Measures

Permanent Impacts

No Build Alternative

Permanent impacts associated with the No Build Alternative would not be Project related and, therefore, would not require mitigation.

All Build Alternatives and Design Options

The mitigation measures presented below will be required to bring the Build alternatives and design options into concurrence with existing and future land use. Build Alternative 2b and Design Option 2b1 would be consistent with the general plans of the City of Hemet and the City of San Jacinto, so no mitigation is proposed.

LU-1 **City of Hemet General Plan and Build Alternative 1a**. Differences between Build Alternative 1a and the General Plan of the City of Hemet would have to be mutually resolved before the Project moves forward. The likely solution is a general plan amendment. This will occur after the Preferred Alternative is identified and the Record of Decision (ROD) is issued. RCTC will coordinate with the City of Hemet to complete the general plan amendment procedure. If such resolution does not occur, the Project would not be implemented.

LU-2 **City of San Jacinto General Plan and Build Alternative 1a**. Differences between Build Alternative 1a and the General Plan of the City of San Jacinto would have to be mutually resolved before the Project moves forward. The likely solution is a general plan amendment. This will occur after the Preferred Alternative is identified and the ROD is issued. RCTC will coordinate with the City of San Jacinto to complete the general plan amendment procedure. If such resolution does not occur, the Project would not be implemented.

LU-3 **City of Hemet General Plan and Build Alternative 1b and Design Option 1b1**. Differences between Build Alternative 1b and Design Option 1b1 and the General Plan of the City of Hemet would have to be mutually resolved before the Project moves forward. The likely solution is a general plan amendment. This will occur after the Preferred Alternative is identified and the ROD is issued. RCTC will coordinate with the City of Hemet to complete the general plan amendment procedure. If such resolution does not occur, the Project would not be implemented.

LU-4 **City of Hemet General Plan and Build Alternative 2a**. Differences between Build Alternative 2a and the General Plan of the City of Hemet would have to be mutually resolved before the Project moves forward. The likely solution is a general plan amendment. This will occur after the Preferred Alternative is identified and the ROD is issued. RCTC will coordinate with the City of Hemet to complete the general plan amendment procedure. If such resolution does not occur, the Project would not be implemented.

LU-5 **City of San Jacinto General Plan and Build Alternative 2a**. Differences between Build Alternative 2a and the General Plan of the City of San Jacinto would have to be mutually resolved before the Project moves forward. The likely solution is a general plan amendment. This will occur after the Preferred Alternative is identified and the ROD is issued. RCTC will coordinate with the City of San Jacinto to complete the general plan amendment procedure. If such resolution does not occur, the Project would not be implemented.

LU-6 **County of Riverside Circulation System.** After the ROD is issued for the Project, and as part of final design, RCTC will coordinate the planned access restrictions on Olive Avenue and Simpson

Road with the County of Riverside so that the County can determine appropriate actions to accommodate a change to the approved Circulation Element of the Riverside County General Plan.

Temporary Impacts

No Build Alternative

Potential impacts associated with the No Build Alternative would not be Project related and would not require mitigation.

All Build Alternatives and Design Options

The Project would not be associated with temporary impacts to existing and future land uses, and, therefore, no avoidance, minimization, or mitigation is required.

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

An important component of the land use analysis is evaluation of the Project to establish consistency with applicable plans and programs. Plans and programs for the jurisdictions that govern the study area have been reviewed to determine applicable land use goals and policies. Applicable policies are outlined in the following section.

Southern California Association of Governments

The Project area is located in the service area of the Southern California Association of Governments. SCAG is the largest metropolitan planning organization in the United States. Among its responsibilities for integrated resource management, SCAG has developed a Regional Comprehensive Plan (RCP), adopted October 2, 2008, a Regional Transportation Plan (RTP), adopted in April 2012, and a regional growth vision that is set forth in its Compass Blueprint and is documented in a Growth Vision Report that was adopted in June 2004. Potentially applicable SCAG goals, policies, principles, and objectives were provided by SCAG in response to the Supplemental Notice of Preparation (NOP) circulated for the Project in March 2005 (SCH 2005).

The 2008 RCP is a problem-solving guidance document that addresses Southern California's housing, traffic, water, air quality, and other regional challenges. The RCP targets integrated resource planning by providing recommendations to local governments for their consideration in general plan updates, municipal code amendments, and other actions.

The RTP is a comprehensive 20-year plan that provides the vision for the region's multimodal transportation system. The Project is included in the adopted and approved 2012-2035 RTP. SCAG recognizes the Project as a regionally significant project that conforms to the policies and strategies contained in both the RCP and RTP.

The 2004 Growth Vision Report presents SCAG's regional vision for growth, considering short-term issues such as congestion and housing availability, as well as long-term issues such as regional land use and transportation planning. The Growth Vision Report is based on the growth management framework of the Compass Blueprint, the region's growth management strategy.

2008 Regional Comprehensive Plan

Taken directly from the 2008 SCAG RCP, a list of those SCAG goals and policies specifically related to land use that are considered applicable to the Project is provided in Table 3.1-5 (page 3-33).

2012-2035 Regional Transportation Plan

Taken directly from the 2012-2035 SCAG RTP, a list of those SCAG goals and policies that are considered applicable to the Project is provided in Table 3.1-5 (page 3-33).

2004 Growth Vision Report

Taken directly from the 2004 SCAG Growth Vision Report, a list of those SCAG principles and goals that are considered applicable to the Project is provided in Table 3.1-5 (page 3-33).

Riverside County

Riverside County Integrated Project

The County of Riverside and RCTC have jointly sponsored a comprehensive planning process for future placement of buildings, roads, and open spaces in Riverside County named the Riverside County Integrated Project (RCIP). The RCIP is associated with three plans that are interrelated: a 2003 Riverside County General Plan for land use and housing; a 2003 Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) to determine what land should be set aside as open space and maintained for plant and animal conservation; and the Community and Environmental Transportation Acceptability Process (CETAP), which identifies improvements for highways and transit systems. The Riverside County General Plan and Western Riverside County MSHCP are applicable to the proposed Project.

Riverside County General Plan

Portions of the land use study area are subject to the guidelines and requirements of the Riverside County General Plan (County 2003a). For purposes of this discussion, the land use element is the most relevant portion of the Riverside County General Plan. However, other elements, such as transportation and open space, are directly or indirectly applicable to land use. In addition, the land use element is required to be internally consistent with all other elements of the general plan.

Due in part to the large geographic area addressed by the general plan (1,916,583 ha [4,735,981 ac]), the County has developed "area plans," which are specific to various subregions of the county. The purpose of each area plan is to provide more detailed land use and policy direction regarding local issues such as land use, open space, and circulation. Riverside County has adopted two area plans that are located in the study area, the HVWAP and the SJVAP. The fundamental focus and requirements of these plans are summarized below.

Riverside County General Plan Policies

The Riverside County General Plan asserts that the physical character of Riverside County communities cannot be separated from the values they respect. The general plan says that the simplest expression of the County's vision is to say that: "Riverside County is a family of special communities in a remarkable environmental setting" (County 2003a).

This vision is based on values that provide the foundation for common ground that, in turn, underpin the General Plan's goals, policies, and actions. These values include:

> *Community, Inter-relatedness, Rights, Responsibilities, Risks, Diversity, Valued Contributions, Varied Communities, Balance, Participation, Decision Making, Creativity and Innovation, Distinctiveness, Housing, Natural Environment, Man-made Environment, Employment, Safety, Planning Integration, Communication and Information, Quality Management, Sustainability, Costs, Governmental Cooperation and Youth in the Community.*

The purpose of the Riverside County General Plan is to manage the overall pattern of development effectively. Of the eight general plan elements, the Land Use Element is considered to have the broadest scope. It governs how land is to be utilized and is linked to many of the issues associated with other general plan elements. The intent of the Land Use Element is to communicate long-term desires for future use and to guide future development. The Riverside County General Plan was reviewed in conjunction with consistency considerations. A list of Riverside County General Plan policies that are considered applicable to the Project is provided in Table 3.1-5 (page 3-33).

Harvest Valley/Winchester Area Plan Policies

The Riverside County HVWAP encompasses 13,009 ha (32,146 ac) of unincorporated territory. As shown in Figure 3.1-2, the HVWAP is bordered by SR 74/Florida Avenue and the city of Hemet on the north and by the Riverside County SJVAP on the east. The Riverside County HVWAP focuses on preserving the unique features of the area while acknowledging a shift from its existing rural character to a more urban/suburban/rural mix. The HVWAP sees the impetus for this shift as Diamond Valley Lake and the recreational opportunities it presents. In addition, the HVWAP cites the opportunities provided by the major transportation facilities that cross the area, SR 74/Florida Avenue and SR 79. The San Jacinto Branch Line traverses the community; however, it has not been in operation over the past 5 years. The Riverside County Harvest Valley/Winchester Area Plan was reviewed in conjunction with consistency considerations. A list of Riverside County Harvest Valley/Winchester Area Plan policies that are considered applicable to the Project is provided in Table 3.1-5 (page 3-33).

San Jacinto Valley Area Plan Policies

The Riverside County SJVAP encompasses 37,455 ha (92,553 ac), approximately one-third of which is under the primary jurisdiction of the incorporated cities of Hemet and San Jacinto. The boundary of the Riverside County SJVAP is shown in Figure 3.1-2. The Riverside County SJVAP focuses on preserving the unique features in the San Jacinto Valley area and, at the same time, guiding the accommodation of future growth. The SJVAP is designed to maintain the predominantly rural, agricultural, and open-space character of the unincorporated portions of the San Jacinto Valley and to focus growth in ways that respect the existing urban fabric, slopes, and natural hazards. This is accomplished by providing an opportunity for community development while preserving selected natural features (especially riparian) and by protecting residents from natural hazards. The Riverside County San Jacinto Valley Area Plan was reviewed in conjunction with consistency considerations. A list of San Jacinto Valley Area Plan policies that are considered applicable to the Project is provided in Table 3.1-5 (page 3-33).

Western Riverside County Multiple Species Habitat Conservation Plan

The MSHCP is a comprehensive, multijurisdictional habitat conservation plan (HCP) focusing on the conservation of species and their associated habitats in western Riverside County. The MSHCP is one of several large, multijurisdictional habitat-planning efforts in Southern California with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region. The Western Riverside County MSHCP will give the County of Riverside and the cities within the county who signed the Implementing Agreement the ability to better control local land use decisions and maintain economic development flexibility while providing a coordinated reserve system and implementation program that will facilitate the preservation of biological diversity and enhance the region's quality of life.

The MSHCP contains policies on vegetation mapping and species surveys, including:

- Policies for Riparian/Riverine Areas and Vernal Pools
- Protection of Narrow Endemic and Criteria Area Plants
- Burrowing Owl Survey Areas
- Mammal Survey Areas
- Amphibian Survey Areas
- Guidelines for Construction of Wildlife Crossings
- Urban/Wildlands Interface Policy
- Guidelines for Siting and Design of Planned Roads within the Criteria Area and the Public/Quasipublic Lands
- Construction Guidelines
- Best Management Practices

The MSHCP and its policies were adopted on June 17, 2004.

A thorough discussion of the Western Riverside County MSHCP is included in Section 3.3.1.3 (page 3-459).

Riverside County Habitat Conservation Agency

The Riverside County Habitat Conservation Agency (RCHCA) and its member agencies will be responsible for implementation of the HCP, with recipients of incidental take authorizations sharing responsibility for compliance with HCP terms and conditions.

Stephens' Kangaroo Rat Habitat Conservation Plan

The RCHCA was formed in 1990 for the purpose of planning, acquiring, and managing habitat for the Stephens' kangaroo rat and other endangered, threatened, and candidate species. The RCHCA is a Joint Powers Agreement agency composed of the Cities of Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Perris, Riverside, and Temecula and the County of Riverside. The RCHCA is responsible for the implementation of the Stephens' kangaroo rat Habitat Conservation Plan (HCP). The RCHCA prepared a long-term HCP in 1996 under Section 10 of the Federal Endangered Species Act (FESA) for the federally endangered Stephens' kangaroo rat in western Riverside County. The loss of habitat and individuals under the HCP is offset by the establishment of a "core reserve" system consisting of seven reserves managed to maintain the long-term survival of the species. Riverside County Ordinance No. 663.10 was established to implement the mitigation provisions of the HCP, which include a mitigation fee for new development in western Riverside County.

City of Hemet

The City of Hemet General Plan (Hemet 1992) establishes policies for the ultimate build out of the city through a comprehensive management strategy for future growth and change. The following analysis is based on the 1992 City of Hemet General Plan. However, this general plan was recently revised and adopted in January 2012. Because this adoption occurred after the analysis was completed for the Project, the new information in the January 2012 general plan is not included in this Draft EIR/EIS. However, the City's Locally Preferred Alternative, as stated in the 2008 Resolution, is included in the January 2012 General Plan and consistent with this Draft EIR/EIS.

The general plan characterizes Hemet as a community of choice for seasonal and permanent retirement living and as a subregional commercial and government center. It identifies specific goals to manage growth and maintain a traditional, small-town feel, while creating and maintaining a functional, healthful, and desirable place for citizens to live and do business. The general plan establishes 2010 as the benchmark date for general plan policy and identifies regionally balanced goals based on seven major issue areas: community development, economic development, public services and facilities, transportation, public health and safety, resource management, and housing. The City of Hemet General Plan (1992) was reviewed in conjunction with consistency considerations. A list of City of Hemet General Plan policies considered applicable to the Project is provided in Table 3.1-5 (page 3-33).

City of San Jacinto

The San Jacinto General Plan (San Jacinto 2006) guides growth and development within the city boundary and sphere of influence, encompassing a planning area containing approximately 5,430 ha (13,195 ac) of land, as shown in Figure 3.1-2. The Land Use element of the San Jacinto General Plan focuses on how to develop vacant land and how to redevelop certain other lands within the city. The plan identifies seven major issues:

> *Developing a balanced land use pattern to meet community needs, managing and directing future growth within the City so that the community and its neighborhoods are protected and enhanced, ensuring compatible land uses and environmental conditions, promoting compatible, high quality development, rejuvenating the downtown area, preserving and protecting important cultural, historic and visual resources within the community, targeting local and regional economic development opportunities.*

The San Jacinto General Plan establishes 9 land use goals and 64 policies that address these 7 major land use issues. The City of San Jacinto General Plan was reviewed in conjunction with consistency considerations. A list of City of San Jacinto General Plan policies considered applicable to the Project is provided in Table 3.1-5 (page 3-33).

Environmental Consequences

Plans and programs that do not include the proposed Project, or with which the Project is not consistent, have the potential to be impacted. Determinations of consistency with the applicable plans and programs are provided in Table 3.1-5 (page 3-33).

Permanent Impacts

Impacts from the use of lands that is inconsistent with applicable plans or policies are considered to be permanent and direct. These impacts are discussed by Project alternative in the sections that follow. The analysis in this section is based on the CIA and the CIA Technical Report Addendum Memorandum of August 2010.

No Build Alternative

With the No Build Alternative, no Project-related roadway improvements would be made to SR 79 between Domenigoni Parkway and Gilman Springs Road. The portion of SR 79 proposed for realignment would remain in place and unchanged, and projected capacity and operational benefits would not be realized.

The Project is intended to improve regional circulation and relieve congestion, which is consistent with the transportation goals of the RCP. The Project is also included in the adopted RTP and FTIP, which demonstrates that the Project is consistent with SCAG's regional planning efforts. The Project is designated as a future transportation corridor in the RTP. The No Build Alternative would not be consistent with and would not further the goals of the RCP.

The need for the Project is acknowledged by the identification of corridors and/or study areas for a realigned SR 79 in the Riverside County, Hemet, and San Jacinto General Plans. The Project would improve transportation infrastructure in the region in accordance with the existing plans and policies of Riverside County and the Cities of Hemet and San Jacinto. The Riverside County General Plan designates an alignment for a future "expressway." The No Build Alternative would be inconsistent with this designation.

The County of Riverside and the City of San Jacinto have specified policies for the development of an SR 79 transportation corridor (Riverside County HVWAP 7.1 and City of San Jacinto 3.1 through 3.3), and the City of San Jacinto has incorporated a Locally Preferred Alternative for the Project in its General Plan (San Jacinto 2006). Additionally, the City of Hemet has identified a Locally Preferred Alternative via City of Hemet Resolution No. 4216 (Hemet 2008). Therefore, the No Build Alternative would not be consistent with the plans and policies for Riverside County, the City of Hemet, or the City of San Jacinto.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Southern California Association of Governments		
2008 Regional Comprehensive Plan		
Land Use and Housing Goals		
–	Focusing growth in existing and emerging centers and along major transportation corridors.	The existing SR 79 is a major transportation corridor. It is the most direct route between Beaumont and Temecula. It is the primary north-south route to the newly developing Diamond Valley Lake recreation area, and it will be the primary linkage between Mid County Parkway (MCP) and SR 74. The SR 79 Project is intended to improve regional circulation and relieve congestion on local streets. Despite overall changes in circulation and access, ongoing land use planning and development are occurring to address already existing and planned growth, which is anticipated with or without the Project. The pattern and rate of population and housing growth would be expected to remain consistent with population forecasts and land use planning contemplated in the approved General Plans of Riverside County and the City of San Jacinto (County 2003a, San Jacinto 2006). With respect to the City of Hemet, a comprehensive update to the 1992 General Plan has been conducted to reflect the City's planned land use and development goals and policies consistent with current and anticipated growth and development. The currently adopted General Plans for Riverside County, City of Hemet, and City of San Jacinto acknowledge the need for the Project by the identification of corridors and/or study areas for a realigned SR 79. In addition, both of the Cities have adopted resolutions identifying Locally Preferred Alternatives for the Project (Hemet 1992 and 2008, San Jacinto 2001 and 2006). Ongoing coordination with the County and Cities at periodic project development team (PDT) meetings held for the Project also confirms the intent of local land use authorities to proceed with land use planning and development with consideration of the proposed Project Impact Area (PIA), but not in anticipation or response to the Project.
–	Creating significant areas of mixed-use development and walkable, "people-scaled" communities.	The Project design includes intersections/interchanges to facilitate local access to, from, and/or across the roadway, consistent with the overall intent of supporting mixed-use development adjacent to and surrounding the transportation corridor while maintaining local and regional transit connections within the county. The Project incorporates measures to maintain appropriate community access along existing transportation and recreation corridors.
–	Preserving existing, stable, single-family neighborhoods.	The Project would be located primarily along the outskirts or edges of existing residential development, which would not disrupt or divide existing communities adjacent to the roadway. However, within the rural Winchester community of unincorporated Riverside County, the Project would traverse the central portion of the community and go through existing residential and rural residential development. Implementation of appropriate mitigation would address potential permanent impacts to cohesion within this community.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
–	Protecting important open space, environmentally sensitive areas and agricultural lands from development.	Advance planning efforts were conducted with federal, state, regional and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to environmentally sensitive resources. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible. See the discussion in Section 3.1.2.2 (page 3-66).
Land Use and Housing Constrained Policies		
LU-5.1	All stakeholders should leverage state infrastructure bond financing, including the Department of Housing and Community Development's Transit Oriented Development program and should support legislation that will target infrastructure bond funds for regions with adopted growth visions such as the Compass Blueprint and for projects consistent with these visions.	The Project is included in the adopted and approved 2011 SCAG Federal Transportation Improvement Program (FTIP) and the 2012-2035 SCAG RTP. Inclusion in the adopted RTP and FTIP demonstrates that the Project has been incorporated into regional planning efforts designed to support SCAG's regional growth vision consistent with the 2004 Compass Blueprint and Growth Vision Report.
LU-5.2	Subregional organizations should leverage the federal transportation planning funds available at the subregional level, to complete projects that integrate land use and transportation planning and implement Compass Blueprint principles.	See consistency determination for LU-5.1, above.
LU-6	Local governments should consider shared regional priorities, as outlined in the Compass Blueprint, Regional Transportation Plan, and this Regional Comprehensive Plan, in determining their own development goals and drafting local plans.	See consistency determination for LU-5.1, above.
LU-6.1	Local governments should take a comprehensive approach to updating their General Plans, keeping General Plans up-to-date and providing progress reports on updates and implementation, as required by law.	The approved Riverside County, Hemet, and San Jacinto General Plans, which govern land use planning and development for the Project area, document the need for an improved SR 79 transportation corridor to accommodate existing and future planned land use. The need for the Project is acknowledged by the identification of corridors and/or study areas for a realigned SR 79 in these approved plans and subsequent decision-making documents adopted by these agencies (e.g., resolutions to adopt Locally Preferred Alternatives for the Project) (Riverside County 2003a, Hemet 1992 and 2008, San Jacinto 2001 and 2006).

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Open Space and Habitat – Natural Lands Goals		
–	Ensure a sustainable ecology by protecting and enhancing the region's open space infrastructure and mitigate growth and transportation related impacts to natural lands by: • Conserving natural lands that are necessary to preserve the ecological function and value of the region's ecosystems; • Conserving wildlife linkages as critical components of the region's open space infrastructure; • Coordinating transportation and open space to reduce transportation impacts to natural lands.	The SR 79 Project is intended to improve regional circulation and relieve congestion on local streets. Despite overall changes in circulation and access, ongoing land use planning and development is occurring to address already existing and planned growth, which is anticipated with or without the Project. The pattern and rate of population and housing growth would be expected to remain consistent with population forecasts and land use planning contemplated in the approved General Plans of Riverside County and the City of San Jacinto (County 2003a, San Jacinto 2006). With respect to the City of Hemet, a comprehensive update to the 1992 General Plan has been conducted to reflect the City's planned land use and development goals and policies consistent with current and anticipated growth and development. The currently adopted General Plans for Riverside County, City of Hemet, and City of San Jacinto acknowledge the need for the Project by the identification of corridors and/or study areas for a realigned SR 79. In addition, both of the Cities have adopted resolutions identifying Locally Preferred Alternatives for the Project (Hemet 1992 and 2008, San Jacinto 2001 and 2006). Ongoing coordination with the County and Cities at periodic PDT meetings held for the Project also confirms the intent of local land use authorities to proceed with land use planning and development with consideration of the proposed PIA, but not in anticipation of or response to the Project. Advance planning efforts were conducted with federal, state, regional and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to environmentally sensitive resources. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible. See the discussion in Section 3.1.2.2 (page 3-66). The MSHCP, a major conservation plan for western Riverside County, is a key factor that helps achieve goals noted. The realignment of SR 79 is specifically included in the MSHCP in Section 7.3.5, Planned Roads. All of the Build alternatives and design options are consistent with the description of the Project in Section 7.3.5, Planned Roads, of the MSHCP. By being included in the MSHCP, it was evaluated with respect to the conservation of biological resources throughout the MSHCP planning process. As a result, the proposed Project is considered a Covered Activity.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Open Space and Habitat – Natural Lands Constrained Policies		
OSN-12	Local governments should track and Monitor Open Space Conservation by: • Considering the most recent annual report on open space conservation in planning and evaluating projects and programs in areas with regionally significant open space resources. • Ensuring consistency with the open space conservation policies and goals of the RCP.	The Project considered regionally significant open space resources, including those addressed in the 2008-2009 Riverside County Regional Park and Open Space Annual Report. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible.
OSN-13	Local governments should develop and implement mitigation for open space impacts by: • Promoting coordinated mitigation programs for regional projects and establish the basis for inter regional conservation strategies. • Planning development in locations least likely to cause environmental impact.	Advance planning efforts were conducted with federal, state, regional and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to environmentally sensitive resources. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible. See the discussion in Section 3.1.2.2 (page 3-66).
OSN-14	Developers and local governments should implement mitigation for open space impacts through the following activities: • Individual projects should either avoid significant impacts to regionally significant open space resources or mitigate the significant impacts through measures consistent with regional open space policies for conserving natural lands, community open space and farmlands. All projects should demonstrate consideration of alternatives that would avoid or reduce impacts to open space. • Individual projects should include into project design, to the maximum extent practicable, mitigation measures and recommended best practices aimed at minimizing or avoiding impacts to natural lands, including, but not limited to FHWA's Critter Crossings, and Ventura County Mitigation Guidelines. • Project level mitigation for RTP's significant cumulative and growth-inducing impacts on open space resources will include but not be limited to the conservation of natural lands, community open space and important farmland through existing programs in the region or through multi-party conservation compacts facilitated by SCAG. • Project sponsors should ensure that transportation systems proposed in the RTP avoid or mitigate significant impacts to natural lands, community open space and important farmland, including cumulative impacts and open space impacts from the growth associated with transportation projects and improvements. • Project sponsors should fully mitigate direct and indirect impacts to open space resulting from implementation of regionally significant projects.	See consistency determination provided for OSN-13, above. Information about growth pressures in the San Jacinto Valley is provided in Section 3.1.2.2 (page 3-66).

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Open Space and Habitat – Community Open Space Lands Goals		
–	Enhance the region's parks, trails and community open space infrastructure to support the aesthetic, recreational and quality-of-life needs, providing the highest level of service to our growing region by: • Creating new community open space that is interconnected, accessible, equitably distributed, provides public health benefits, and meets the changing and diverse needs of communities; • Improving existing community open space through urban forestry and other programs that provide environmental benefits.	See consistency determination provided for OSN-13, above.
Open Space and Habitat – Community Open Space Lands Constrained Policies		
OSC-8	Local governments should encourage patterns of urban development and land use, which reduce costs on infrastructure and make better use of existing facilities.	The approved Riverside County, Hemet, and San Jacinto General Plans, which govern land use planning and development for the Project area, document the need for an improved SR 79 transportation corridor to accommodate existing and future planned land use. The current alignment of SR 79 between Domenigoni Parkway and Gilman Springs Road is circuitous, with numerous at-grade intersections, residential and commercial driveways, traffic signals, and other impediments that degrade the operational characteristics of the facility. The use of the existing SR 79 facility has been determined to be inadequate to meet existing circulation needs and ongoing development in the area. The need for the Project is acknowledged by the identification of corridors and/or study areas for a realigned SR 79 in these approved plans and subsequent decision-making documents adopted by these agencies (e.g., resolutions to adopt Locally Preferred Alternatives for the Project) (County 2003a, Hemet 1992 and 2008, San Jacinto 2001 and 2006).
OSC-9	Developers and local governments should increase the accessibility to natural areas lands for outdoor recreation.	The Project would increase capacity to facilitate the regional movement of people and goods, which has the potential to increase accessibility to natural lands for outdoor recreation. Advance planning efforts were conducted with federal, state, regional and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to environmentally sensitive resources. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Open Space and Habitat – Agricultural Lands Goals		
–	Preserve the productivity and viability of the region's agricultural lands while supporting a sustainable economy and region by: • Maintaining a viable level of agriculture to support economic and food supply needs for the region while supporting sustainable energy, air quality and transportation policies; • Promote and support a strong locally-grown food system by encouraging community farming and developing cooperative farming initiates that use sustainable farming practices.	Within the Agricultural Study Area (ASA), many of the farmlands present have recently been converted for development. The trend in farmland conversion within the ASA is expected to continue with or without the Project, in accordance with the adopted Riverside County, City of Hemet, and City of San Jacinto General Plans. The Project would impact active agricultural lands to some degree, as discussed in Section 3.1.3, Farmlands/Timberlands (page 3-86). Although mitigation for permanent impacts to agricultural lands is not expected to be required by the Farmland Policy Protection Act (FPPA) because the Project would not exceed the threshold of 160, appropriate minimization and/or mitigation measures for potential agricultural impacts would be implemented, as feasible.
Open Space and Habitat – Agricultural Lands Constrained Policies		
OSA-6	Local governments are encouraged to obtain assistance from the American Farmland Trust in developing and implementing farmland conservation measures or avoid impacts to important farmlands.	See consistency determination for Open Space and Habitat – Agricultural Lands Goals, above.
OSA-7	Local governments should avoid the premature conversion of farmlands by promoting infill development and the continuation of agricultural uses until urban development is imminent; if development of agricultural lands is necessary, growth should be directed to those lands on which the continued viability of agricultural production has been compromised by surrounding urban development or the loss of local markets.	See consistency determination for Open Space and Habitat – Agricultural Lands Goals, above.
OSA-8	Developers and sponsors with projects that have potentially significant impacts to important farmlands should include mitigation measures to reduce impacts and demonstrate project alternatives that avoid or lessen impacts. Mitigation at a 1:1 ratio is recommended.	See consistency determination for Open Space and Habitat – Agricultural Lands Goals, above.
Water Goals		
–	Achieve water quality improvements through implementation of land use and transportation policies and programs that promote water stewardship and eliminate water impairments and waste in the region.	The Project would not substantially alter the existing drainage pattern of the site or area. The Project design incorporates appropriate storm water facilities, and Project operation would include implementation of best management practices (BMPs) to ensure proper onsite drainage and maintain existing offsite water flows to avoid flooding onsite or offsite.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Water Constrained Policies		
WA-13	Developers and local governments should protect and preserve vital land resources—wetlands, groundwater recharge areas, woodlands, riparian corridors, and production lands. The federal government's 'no net loss' wetlands policy should be applied to all of these land resources.	Advance planning efforts were conducted with federal, state, regional and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to vital land resources, including wetlands and other sensitive ecological habitats. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible.
WA-23	Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage runoff flows caused by storms and impervious surfaces.	See consistency determination for WA-13, above.
WA-24	Local governments should prevent development in flood hazard areas lacking appropriate protections, especially in alluvial fan areas.	See consistency determination for WA-13, above.
WA-27	Developers and local governments should maximize pervious surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.	See consistency determination for WA-13, above. Water quality and storm water runoff are discussed in greater detail in Section 3.2.2, particularly in Section 3.2.2.3, Environmental Consequences (page 3-301).
WA-34	State and regional agencies should design and operate regional transportation facilities so that stormwater runoff does not contaminate surrounding watershed ecosystems.	See consistency determination for WA-13, above.
Energy Constrained Policies		
EN-8	Developers should incorporate and local governments should include the following land use principles that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms: • Mixed-use residential and commercial development that is connected with public transportation and utilizes existing infrastructure. • Land use and planning strategies to increase biking and walking trips.	The Project design includes intersections/interchanges to facilitate local access to, from, and/or across the roadway, consistent with the overall intent of supporting mixed-use development adjacent to and surrounding the transportation corridor while maintaining local and regional transit connections within the county. The Project would incorporate measures to maintain appropriate community access along existing transportation and recreation corridors.
Air Quality Goals		
–	Minimize land uses that increase the risk of adverse air pollution-related health impacts from exposure to toxic air contaminants, particulates (PM_{10}, $PM_{2.5}$, ultrafine), and carbon monoxide.	The Project would provide a more effective north-south transportation corridor than existing SR 79, thus would enhance circulation, accessibility, and safety. While the Project would be associated with the production of toxic air contaminants, the Project would include measures to minimize and/or mitigate air quality impacts.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Solid Waste Goals		
–	A region that conserves our natural resources, reduces our reliance on landfills, and creates new economic opportunities in the most environmentally responsible manner possible.	Advance planning efforts were conducted with federal, state, regional and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to natural resources and other environmentally sensitive areas. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible. Project construction is expected to be conducted in the most environmentally responsible manner possible. Additional economic opportunities would be provided by the construction jobs generated by the Project. In addition, while construction is anticipated to produce a small amount of refuse, debris, and landscape trimmings over the life of the Project, the majority of construction and demolition waste would be recyclable.
Transportation Goals		
–	A more efficient transportation system that reduces and better manages vehicle activity.	The SR 79 Project is intended to improve regional circulation and relieve congestion on local streets. The Project would increase capacity to facilitate the regional movement of people and goods, which would provide a more efficient transportation system that better manages vehicle activity.
Transportation Constrained Policies		
TR-2	SCAG should ensure safety, adequate maintenance, and efficiency of operations on the existing multi-modal transportation system that should be RTP priorities and should be balanced against the need for system expansion investments.	The Project would meet the stated Project purpose, “To improve traffic flow for local and regional north-south traffic in the San Jacinto Valley, to improve operational efficiency and enhance safety conditions by maintaining route continuity and upgrading the facility, to allow regional traffic, including truck traffic, to adequately bypass local roads, and to reduce the diversion of traffic from state routes onto local roads.” The Project is included in the adopted and approved 2011 SCAG FTIP and the 2012-2035 SCAG RTP. Inclusion in the adopted RTP and FTIP demonstrates that the Project is consistent with SCAG’s regional planning efforts for system expansion investments.
Security and Emergency Preparedness Goals		
–	Ensure transportation safety, security, and reliability for all people and goods in the region.	The Project is intended to improve regional circulation and relieve congestion on local streets. The Project would increase capacity to facilitate the regional movement of people and goods, which would provide a more efficient transportation system that better manages transportation safety, security, and reliability.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Economy Goals		
–	Focusing development in urban centers, existing cities and along (existing and future) transportation corridors.	The approved Riverside County, Hemet, and San Jacinto General Plans, which govern land use planning and development for the Project area, document the need for an improved SR 79 transportation corridor to accommodate existing and future planned land use. The Project has been closely coordinated with the local jurisdictions, and the existing SR 79 facility has been determined to be inadequate to meet circulation needs and ongoing development in the area. The need for the Project is acknowledged by the identification of corridors and/or study areas for a realigned SR 79 in these approved plans and subsequent decision-making documents adopted by these agencies (e.g., resolutions to adopt Locally Preferred Alternatives for the Project) (County 2003a, Hemet 1992 and 2008, San Jacinto 2001 and 2006).
2012-2035 Regional Transportation Plan		
Goals	Maximize mobility and accessibility for all people and goods in the region.	The Project is intended to improve regional circulation and relieve congestion on local streets. The Project would increase capacity to facilitate the regional movement of people and goods, which would provide a more efficient transportation system that maximizes mobility and accessibility and better manages transportation safety, security, and reliability.
	Ensure travel safety and reliability for all people and goods in the region.	See consistency determination above.
	Preserve and ensure a sustainable regional transportation system.	See consistency determination above.
	Maximize the productivity of our transportation system.	See consistency determination above.
	Protect the environment, improve air quality, and promote energy efficiency.	Advance planning efforts were conducted with federal, state, regional, and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to the environment, including air quality and energy consumption. Protection of the environment is addressed in the resource-specific environmental impact analyses contained in technical reports prepared for the Project, which include the identification of measures to minimize and/or mitigate impacts to the environment, when appropriate.
	Encourage land use and growth patterns that complement our transportation investments.	The approved Riverside County, Hemet, and San Jacinto General Plans, which govern land use planning and development for the Project area, document the need for an improved SR 79 transportation corridor to accommodate existing and future planned land use. The need for the Project is acknowledged by the identification of corridors and/or study areas for a realigned SR 79 in these approved plans and subsequent decision-making documents adopted by these agencies (e.g., resolutions to adopt Locally Preferred Alternatives for the Project) (County 2003a, Hemet 1992 and 2008, San Jacinto 2001 and 2006).

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
	Maximize the security of the regional transportation system through improved system monitoring, rapidly recovery planning, and coordination with other security agencies.	The SR 79 Project would provide a more efficient transportation system that maximizes mobility and accessibility and better manages transportation safety, security, and reliability.
Transportation Policies		
	Transportation investments shall be based on SCAG's adopted regional Performance Indicators	The Project would meet the stated Project purpose, "To improve traffic flow for local and regional north-south traffic in the San Jacinto Valley, to improve operational efficiency and enhance safety conditions by maintaining route continuity and upgrading the facility, to allow regional traffic, including truck traffic, to adequately bypass local roads, and to reduce the diversion of traffic from state routes onto local roads." The Project is included in the adopted and approved 2011 SCAG FTIP and the 2012-2035 SCAG RTP. Inclusion in the adopted RTP and FTIP demonstrates that the Project is consistent with SCAG's regional planning efforts for system expansion investments.
	Ensuring safety, adequate maintenance, and efficiency of operations on the existing multimodal transportation system should be the highest RTP/SCS priorities for any incremental funding in the region.	The SR 79 Project is intended to improve regional circulation and relieve congestion on local streets. The Project would increase capacity to facilitate the regional movement of people and goods, which would provide a more efficient transportation system that maximizes mobility and accessibility and better manages transportation safety, security, and reliability. The Project has been closely coordinated with the local jurisdictions to ensure that the roadway design is consistent and supportive of ongoing land use planning and development and transportation goals. Project construction and operation would support planned economic growth consistent with the general plan goals and policies.
2004 Growth Vision Report		
	Principle #1 Improve **mobility** for all residents. Goal: • Encourage transportation investments and land use decisions that are mutually supportive • Locate new housing near existing jobs and new jobs near existing housing • Encourage transit-orientated development • Promote a variety of travel choices	The SR 79 Project is intended to improve regional circulation and relieve congestion on local streets. The Project would increase capacity to facilitate the regional movement of people and goods, which would provide a more efficient transportation system that maximizes mobility and accessibility and better manages transportation safety, security, and reliability. The approved Riverside County, Hemet, and San Jacinto General Plans, which govern land use planning and development for the Project area, document the need for an improved SR 79 transportation corridor to accommodate existing and future planned land use. The need for the Project is acknowledged by the identification of corridors and/or study areas for a realigned SR 79 in these approved plans and subsequent decision-making documents adopted by these agencies (e.g., resolutions to adopt Locally Preferred Alternatives for the Project) (County 2003a, Hemet 1992 and 2008, San Jacinto 2001 and 2006). The Project has been closely coordinated with the local jurisdictions to ensure that the roadway design is consistent with and supportive of ongoing land use planning and development and transportation goals. Although the Project does not directly encourage transit-oriented development, it does include design measures that do not preclude existing or planned transit service.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
	Principle #2 Foster **livability** in all communities. Goal: • Promote developments that provide a mix of uses • Promote "people-scaled," pedestrian friendly communities • Support the preservation of stable, single-family neighborhoods	The Project design includes intersections/interchanges to facilitate local access to, from, and/or across the roadway, consistent with the overall intent of supporting mixed-use development adjacent to and surrounding the transportation corridor while maintaining local and regional transit connections within the county.
	Principle #3 Enable **prosperity** for all people. Goal: • Ensure environmental justice regardless of race, ethnicity or income class • Support local and state federal policies that encourage balanced growth	The Project is intended to improve regional circulation and relieve congestion on local streets. The Project would increase capacity to facilitate the regional movement of people and goods, which would provide a more efficient transportation system for the benefit of all people.
	Principle #4 Promote **sustainability** for future generations. Goal: • Preserve rural, agricultural, recreational, and environmentally sensitive areas • Focus development in urban centers and existing cities • Develop strategies to accommodate growth that use resources efficiently, eliminate pollution, and significantly reduce waste	The Project would provide transportation infrastructure in support of past, present, and projected regional growth and in accordance with the existing plans and policies of Riverside County and the Cities of Hemet and San Jacinto. Advance planning efforts were conducted with federal, state, regional and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to environmentally sensitive resources. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible. Protection of the environment is addressed in the resource-specific environmental impact analyses contained in technical reports prepared for the Project, which include the identification of measures to minimize and/or mitigate impacts to the environment, when appropriate.
2003 Riverside County General Plan		
Land Use Element Policies		
LU 1.5	The County shall participate in regional efforts to address issues of mobility, transportation, traffic congestion, economic development, air and water quality, and watershed and habitat management with cities, local and regional agencies, stakeholders, Indian nations, and surrounding jurisdictions.	The Project would meet its stated purpose, "To improve traffic flow for local and regional north-south traffic in the San Jacinto Valley, to improve operational efficiency and enhance safety conditions by maintaining route continuity and upgrading the facility, to allow regional traffic, including truck traffic, to adequately bypass local roads, and to reduce the diversion of traffic from state routes onto local roads." The Project has been actively coordinated with federal, state, regional, and local agencies and Native American Tribes.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
LU 6.1	Require land uses to develop in accordance with the General Plan and Area Plans to ensure compatibility and minimize impacts. A) The facility is compatible in scale and design with surrounding land uses, and does not generate excessive noise, traffic, light, fumes, or odors that might have a negative impact on adjacent neighborhoods. B) The location of the proposed use will not jeopardize public health, safety, and welfare, or the facility is necessary to ensure the continual public safety and welfare.	The General Plan designates an alignment for a future "expressway," but the alignment is in a different location than the Project. The County has not identified a Locally Preferred Alternative. However, the Project is generally consistent with the intent for a limited access expressway in this area of the County. The Project would be inconsistent with the currently planned land uses in the General Plan and would require the County to amend its General Plan Land Use and Circulation elements to reflect the final Project alignment.
LU 12.6	Require that adequate and accessible circulation facilities exist to meet the demands of a proposed land use.	The Project would meet its stated purpose, "To improve traffic flow for local and regional north-south traffic in the San Jacinto Valley, to improve operational efficiency and enhance safety conditions by maintaining route continuity and upgrading the facility, to allow regional traffic, including truck traffic, to adequately bypass local roads, and to reduce the diversion of traffic from state routes onto local roads."
LU 16.1	Encourage retaining agriculturally designated lands where agricultural activity can be sustained at an operational scale, where it accommodates lifestyle choice, and in locations where impacts to and from potentially incompatible uses, such as residential uses, are minimized, through incentives such as tax credits.	Within the ASA, many of the farmlands present have recently been converted for development. The trend in farmland conversion within the ASA is expected to continue with or without the Project, in accordance with the adopted Riverside County, City of Hemet, and City of San Jacinto General Plans. The Project would impact active agricultural lands to some degree. Although mitigation for permanent impacts to agricultural lands is not expected to be required by the FPPA because the Project would not exceed the threshold of 160, appropriate minimization and/or mitigation measures for potential agricultural impacts would be implemented, as feasible.
LU 16.2	Protect agricultural uses, including those with industrial characteristics (diaries, poultry, hog farms, etc.) by discouraging inappropriate land division in the immediate proximity and allowing only uses and intensities that are compatible with agricultural uses.	The Project would support the avoidance and conservation of productive agricultural lands and is proposed in accordance with the County's concern for the protection of agricultural resources. However, because the Project would impact these resources to some degree, appropriate minimization and/or mitigation measures for these impacts would be implemented, as feasible.
LU 16.4	Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.	See consistency determination for LU 16.2, above.
LU 16.5	Continue to participate in the California Land Conservation Act of 1965.	The Project would address active agricultural lands consistent with the California Land Conservation Act of 1965. While mitigation for permanent impacts to agricultural lands is not anticipated to be required by the FPPA because the Project would not exceed the threshold of 160, appropriate minimization and/or mitigation measures for potential agricultural impacts would be implemented, as feasible.
Circulation Element Policies		
C 1.1	Design the transportation system to respond to concentrations of population and employment activities, as designated by the Land Use Element and in accordance with the Circulation Plan.	The Project design provides a more effective north-south transportation corridor than the existing SR 79 and would accommodate existing and planned population growth and employment activities.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
C.1.3	Support the development of transit connections that link the community centers located throughout the county and as identified in the Land Use Element and in the individual area plans.	The Project design includes intersections/interchanges to facilitate local access to, from, and/or across the roadway, consistent with the overall intent of maintaining local and regional transit connections within the County.
C 1.4	Utilize existing infrastructure and utilities to the maximum extent practicable and provide for the logical, timely, and economically efficient extension of infrastructure and services.	The use of the existing SR 79 facility has been determined to be inadequate to meet existing circulation needs and ongoing development in the area. The Project would permanently relocate cable television, electricity, natural gas, sewer, telephone, and water utilities to local streets or designated utility corridors outside the Project ROW. The Project has been closely coordinated with federal, state, regional, and local agencies, including Riverside County. It proposes to redirect traffic off local roadways and onto the more direct and efficient realigned SR 79 facility. The Project design would incorporate existing utilities to the extent feasible, including extension of existing lines as necessary, for Project use. Implementation of the mitigation measures discussed in Section 3.1.5.3, Avoidance, Minimization, and/or Mitigation Measures (page 3-165), would address these impacts.
C 1.5	Evaluate the planned circulation system as needed to enhance the arterial highway network.	The Project design has been coordinated with federal, state, regional, and local agencies to enhance the arterial highway network with consideration of the planned circulation system.
C 1.6	Cooperate with local, regional, state, and federal agencies to establish an efficient circulation system.	The proposed Project has been closely coordinated with the City of Hemet and San Jacinto and other local, regional, state, and federal agencies. In addition, the approved Riverside County, Hemet, and San Jacinto General Plans, which govern land use planning and development for the Project study area, document the need for an improved SR 79 transportation corridor to accommodate existing and planned land use. The Project alternatives were developed over many years and in accordance with the NEPA/404 Integration Process in a joint effort among federal, state, and local agencies, and supported by community involvement (see Section 5.3 [page 5-5]). The results of that effort are documented in the reports listed in Section 1.1.1.1 (page 1-1), Section 2.2.5 (page 2-26), and Section 5.2.2 (page 5-3).
Open Space Element Policies		
OS 7.2	In cooperation with individual farmers, farming organizations, and farmland conservation organizations, the County shall employ a variety of farmland conservation programs to improve the viability of farms and ranches and thereby ensure the long-term conservation of viable agricultural operations within Riverside County.	The Project would address active agricultural lands consistent with available farmland mapping and land use designations for the California Division of Land Resource Protection Farmland Mapping and Monitoring Program (FMMP) and the local jurisdictions (Riverside County and Cities of Hemet and San Jacinto). Although mitigation for permanent impacts to agricultural lands is not expected to be required by the FPPA because the Project would not exceed the threshold of 160, appropriate minimization and/or mitigation measures for potential agricultural impacts would be implemented, as feasible.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
OS 7.3	Encourage conservation of productive farmlands and preservation of prime farmlands.	See consistency determination OS 7.2, above.
OS 7.5	Encourage the combination of agriculture with other compatible open space uses in order to provide an economic advantage to agriculture. Allow by right, in areas designated Agriculture, activities related to the production of food and fiber, and support uses incidental and secondary to the on-site agricultural operation.	See consistency determination OS 7.2, above.
Air Quality Element Policies		
AQ 14.4	Preserve transportation corridors with the potential of high demand or of regional significance for future expansion to meet project demand.	The Project would establish a transportation corridor that meets the goal of this policy by providing a more effective north-south transportation corridor than existing SR 79 and would accommodate existing and planned population growth.
Harvest Valley/Winchester Area Plan		
Hemet-Ryan Airport Influence Area HVWAP 1.1	To provide for the orderly development of Hemet-Ryan Airport and the surrounding area, comply with the Airport Land Use Compatibility Plan for Hemet-Ryan Airport as fully set forth in Appendix L and as summarized in Table 4, as well as any applicable policies related to airports in the Land Use, Circulation, Safety, and Noise Elements of the Riverside County General Plan.	The Project would incorporate appropriate design elements to meet land use, circulation, safety, and noise requirements within the Hemet-Ryan Airport Influence Area and complies with the Airport Land Use Compatibility Plan.
Winchester Policy Area HVWAP 3.1	Encourage mixed land uses within the Winchester Policy area that promote the surrounding recreation, employment, and transit opportunities.	The Project would provide transit opportunities in the Winchester Policy Area and would improve regional access to recreation and employment opportunities both within the Winchester Policy Area and western Riverside County.
Winchester Road/ Newport Road Policy Area HVWAP 6.1	Development of the hilltop area shall be designed to maintain the scenic value of the hills, avoiding slope scarring.	The Project would be located within the hilltop area of the Harvest Valley/Winchester Area Plan and, therefore, would be inconsistent with this policy. Appropriate minimization and/or mitigation measures to minimize and/or mitigate impacts to the scenic value of the hilltop area would be implemented. See the discussion in Section 3.1.7 (page 3-211).
Highway 79 Policy Area HVWAP 7.1	Accelerate the construction of transportation infrastructure in the Highway 79 Policy Area. The County shall require that all new development projects demonstrate adequate transportation infrastructure capacity to accommodate the added traffic growth. The County shall coordinate with cities adjacent to the policy area to accelerate the useable revenue flow of existing funding programs, thus assuring that transportation infrastructure is in place when needed.	The Project would provide transportation infrastructure in the Highway 79 Policy Area and has been closely coordinated with Riverside County and the Cities of Hemet and San Jacinto. "The Project would meet its stated purpose, "To improve traffic flow for local and regional north-south traffic in the San Jacinto Valley, to improve operational efficiency and enhance safety conditions by maintaining route continuity and upgrading the facility, to allow regional traffic, including truck traffic, to adequately bypass local roads, and to reduce the diversion of traffic from state routes onto local roads.""

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
HVWAP 11.1	Design and develop the vehicular roadway system per Figure 8, Circulation, and in accordance with the Functional Classifications and Standards section of the General Plan Circulation Element.	The Riverside County General Plan designates an alignment for a future "expressway," but the alignment is in a different location than the Project. The County has not identified a Locally Preferred Alternative. However, the Project would be generally consistent with the intent for a limited access expressway in this area of the county. The Project would be inconsistent with the currently planned land uses in the general plan and would require the County to amend its General Plan Land Use and Circulation elements to reflect the final Project alignment.
HVWAP 11.2	Maintain the County's roadway Level of Service standards as described in the Level of Service section of the General Plan Circulation Element.	The Project is proposed in response to the need for a roadway with adequate capacity to accommodate both local and regional travel demand, at an acceptable level of service, through planning year 2035. The Project design has been coordinated with federal, state, regional, and local agencies with consideration of the planned circulation system to improve levels of service on local roadways.
HVWAP 12.1	Maintain and enhance the existing railroad facilities in accordance with the Freight Rail section of the General Plan Circulation Element.	The Project incorporates appropriate design elements that would ensure continued operation of the San Jacinto Branch Line, and the roadway crossing would provide adequate clearance in accordance with applicable requirements.
HVWAP 16.1	Require the dedication of right-of-way along existing State Route 79 (Winchester Road) for future transportation/transit improvements.	The Project is proposed in a different location than existing SR 79 (Winchester Road). Therefore, additional ROW would not need to be dedicated along this existing alignment. ROW dedication for the Project would be sufficient for construction of a new roadway capable of meeting transportation demands through the planning design year of 2035.
San Jacinto Valley Area Plan		
San Jacinto River Policy Area SJVAP 3.7	Discourage the addition of local road crossings. If any additional crossing is allowed, careful consideration shall be given to location, design, and landscaping to take advantage of the scenic character of the River and to avoid destruction of its natural values.	The Project would be located within the San Jacinto River Policy Area and has been closely coordinated with the City of San Jacinto for careful consideration of Project location, design, and landscaping to avoid impacts to the scenic character of the river and to avoid destruction of its natural values.
SJVAP 7.1	Maintain particular attention to the Foundation Component designation and Certainty System procedures/findings in the General Plan with respect to the agricultural designations in the lower San Jacinto Valley.	The Project would address active agricultural lands consistent with available farmland mapping and land use designations for California Division of Land Resource Protection FMMP and the local jurisdictions (Riverside County and Cities of Hemet and San Jacinto). Although mitigation for permanent impacts to agricultural lands is not expected to be required by the FPPA because the Project would not exceed the threshold of 160, appropriate minimization and/or mitigation measures for potential agricultural impacts would be implemented, as feasible.
Highway 79 Policy Area SJVAP 4.1	This is the same as HVWAP 7.1.	See consistency determination for HVWAP 7.1.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Hemet-Ryan Airport Influence Area SJVAP 5.1	This is the same as HVWAP 1.1.	See consistency determination for HVWAP 1.1.
SJVAP 10.1	This is the same as HVWAP 11.1.	See consistency determination for HVWAP 11.1.
SJVAP 10.2	This is the same as HVWAP 11.2.	See consistency determination for HVWAP 11.2.
2003 Western Riverside County MSHCP		
–	The MSHCP contains policies on vegetation mapping and species surveys, including: • Policies for Riparian/Riverine Areas and Vernal Pools • Protection of Narrow Endemic and Criteria Area Plants • Burrowing Owl Survey Areas • Mammal Survey Areas • Amphibian Survey Areas • Guidelines for Construction of Wildlife Crossings • Urban/Wildlands Interface Policy • Guidelines for Siting and Design of Planned Roads within the Criteria Area and the Public/Quasipublic Lands • Construction Guidelines • Best Management Practices	The proposed Project is included in Section 7.3.5, Planned Roads, within the Criteria Area of the MSHCP, and is considered a Covered Activity. A detailed discussion of the Project's consistency with the MSHCP is included in Section 3.3, Biological Environment (page 3-437 [Volume 2]).
1996 Stephens' Kangaroo Rat Habitat Conservation Plan		
–	The proposed Project is within the County fee area for the Stephens' kangaroo rat HCP.	The core reserves established by the RCHCA's Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) are managed as part of the MSHCP Conservation Area consistent with the SKR HCP under a Memorandum of Understanding between the RCHCA and regulatory agencies. A detailed discussion of the Project's consistency with the MSHCP is included in Section 3.3, Biological Environment (page 3-437 [Volume 2]).
1992 City of Hemet General Plan		
Community Vision 1b and Community Development 2	Community Character and Design – Physical development and environmental management whose visual traits emphasize Hemet's unique identity and character.	The Project has been closely coordinated with the City of Hemet for careful consideration of Project location, design, and landscaping to avoid impacts to the scenic character of the community and to avoid destruction of its visual traits. In addition, the Project incorporates design options and mitigation, when appropriate, to address changes to the visual character of the Project area. These are discussed in detail in Section 3.1.7 (page 3-211).

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Community Vision 1c and Community Development 3	Community Structure – To maintain the special character and identity of Hemet area as a collection of distinct districts with unique assets and traits, each contributing to the overall image of the community.	See consistency determination 1b, above.
Community Development 5	Neighborhood Planning Areas – Protection and enhancement of the unique features and characteristics of individual neighborhoods within the Hemet General Plan study area.	Within the City of Hemet, the Project would be located along the outskirts or edges of existing residential development, which would not disrupt or divide the existing Hemet communities adjacent to the roadway. The Project design includes intersections and interchanges to facilitate local access to, from, and/or across the roadway, consistent with the overall intent of supporting mixed-use development adjacent to and surrounding the transportation corridor while maintaining local and regional transit connections within the county.
Community Vision 1d and Community Development 6	Regional Cooperation and Coordination – A harmony of interests between the City of Hemet and other local, regional, state, and federal agencies whose planning programs may affect Hemet residents and business.	The proposed Project has been closely coordinated with the City of Hemet and other local, regional, state, and federal agencies. The Project is proposed in an area of western Riverside County that requires an adequate north-south transportation facility to support residents and businesses, and Project design considers applicable regional and local planning programs, including the approved 1992 Hemet General Plan. Funding for the Project is expected to be provided by the Federal Transportation Equity Act for the 21st Century (TEA-21), Riverside County Measure "A," and Transportation Uniform Mitigation Fees (TUMF). In addition, the approved Riverside County, Hemet, and San Jacinto General Plans, which govern land use planning and development for the Project study area, document the need for an improved SR 79 transportation corridor to accommodate existing and planned land use. The existing SR 79 facility has been determined to be inadequate to meet existing circulation needs and ongoing development in the area.
Community Vision 2a and Economic Development 1	Citywide Economic Base – Promotion of an economic base which provides service to the area's retirement population, broadens business and employment opportunities for the wider San Jacinto Valley community, and which generates sufficient municipal income to support the services and facilities envisioned in the City of Hemet General Plan.	Consistent with the stated Project purpose and need, the roadway would facilitate the regional movement of people and goods. The proposed Project design includes intersections/interchanges to facilitate local access to communities, services, and facilities. The need for the Project is acknowledged in the currently adopted Hemet General Plan by the identification of corridors and/or study areas for a realigned SR 79. In addition, the City of Hemet has adopted a resolution identifying their Locally Preferred Alternative for the Project (Hemet 2008).
Economic Development 2	Strengthening Hemet's Principle Commercial Nodes – Strengthen and diversity Hemet's principal commercial nodes located at the Hemet Valley Mall, the State/Stetson intersection, and the Florida/Warren intersection.	The Project design would provide a more effective north-south transportation corridor for SR 79 to maximize regional access to commercial, retail, and employment opportunities. The Project design includes intersections/interchanges to facilitate local access from the roadway to SR 47/Florida Avenue.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Economic Development 3	Economic Development Tools – Utilization of a side range of the tools available under California law to attract and retain economically strong business and industry and to support the maintenance of neighborhood quality.	The proposed Project would include intersections/interchanges to facilitate local access to communities, services, and facilities.
Community Vision 3a and Public Services and Facilities 1a	General Public Services and Facilities – Ensure that new development does not adversely affect the services and facilities enjoyed by existing residences, and that new development pays for itself.	Consistent with the stated Project purpose and need, the roadway would facilitate the regional movement of people and goods, and its design would facilitate local access to communities, services, and facilities. Despite overall changes in circulation and access, ongoing land use planning and development is occurring to address already existing and planned growth, which is anticipated with or without the Project. Funding for the Project is expected to be provided by the Federal Transportation Equity Act for the 21st Century (TEA-21), Riverside County Measure "A," and Transportation Uniform Mitigation Fees (TUMF). Funding for transportation improvements required to accommodate commercial and residential planned developments in the vicinity of the Project would be the responsibility of the individual developers.
Public Services and Facilities 1b	Traffic – The goal is to maintain a transportation system which maximizes freedom, safety of movement, is cost-effective, considers all forms of transportation, and maintains the quality of the City's living environment.	Consistent with the stated Project purpose and need, the roadway would facilitate the regional movement of people and goods and enhance safety and, therefore, would improve travel safety and reliability for all people and goods in the region. The population for the Project urban areas is not larger than 200,000 persons and as a result does not meet the requirements of California Government Code § 65080. Therefore, a separate Transportation Systems Management (TSM)/Transportation Demand Management (TDM) alternative was not evaluated for the Project. However, TSM/TDM strategies were considered in the definition of the Project purpose and need, and appropriate measures have been incorporated into the design of the Build alternatives. The Project facility is designed for limited access, with grade-separated interchanges to enhance travel efficiency and improve local and regional traffic flow. The Project is associated with right-of-way allowances that support the implementation of such TSM measures as ramp metering and enforcement areas. In addition, the facility would not preclude future (as yet undefined) multimodal transportation systems.
Public Services and Facilities 1c	Drainage Facilities – Adequate facilities to protect Hemet residences and businesses from flooding conditions.	The Project would not substantially alter the existing drainage pattern of the site or area. The Project design incorporates appropriate storm water facilities, and Project operations would include implementation of best management practices (BMPs) to ensure proper onsite drainage and maintain existing offsite water flows to avoid flooding onsite or offsite.
Community Vision 5c and Public Health and Safety 3	Noise – Promote noise compatible land use relationships by implementing noise standards to be utilized for design purposes in new development and establishing a program to attenuate existing noise problems.	The Project would provide a more effective north-south transportation corridor than existing SR 79 and would accommodate existing and planned population growth. Noise barriers have been proposed as a mitigation measure for noise impacts generated by the Project.
Community Vision 5h	Airport Land Use Compatibility – Provide an acceptable level of protection to life and property from airport-related uses and hazards.	The Project would incorporate appropriate design elements to meet land use, circulation, safety, and noise requirements within the Hemet-Ryan Airport Influence Area and complies with the Airport Land Use Compatibility Plan.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Public Health and Safety 8	Airport Land Use Compatibility – Protect lives and property from airport-related uses and hazards.	See consistency determination for Community Vision 5h – Airport Land Use Compatibility.
Community Vision 6a and Resource Management 1	Air Quality – Achievement of air quality that is conducive to good health and enjoyment of the area's climate for all citizens, including the elderly, children, and those with respiratory problems.	The Project would provide a more effective north-south transportation corridor than existing SR 79, thus would enhance circulation, accessibility, and safety. Although the Project would be associated with the production of toxic air contaminants, the Project would include measures to minimize and/or mitigate air quality impacts.
Community Vision 6c and Resource Management 3	Open Space – Take Advantage of existing open space opportunities which conserve natural resources, provide open space for outdoor recreation, and protect the public health and safety.	The Project would increase capacity to facilitate the regional movement of people and goods, which has the potential to increase accessibility to natural lands for outdoor recreation. Advance planning efforts were conducted with federal, state, regional and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to environmentally sensitive resources. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible.
Community Vision 6d and Resource Management 4	Biological Resources – The management of rare, endangered, and candidate species and their habitats through appropriate and accepted preservation programs.	The Project has been closely coordinated with local jurisdictions to minimize environmental impacts and specifically to avoid impacts to rare, endangered, and candidate species and their habitats. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible.
2006 City of San Jacinto General Plan		
Land Use Element		
Land Use Goal 3	Foster development in San Jacinto that ensures the compatibility of land uses with environmental conditions.	The Project would provide a more effective north-south transportation corridor than existing SR 79 and would accommodate existing and planned population growth and employment activities.
3.1	Limit development in the, ridgelines, flood plains, and other high risk areas.	Advance planning efforts were conducted with federal, state, regional, and local agencies and interested members of the public to identify potential alignments that would avoid and minimize impacts to high-risk areas such as ridgelines and floodplains. The Project incorporates design elements to address applicable requirements for safety when high-risk areas cannot be avoided.
Land Use Goal 4	Promote high-quality development that ensures compatibility with surrounding land uses and major transportation corridors.	The Project would include intersections/interchanges that would facilitate local access to, from, and/or across the new roadway, consistent with the overall intent of supporting mixed-use development adjacent to and surrounding the transportation corridor while maintaining local and regional transit connections within the county.
4.3	Maximize commercial, retail and employment opportunities along the City's major corridors and intersections, including SR 79, the Ramona Expressway, Sanderson and Cottonwood.	The Project would provide a more effective north-south transportation corridor for SR 79 to improve regional access to commercial, retail, and employment opportunities. The Project would include intersections/interchanges that would facilitate local access from the new roadway to Ramona Expressway, Sanderson Avenue, and Cottonwood Avenue.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Land Use Goal 6	Preserve and protect the City's cultural, historic, agricultural, and visual resources.	Appropriate minimization and/or mitigation measures for impacts to cultural, historic, agricultural, and visual resources have been proposed as part of the Project and will minimize those impacts as much as possible.
6.5	Encourage the use of Project design features that reduce impacts to important local and regional environmental resources.	Advance planning efforts were conducted with federal, state, regional and local agencies, and interested members of the public to identify potential alignments that avoid and minimize impacts to important local and regional environmental resources, particularly cultural, biological, and scenic values. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible.
6.7	Preserve and enhance public views of the mountains and hillsides and other scenic vistas.	Appropriate minimization and/or mitigation measures for impacts to scenic vistas have been proposed in the assessment of visual impacts in Section 3.1.7.4 (page 3-244).
6.8	Preserve large groupings of trees, rock outcroppings, and other valuable scenic resources.	See consistency determination for 6.7, above.
6.9	Protect valuable agricultural resources and encourage the continuation of agricultural activities.	Within the ASA, many of the farmlands present have recently been converted for development. The trend in farmland conversion within the ASA is expected to continue with or without the Project, in accordance with the adopted Riverside County, City of Hemet, and City of San Jacinto General Plans. Although mitigation for permanent impacts to agricultural lands is not expected to be required by the FPPA because the Project would not exceed the threshold of 160, appropriate minimization and/or mitigation measures for potential agricultural impacts would be implemented, as feasible.
Land Use Goal 7	Capitalize on the City's many economic development opportunities to promote a strong and economically healthy community.	The approved San Jacinto General Plan documents the need for an improved SR 79 transportation corridor to accommodate existing and future planned land use. The Project construction and operations would support planned economic growth consistent with the general plan goals and policies.
7.2	Ensure that State Route 79 provides the maximum economic benefits to the local economy by encouraging appropriate development along the corridor and at major interchanges.	The Project would require that existing SR 79 be relinquished to the local jurisdictions and the new alignment be designated as a state route. However, the Project would include intersections/interchanges to facilitate local access to communities, services, and facilities to support existing and future planned development along this corridor.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
Circulation Element		
Circulation Goal 1	Provide a circulation system that meets the needs of existing and future land uses.	The Project would meet the stated Project purpose, “To improve traffic flow for local and regional north-south traffic in the San Jacinto Valley, to improve operational efficiency and enhance safety conditions by maintaining route continuity and upgrading the facility, to allow regional traffic, including truck traffic, to adequately bypass local roads, and to reduce the diversion of traffic from state routes onto local roads.” The Project would include intersections/interchanges to facilitate local access to, from, and/or across the roadway, consistent with the overall intent of supporting mixed-use development adjacent to and surrounding the transportation corridor while maintaining local and regional transit connections within the county.
1.1	Provide a balanced circulation system that ensures the safe and efficient movement of people and goods throughout the City.	The Project is intended to improve regional circulation and relieve congestion on local streets. The Project would increase capacity to facilitate the regional movement of people and goods, which would provide a more efficient transportation system that maximizes mobility and accessibility and better manages transportation safety, security, and reliability.
1.3	Coordinate with other major transportation improvement programs and agencies such as Caltrans and the Riverside County Transportation Commission (RCTC) to implement roadway improvements that promote the safe and efficient flow of traffic through San Jacinto.	RCTC has coordinated the Project with federal, state, regional, and local agencies, including but not limited to the Department, Riverside County, and the Cities of Hemet and San Jacinto. The Project is proposed in direct response to the need for a safer and more effective transportation corridor between Domenigoni Parkway and Gilman Springs Road, and its design considers other ongoing regional and local transportation improvement programs.
Circulation Goal 2	Achieve a circulation system that is integrated with the larger regional transportation system to ensure the economic well-being of the community.	The approved San Jacinto General Plan documents the need for an improved SR 79 transportation corridor to accommodate existing and future planned land use. The Project construction and operations would support planned economic growth consistent with the general plan goals and policies.
2.1	Coordinate planning and construction of local circulation improvements, public transit systems and regional highway facilities (SR 79 and Mid County Parkway) with adjacent jurisdictions and regional transportation agencies.	The Project has been closely coordinated with federal, state, regional, and local agencies, including, but not limited to, the Department, RCTC, and the City of San Jacinto. See consistency determination for 1.3, above.
2.4	Minimize the impact of regional through traffic on residential neighborhoods.	The Project would include intersections/interchanges to promote efficient regional traffic flow and facilitate local access to existing and planned roadways. The Project would be located along the outskirts or edges of existing residential development, which would not disrupt or divide the existing communities adjacent to the roadway.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
2.6	Acquire adequate right-of-way prior to development occurring to allow for the ultimate alignment of the future regional roadways and interchanges identified in the Circulation Plan.	ROW for the SR 79 realignment would be acquired to meet the stated Project purpose, "To improve traffic flow for local and regional north-south traffic in the San Jacinto Valley, to improve operational efficiency and enhance safety conditions by maintaining route continuity and upgrading the facility, to allow regional traffic, including truck traffic, to adequately bypass local roads, and to reduce the diversion of traffic from state routes onto local roads." The Project roadway would open initially in 2015. Additional Project features to be constructed prior to 2035 would consist of activities to transition from signalized at-grade intersections to grade-separated interchanges.
Circulation Goal 3	Work to ensure that the alignment of SR 79 benefits the community.	The Project is intended to improve regional circulation and relieve congestion on local streets. The Project would increase capacity to facilitate the regional movement of people and goods, which would provide a more efficient transportation system that maximizes mobility and accessibility and better manages transportation safety, security, and reliability.
3.1	Work closely with Caltrans and RCTC to ensure that the preferred alignment of SR 79 benefits the community.	RCTC has coordinated the Project with federal, state, regional, and local agencies, including, but not limited to, the Department, Riverside County, and the Cities of Hemet and San Jacinto. The Project is following an environmental review and approval process, including a formal public comment period, to analyze potential Build alternatives and determine a preferred alignment that benefits the community.
3.2	Coordinate with Caltrans and RCTC to implement freeway ramp interchange improvements that promote efficient traffic flow and minimize impacts to the local roadway system.	RCTC has coordinated the Project with federal, state, regional, and local agencies, including, but not limited to, the Department, Riverside County, and the Cities of Hemet and San Jacinto. The Project design includes intersections/interchanges to promote efficient regional traffic flow and facilitate local access to existing and future planned roadways. The limited-access roadway design would control ingress and egress to the local roadway system and would direct regional through traffic away from overloaded local streets, such as Sanderson Avenue and Warren Road.
3.3	Work with Caltrans and RCTC to ensure that the construction of SR 79 minimally disrupts access to existing businesses and employment centers.	RCTC has coordinated the Project with federal, state, regional, and local agencies, including, but not limited to, the Department, Riverside County, and the Cities of Hemet and San Jacinto. Circulation patterns are expected to be maintained during construction through continued coordination with these entities and adherence to a traffic management plan that is designed to minimize disruption of access, including existing businesses and employment centers.
Resource Management Element		
Resource Management Goal 1	Conserve and protect natural resources.	The Project has been closely coordinated with local jurisdictions to minimize environmental impacts and specifically to avoid impacts to natural resources. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
1.1	Conserve important natural resources such as mature trees, rock outcroppings, hills, ridges, and other prominent land forms, as open space.	Appropriate minimization and/or mitigation measures for impacts to hilltop areas have been proposed as part of the Project and would include measures to minimize impacts to the extent feasible.
1.2	Work closely with the County of Riverside to implement the Multiple Species Habitat Conservation Plan that meets the goal of preservation, but allows for economic development of the community.	The Project is included in Section 7.3.5, Planned Roads, within the Criteria Area of the MSHCP, and is considered a Covered Activity.
1.3	Conserve and protect important plant communities and wildlife habitats, such as riparian areas, wetlands, vernal pools, oak woodlands and other significant tree stands, and rare and endangered species.	The Project has been closely coordinated with local jurisdictions to minimize environmental impacts and specifically to avoid impacts to biological resources. Each Build alternative has been developed to achieve maximum avoidance and includes measures to minimize and/or mitigate when avoidance is not feasible.
1.5	Require proper soil management and erosion control techniques in new development to reduce erosion, sedimentation, and other soil related problems.	The Project incorporates design elements to address proper soil management and erosion control techniques.
Resource Management Goal 5	Where appropriate, conserve agricultural lands and avoid the premature conversion of agricultural land to urban uses.	Within the ASA, many of the farmlands present have recently been converted for development. The trend in farmland conversion within the ASA is expected to continue with or without the Project, in accordance with the adopted Riverside County, City of Hemet, and City of San Jacinto General Plans. Although mitigation for permanent impacts to agricultural lands is not expected to be required by the FPPA because the Project would not exceed the threshold of 160, appropriate minimization and/or mitigation measures for potential agricultural impacts would be implemented, as feasible.
5.3	Protect agricultural lands from premature conversion to urban uses.	See consistency determination above.
Resource Management Goal 6	Improve air quality.	The Project would provide a more effective north-south transportation corridor than existing SR 79, thus would enhance circulation, accessibility, and safety. Although the Project would be associated with the production of toxic air contaminants, the Project would include measures to minimize and/or mitigate air quality impacts. Detailed evaluations of impacts and avoidance, minimization, and/or mitigation for air quality are provided in the Air Quality Technical Report of 2009.
6.2	Cooperate and participate in regional air quality management planning, programs, and enforcement measures.	The Project is included in the adopted and approved 2011 SCAG FTIP and the 2012-2035 SCAG RTP. Inclusion of the Project in the adopted RTP demonstrates that the Project was evaluated for regional impacts, meets the planning and regional requirements for demonstration of federal conformity, and is consistent with local air quality planning efforts.
Public Safety Element		
Public Safety Goal 1	Minimize the risk of injury and the loss of life and property related to geologic conditions, seismic activity, wildfires, and flooding.	The Project would incorporate design elements to address the risks associated with geologic conditions, seismic activity, wildfires, and flooding.

Table 3.1-5 Build Alternatives Consistency with Applicable Plans and Programs

Number	Plan/Program/Policy	Consistency Determination
1.1	Reduce the risk of impacts from geologic and seismic hazards by applying proper and up to date land use planning, development engineering, building construction, and retrofitting requirements.	See consistency determination above.
1.3	Reduce the risk of wildfire hazards by requiring fire retardant landscaping and other project design features for development located in areas of or adjacent to high wildfire risk.	See consistency determination above.
Public Safety Goal 2	Protect the community from hazards related to air pollution, dam inundation, hazardous materials, structural fires, ground transportation, and criminal activity.	The Project would incorporate measures to protect the community from hazards.
2.5	Reduce the risk from ground transportation hazards, such as rail and roadway systems.	See consistency determination above.
Noise Element		
Noise Goal 1	Minimize the effects of noise through proper land use planning and development techniques.	The Project would provide a more effective north-south transportation corridor than the existing SR 79, thus would accommodate existing and planned population growth. Noise barriers have been proposed as a mitigation measure for noise impacts generated by the Project.
1.2	Require noise control measures, such as berms, walls, and sound attenuating construction in areas of new development or rehabilitation.	See consistency determination above.
1.4	Use creative techniques to mitigate potential noise incompatibilities, particularly in areas with a mixture of uses.	See consistency determination above.
Noise Goal 2	Minimize the effects of transportation-related noise.	See consistency determination above.
2.1	Reduce transportation-related noise impacts to sensitive land uses through the use of noise control measures.	See consistency determination above.
2.2	Require sound-reduction design in development projects impacted by transportation-related noise, particularly along highways and major arterials.	See consistency determination above.
2.3	Control truck traffic routing to reduce transportation-related noise impacts to sensitive land uses.	See consistency determination above.

Source: Riverside County General Plan, 2003; Hemet General Plan, 1992; San Jacinto General Plan, 2006; Community Impact Assessment, August 2010

Note: A dash (–) in the Number column indicates that the Plan/Program/Policy does not have a number designation.

All Build Alternatives and Design Options

Southern California Association of Governments

All Build alternatives would be consistent with and would help further the goals of the SCAG 2008 RCP, based on the summary of consistency provided in Table 3.1-5 (page 3-33). In addition, the Project is designated as a future transportation corridor in the RTP. Therefore, all Build alternatives would be consistent with SCAG goals and policies.

Riverside County General Plan

The Project has been closely coordinated with the County of Riverside in consideration of the county's ongoing growth and development. The Riverside County Circulation Map shows the SR 79 Realignment alternatives, but does not identify a Locally Preferred Alternative. As stated in Table 3.1-5, Policy LU 6-1 (page 3-44), the Project would be inconsistent with the currently planned land uses in the general plan and would require the County to amend its general plan land use and circulation elements to reflect the final Project alignment. However, the Project would be consistent with County intent for a limited-access expressway in this area.

Additionally, Policies LU 16.2, LU 16.4, OS 7.2, OS 7.3, and OS 7.5, as shown in Table 3.1-5 (page 3-33), reflect the need to conserve, preserve, and protect agricultural lands and uses in the Project study area. The Project supports the avoidance and conservation of productive agricultural land and is proposed in accordance with the County's concern for the protection of agricultural resources. However, because the Project would impact these resources to some degree, appropriate minimization or mitigation measures for these impacts would be implemented, as described in Section 3.1.3.4 (page 3-106).

The Project would be consistent with all other policies in the Riverside County General Plan, as shown in Table 3.1-5 (page 3-33).

Western Riverside County Multiple Species Habitat Conservation Plan

A discussion of Project consistency with the Western Riverside County MSHCP is included in Section 3.3.1.3 (page 3-459 [Volume 2]).

Cities of Hemet and San Jacinto

The Project would be generally consistent with the City of Hemet goals and policies identified in Table 3.1-5 (page 3-33). It also has been closely coordinated with the City of San Jacinto in consideration of its ongoing growth and development and is included in that City's general plan. Some of the Build alternatives and design options would be consistent with the plans and policies of the cities, but others would not. These differences in consistency are discussed below.

Build Alternative 1a

City of Hemet

The Build Alternative 1a alignment would not be consistent with the Locally Preferred Alternative adopted by Resolution No. 4216 in 2008 (Hemet 2008). Roadway Segments A, E, and G would all be inconsistent with the alternative preferred by the City. Therefore, Build Alternative 1a generally would be inconsistent with the City of Hemet General Plan.

City of San Jacinto

Roadway Segment L of Build Alternative 1a within San Jacinto jurisdiction is not the alignment identified in the general plan as the Locally Preferred Alternative and would thus not be consistent with local goals. Other aspects of Build Alternative 1a generally would be consistent with the City goals and policies that are applicable to the Project.

Build Alternative 1b and Design Option 1b1

City of Hemet

The Build Alternative 1b/Design Option 1b1 alignment would not be consistent with the Locally Preferred Alternative adopted by Resolution No. 4216 in 2008 (Hemet 2008). Roadway Segments C and G would not be consistent with the alternative preferred by the City. Therefore, Build Alternative 1b and Design Option 1b1 would be inconsistent with the City of Hemet General Plan.

City of San Jacinto

The City of San Jacinto General Plan identifies the portion of Build Alternative 1b/Design Option 1b1 within City jurisdiction, specifically Roadway Segments K, M, and N, as its Locally Preferred Alternative. Therefore, Build Alternative 1b and Design Option 1b1 generally would be consistent with the City of San Jacinto goals and policies that are applicable to the Project.

Build Alternative 2a

City of Hemet

The Project as currently defined was not addressed by the 1992 City of Hemet General Plan, nor is it consistent with the Locally Preferred Alternative adopted by Resolution No. 4216 in 2008 (Hemet 2008). Roadway Segments A and F would be inconsistent with the alternative preferred by the City. Therefore, Build Alternative 2a would not be consistent with the City of Hemet General Plan.

City of San Jacinto

Roadway Segment L, the portion of Build Alternative 2a within City jurisdiction, is not the alignment identified in the San Jacinto General Plan as the Locally Preferred Alternative for the SR 79 Project and is not consistent with that plan. Other aspects of Build Alternative 2a generally would be consistent with the City goals and policies that are applicable to the Project.

Build Alternative 2b and Design Option 2b1

City of Hemet

The Project as currently defined is not addressed by the 1992 City of Hemet General Plan, but Roadway Segments B, D, and H would correspond to the Locally Preferred Alternative adopted by Resolution No. 4216 in 2008 (Hemet 2008). Thus Build Alternative 2b and Design Option 2b1 would not be consistent with the City of Hemet General Plan, but consistent with the Locally Preferred Alternative identified in 2008.

City of San Jacinto

The portion of Build Alternative 2b/Design Option 2b1 within City jurisdiction has been identified in its general plan as the Locally Preferred Alternative. Specifically, Roadway Segments J, M, and N would correspond with the San Jacinto Locally Preferred Alternative. Therefore, Build Alternative 2b generally would be consistent with the City of San Jacinto goals and policies that are applicable to the Project.

Temporary Impacts

All Project impacts regarding inconsistencies with applicable plans and programs are considered to be permanent and direct. Consequently, there is no discussion of temporary impacts.

Avoidance, Minimization, and/or Mitigation Measures

Permanent Impacts

No Build Alternative

Permanent impacts associated with the No Build Alternative would not be Project related and, therefore, would not require mitigation.

All Build Alternatives and Design Options

Mitigation measures LU-1 through LU-6 (see page 3-25) will be required to bring the Build alternatives and design options into concurrence with applicable plans and policies and into consistency with the goals of the general plans.

Temporary Impacts

No Build Alternative

Potential impacts associated with the No Build Alternative would not be Project related and would not require mitigation.

All Build Alternatives and Design Options

The Project’s inconsistencies with applicable plans and policies are not characterized as temporary impacts, and, therefore, no avoidance, minimization, or mitigation is required.

3.1.1.3 Parks and Recreational Facilities

Parks and recreational facilities are common components of land use planning and can be among the primary defining aspects of livability and character in an area (County 2003a). Parks and recreational facilities in the land use study area were inventoried during the reconnaissance of existing land uses conducted in April 2007 and again in December 2009. Officials from Riverside County, the City of Hemet, and the City of San Jacinto confirmed the status of the trails and bike paths in the study area in December 2010 and January 2011 (see Appendix I [Volume 2]).

Publicly owned parks, recreation areas, wildlife and waterfowl refuges, and significant historic properties, whether public or privately owned, are afforded specific consideration under Section 4(f) of the United States Department of Transportation Act of 1966, codified in federal law at 49 USC Section 303. There are Section 4(f) resources in the Project vicinity, but there would be no use of any publicly owned parks, recreation areas, or wildlife and waterfowl refuges by the Project. The resources that require consideration under Section 4(f) are addressed in Appendix B (Volume 2).

Affected Environment

Riverside County

Riverside County has designated a number of recreational uses that include parks, trails, bike paths, campgrounds, athletic fields, and golf courses. No existing or proposed parks, campgrounds, athletic fields, or golf courses are located in the unincorporated Riverside County portion of the study area. Double Butte County Park is the closest county park, and it is 2.4 to 3.2 km (1.5 to 2.0 mi) west of any Build alternative and outside any visual or noise impact area.

A system of regional trails and bike paths has been designated along rural transit routes in unincorporated Riverside County (County 2003b and 2003c). The definition of bikeways as stated in the County of Riverside Circulation Element is provided below.

Riverside County's bikeway system is included as part of the County's circulation system. Planned bicycle routes are shown on the Bikeways and Trails Plan, Figure C-7. The County uses three types of bike path classifications:

- Class I – Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross-flow minimized.
- Class II – Provides a striped lane for one-way bike travel on a street or highway.
- Class I Bike Path/Regional Trail (Combination Trail) – This functions as a regional connector to link all of the major bodies of water in Western Riverside County and to provide the opportunity for long-distance users to take advantage of this system for long one-way or loop type trips. This system may also take advantage of existing or planned Class I Bike Paths, Regional Trails, and/or Community Trails for several combinations of easements, connections, or links.

The trails and bike paths in the study area are shown in Figure 3.1-7. In this figure, a County-designated Regional Trail is shown along the western edge of Diamond Valley Lake, then linking with portions of California Avenue, Stetson Avenue, Esplanade Avenue, and Odell Avenue. A Class I Bike Path/Regional Trail is designated within the existing Domenigoni Parkway ROW, and another Class I Bike Path is designated within the existing Ramona Expressway ROW. Outside the study area, a Regional Trail and the Juan Bautista de Anza National Trail are designated at the northern Project terminus.

In December 2010, officials from the County of Riverside verified the status of each bike path and trail noted above (see Appendix I [Volume 2]). The Regional Trail along the western edge of Diamond Valley Lake, then linking with portions of California Avenue, Stetson Avenue, Esplanade Avenue, and Odell Avenue, the Class I Bike Path/Regional Trail along Domenigoni Parkway, and the Class I Bike Path along Ramona Expressway have not been constructed, and there are no plans to construct them in the near future (County 2010b).

The County-designated Regional Trail along the San Jacinto River at the northern terminus of the Project and the Juan Bautista de Anza National Trail are the only trails or bike paths that have been built, and they are outside the Project study area.

City of Hemet

The City of Hemet designates trails and bike paths in unincorporated portions of Riverside County and in its own jurisdiction as well.

Designated Class I, II, III, and IV are defined in the Hemet General Plan as follows:

- Class I Bike Path – A Class I Bike Path serves corridors which are not served by streets and highways or where wide rights-of-way exist, permitting such facilities to be built with a separation from roadway traffic.
- Class II Bike Lanes – Class II Bike Lanes are intended to delineate the rights-of-way assigned to bicyclists and motorists, and to provide for more predictable movements of each. Bike lanes of this class also help accommodate bicyclists through corridors where insufficient room exists for safe bicycling on existing streets.
- Class III Bike Routes – Class III Bikeways are considered shared facilities, which serve either to provide continuity to other bicycle facilities, or designate preferred routes through high demand corridors.
- Multi-Use Trails (Class IV Mixed Use Trail System) – Currently the City of Hemet has no formal Multi-Use Trails Master Plan incorporating equestrian, hiking, pedestrian, and bicycling activities, although many of these activities do now exist in various parts of the study area. Existing natural features may afford the best opportunity to link the bikeway system with a series of multi-use trails.

These include a Class 4 Mixed Use Trail System in the vicinity of Diamond Valley Lake and along the San Diego Canal and California Avenue and a Class 2 Bike Lane along Simpson Road (Hemet 1992). The usage and accessibility of the trails and bike paths were verified in December 2009.

The City of Hemet designates a number of recreational land uses, including parks, trails, bike paths, athletic fields, and golf courses inside its city limits. No existing or proposed parks, athletic fields, or golf courses that are under Hemet's jurisdiction are in the study area (Hemet 1992).

Existing trails and bike paths in the city of Hemet are shown in Figure 3.1-7. There are no existing bike paths in the Hemet portion of the study area, although some have been designated, but not built, along existing roads, including Warren Road, SR 74/Florida Avenue, Simpson Road, Devonshire Avenue, and Esplanade Avenue.

The City of Hemet does not have a formal multiple-use trails master plan to address combined equestrian, hiking, pedestrian, and bicycling activities. However, Hemet does have a designated, but not built, Class 4 Mixed Use Trail System. Portions of the designated trail system are inside the study area in the vicinity of Diamond Valley Lake, along the San Diego Canal and California Avenue, and in areas east of the San Diego Canal and the Tres Cerritos Hills (Hemet 1992). The transportation element of the City of Hemet General Plan designates these trails, bike trails, and bike lanes (Hemet 1992).

In January 2011, officials of the City of Hemet verified the current status of each bike path, bike lane, and trail noted above (see Appendix I [Volume 2]). While the general plan designates them, none of the bike paths, bike lanes, or mixed use trails in the SR 79 study area have been built. Specifically, the Class 1 Bike Paths along SR 74/Florida Avenue and Warren Road, the Class 2 Bike Lanes along Simpson Road, Devonshire Avenue, and Esplanade Avenue, and the Class 4 Mixed Use Trail System have not been constructed.

The City of Hemet is currently in the process of revising its general plan (Hemet 2011a). The City of Hemet proposes a Class 1 Bike Path along Salt Creek Channel and the San Diego Canal and a Class 2 Bike Path along Domenigoni Parkway. The City of Hemet General Plan update does not include the Class 4 Mixed Use Trail System, the Class 1 Bike Paths along SR 74/Florida Avenue and Warren Road, or the Class 2 Bike Lanes along Devonshire Avenue and Esplanade Avenue. No bike path designated within the study area has been built.

Hemet Golf Club is located north of SR 74/Florida Avenue and west of California Avenue. It includes a golf course (89 ha [220 ac]), driving range (6 ha [15 ac]), and is part of a 1,200-home master planned community (110 ha [274 ac]). Privately owned, Hemet Golf Club is open to the public.

Winchester Elementary School Playground is located on land owned by the Hemet Unified School District. Facilities include ball fields, courts, and open area. Although school facilities may be available to the public as part of school activities, the facilities are not generally available for public use, as indicated by existing signage and fencing restricting general public access per Penal Code 602.

City of San Jacinto

The City of San Jacinto designates a number of recreational land uses, including parks, trails, bike paths, athletic fields, campgrounds, and golf courses. No golf courses in the City's jurisdiction are present in the study area (San Jacinto 2006).

Existing trails and bike paths provide recreational opportunities in the city of San Jacinto. The locations of existing and proposed city trails and bike paths are shown in Figure 3.1-7.

The City of San Jacinto Circulation Element trails system is composed of Class I and Class II bikeways located on or adjacent to the roadway segments illustrated in Figure C-3 of the Circulation Element. Class I bikeways provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians. The only Class I bikeway in San Jacinto is along the Ramona Expressway. The remaining bikeways in the community are proposed as Class II facilities. Class II bikeways provide a restricted right-of-way on a roadway's shoulder designated for the exclusive or semi-exclusive use of bicycles.

Designated Class I and Class II Bike Trails are located on or adjacent to existing roads, including Esplanade Avenue, Cottonwood Avenue, Warren Road, Sanderson Avenue, and Ramona Expressway. Proposed Community Trails are designated along the Casa Loma Canal and Warren Road. A designated Regional Trail is located along Esplanade Avenue and Odell Avenue. The circulation element of the City of San Jacinto General Plan designates these trails, bike trails, and bike lanes (San Jacinto 2006).

In December 2010, officials from the City of San Jacinto verified the current status of each bike path and trail (see Appendix I [Volume 2]). Although they are designated in the circulation element of the City of San Jacinto General Plan, the Regional Trail along Esplanade Avenue and Odell Avenue, the Class 1 Bike Path along Ramona Expressway, the Class II Bike Trail along Esplanade Avenue, Cottonwood Avenue, Sanderson Avenue, and Warren Road, and the Proposed Community Trail along Casa Loma Canal and Warren Road have not been constructed in the Project area and there are no plans to construct them in the near future (San Jacinto 2010).

Two public parks are located in the study area. The Ambassador Street Sports Field, located along Ambassador Street, is owned by the City of San Jacinto. It is currently used for soccer and includes tables and benches for spectators. Tamarisk Park, also owned by the City of San Jacinto, is located along Cherry Laurel Lane. Tamarisk Park includes a basketball court, sports field, a playground for small children, picnic tables, and benches. As shown in Figure 3.1-1c, these parks are located in residential developments south of Cottonwood Avenue. Figure 3.1-4a shows the parks in an area that is designated Low-Density Residential and General Open Space, east of Roadway Segments L (Build Alternatives 1a and 2a) and M (Build Alternatives 1b and 2b and both design options) between the San Diego Canal and Cawston Avenue. Both parks are operational (San Jacinto 2010).

Reflection Lake Recreational Vehicle Resort, located south of Cottonwood Avenue between Warren Road and the San Diego Canal, is a privately owned facility (San Jacinto 2006). Reflection Lake Recreational Vehicle Resort offers camping and fishing on approximately 11 ha (27 ac). The City of San Jacinto General Plan designates this property for Medium-Density Residential development.

Environmental Consequences

The following section provides a discussion of potential Project-related impacts to existing parks and recreational facilities by Project alternative, taking both permanent and temporary impacts into account.

As discussed in Appendix B (Volume 2), there would be no permanent incorporation, temporary occupancy, or constructive use of any existing parks or recreational facilities by any Project alternative.

Permanent Impacts

No Build Alternative

Under the No Build Alternative, no roadway improvements would be made to SR 79 between Domenigoni Parkway and Gilman Springs Road except those associated with projects currently included in the general plans of the County and the Cities of Hemet and San Jacinto. As a result, there would be no Project-related impacts to parks and recreational facilities.

All Build Alternatives and Design Options

There are no existing trails or bike paths in the Project area or vicinity. Therefore, there would be no impacts.

The Project would be located in the vicinity of several recreational uses. None of the Build alternatives or design options would encroach upon these resources. However, a noise analysis was conducted for these areas, and traffic noise impacts are expected.

Tamarisk Park and Ambassador Street Sports Field are located on Cottonwood Avenue, within an existing residential subdivision. The Project would not encroach onto the park property or affect the continued use of either park. However, noise impacts are expected. The noise impacts expected here were assessed in conjunction with the existing residential uses.

The Project would be located south of a City of San Jacinto proposed park located between Odell Avenue and Sanderson Avenue. The roadway would not encroach into the proposed park and would not interfere with its future use. Whether or not the park would ever be developed is speculative, as are any potential uses. No impacts would occur.

The Reflection Lake Recreational Vehicle Resort is in the Project study area, but the Project ROW would not cross it. The Project would have no permanent impact on this recreation resource. The San Jacinto General Plan designates this privately owned property for Medium-Density Residential development and not as a park or recreational facility. The noise impacts expected here were assessed in regard to the facility's residential uses.

Temporary Impacts

No Build Alternative

Under the No Build Alternative, no roadway improvements would be made to the portion of SR 79 between Domenigoni Parkway and Gilman Springs Road except those associated with projects currently included in the general plans of the County and the Cities of Hemet and San Jacinto. As a result, there would be no Project-related temporary impacts to parks and recreational areas.

All Build Alternatives and Design Options

None of the Build alternatives or design options would impact any trail or bike path.

Tamarisk Park and Ambassador Street Sports Field would be located adjacent or close to the Project. Noise, dust, and similar secondary effects during major construction might affect the desirability of these facilities, but would not affect the principal uses that include high energy sports such as youth soccer practice and games. However, the construction would not physically impede use of the parks. Minimization measures discussed in the next section would address these temporary impacts.

Avoidance, Minimization, and/or Mitigation Measures

Permanent Impacts

No Build Alternative

Permanent impacts associated with the No Build Alternative would not be Project related and, therefore, would not require mitigation.

All Build Alternatives and Design Options

The Project will incorporate a noise abatement measure to mitigate traffic noise per the commitment in mitigation measure NO-1. Section 3.2.7.4 (page 3-423) presents the proposed avoidance, minimization and/or mitigation measures associated with traffic noise impacts; mitigation measure NO-1 is on page 3-430. The implementation of this measure will benefit Tamarisk Park and Ambassador Street Sports Field. The decision to recommend continued consideration of noise barriers was based on the impacts to the residential resources adjacent to these recreational facilities. Noise Barrier 1A-L2/1B-M3/2A-L2/2B-M3 will abate noise for the adjacent residences, but also at the Tamarisk Park and Ambassador Street Sports Field. Noise Barrier 1A-E1/2A-F1 will abate noise for several residences in the community of Winchester and also benefit the Winchester Elementary School playground.

Temporary Impacts

No Build Alternative

Potential temporary impacts associated with the No Build Alternative would not be Project related and would not require mitigation.

All Build Alternatives and Design Options

Implementation of the following measures will be required to minimize temporary impacts to parks and recreational facilities associated with the Build alternatives and design options:

LU-7 **Public Notification of Alternative San Jacinto Parks**. Project construction will be coordinated with the City of San Jacinto so that the availability and location of alternative neighborhood parks and recreational facilities can be properly noticed to the public.

BIO-8 **Dust Minimization.** The Project will minimize dust by regularly watering active construction areas.

3.1.2 Growth

3.1.2.1 Regulatory Setting

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

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

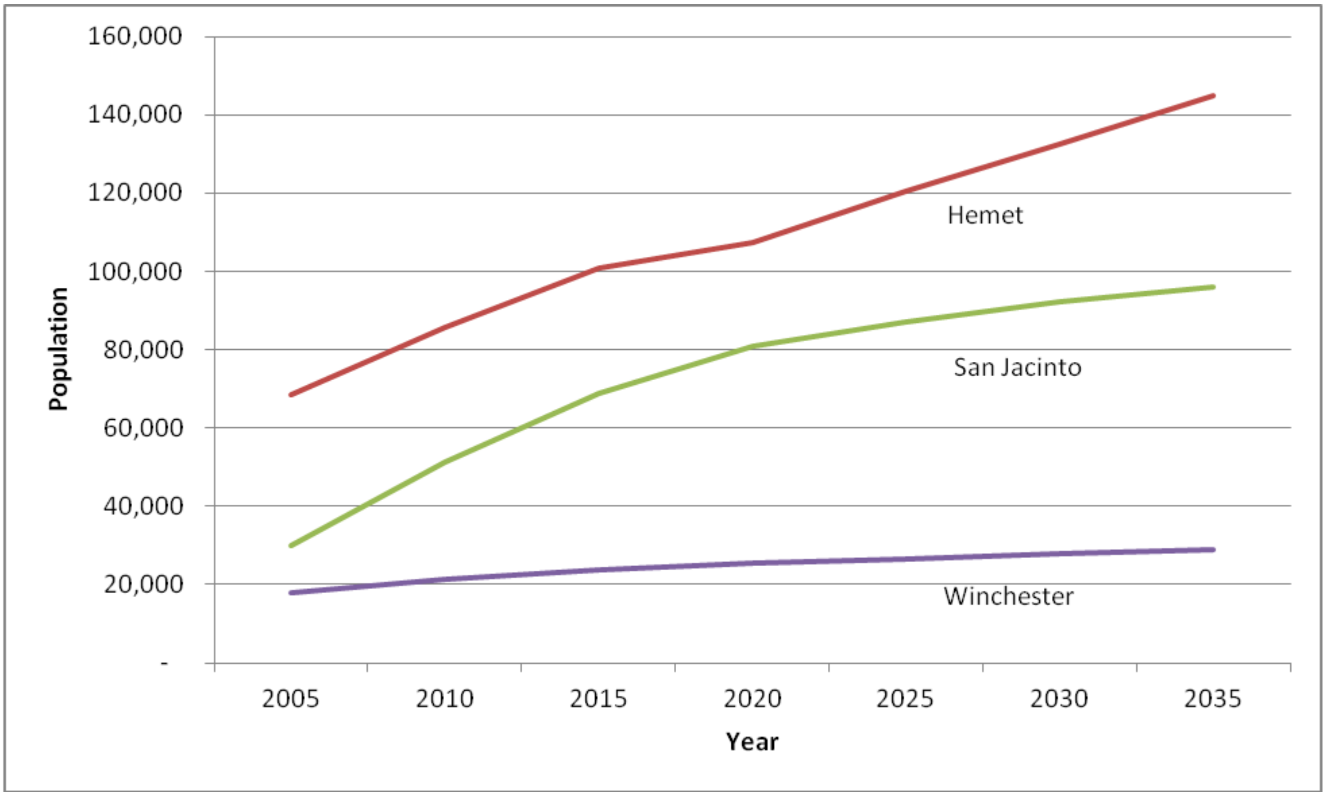
3.1.2.2 Background

The San Jacinto Valley was established in the late 1800s as a ranching, and later agricultural, community. Following World War II, then accelerating in the 1960s, the area began to transition toward becoming a major destination for senior living, either year round or seasonally. Starting in the 1960s and continuing for about 20 years, more than 10,000 homes (primarily mobile homes) were built in senior-oriented communities (Hemet 2011b). As a result, in the 1990 census, the average age in Hemet was over 60. Since the late 1990s, however, a demographic shift has occurred as younger families have moved to the area, drawn by many factors, including the availability of affordable housing. This trend also occurred in many of the communities in western Riverside County, resulting in the prediction that the population in the county would double to 3 million by 2020 (RCIP 2003). This corresponds to a projected annual growth rate of 3.4 percent over the next 20 years for Riverside County compared to the 1.25-percent average in Southern California (County 2010a).

The recent 2010 Census results confirm that growth is increasing as predicted and is consistent with the county-wide projections. Hemet's population grew from just over 52,000 in 1990 to more than 78,000 in 2010 (more than 50 percent). San Jacinto grew from 16,000 people in 1990 to almost 37,000 in 2010 (130 percent). The average age dropped from over 60 to just over 39 in Hemet and just over 33 in San Jacinto (Hemet 2011b, San Jacinto 2006b). Forecasts show this rate of growth continuing until at least 2035 (County 2010a).

Table 3.1-6 (page 3-67) shows a forecast for very strong and continuing growth in the Project area. The city of Hemet could nearly double in population between 2005 and 2035, from 68,591 to 144,888 people. The city of San Jacinto could increase more than threefold, from 30,007 to 96,107. Winchester is the relatively slow-growth community in the area, with its population forecast to increase 68 percent, from 17,739 to 28,966, by 2035 (County 2006).

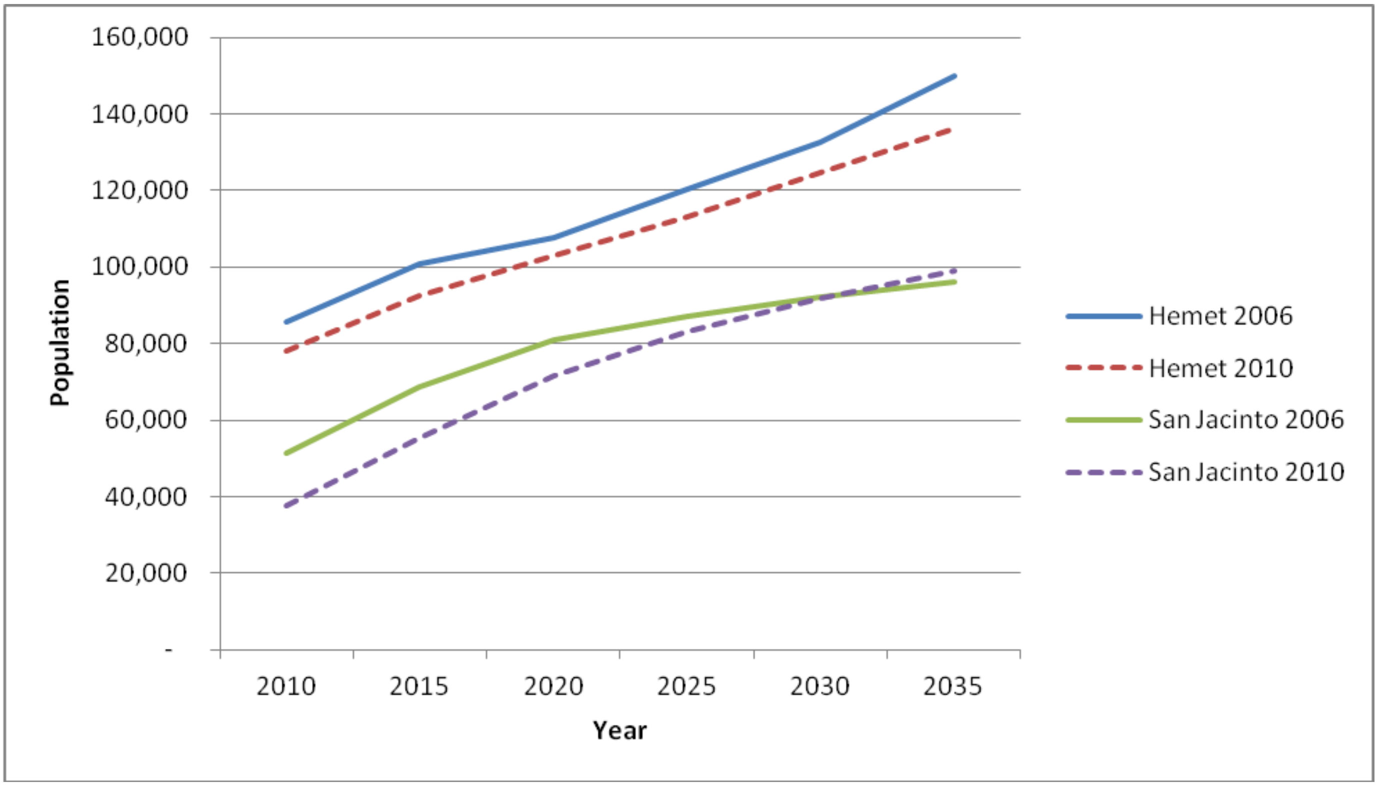
Table 3.1-6 Forecast Growth in the Project Area



Source: Riverside County Center for Demographic Research/Transportation and Land Management Agency, 2006. Riverside County Projections, 2006. Riverside, CA

The forecast in Table 3.1-6 was published in 2006, prior to the recession of 2007–2009. Because of concern about the effects of the recession on growth, more recent forecasts were reviewed. The 2006 and 2010 forecast data were compared, as shown in Table 3.1-7 (page 3-68). More recent data was only available for Hemet and San Jacinto and not Winchester.

Table 3.1-7 Comparison of 2006 and 2010 Growth Forecasts in the Project Area



Source: Riverside County Center for Demographic Research/Transportation and Land Management Agency, 2006. Riverside County Projections Update 2010. Riverside, CA. 2010.

The data show the effects of the recession on local growth forecasts. The population estimate for 2010 is less than it was in the corresponding 2006 forecast. However, both growth lines slope sharply upward to the right, indicating continuing population growth predicted through 2035.

Hemet was forecast to grow 75 percent in the 2006 data and 74 percent in the more recent data. This represents no change in growth rates, although the starting population is lower. San Jacinto was forecast to grow 87 percent in the 2006 data. This increased to 163 percent in the 2010 forecast. Although the starting population in 2010 is lower, the forecast population in 2035 is higher.

Because of the wide distribution of this predicted growth throughout the county, a series of unprecedented planning activities were initiated at a county level to manage decision making for land use, transportation, and the conservation of biological habitats. The result was the Riverside County Integrated Project (RCIP) and each of its elements—the Riverside County General Plan (led by the County of Riverside), the Community and Environmental Transportation Acceptability Process (CETAP) (led by RCTC), and the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) (led by the County of Riverside). These elements guided the choices and decisions made about how to address the changes necessary to accommodate and support the predicted growth. The result was a balanced blueprint for Riverside County to accomplish the RCIP goals, listed below.

- To create a high-quality, balanced, and sustainable environment for the citizens of Riverside County
- To make Riverside County's communities great places to live, work, and play

An “integrated” plan established a collective goal so that implementation of each component, even at a local scale, would result in a compatible outcome for the county as a whole. For example, land use patterns and densities were determined and balanced with the plan to implement the necessary transportation facilities while concurrently establishing biological conservation areas to preserve the diversity of habitats and the protected species they support. After the approval of each of the plans in 2003, their implementation has progressed and has supported the subsequent updates to city general plans in a manner consistent with the County General Plan.

For each of the general plans, an environmental impact report (EIR) was completed by each jurisdiction that analyzed the potential for growth-inducing impacts. For each jurisdiction, a conclusion was reached that growth was induced because a “General Plan is inherently growth inducing” (County 2003a). However, the intent of the general plan was to provide “a framework by which public officials will be guided on making decisions relative to development” (County 2003a) and “define the limits of such development and act as a mechanism to accommodate and control future development” (San Jacinto 2006). Thus, while growth was recognized as being induced, it was also intended to be managed. In addition, the EIR for Riverside County further evaluated the potential for growth inducement from the construction of infrastructure needs. As stated in Section 5.3 of the Final EIR for the County General Plan (2003a), “providing these infrastructure needs (such as roads) in response to substantial increases in development that would occur through build out of the General Plan, would accommodate, but not induce or cause, the growth projected by the County General Plan.” Based on these conclusions included in the EIRs of the general plans for Riverside County, San Jacinto, and Hemet, the baseline for the Project (the No Build Alternative) recognizes that growth is occurring in Riverside County, which has been induced by the adoption of the updated general plans.

The development of the Project occurred simultaneously with the RCIP and the Cities’ general plan update processes. The intent of the Project to realign SR 79 was first identified in the Route Concept Report in 1992. Subsequent to that, the SR 79 Realignment Study Report (1998) and the Project Study Report/Project Development Support (PSR/PDS) (2002) evaluated conceptual alternatives for the Project, during the same period the RCIP planning process was being developed. The Project alternatives identified in the PSR/PDS were vetted through the NEPA/404 process, closely coordinated with the community, and were included and analyzed in the RCIP and the Cities’ general plan planning documents. Because of these efforts, each of the RCIP and City planning documents includes the Project. The general plans for the County of Riverside (County 2003a) and the City of Hemet (Hemet 2011b) include goals and policies for improved circulation and access in association with a realigned SR 79. Both the City of San Jacinto and the City of Hemet have adopted, via city council resolutions, Locally Preferred Alternatives (LPAs) for the Project (San Jacinto 2001, Hemet 2008). The respective LPAs are included in the general plans of each jurisdiction. Riverside County has not identified an LPA, but has included all of the Build alternatives in the County General Plan. In addition, the MSHCP has specific criteria included so that the Project is provided “Covered Activity” status. The culmination of this effort led to formal scoping in the community for the Project in 2004 and 2005 and the subsequent development of the technical studies and the Draft EIR/EIS.

The culmination of this approach is that the Project alternatives and design options developed are consistent with federal, state, regional, and local planning policies regarding traffic and circulation, public services, safety, and land use plans. The Project addresses the vision and long-range goals, policies, and strategies for development and population growth in the county.

3.1.2.3 Growth-Related Impact Analysis

Environmental Consequences

No Build Alternative

Other than limited and localized influence, the No Build Alternative and the Build alternatives would result in a level of growth that is consistent with local plans. The differences in the rate and location of growth, other than highly localized effects near Project interchanges, would be minimal with the No Build Alternative or any of the Build alternatives or design options. This is detailed in the following sections.

All Build Alternatives and Design Options

The first step in considering growth-related effects of the Project is to consider how the Project may influence the location, rate, type, or amount of growth and how that growth could impact resources of concern. To accomplish this, several elements of the Project area need to be defined to consider the context of this screening evaluation. A key element of this analysis is to determine the current status of the land in the Project area (developed or undeveloped) and its susceptibility to growth.

The Project is located in western San Jacinto Valley, and its influence area is primarily associated within the designated SR 79 study area, composed of developed or undeveloped land. Most of the developed land use is a result of recent construction (residential neighborhoods since 2003) and would be less likely to be redeveloped in association with the Project. Thus the focus of determining whether the Project would have any growth-related effects to environmental resources should be on undeveloped land.

In the general plan areas, the percentage of vacant land available for development varies from more developed areas such as Hemet (where only 13 percent of the area designated for development is vacant) to San Jacinto (where 32 percent of the area designated for development is vacant) (Hemet 2011a, San Jacinto 2006b). The undeveloped areas fall into two categories, parcels that are at some stage in the development entitlement process (e.g., Specific Plan, Application Submitted, Project Approved) that is compatible with their general plan designation and those that have not yet begun the entitlement process. As shown in Figure 3.6-1 (Volume 2, Section 3.6), much of the undeveloped land is at some stage in the development-entitlement process. Future projects are also discussed in Section 3.6 (Volume 2, page 3-691) and listed in Table 3.6-2 (Volume 2, page 3-704) and Appendix H (Volume 2). These lands are being developed consistent with the local jurisdictions' general plan land use elements, which designate areas for both land development and open space.

For parcels that are not yet entitled, some of these areas are already proposed for conservation areas per the MSHCP. The obligations of the MSHCP would require those lands to be conserved, and their commitment to protection by the local agency permittees (Riverside County, RCTC, Hemet, San Jacinto) would supersede any potential for their susceptibility to growth. If the lands are in designated MSHCP Criteria Area Cells, then development would not be allowed in a way that is inconsistent with the adopted the goals of the individual Cells and Cell Groups. Per the MSHCP, each Cell in the MSHCP Criteria Area, designating a specific 64.74-ha (160-ac) area of land, includes a definition. That definition states a percentage goal for conservation and a percentage of land allowed for development. In many cases, the goals for conservation include a description of the percentage of the Cell identified for conservation (acres), the type of biological habitat targeted for conservation, and its approximate location within the Cell. This structure was established for the MSHCP because a hard-line reserve boundary was not established.

The land that is susceptible to future growth includes undeveloped land, primarily the areas that are not yet entitled, but also, to a lesser degree, currently entitled property.

The context above was considered when responding to the six topics in the growth-related impact analysis.

1. Does the project have the potential to change accessibility?
2. Does the project type, project location, and growth-pressure potentially influence growth?
3. Is project-related-growth “reasonably foreseeable” as defined by NEPA?
4. If there is project-related growth, could it impact resources of concern?
5. Are there any additional opportunities to avoid and minimize growth-related impacts?
6. Comparison of the results of the analysis for all alternatives.

These topics are addressed below.

Does the project have the potential to change accessibility?

The Project would result in a new limited-access facility along the western edge of the San Jacinto Valley, providing a more direct and efficient connection from SR 79 at Domenigoni Parkway to Gilman Springs Road while also serving as a Surface Transportation Assistance Act (STAA) route (see Section 1.2.4 [page 1-10] for an explanation of STAA). Currently, no other north-south limited-access facility is available in this portion of the valley. The current SR 79 would remain as it is and would serve as a local road, but would no longer be designated as a state route. Accessibility to local businesses and residences along existing SR 79 would not be changed with the proposed Project. The existing route for SR 79 would be relinquished to the cities of local jurisdictions, as shown on their local circulation elements. The existing alignment would not be close to the proposed realignment of SR 79, so no Project-related changes to access would occur. In addition, Sanderson Avenue would no longer be designated as an STAA route. Existing circulation would remain as constructed or improved as planned and would continue to provide access to all properties in the San Jacinto Valley.

The introduction of a limited-access facility into the San Jacinto Valley would provide a more direct and efficient connection from Domenigoni Parkway to Gilman Springs Road on SR 79. A limited-access facility exists north of Gilman Springs Road on SR 79, but not south of Domenigoni Parkway. Because of this, the Project would extend the limited-access facility from the San Jacinto Valley to Beaumont and SR 60 and I-10. The construction of a realigned SR 79 would be expected attract regional trips to SR 79 from the local north and south arterials (Sanderson Avenue, Warren Road). These local roads have become a substitute regional facility for travelers because the current route designated as SR 79 has not been adequate for this purpose for some time. Although the proposed SR 79 would be located close to Sanderson Avenue and Warren Road, the difference in facility type (limited-access expressway versus arterial with stop signs and signals) and not its geographic location would generate the expected reductions in travel time and travel cost. Travel times have been estimated for three situations in 2035 and are shown in Tables 3.1-8 (page 3-73), 3.1-9 (page 3-74), and 3.1-10 (page 3-75). The tables indicate that travel times for the existing facility (61 minutes) and a parallel existing local route along Sanderson Avenue (46 minutes) are more than the travel time expected on a realigned SR 79 (12 minutes).

A realigned SR 79 would be most beneficial to regional travelers passing through the San Jacinto Valley. For local travelers who have the western portion of the valley as a destination, the realigned SR 79 would be expected to provide more efficient access to those local destinations.

Local trips to or from the San Jacinto Valley would be expected to begin or end at one of the planned interchanges/intersections included in the list below. The proposed interchanges for each of the Build alternatives can be viewed in Figures 2.2-8a through 2.2-8n (Chapter 2). All of these arterials run east and west except Sanderson Avenue, which runs north and south. The arterials with an asterisk (*) would be expected to attract the largest number of trips. These arterials extend to either side of the San Jacinto Valley and would probably remain as local trips or connect with other expressways (**) and could continue to other regional destinations.

- East Newport Road
- Domenigoni Parkway**
- Ranchland Road
- Future Street A (only if local arterial is constructed by City of Hemet)
- Florida Avenue**
- Tres Cerritos Avenue*
- Esplanade Avenue*
- Cottonwood Avenue*
- Future Street B (only if local arterial is constructed by City of San Jacinto)
- Sanderson Avenue**
- Ramona Expressway**

Table 3.1-8 Estimated Travel Time for the Existing State Route 79 in 2035

Road Name	Number of Controlled Intersections	Average Delay per Intersection[a] (seconds)	Total Intersection Delay (seconds)	Total Trip Distance (Domenigoni Parkway to Gilman Springs Road) in kilometers (miles)	Average Speed in kilometers per hour (miles per hour)[b]	Total Travel Time (minutes)
Winchester Road	2	35	71	5.2 (3.2)	55.0 (34.2)	7
Florida Avenue	18	68	1229	11.1 (6.9)	55.0 (34.2)	33
San Jacinto Street	9	30	270	4.0 (2.5)	55.0 (34.2)	9
Ramona Boulevard	2	19	38	1.6 (1.0)	55.0 (34.2)	2
State Street	2	22	45	0.8 (0.5)	55.0 (34.2)	2
Ramona Expressway	3	41	122	3.9 (2.4)	55.0 (34.2)	6
Sanderson Avenue	0	63	0	2.4 (1.5)	55.0 (34.2)	3
Total	**36**	**–**	**1,774**	**29.0 (18.0)**	55.0 (34.2)	**61**

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009; Final Air Quality Technical Report, September 2009

Note: All intersections included in this analysis are signalized. There are no unsignalized intersections with stop control on the main road along this route.

[a]Calculated based on 2035 No-Build Conditions AM/PM Peak Hour Intersection Analysis; see Figure 3.1-31 and Table 3.1-49 (page 3-189).

[b]2035 No Build Alternative average speed, from Mobile Source Air Toxics (MSAT) Analysis, page 3-368 (Volume 2)

Table 3.1-9 Estimated Travel Time for an Alternate Route along Sanderson Avenue in 2035

Road Name	Number of Controlled Intersections	Average Delay per Intersection[a] (seconds)	Total Intersection Delay (seconds)	Total Trip Distance (Domenigoni Parkway to Gilman Springs Road) in kilometers (miles)	Average Speed in kilometers per hour (miles per hour)[b]	Total Travel Time (minutes)
Winchester Road	2	35	71	5.2 (3.2)	55.0 (34.2)	7
Florida Avenue	8	68	546	6.8 (4.2)	55.0 (34.2)	16
Sanderson Avenue	10	63	631	10.9 (6.8)	55.0 (34.2)	22
Total	**20**	**–**	**1,248**	**22.9 (14.2)**	55.0 (34.2)	**46**

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009; Final Air Quality Technical Report, September 2009

Note: All intersections included in this analysis are signalized. There are no unsignalized intersections with stop-control on the main road along this route.

[a]Calculated based on 2035 No-Build Conditions AM/PM Peak Hour Intersection Analysis; see Figure 3.1-31 and Table 3.1-49 (page 3-189)

[b]2035 No Build Alternative average speed, from MSAT Analysis, page 3-368 (Volume 2)

Table 3.1-10 Estimated Travel Time for the Realigned and Grade Separated State Route 79 in 2035

Road Name	Number of Controlled Intersections	Average Delay per Intersection (seconds)	Total Intersection Delay (seconds)	Total Trip Distance (Domenigoni Parkway to Gilman Springs Road) in kilometers (miles)	Average Speed in kilometers per hour (miles per hour)[a]	Total Travel Time (minutes)
SR 79	–	–	–	20.1 (12.5)	101.9 (63.3)	12

Source: Final Air Quality Technical Report, September 2009

[a]2035 Build Alternative average speed, from MSAT Analysis, page 3-368 (Volume 2)

The Project would change and improve regional accessibility in the San Jacinto Valley, especially in the western portions of Hemet and San Jacinto. As shown in Table 3.1-11 (page 3-76), travel times and consequently travel costs for through trips in the San Jacinto Valley or to and from the valley would be expected to decrease for both local and regional trips. Access points from SR 79 to the local arterials would be planned primarily to connect with existing arterials. For each of the proposed Project Build alternatives, interchanges would be constructed to allow traffic on the existing arterials to enter the realigned SR 79 or traffic on the realigned SR 79 to exit onto local arterials. Based on the location of each of the Build alternatives in the San Jacinto Valley, there are differences in the interchanges of SR 79 and the local arterials. This occurs because each Build alternative intersects different arterials as it traverses the San Jacinto Valley from Domenigoni Parkway to Gilman Springs Road. The construction of these interchanges would direct traffic to or from SR 79 at these locations. While access to the land in the area of each proposed interchange is already provided by the local arterials, the construction of the interchanges would provide more efficient access to these areas than previously provided. In addition, two locations could provide access to new arterials (Future Streets A and B) if they are constructed by the local jurisdictions as currently planned. If a jurisdiction does not move forward with the planned road, then the corresponding SR 79 interchange would not be constructed. A summary of the interchange locations for each of the Build alternatives is included in Table 3.1-11 (page 3-76). In addition, a comment column in this table provides information about each new interchange proposed for the Project and if that interchange changes accessibility to the immediate area. The location of each proposed interchange can be viewed in Figures 2.2-8a through 2.2-8n (Chapter 2).

If the No Build Alternative is selected for the Project, then no interchanges would be constructed to local arterials, and no changes to accessibility would occur within the San Jacinto Valley.

Table 3.1-11 Changes in Accessibility and Land Use Related to Realigned SR 79 20-Year Design Horizon Interchanges

Interchange	Build Alternatives and Design Options						Comments
	1a	1b	1b1	2a	2b	2b1	
East Newport Road[a]	X	X		X	X		Because there is already access from SR 79 to Newport Road, there would be no meaningful change in access or land use near this location from the realignment of SR 79.
East Newport Road[a] (Design Options)			X			X	Because there is already access from SR 79 to Newport Road, there would be no meaningful change in access or land use near this location from the realignment of SR 79.
Domenigoni Parkway[b] (Roadway Segment A)	X			X			Limited development has occurred along Domenigoni Parkway. Roadway Segment A would probably exclude the planned commercial retail and medium-high-density residential uses at the intersection of SR 79 and Domenigoni Parkway and some of the medium-density residential, but other uses, including medium-density residential and public facilities, would remain. Because there is already access from SR 79 to Domenigoni Parkway at this location, other than the effects noted above, no meaningful change in access or land use is anticipated near this location as a result of realigning SR 79.

Table 3.1-11 Changes in Accessibility and Land Use Related to Realigned SR 79 20-Year Design Horizon Interchanges

Interchange	Build Alternatives and Design Options						Comments
	1a	1b	1b1	2a	2b	2b1	
Domenigoni Parkway (Roadway Segment B)		X	X		X	X	Roadway Segment B could preclude some conservation habitat and public facility planned land uses near the interchange. This location is about 1 mile east of the existing intersection of Winchester Road and Domenigoni Parkway and would probably attract commercial development that would otherwise occur farther to the east of the new interchange. Other than the effects noted, no meaningful change in access or land use is anticipated near this location as a result of realigning SR 79.
Ranchland Road[b]	X	X	X				A Ranchland Road interchange would supplant the existing intersection of Winchester Road and Milan Road. Because this would improve local accessibility, it would yield some development potential, but this area is low density, with low growth potential, consistent with the Riverside County General Plan.
Future Street A				X	X	X	The Future Street A interchange would improve access to areas planned for low density development. Much of the area currently has limited access from widely separated arterials, so an interchange at this location would probably encourage development.
Florida Avenue[c]	X	X	X	X	X	X	The proposed interchange of realigned SR 79 and Florida Avenue would occur between the existing intersections of Florida Avenue and California Avenue and Florida Avenue and Warren Road. Land available for development is limited west of the interchange at Florida Avenue because it is already developed or proposed for development. East of the interchange toward Hemet, existing and planned development has emphasized commercial uses, with residential development evident farther east. From Florida Avenue north, Warren Road provides north-south access to the area.
Tres Cerritos Avenue[c]	X	X	X	X	X	X	The interchange at Tres Cerritos would be an additional access point to existing residential areas to the west. Although realigned SR 79 would improve access to the area, there is limited development potential. To the east, the Tres Cerritos Hills present a barrier to eastward development. To the west, most lands are rural estate homes or homes along a golf course.
Esplanade Avenue[b] (Roadway Segment J) (Roadway Segment K)	X	X	X	X	X	X	There is already an intersection of Esplanade Avenue with Warren Road in this location. Terrain and existing large-lot residential uses constrain additional development to the west. Planned land uses in the area stress rural residential. Residential development and Tahquitz High School exist to the east, south of Esplanade Avenue. Development potential exists north of Esplanade Avenue in areas currently accessible from Esplanade Avenue or Cawston Avenue.
Cottonwood Avenue[b] (Roadway Segment L) (Roadway Segment M)	X	X	X	X	X	X	An interchange of SR 79 with Cottonwood Avenue would be approximately 0.5 miles east of the existing intersection of Cottonwood Avenue and Warren Road. Residential development is active along both sides of a northwest reach of Cottonwood Avenue. To the east, existing, and relatively new, single-family residential uses dominate the area south of Cottonwood Avenue, with institutional and commercial uses farther east. The

Table 3.1-11 Changes in Accessibility and Land Use Related to Realigned SR 79 20-Year Design Horizon Interchanges

Interchange	Build Alternatives and Design Options						Comments
	1a	1b	1b1	2a	2b	2b1	
							San Jacinto General Plan envisions low-density residential and commercial uses south of Cottonwood Avenue and medium and high-density residential as well as commercial uses north of Cottonwood Avenue. Undeveloped land north of Cottonwood Avenue is bounded by the Casa Loma Canal and the Eastern Municipal Wastewater Treatment Facility.
Future Street B[d]	X			X			There is no intersection of arterial roads where Future Street B would intersect with the realigned SR 79. San Jacinto includes Future Street B in their Circulation Plan, and the General Plan anticipates that the area around the interchange will develop with low- and medium-density residential uses, with commercial and very high-density residential uses along Sanderson Avenue.
Sanderson Avenue		X	X		X	X	Access to land south of the Casa Loma Canal is from Cottonwood Avenue and Sanderson Avenue. This would not change with the realignment of SR 79. An interchange of SR 79 with Sanderson Avenue would accommodate the planned medium-density and very high-density residential and community commercial uses.
Ramona Expressway[c]	X	X	X	X	X	X	An interchange at Ramona Expressway would occur at the location of the existing signalized intersection at Ramona Expressway and Sanderson Avenue, which would remain. No meaningful change in access or land use is expected near this location as a result of realigning SR 79.

Source: Community Impact Assessment, August 2010, and Technical Report Addendum Memorandum, Community Impact Assessment, August 2010

[a]20-Year Design Horizon includes a signalized intersection at this location.

[b]Only one interchange would be implemented from the pair shown in this row.

[c]Interchange location is common to all alternatives.

[d]Future Street B is also called Bridge Street.

Do project type, project location, and growth-pressure potentially influence growth?

Project Type

The Project would construct a new limited-access expressway to provide a more direct and efficient north-south regional roadway through the San Jacinto Valley. Points of access (interchanges or intersections) would be provided to east-west arterials or regional expressways and improve the regional accessibility in the valley. Projects such as a bypass, new road, or new interchange are the most likely to have growth-related impacts. Based on the type of this Project, being a limited-access expressway, growth would have the greatest potential to occur adjacent to a proposed interchange. The amount of growth expected would be attributed to the volume of undeveloped land in that immediate area. This growth would also be managed by the control allowed to the local jurisdiction and the restrictions included in their corresponding general plan or the County's MSHCP.

Project Location

The Project is being planned in a valley of western Riverside County that is isolated between Diamond Valley Lake to the south, the Lakeview Mountains to the west, and the San Jacinto Mountains to the east. The community in this valley has historically been rural and agriculture based but has been transitioning since the late 1990s to a suburban area. All of western Riverside County is expected to experience increased growth rates when compared to the surrounding areas (County 2003a). This growth has been planned and is addressed in the updated general plans for Riverside County and also for the local jurisdictions (Hemet, San Jacinto) within the Project area. While Riverside County determined that infrastructure needs would not induce growth, the timing and type of development on immediate parcels of undeveloped land adjacent to proposed interchanges may be influenced by the proposed Project. Therefore, the Project could contribute to the location, timing, or type of growth that may occur on undeveloped parcels adjacent to the proposed Project interchanges.

Growth Pressure

Because of the residential housing demand in the San Jacinto Valley, comprehensive planning activities (see RCIP discussion above) have taken place to accommodate this planned growth. These efforts have resulted in general plans being updated and adopted for the cities and unincorporated county lands within and adjacent to the valley. In the general plan areas, the percentage of vacant land available for development varies from more developed areas such as Hemet (where only 13 percent of the area designated for development is vacant) to San Jacinto (where 32 percent of the area designated for development is vacant) (Hemet 2011a, San Jacinto 2006b). As previously noted, and shown in Figure 3.6-1 (Volume 2, Section 3.6), much of the undeveloped land is at some stage in the development entitlement process. The MSHCP Criteria Area Cells, which represent areas of land proposed for conservation, are also included in Figure 3.6-1 (Volume 2, Section 3.6). As a result, only a limited number of locations are not already converted (existing land use), identified for a future project (land in entitlement process), or proposed for permanent conservation (MSHCP Criteria Area Cells). Although these land development activities are occurring near the Project, they are not in response to the Project. These development activities are in response to housing demand and have been included in the RCIP process. These developments can be viewed in Figure 3.6-1 (Volume 2, Section 3.6) and occur throughout the entire valley and not only adjacent to the Project. These development activities can and have been moving forward independent of the Project. In addition, no development project in the San Jacinto Valley has received a condition of approval as part of their entitlement process specifically requiring the construction or operation of the Project prior to occupancy.

Is project-related-growth "reasonably foreseeable" as defined by NEPA?

The anticipated growth in western Riverside County, including the San Jacinto Valley, has been projected, analyzed, and planned as part of the RCIP process. The results have culminated in the adopted general plans for Riverside County, Hemet, and San Jacinto, as well as the MSHCP. In the San Jacinto Valley, the reasonably foreseeable projects (based on development applications) are shown in Figure 3.6-1 (Volume 2, Section 3.6). These projects have been proposed in a manner consistent with each general plan of the authorizing jurisdiction.

Two types of situations could create a causal relationship between the Project and growth. First, the rate of growth (decrease or increase) could change because of the Project. For instance, parcels that could be in conflict with the expected right-of-way (ROW) of the Project might have not been proposed to the local jurisdiction for development until a decision on the Project has been made. Parcels adjacent to the Project might also wait to develop until the Project is constructed (i.e., a marketing strategy), even though their entitlement process occurred prior to Project development. Alternatively, a planned project could be proposed for construction sooner than expected for any number of reasons, but may include increased marketability due to the proximity of a new interchange. Although these growth-rate shifts could occur, it is not likely that they would occur at a rate or to a quantity of land that would result in a meaningful change in the land use in the San Jacinto Valley because of the low quantity of undeveloped land, as noted above and shown in Figure 3.6-1 (Volume 2, Section 3.6), adjacent to the interchanges of the Build alternatives.

The second type of situation would alter the patterns of land use immediately adjacent to the Project. Parcels adjacent to new interchanges are the most vulnerable because of the change with the new access to a regional facility. Un-entitled parcels are most vulnerable because they have not made any commitments to a future use. Other entitled parcels are less likely to change their plans based on the existing investment for their future use. As noted above, some parcels of land immediately adjacent to the Project area are not included in the current entitlement process or planned for conservation. These individual and undeveloped parcels, while few in number, could be vulnerable to a change in land use pattern. The land surrounding Future Streets A and Future Streets B would have the most potential for this to occur. Overall, this would not be expected to be a widespread change throughout the valley, but some local changes in land use patterns on a few parcels adjacent to the proposed interchanges or intersections could take place.

Although changes to the rate of growth or localized patterns of land use may change, these would be considered negligible compared to the changes already planned for the San Jacinto Valley shown in Figure 3.6-1 (Volume 2, Section 3.6). Development projects are currently proposed extensively throughout the San Jacinto Valley. The portion of the valley potentially influenced by the proposed Project would occur around the proposed Project interchanges, where only a relatively small portion of undeveloped land remains when compared to the total area within the San Jacinto Valley. Because of that, even if all that undeveloped land adjacent to the interchanges would be influenced by the Project and develop more quickly than otherwise expected, its relative proportion is very low when compared to the size of the San Jacinto Valley. As shown in Appendix H (Volume 2), extensive residential, commercial, and infrastructure projects are planned in the San Jacinto Valley. Most of the projects would occur with or without the Project. The amount of growth will be essentially the same with or without the Project.

Project-related growth impacts could include changes to the rate of growth (decrease or increase) and/or a change to the pattern of land use immediately adjacent to the Project. Based on an examination of development applications and discussions with staff from the local jurisdictions, there is little evidence that these impacts are expected to occur (Appendix H). However, it is possible that they could occur based on the current growth trends in Riverside County and the San Jacinto Valley and in what had been documented in transportation case studies for projects that construct a new roadway, including a bypass project. Therefore, these potential Project-related growth impacts have been included in this growth analysis.

If there is project-related growth, could it impact resources of concern?

As stated previously, Project-related growth can include two situations.

1. There may be changes to the rate of growth (decrease or increase), and/or
2. There may be a change to the pattern of land use immediately adjacent to the Project.

The potential growth-related impact from the Project would possibly result in impacts happening at a different rate than predicted or possibly changing the type of land use proposed for each development project. The magnitude of this impact (amount) would be determined based on the specific location of each interchange. For instance, some areas adjacent to interchanges may be more susceptible to growth based on the amount of nearby undeveloped land. Others may not be susceptible if all of the adjacent parcels are already developed. For both of these situations, the ultimate land use determined would be expected to be compatible with the land use designated in the general plans of the respective jurisdictions. Existing undeveloped land (undeveloped natural habitat or agricultural lands) would be most sensitive to any potential land use conversion. Existing residential or commercial developments would not be readily redeveloped because many of them have been built recently and are in reasonable condition. Because of this, the analysis included in Table 3.1-12 is oriented primarily toward undeveloped land and the potential for growth-related impacts to the corresponding resources of concern. The potential for impacts to these resources of concern have been evaluated to be high, low, or uncertain based on the presence and status of the resource within the San Jacinto Valley as described in more detail in the resource specific sections of this document.

Table 3.1-12 Evaluation of Growth-Related Impacts to Resources of Concern Per the Realigned SR 79 20-Year Design Horizon Alternatives and the No Build Alternative

	Severity of Growth-Related Impacts to Resources of Concern from No Build Alternative, Build Alternatives, and Design Options H=High, L=Low, U=Uncertain							
Resources of Concern	**No Build**	**1a**	**1b**	**1b1**	**2a**	**2b**	**2b1**	**Comments**
Human Environment								
Farmlands/Timberlands	H	H	H	H	H	H	H	Changes in land use from undeveloped to developed land would have a direct impact to farmlands within the San Jacinto Valley. Many of the undeveloped lands within the San Jacinto Valley are agricultural lands. Based on the potential rate of growth change, some conversions of farmland to other uses may occur sooner than currently planned, especially adjacent to the interchanges of the Project. This has the greatest potential to occur in San Jacinto, as well as southern Hemet/Winchester. San Jacinto has the largest amount of farmlands designated to be converted based on the general plan designation.
Traffic and Transportation	H	H	H	H	H	H	H	While changes in land use would imply traffic impacts, it would be expected that new development would be approved consistent with the currently approved general plans for their jurisdiction. No reasonably foreseeable projects include high traffic generators that would exceed the planned circulation element. However, based on the potential rate of growth change, some improvements to the local arterials may

Table 3.1-12 Evaluation of Growth-Related Impacts to Resources of Concern Per the Realigned SR 79 20-Year Design Horizon Alternatives and the No Build Alternative

Resources of Concern	Severity of Growth-Related Impacts to Resources of Concern from No Build Alternative, Build Alternatives, and Design Options H=High, L=Low, U=Uncertain							Comments
	No Build	1a	1b	1b1	2a	2b	2b1	
								be warranted for construction sooner than currently planned, especially adjacent to the interchanges of the Project.
Visual/Aesthetics	L	L	L	L	L	L	L	The majority of the area that is currently undeveloped is on the valley floor and would be expected to be developed consistent with other existing developments and structures. For instance, the designs of new residences or businesses would be expected to be similar to those already existing. New zoning is not expected to change the density or multi-story restrictions for building structures. However, based on the potential rate of growth change, some conversion may occur sooner than planned and change the visual environment of the valley sooner than currently planned, especially adjacent to the interchanges of the Project. This change would be expected to be minor and consistent with the adjacent land use and would most likely occur in the areas around Domenigoni Parkway, Florida Avenue, and Ramona Expressway. All three of these locations would be adjacent to each of the Build alternatives,
Cultural Resources (Archeological)	U	U	U	U	U	U	U	Impacts to archeological (buried) resources could occur, but are uncertain at this time. It is not expected that subsurface excavation has occurred on undeveloped properties to determine the risk to this resource. Information would be obtained as part of the investigation of each future project. Based on the potential rate of growth change, some conversion may occur sooner than planned and impacts to archeological resources within the valley could occur sooner than currently planned, especially adjacent to the interchanges of the Project. This impact would be most likely to occur in areas that have not been previously developed. In some cases, the distribution of these resources could be associated with rocky terrain or stream or drainage areas. However, it is not possible to determine the amount or location of buried resources at this time.
Physical Environment								
Hydrology and Floodplain	L	L	L	L	L	L	L	Impacts to hydrology and floodplain are expected to be correlated to the construction of new projects. While changes in land use would imply hydrology and floodplain impacts, it would be expected that new development would be approved consistent with the currently approved general plans for their jurisdiction. Based on the potential rate of growth change, some conversion may occur sooner than planned, and impacts to hydrology and floodplain within the valley could occur sooner than currently planned, especially adjacent to the interchanges of the Project.

Table 3.1-12 Evaluation of Growth-Related Impacts to Resources of Concern Per the Realigned SR 79 20-Year Design Horizon Alternatives and the No Build Alternative

Resources of Concern	Severity of Growth-Related Impacts to Resources of Concern from No Build Alternative, Build Alternatives, and Design Options H=High, L=Low, U=Uncertain							Comments
	No Build	**1a**	**1b**	**1b1**	**2a**	**2b**	**2b1**	
Water Quality and Storm Water Runoff	L	L	L	L	L	L	L	Impacts to water quality and storm water runoff are expected to be correlated to the construction of new projects. While changes in land use would imply water quality and storm water runoff impacts, it would be expected that new development would be approved consistent with the currently approved general plans for their jurisdiction. Based on the potential rate of growth change, some conversion may occur sooner than planned, and impacts to water quality and storm water runoff within the valley could occur sooner than currently planned, especially adjacent to the interchanges of the Project.
Paleontology	U	U	U	U	U	U	U	Impacts to paleontological resources could occur, but are uncertain at this time. It is not expected that subsurface excavation has occurred on undeveloped properties to determine the risk to this resource. However, past projects have identified paleontological resources, especially in areas with terrain. Further information would be obtained as part of the investigation of each future project. Based on the potential rate of growth change, some conversion may occur sooner than planned, and impacts to paleontological resources within the valley could occur sooner than currently planned, especially adjacent to the interchanges of the Project.
Air Quality	L	L	L	L	L	L	L	Impacts to air quality are expected to be correlated to the construction of new projects and the operation of those facilities and the traffic they require or serve. While changes in land use would imply an increase in traffic, it would be expected that new development would be approved consistent with the currently approved general plans for their jurisdiction. No reasonably foreseeable projects include high traffic generators that would exceed the planned circulation element or be approved if not in conformance with air quality regulations.
Noise and Vibration	L	L	L	L	L	L	L	Impacts to noise are expected to be correlated to the construction of new projects and the operation of those facilities and the traffic they require or serve. While changes in land use would imply traffic impacts, it would be expected that new development would be approved consistent with the currently approved general plans for their jurisdiction. No reasonably foreseeable projects include high traffic generators that would exceed the planned circulation element or be approved if not in conformance with their associated noise policies. The distribution of sensitive receptors in the San Jacinto Valley occurs in either dense clusters of residential developments or scattered in rural settings. The clusters of residential developments were recently constructed, use more modern methods and materials, and typically have sound walls constructed along their perimeters. The sensitive receptors that are most vulnerable to changes in noise and vibration are those scattered homes in rural settings.

Table 3.1-12 Evaluation of Growth-Related Impacts to Resources of Concern Per the Realigned SR 79 20-Year Design Horizon Alternatives and the No Build Alternative

Resources of Concern	Severity of Growth-Related Impacts to Resources of Concern from No Build Alternative, Build Alternatives, and Design Options H=High, L=Low, U=Uncertain							Comments
	No Build	1a	1b	1b1	2a	2b	2b1	
Biological Environment								
Natural Communities	H	H	H	H	H	H	H	Figure 3.6-2 (Volume 2, Section 3.6) identifies the biological resources of concern within and adjacent to the Project area. Included on this figure are the species that require further consideration (additional surveys) per the MSHCP policies. These are the species that are not included in the list of the 146 Covered Species within the MSHCP. The MSHCP includes specific survey areas for each of these species. Project survey data is shown for the area within the study area, while California Natural Diversity Database (CNDDB) data is shown for those same species outside the Project study area. Although some of these species do occur within and adjacent to the Project, most of them occur within the MSHCP Criteria Area Cells, which includes area proposed for conservation. Because of this, they are provided an additional level of protection and conservation beyond those traditional requirements and practices. However, based on the potential rate of growth change, some conversion may occur sooner than planned and impact biological habitats or their associated species sooner than currently planned, especially adjacent to the interchanges of the Project. It is important to note that Riverside County and the Cities of Hemet and San Jacinto are fulfilling their obligations as permittees under the MSHCP by ensuring developer compliance with the conservation criteria and goals of the MSHCP, including the dedication of lands to be preserved for inclusion in the MSHCP Reserve. The lands set aside for conservation under the MSHCP will augment existing habitat reserve lands within the SR 79 study area that are protected from future development.
Wetlands and Other Waters	H	H	H	H	H	H	H	
Plant Species	H	H	H	H	H	H	H	
Animal Species	H	H	H	H	H	H	H	
Threatened and Endangered Species	H	H	H	H	H	H	H	
Invasive Species	H	H	H	H	H	H	H	Based on the potential rate of growth change, some land conversion may occur sooner than planned and increase the dispersion of invasive species to a greater extent through the valley than currently expected, especially adjacent to the interchanges of the Project. This would be expected to occur along the edge of local arterials or undeveloped lands that are not landscaped or maintained.

Source: See List of Technical Studies at the beginning of Chapter 3.

Because the Project may have some influence on the rate and location of growth near the proposed Project interchanges, it could also influence impacts on environmental resources of concern, as outlined in Table 3.1-12. At the current time there are additional influences on the rate and location of growth in the San Jacinto Valley beyond the Project. A main influence is the current economic conditions that have resulted in an increase of residential and commercial vacancies in the Project area. Because of that, it would seem unlikely that the Project would influence the construction of new development adjacent to the Project interchanges at this time even though growth in the Project area is also inevitable and planned for in the general plans for the local jurisdictions. In addition, there are potential influences beyond what is currently known. Because of these influences, the proposed Project is only expected to minimally contribute to the rate and location of growth adjacent to the Project. The majority of the influence on this development is expected to remain with the individual property owner of each of the undeveloped parcels adjacent to the proposed Project interchanges. Because of this, mitigation is not proposed for the Project to address the minimal contribution to development that may occur on private property adjacent to the proposed Project interchanges. When those impacts involve protected resources (e.g., species, wetlands, storm water), impacts could only occur as permitted or approved by the responsible regulatory agency.

Are there any additional opportunities to avoid and minimize growth-related impacts?

Avoidance and minimization of impacts, including those that are growth related, have been an objective of the Project since the preliminary development phases. RCTC and the Department have initiated and participated in the FHWA NEPA/404 MOU process to guide the development of the Project. This began with the development of the Purpose and Need and continued with the determination of environmental screening criteria (including field surveys) and the screening of preliminary alternatives, formal scoping, and the selection of the Build alternatives to be included in the analysis of the technical studies and the EIR/EIS. This effort was undertaken because of the potential for substantial impacts to waters of the United States, including wetlands (vernal pools) and the species they support, including listed and endemic species. Each of the approving or commenting federal and state agencies associated with these resources participated in this process to ensure that impacts to resources of concern would be avoided or minimized. Future minimization efforts would be implemented during final design or construction. This undertaking, along with the coordination of the RCIP elements and subsequent coordination with the developing and now adopted corresponding general plans, has resulted in a reasonable range of Build alternatives, including efforts to avoid impacts to resources of concern, that represent the most viable options identified to date for a limited-access expressway in the San Jacinto Valley.

Comparison of the results of the analysis for all alternatives

The data presented in Table 3.1-12 (page 3-81) includes an analysis of the potential for impacts from the Build alternatives and the design options to resources of concern. That analysis determines those impacts to be of high, low, or uncertain probability. When comparing the rating between alternatives for an individual resource of concern, it should be noted that the probabilities determined are the same for each Build alternative or design option. This is because the differences in the location of the alternatives are so minor in some cases that geographic differences in resources of concern do not occur near the alignments. Also, in locations in the southern portion of the Project area near Winchester or the northern portion of the Project in San Jacinto, the resources are distributed fairly consistently, so major distinctions cannot be made. This result occurred because of a substantial effort that was undertaken by the Project proponents during the initial development of the Project with the state and federal agencies. This investigation included the early identification of resources of concern in the Project area so that the alignments of the Build alternatives could be developed to avoid them. This analysis contributed to the avoidance of growth-related impacts because the study area for this work encompassed the majority of the San Jacinto Valley, including large indirect impact areas for each Build alternative. As a result, although growth-related impacts associated with the Project may occur, their influence would not be expected to result in substantially different impacts to resources of concern.

3.1.3 Farmlands/Timberlands

3.1.3.1 Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, 7 United States Code [USC] 4201-4209; and its regulations, 7 Code of the Federal Regulations [CFR] Part 658) require federal agencies, such as FHWA, to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

Williamson Act

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

The status of parcels under a Williamson Act contract can be in one of the following categories: preserve (prime and nonprime), nonrenewal, expired, or canceled. Only Williamson Act lands with a preserve or nonrenewal status are relevant. Parcels with an expired or canceled status are no longer subject to the Williamson Act.

Farmland Protection Policy Act

The Agriculture and Food Act, which contains the FPPA, was passed by Congress in 1981. The FPPA is intended to minimize the impact federal programs have on unnecessary and irreversible conversion of farmland to nonagricultural uses. The act assures that, to the extent possible, federal programs are administered to be compatible with state, local, and private programs and policies to protect farmland (USDA 2007).

Farmland subject to FPPA requirements does not have to be in use as cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land (7 USC 4201-4209; and its regulations, 7 CFR Part 658). Compliance with the FPPA must be part of the NEPA process (7 CFR 658.4[e]).

Federal agencies are required to complete an NRCS Farmland Conversion Impact Rating Form for projects that may have adverse effects to farmlands. Either NRCS form AD-1006 or CPA-106 (for corridor type projects) may be used to assess the extent of farmland impacts relative to federally established criteria. The rating forms are based on a Land Evaluation and Site Assessment (LESA) system, which is a numerical system that measures the quality of farmland. LESA systems have two components. The Land Evaluation component rates soil quality, while the Site Assessment component measures other factors that affect the viability of a farm, such as proximity to water and sewer lines and the size of the parcel. According to the FPPA, projects receiving a combined score of less than 160 points do not require further evaluation. Projects receiving a combined score of 160 or greater should consider alternatives to minimize impacts to farmlands. For projects with a combined score of 160 or greater, a federal agency may, but is not required to, deny assistance to private parties and state and local governments undertaking projects that would convert farmland.

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established in 1982 to produce agricultural resource maps based on soil quality and land use across the nation. As part of this nationwide mapping effort, NRCS developed a series of definitions known as the Land Inventory and Monitoring (LIM) criteria. The LIM criteria classify suitability for agricultural production, including physical and chemical characteristics of soils and specific land use characteristics (CDC 2004a). Using the LIM criteria, farmlands are categorized as one of four types—prime, unique, statewide importance, or local importance. The FMMP is administered by the California Department of Conservation (CDC). The CDC periodically updates mapping of farmlands based on the current land use. CDC mapping was used in the analysis for the Project. The definitions for each classification were developed by the NRCS as part of the LIM system and are described below.

Prime Farmland

Prime farmland is land that has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime farmland must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. Prime farmland must also meet specific conditions related to water, soil temperature range, acid-alkali balance, water table, soil sodium content, flooding, erodibility, permeability, rock fragment content, and rooting depth.

Prime farmland does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Farmland of Statewide Importance

Farmland of statewide importance is land other than prime farmland that has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.

Farmland of statewide importance must also meet specific conditions related to water, soil temperature range, acid-alkali balance, water table, soil sodium content, flooding, erodibility, and rock fragment content.

Farmland of statewide importance does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Unique Farmland

Unique farmland is land that does not meet the criteria for prime farmland or farmland of statewide importance and has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops include oranges, olives, avocados, rice, grapes, and cut flowers.

Unique farmland includes one or more of the following:

- Used for specific high-value crops
- Has a moisture supply that is adequate for the specific crop; the supply is from stored moisture, precipitation, or a developed irrigation system
- Combines favorable factors of soil quality, growing season, temperature, humidity, air drainage, elevation, exposure, or other conditions, such as nearness to market, that favor growth of a specific food or fiber crop
- Excludes abandoned orchards or vineyards, dryland grains, and extremely low yielding crops, such as irrigated pasture, as determined in consultation with the County Cooperative Extension Director and Agricultural Commissioner

Unique farmland does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Farmland of Local Importance – Riverside County

Farmland of local importance is land of importance to the local economy, as defined by a local advisory committee and adopted by a county board of supervisors. Farmland of local importance is either currently in production, or has the capability of production, but does not meet the criteria of prime, unique, or statewide importance. This land may be important to the local economy due to its productivity or value. Authority to adopt or to recommend changes to the category of farmland of local importance rests with the board of supervisors in each county. Farmland of local importance does not include publicly owned lands for which there is an adopted policy preventing agricultural use (CDC 2004b).

The criteria for farmland of local importance for Riverside County are based on definitions provided by the California Department of Conservation (CDC) Division of Land Resources Protection (DLRP 2007). Farmlands of local importance in Riverside County include one or more of the following:

- Soils that would be classified as prime and statewide importance but lack available irrigation water. This includes lands planted with dryland crops of barley, oats, and wheat.

- Lands producing major crops for Riverside County but not listed as unique crops. These are crops that returned $1 million or more in the 1980 Riverside County Agriculture Crop Report. Unique crops include permanent pasture (irrigated), summer squash, okra, eggplant, radishes, and watermelons.

- Dairylands, including corrals, pasture, milking facilities, and hay and manure storage areas, if accompanied by permanent pasture or hayland of 10 acres or more.
- Lands identified by city or county ordinance as agricultural zones or contracts.
- Lands planted in jojoba that are under cultivation and are of producing age.

Regional and Local General Plans

Riverside County

The Riverside County General Plan contains several policies pertaining to farmlands and associated resources and identifies areas designated for agricultural uses. The intent of the agricultural policies in the Riverside County General Plan is to conserve agricultural resources when feasible and to ensure that new uses that encroach upon existing agricultural operations provide some type of buffer to lessen the effects of these new land uses. Policies of the Riverside County General Plan that are applicable to the Project are listed below.

Land Use

LU 16.1 Encourage retaining agriculturally designated lands where agricultural activity can be sustained at an operational scale, where it accommodates lifestyle choice, and in locations where impacts to and from potentially incompatible uses, such as residential uses, are minimized, through incentives such as tax credits.

LU 16.2 Protect agricultural uses by discouraging inappropriate land division in the immediate proximity and allowing only uses and intensities that are compatible with agricultural uses.

LU 16.4 Encourage conservation of productive farmlands, and preserve prime farmlands for high-value crop production.

LU 16.5 Continue to participate in the California Land Conservation Act of 1965.

Open Space

OS 7.1 Work with state and federal agencies to periodically update the Agricultural Resources map to reflect current conditions.

OS 7.2 In cooperation with individual farmers, farming organizations, and farmland conservation organizations, the County shall employ a variety of farmland conservation programs to improve the viability of farms and ranches and thereby ensure the long-term conservation of viable agricultural operations within Riverside County.

OS 7.3 Encourage conservation of productive farmlands and preservation of prime farmlands.

OS 7.5 Encourage the combination of agriculture with other compatible open space uses in order to provide an economic advantage to agriculture. Allow by right, in areas designated Agriculture, activities related to the production of food and fiber, and support uses incidental and secondary to the on-site agricultural operation.

The Project would be partially located in the San Jacinto Valley Area Plan (SJVAP), which is a component of the Riverside County General Plan. The SJVAP recognizes agriculture as an important economic activity in the region and intends to accommodate those agricultural owners who wish to continue their operations into the future. The following policy in the SJVAP addresses agriculture:

SJVAP 7.1 Maintain particular attention to the Foundation Component designation and Certainty System procedures/findings in the General Plan with respect to the agricultural designations in the lower San Jacinto Valley.

City of San Jacinto

The City of San Jacinto General Plan acknowledges that, despite the suitability of soils in the San Jacinto area for agriculture, the amount of urbanization in the community, the high cost of water, and the present pressures for additional development severely constrain the viability of agriculture as a dominant use. As a result, there is currently no land zoned for agriculture in the San Jacinto General Plan (San Jacinto 2006).

Applicable policies pertaining to agriculture in the City of San Jacinto are as follows.

Soils/Agriculture

- Policies
  Encourage the retention of agriculture as an interim use.

  Erosion control measures described in the "Hazards Management Element" shall be closely adhered to.

- Implementation Program
  Existing agricultural uses, in particular row crops in the southeastern portion of the City and dairies in the northwest portion of the planning area, shall be permitted to remain at the owner's prerogative. Transition of agricultural uses to more urbanized uses is expected and is consistent with City objectives for the future.

  Areas within agricultural preserves shall be given a lower priority for development than areas which are not in such preserves.

Land Use

- Existing agricultural uses shall be permitted to remain in agricultural use at the owner's discretion. Transition of agricultural to more urbanized areas is expected and consistent with City objectives for the future.
- Special consideration shall be given to the interface between dairy farms and the areas adjacent to them because of their incompatibility with residential and related urban use.

Open Space (which includes agricultural and undeveloped land)

- Policies
  Protect open space areas

- Implementation Program
  Funding sources (which include private sector financing) shall be sought to acquire and preserve open space areas.

City of Hemet

The City of Hemet General Plan (1992) includes a policy to conserve agricultural resources and operations and to help minimize the impact of land development on existing agricultural uses. The policy pertaining to agriculture is as follows.

> Ensure that if an area presently designated as Agriculture in the Riverside County Growth Management Plan is, at some future time, to be converted to rural or urban use, appropriate improvements are made to the planned roadway system in the eastern portion of Hemet's sphere of influence.

Agency Coordination

To comply with Section 51290 of the California Government Code, the Department advised the CDC of the Williamson Act land impacts within the agricultural study area (ASA) of the Project in a letter dated March 9, 2010. Comments were received from the CDC in April 2010 and were addressed in a follow-up letter sent by the Department in June 2010, which the CDC indicated to be acceptable in their reply of July 2010 (see Appendix G [Volume 2]).

Additionally, Form CPA-106, which is used to evaluate corridor projects, was submitted to the NRCS in March 2010, and again in February 2012, for each Project alternative. The NRCS responded in June 2010, and subsequently in July 2012, and provided each Project alternative with a Farmland Conversion Impact Rating Score (FCIRS) based on the criteria provided contained in the form. Copies of the Forms CPA-106 completed by the NRCS and the Department's cover letters are included in Appendix G (Volume 2). The contents of the figures that were included as attachments to the cover letter are in Figure 1.1-1 (Chapter 1), Figures 2.2-4 and 2.2-5a through 2.2-6b (Chapter 2), and Figures 3.1-8, 3.1-9, 3.1-13, and 3.1-15 at the end of this section.

3.1.3.2 Affected Environment

The discussion and analysis in this section is based on the environmental review and conclusions completed for the Community Impact Assessment (CIA) and the CIA Technical Report Addendum Memorandum of August 2010.

The Character of Agriculture in the Project Area

Agriculture is prominent in the history of the San Jacinto valley and is currently a dominant land use in the Project area. Agricultural land uses compose about one-half of the area of all alternatives. Agricultural uses in the Project area include open agricultural fields (row croplands, pasture, and hay fields), poultry farms, dairy farms, and horse ranches.

However, strong and continuous population growth in the valley, as discussed in Section 3.1.2 (page 3-66), is expected to lead to a sustained conversion of agricultural land to other uses. Information obtained from the planning departments of Riverside County, the City of Hemet, and the City of San Jacinto, as well as coordination with federal, state, and regional agencies during various stages of Project definition, supports this projection. Data published by the CDC indicate a conversion of prime and other important farmlands across Riverside County to nonagricultural uses at an average rate of about 3,197 ha (7,900 ac) per year from 2000 to 2010.

Ongoing coordination with the local land use authorities regarding development proposals in the area highlights their expectation that much of the agricultural land that exists today will be converted to residential and commercial uses. These development plans are currently proceeding, irrespective of any decision about the Project. The trend in farmland conversion is reflected in the general plans for Riverside County and the Cities of Hemet and San Jacinto. Each general plan identifies areas zoned for development where farmlands currently exist. These plans acknowledge that commercial agriculture is not likely to be a viable long-term use in the lower San Jacinto Valley, and farmlands will continue to be lost to development.

The trend in farmland conversion is most noticeable in the city of San Jacinto. Although there are existing farmlands in the city limits, the current zoning maps contain no lands zoned as agricultural. This indicates that all of the existing farmlands located in the city of San Jacinto will be converted to nonagricultural uses for reasons associated with ongoing and planned growth, which are unrelated to the proposed Project. It is not known when these lands will be converted from farmlands to their zoned use because these are private properties, and the timing for development of these lands is at the discretion of each landowner.

Existing farmland parcels planned or zoned for nonagricultural uses per the Riverside County, Hemet, and San Jacinto general plans or zoning are called planned farmland conversion areas for purposes of this Project (see Figure 3.1-9). As shown in Table 3.1-13 (page 3-94), roughly 99 percent of the existing farmlands in the ASA of each Build alternative is in planned farmland conversion areas.

Farmland Types in the Project Area

Five types of farmlands/agricultural lands have been evaluated for the Project—existing farmlands, important farmlands, Williamson Act lands, zoned farmlands, and farm units. These various types are not mutually exclusive, but overlap irregularly.

The **existing farmlands** category consists of lands in current agricultural use, as defined in the land use analysis for the Project (Section 3.1.1.1 [page 3-7]). Existing farmlands were identified from field reconnaissance and some secondary mapping data. The boundaries of existing farmlands generally conform to parcel lines.

The **important farmland** category consists of the four general farmland types that are protected under the FPPA and mapped under the FMMP—prime, unique, statewide importance, and local importance. Mapping of these farmland types in the Project area was obtained from the CDC. Important farmlands include some areas that are not currently in use, but are undeveloped and could be used for agriculture. Mapping of important farmland does not conform to parcel lines, but rather the physical conditions of the land.

The **Williamson Act lands** category includes parcels under contract with the County to maintain agricultural or open space use in return for a reduced property tax assessment. Only Williamson Act lands with a preserve or nonrenewal status were considered for this Project. Williamson Act land information was obtained from the Riverside County Assessor's Office.

The **zoned farmlands** category consists of parcels zoned by the County of Riverside and the City of Hemet for agriculture, as discussed in Section 3.1.1.1 (page 3-7). The City of San Jacinto does not zone any lands for agriculture in its General Plan (County 2003a, Hemet 1992, San Jacinto 2006). Zoned agricultural lands in the ASA are limited to the central area of the ASA between Devonshire Avenue and Esplanade Avenue. Figure 3.1-10 shows the zoned farmlands in the ASA. Most of the zoned agricultural land is existing farmland. Some of the area zoned for agriculture is classified as the "services/facilities" land use type (area adjacent to the San Diego Canal), and some is classified as "undeveloped" east of the canal.

A **farm unit** consists of one or more contiguous parcels that contain farmlands with the same owner or owners. Farm units are devoted primarily to agricultural uses such as the production of crops or livestock, but may contain other land uses as well. A farm unit is assumed to be an independent and self-sustaining agricultural property. Farm units are assigned numbers beginning with 001 and ending with 058 based on parcel ownership. Designating farm units is required to be able to assign a value to the Project alternatives using the LESA system in the NRCS Form CPA-106, as described previously in Farmland Protection Policy Act (page 3-86).

Agricultural Study Area

For the agricultural analysis, an ASA was established. The ASA is primarily defined by the Project Impact Area (PIA) and unique design features. When an alternative would divide a parcel containing any of the farmland types (existing, important, Williamson Act, zoned, or farm unit), the ASA was extended to include the entire parcel (Figure 3.1-8). The entire parcels were included to ensure a proper analysis of indirect impacts.

Refer to Table 3.1-13 (page 3-94) for quantities of farmland types in the ASA and comparison of the Project alternatives.

There are no contracts involving Timber Production Zones in the ASA. Therefore, this discussion will focus on farmlands; no further discussion about timberlands will be provided.

Table 3.1-13 Farmland/Agricultural Land Summary of Affected Environment for Project Alternatives

Affected Environment	Areas within the ASA of Each Project Alternative				
		Build Alternative 1a	Build Alternative 1b OR Design Option 1b1[a]	Build Alternative 2a	Build Alternative 2b OR Design Option 2b1[a]
	Area within the Whole Project ASA (hectares [acres])	Roadway Segments A, E, G, I, J, L, N (hectares [acres])	Roadway Segments B, C, G, I, K, M, N (hectares [acres])	Roadway Segments A, F, H, I, K, L, N (hectares [acres])	Roadway Segments B, D, H, I, J, M, N (hectares [acres])
Existing Farmlands	1,833.83 ha (4,531.54 ac)	1,458.34 ha (3,603.66 ac)	1,441.06 ha (3,560.98 ac)	1,520.16 ha (3,756.42 ac)	1,353.85 ha (3,345.46 ac)
Planned Farmland Conversion Areas (per local and county general plans)	1,679.12 ha (4,149.19 ac)	1,383.93 ha (3,419.79 ac)	1,323.31 ha (3,269.99 ac)	1,433.34 ha (3,541.90 ac)	1,220.87 ha (3,016.86 ac)
Prime Farmland (FMMP data)	189.29 ha (467.74 ac)	188.71 ha (466.32 ac)	188.32 ha (465.36 ac)	144.04 ha (355.92 ac)	143.64 ha (354.95 ac)
Unique Farmland (FMMP data)	136.43 ha (337.13 ac)	112.61 ha (278.27 ac)	86.46 ha (213.66 ac)	112.61 ha (278.27 ac)	86.46 ha (213.66 ac)
Farmland of Statewide Importance (FMMP data)	510.98 ha (1,262.66 ac)	395.88 ha (978.25 ac)	449.30 ha (1,110.26 ac)	396.05 ha (978.66 ac)	445.19 ha (1,100.08 ac)
Farmland of Local Importance (FMMP data)	1,230.81 ha (3,041.42 ac)	938.60 ha (2,319.36 ac)	937.41 ha (2,316.40 ac) OR 938.66 ha (2,319.49 ac)[a]	1,047.80 ha (2,589.18 ac)	894.00 ha (2,209.14 ac) OR 895.25 ha (2,212.23 ac)[a]
Williamson Act Land (Total)	320.59 ha (792.19 ac)	237.60 ha (587.12 ac)	82.99 ha (205.07 ac)	237.60 ha (587.12 ac)	82.99 ha (205.07 ac)
Farm Units[b]	58 Units 1,602.78 ha (3,960.58 ac)	44 Units 1,503.78 ha (3,715.96 ac)	48 Units 1,405.49 ha (3,473.08 ac)	43 Units 1,548.36 ha (3,826.12 ac)	43 Units 1,297.67 ha (3,206.64 ac)
Zoned Riverside County Farmlands (per general plan data)[c]	71.21 ha (175.97 ac)	71.21 ha (175.97 ac)	71.21 ha (175.97 ac)	71.21 ha (175.97 ac)	71.21 ha (175.97 ac)
Zoned City of San Jacinto Farmlands (per general plan data)	N/A[d]	N/A[d]	N/A[d]	N/A[d]	N/A[d]
Zoned City of Hemet Farmlands (general plan data)[c]	37.62 ha (92.95 ac)	37.62 ha (92.95 ac)	37.62 ha (92.95 ac)	37.62 ha (92.95 ac)	37.62 ha (92.95 ac)

Source: Farmland Mapping and Monitoring Program Data, 2004; Riverside County Zoning Data from General Plan, October 2003; City of San Jacinto Zoning Data from Draft General Plan, January 2006; Riverside County Agricultural Division, Assessor County Clerk Recorder, Box Springs District Office, 2008

Note: ha = hectare(s)

ac = acre(s)

[a]The calculation of farmlands of local importance varies between the base condition and the design options. The calculations of farmlands of local importance are presented first for the base condition of Build Alternatives 1b and 2b, followed by the calculations for Design Options 1b1 and 2b1.

[b]A farm unit consists of one or more contiguous parcels that contain farmlands with the same owner or owners. A farm unit may contain land uses other than agriculture, such as undeveloped areas, rural residential, or services and facilities.

[c]The amount of Riverside County and City of Hemet zoned farmland present in the ASA would not vary among the Project alternatives.

[d]N/A: Not applicable. The 2006 San Jacinto General Plan does not identify any lands zoned for agricultural use.

Parcel number, status, and quantity of Williamson Act land in the combined ASA are shown in Table 3.1-14.

Table 3.1-14 Williamson Act Land in the Combined ASA

Assessor's Parcel Number (APN)	Status of Williamson Act Contract	Amount of Land (hectares [acres])
431020009	Nonrenewal	68.19 ha (168.50 ac)
431020013	Preserve	31.60 ha (78.09 ac)
431020014	Preserve	0.004 ha (0.01 ac)
431020018	Nonrenewal	32.88 ha (81.24 ac)
431020019	Nonrenewal	32.88 ha (81.24 ac)
431020020	Nonrenewal	32.85 ha (81.05 ac)
431030017	Nonrenewal	7.89 ha (19.50 ac)
431100001	Nonrenewal	6.91 ha (17.08 ac)
431120004	Preserve	41.40 ha (102.29 ac)
431120006	Preserve	32.35 ha (79.94 ac)
431130030	Preserve	33.64 ha (83.13 ac)
TOTAL		320.59 ha (792.20 ac)

Source: Riverside County Agricultural Division, Assessor County Clerk Recorder, Box Springs District Office, 2008

3.1.3.3 Environmental Consequences

The following sections describe the potential permanent and temporary impacts (direct and indirect) to farmlands for the Project alternatives.

Refer to Table 3.1-15 (page 3-97) for quantities of all impacted farmland types and comparisons of impacts among the Project alternatives.

No Build Alternative

The No Build Alternative would have no impact on farmlands. The widespread conversion of remaining agricultural lands in the western San Jacinto Valley would continue to occur.

All Build Alternatives and Design Options

Direct and Indirect Impact Analysis in the ASA

The farmlands impact analysis consists of calculating the areas of various farmland types that would be directly and indirectly impacted in the ASA. Direct and indirect permanent impacts are calculated for each Build alternative and unique Project feature (utility relocation areas and connections to Hemet Channel outside the Project ROW). No temporary construction easements would be required for the Project; therefore, no temporary impacts (direct or indirect) to farmlands were quantified for either the Build alternatives or unique Project features.

Direct Impacts

Permanent direct impacts to farmlands/agricultural lands are defined as the removal of any farmland (existing farmlands, important farmlands, Williamson Act land, zoned farmlands, or farm units) in the PIA, plus areas outside the PIA designated for utility relocations and connections to Hemet Channel. No permanent impacts from either short-term or long-term traffic detours would occur because the traffic detours would be temporary and would be routed only within the PIA for local streets.

The direct, permanent impact area, specific to farm units, includes all land uses found in the farm unit. For example, a farm unit may contain land uses other than agriculture, such as undeveloped areas, rural residential, or services and facilities. Therefore, the direct impact calculation for farm units includes these areas because they are considered to be part of the farm unit as a whole.

Government Code Section 51295 states that when a project would condemn or acquire only a portion of a parcel of land subject to a Williamson Act contract, the contract is deemed null and void only as to that portion of the contracted farmland taken. The remaining land continues to be subject to the contract unless it is adversely affected by the acquisition. In such cases, the contract for the remaining portion may be canceled. The CEQA Guidelines consider cancellation of Williamson contracts for parcels exceeding 40.47 ha (100.00 ac) to be of statewide significance.

Indirect Impacts

Permanent indirect impacts to farmlands may be defined as the loss of buildings, reductions in economic opportunity due to the decrease in parcel size, or inaccessibility of farmland as a result of the Project. The indirect impact area at a particular parcel is represented by the area between the PIA and the outer limit of the parcel. If the PIA would cross a parcel under a Williamson Act contract, the remaining portion of the parcel between the PIA and the parcel boundary was quantified as a potential indirect impact if the entire parcel would need to be acquired for the Project.

Permanent Impacts

The Build alternatives would permanently and directly impact prime farmlands, unique farmlands, and farmland of statewide and local importance. The Build alternatives would each directly impact a number of farm units (see Table 3.1-15 [page 3-97]).

The Build alternatives would also permanently and indirectly impact prime farmlands, unique farmlands, farmland of statewide and local importance. The Build alternatives would each indirectly impact additional areas of farm units beyond the areas that are directly affected (see Table 3.1-15 [page 3-97]).

Roadway Segments L and M would directly impact Williamson Act land (see Figure 3.1-11). The impact of each Build alternative would vary with the incorporation of these segments into the alternative. Parcel number, status, and quantity of Williamson Act lands that would be permanently impacted under the Build alternatives are shown in Table 3.1-16 (page 3-100). It should be noted that the 2006 San Jacinto General Plan (which includes all of the Williamson Act contract parcels in the Project area) does not identify any lands zoned for agricultural use.

Table 3.1-15 Farmland/Agricultural Land
Summary of Potential Direct and Indirect Permanent Impacts for Project Alternatives

Impacts	Project Alternative				
	No Build Alternative[a] (hectares [acres])	Build Alternative 1a Roadway Segments A, E, G, I, J, L, N (hectares [acres])	Build Alternative 1b OR Design Option 1b1[b] Roadway Segments B, C, G, I, K, M, N (hectares [acres])	Build Alternative 2a Roadway Segments A, F, H, I, K, L, N (hectares [acres])	Build Alternative 2b OR Design Option 2b1[b] Roadway Segments B, D, H, I, J, M, N (hectares [acres])
Existing Farmlands					
Permanent Direct	0	275.04 ha (679.64 ac)	254.03 ha (627.73 ac)	272.47 ha (673.28 ac)	252.9 ha (624.92 ac)
Permanent Indirect	0	34.95 ha (86.37 ac)	31.86 ha (78.72 ac)	35.05 ha (86.62 ac)	31.76 ha (78.47 ac)
Total	0	309.99 ha (766.01 ac)	276.89 ha (706.45 ac)	307.52 ha (759.90 ac)	284.66 ha (703.39 ac)
Prime Farmland (FMMP data)					
Permanent Direct	0	50.53 ha (124.86 ac)	41.32 ha (102.10 ac)	45.28 ha (111.90 ac)	40.40 ha (99.82 ac)
Permanent Indirect	0	0	0	0	0
Total	0	50.53 ha (124.86 ac)	41.32 ha (102.10 ac)	45.28 ha (111.90 ac)	40.40 ha (99.82 ac)
Unique Farmland (FMMP data)					
Permanent Direct	0	15.08 ha (37.27 ac)	8.61 ha (21.27 ac)	15.08 ha (37.27 ac)	8.61 ha (21.27 ac)
Permanent Indirect	0	0.08 ha (0.21 ac)	0.08 ha (0.21 ac)	0.08 ha (0.21 ac)	0.08 ha (0.21 ac)
Total	0	15.16 ha (37.48 ac)	8.69 ha (21.48 ac)	15.16 ha (37.48 ac)	8.69 ha (21.48 ac)
Farmland of Statewide Importance (FMMP data)					
Permanent Direct	0	41.67 ha (102.97 ac)	44.28 ha (109.41 ac)	41.43 ha (102.38 ac)	40.40 ha (99.82 ac)
Permanent Indirect	0	0.08 ha (0.20 ac)	0.08 ha (0.20 ac)	0.08 ha (0.20 ac)	0.08 ha (0.20 ac)
Total	0	41.75 ha (103.17 ac)	44.36 ha (109.61 ac)	41.51 ha (102.58 ac)	40.48 ha (100.02ac)

Table 3.1-15 Farmland/Agricultural Land
Summary of Potential Direct and Indirect Permanent Impacts for Project Alternatives

Impacts	Project Alternative				
	No Build Alternative[a] (hectares [acres])	Build Alternative 1a Roadway Segments A, E, G, I, J, L, N (hectares [acres])	Build Alternative 1b OR Design Option 1b1[b] Roadway Segments B, C, G, I, K, M, N (hectares [acres])	Build Alternative 2a Roadway Segments A, F, H, I, K, L, N (hectares [acres])	Build Alternative 2b OR Design Option 2b1[b] Roadway Segments B, D, H, I, J, M, N (hectares [acres])
Farmland of Local Importance (FMMP data)					
Permanent Direct	0	206.95 ha (511.40 ac)	208.76 ha (515.87 ac) OR 209.10 ha (516.71 ac)	211.42 ha (522.43 ac)	211.47 ha (522.55 ac) OR 211.81 ha (523.39 ac)
Permanent Indirect	0	34.62 ha (85.55 ac)	31.52 ha (77.89 ac)	34.62 ha (85.55 ac)	31.52 ha (77.89 ac)
Total	0	241.57 ha (596.95 ac)	240.28 ha (593.76 ac) OR 240.62 ha (594.60 ac)[c]	246.04 ha (607.98 ac)	242.99 ha (600.44 ac) OR 243.33 ha (601.28 ac)[c]
Williamson Act Land (Totals)					
Permanent Direct	0[c]	22.0 ha (54.4 ac)	10.12 ha (25.0 ac)	22.0 ha (54.4 ac)	10.1 ha (25.0 ac)
Permanent Indirect	0[c]	0	0	0	0
Total	0[c]	22.0 ha (54.4 ac)	10.12 ha (25.0 ac)	22.0 ha (54.4 ac)	10.1 ha (25.0 ac)
Farm Units[d]					
Permanent Direct	0	43 Units 250.85 ha (619.86 ac)	47 Units 211.79 ha (523.35 ac)	42 Units 246.55 ha (609.23 ac)	41 Units 207.98 ha (513.93 ac)
Permanent Indirect	0	4 Units 34.95 ha (86.37 ac)	4 Units 31.86 ha (78.72 ac)	4 Units 35.05 ha (86.62 ac)	4 Units 31.76 ha (78.47 ac)
Total	0	43 Units[e] 285.8 ha (706.23 ac)	47 Units[g] 243.65 ha (602.07 ac)	42 Units[e] 281.60 ha (695.85 ac)	41 Units[e] 239.74 ha (592.40 ac)
Zoned Riverside County Farmlands (per County general plan)[f]					
Permanent Direct	0	22.10 ha (54.61 ac)	24.26 ha (59.95 ac)	24.26 ha (59.95 ac)	22.10 ha (54.61 ac)
Permanent Indirect	0	0	0	0	0
Total	0	22.10 ha (54.61 ac)	24.26 ha (59.95 ac)	24.26 ha (59.95 ac)	22.10 ha (54.61 ac)

Table 3.1-15 Farmland/Agricultural Land
Summary of Potential Direct and Indirect Permanent Impacts for Project Alternatives

Impacts	Project Alternative				
	No Build Alternative[a] (hectares [acres])	Build Alternative 1a Roadway Segments A, E, G, I, J, L, N (hectares [acres])	Build Alternative 1b OR Design Option 1b1[b] Roadway Segments B, C, G, I, K, M, N (hectares [acres])	Build Alternative 2a Roadway Segments A, F, H, I, K, L, N (hectares [acres])	Build Alternative 2b OR Design Option 2b1[b] Roadway Segments B, D, H, I, J, M, N (hectares [acres])
Zoned City of San Jacinto Farmlands (per City general plan)					
Permanent Direct	N/A[g]	N/A[g]	N/A[g]	N/A[g]	N/A[g]
Permanent Indirect	N/A[g]	N/A[g]	N/A[g]	N/A[g]	N/A[g]
Total	N/A[g]	N/A[g]	N/A[g]	N/A[g]	N/A[g]
Zoned City of Hemet Farmlands (per City zoning)[f]					
Permanent Direct	0	7.09 ha (17.52 ac)	6.67 ha (16.48 ac)	6.67 ha (16.48 ac)	7.09 ha (17.52 ac)
Permanent Indirect	0	0	0	0	0
Total	0	7.09 ha (17.52 ac)	6.67 ha (16.48 ac)	6.67 ha (16.48 ac)	7.09 ha (17.52 ac)

Source: Community Impact Assessment, August 2010; Technical Report Addendum Memorandum, Community Impact Assessment, August 2010

Note: No temporary impacts would occur to any farmlands.

N/A = Not Applicable

[a]The No Build Alternative is assumed to have no impacts, although impacts would occur in the Project area as a consequence of other, unrelated projects.

[b]Impacts to farmlands associated with Design Options 1b1 and 2b1 are the same as Build Alternatives 1b and 2b except for farmlands of local importance. The calculation of permanent direct impacts to farmlands of local importance varies between the base condition and the design options. The calculation of permanent direct impacts to farmlands of local importance are presented first for the base condition of Build Alternatives 1b and 2b, followed by Design Options 1b1 and 2b1.

[c]Although Williamson Act land is zoned for nonagricultural uses, it is not considered a planned farmland conversion area for purposes of this Project.

[d]A farm unit consists of one or more contiguous parcels that contain farmlands with the same owner or owners. The direct, permanent impact area, specific to farm units, includes all land uses found within the farm unit. For example, a farm unit may contain land uses other than agriculture, such as undeveloped areas, rural residential, or services and facilities. Therefore, the direct impact calculation for farm units includes these areas because they are considered to be part of the farm unit as a whole.

[e]The total units is not a total of the indirect and directly impacted units because the indirect impacts occur on units where direct impacts would occur.

[f]The zoned farmland designation indicates areas where the 2006 Riverside County General Plan and the 1992 City of Hemet General Plan intend agricultural uses to occur.

[g]The 2006 San Jacinto General Plan does not identify any lands zoned for agricultural use; therefore, no impacts to zoned farmland within the city of San Jacinto would occur in association with the Project alternatives.

Table 3.1-16 Relative Impacts to Important Farmlands in Riverside County

		Project Alternative			
		Build Alternative 1a	**Build Alternative 1b OR Design Option 1b1**[a]	**Build Alternative 2a**	**Build Alternative 2b OR Design Option 2b1**[a]
		Roadway Segments A, E, G, I, J, L, N (hectares [acres])	Roadway Segments B, C, G, I, K, M, N (hectares [acres])	Roadway Segments A, F, H, I, K, L, N (hectares [acres])	Roadway Segments B, D, H, I, J, M, N (hectares [acres])
Prime Farmland Total in Riverside County = 48,415 ha (119,635 ac)	Impact Area	50.53 ha (124.86 ac)	41.32 ha (102.10 ac)	45.28 ha (111.90 ac)	40.4 ha (99.82 ac)
	Percent of County Total	0.10%%	0.09%	0.09%	0.08%
Unique Farmland Total in Riverside County = 14,322 ha (35,391 ac)	Impact Area	15.16 ha (37.48 ac)	8.69 ha (21.48 ac)	15.16 ha (37.48 ac)	8.69 ha (21.48 ac)
	Percent of County Total	0.11%	0.06%%	0.11%	0.06%
Farmland of Statewide Importance Total in Riverside County = 17,841 ha (44,086 ac)	Impact Area	41.75 ha (103.17 ac)	44.36 ha (109.61 ac)	41.51 ha (102.58 ac)	40.48 ha (100.02 ac)
	Percent of County Total	0.23%	0.25%	0.23%	0.23%
Farmland of Local Importance Total in Riverside County = 93,028 ha (229,877 ac)	Impact Area	241.57 ha (596.95 ac)	240.28 ha (593.76 ac) OR 240.62 ha (594.60 ac)	246.04 ha (607.98 ac)	242.99 ha (600.44 ac) OR 243.33 ha (601.28 ac)
	Percent of County Total	0.26%	0.26%	0.26%	0.26%
TOTAL IMPORTANT FARMLANDS Total in Riverside County = 173,605 ha (428,989 ac)	Impact Area	349.01 ha (862.46 ac)	334.65 ha (826.95 ac) OR 334.99 ha (827.79 ac)	347.99 ha (859.94 ac)	332.56 ha (821.76 ac) OR 332.9 ha (822.60 ac)
	Percent of County Total	0.20%	0.19%	0.20%	0.19%
Farmland Conversion Impact Rating Score (FCIRS)		120	117 OR 118	119	116 OR 117

Source: Community Impact Assessment, August 2010; Technical Report Addendum Memorandum, Community Impact Assessment, August 2010

Note: No temporary impacts would occur to any farmlands.

[a]Impacts to farmlands associated with Design Options 1b1 and 2b1 are the same as Build Alternatives 1b and 2b except for farmlands of local importance. The calculation of permanent direct impacts to farmlands of local importance varies between the base condition and the design options. The calculation of permanent direct impacts to farmlands of local importance are presented first for the base condition of Build Alternatives 1b and 2b, followed by Design Options 1b1 and 2b1. This difference is reflected in the FCIRS.

All impacts to farmlands associated with Design Options 1b1 and 2b1 would be nearly the same as those described for Build Alternatives 1b and 2b, respectively. The area of impact to existing farmland would be less than an acre more with Design Options 1b1 and 2b1. Both of the design options would increase the permanent, direct impact to farmland of local importance in Roadway Segment B by about 0.34 ha (0.84 ac) (see Table 3.1-15 [page 3-97]).

Under the No Build Alternative, existing SR 79 would have no roadway improvements between Domenigoni Parkway and Gilman Springs Road except those associated with separate projects already identified in the general plans for the County of Riverside and the Cities of Hemet and San Jacinto. These projects are included in the planned farmland conversion areas, and these areas would be converted even if the Project did not proceed (Figure 3.1-9). The No Build Alternative would have no impact on zoned agricultural lands or Williamson Act lands.

Impacts to all types of farmlands are illustrated in Figures 3.1-11 through 3.1-15. All Project impact figures show the ASA, the PIA, areas outside the Project ROW designated for utility relocations and connections to Hemet Channel, planned farmland conversion areas, and direct and indirect impacts.

Conclusions

Existing Farmlands

Direct impacts to existing farmlands vary by about 10 percent between the Build alternatives (Table 3.1-15 [page 3-97]). Build Alternative 2b (and Design Option 2b1) would directly affect the smallest area of existing farmlands, about 253 ha (625 ac). Build Alternative 1a would affect the largest area of existing farmlands, about 275 ha (680 ac). Build Alternative 2b would also have the least indirect impact, at about 32 ha (78 ac), and Build Alternatives 1a and 2a would have the most, at about 35 ha (87 ac). All told, Build Alternative 2b would have the smallest total impact (about 285 ha [703 ac]), and Build Alternative 1a would have the most total impact (310 ha [766 ac]).

The reported indirect impacts to farmlands would be limited to a few parcels. A large proportion of the farmlands that would be affected by the Project are croplands. Primarily, the indirect impact to croplands adjacent to a new highway is loss of access caused by the Project. With the existing surface road network, there are few if any parcels in the Project area to which access could not be maintained after construction. Modifications to driveways and farm lanes would be made in cooperation with the landowners to facilitate access needed to continue their use of the remaining parcels. The same is true for most livestock operations where the impacts to the parcels will be peripheral, unaffecting use of the remainder of the property. Indirect impacts are expected at only four parcels. Large portions of these parcels would be directly impacted. Two of these parcels are used for livestock operations; the Project would bisect these parcels and remove most of the existing structures. The other indirect impacts would occur on one parcel where the remnant could be landlocked and one parcel where the proposed ROW would occupy most of the parcel, leaving only a small remnant; it is assumed that this remnant would not continue to be used for agriculture. Indirect impacts amount to about 12 percent of the total impact of each Build alternative.

As can be seen in Table 3.1-13 (page 3-94), a large portion of the agricultural lands in the Project area is in planned farmland conversion areas, as designated in the general plans of Riverside County and the Cities of Hemet and San Jacinto. Roughly 90 to 95 percent of the existing farmlands in each Build alternative is in planned farmland conversion areas. Thus, a large majority of the direct and indirect impact to existing farmlands by one of the Build alternatives is already accounted for in the general plans; that is, the impacted farmlands are expected to be converted to a nonagricultural use in time, based on population growth and development pressure in the area, regardless of the Project. This assumption is stated in the Department interagency coordination letters to the CDC and the NRCS of March 9, 2010 (Appendix G [Volume 2]). As noted in Section 3.1.3.2 (page 3-91), these farmlands are actively being converted to nonagricultural uses.

The conversion of these existing farmlands to a nonagricultural use is addressed under CEQA in the environmental impact reports prepared for the general plans of the City of San Jacinto, City of Hemet, and the County of Riverside (San Jacinto 2006, Hemet 1992, County 2003). In all of the general plans, there is a consensus that development pressure will continue to convert farmlands to nonagricultural uses. These pressures include land value, water costs, labor costs, urbanization, competition, and changes in adjacent land use. The development of residential and other urban uses adjacent to agricultural land adds pressure to the farmland that remains. In areas zoned for urban development, farmers can be required to control nuisances, such as dust, odors, noise, insects, and aerial application of pesticides, thus incurring additional operating costs. The general plan environmental impact reports recognize that impacts to existing farmland and State-designated important farmlands resulting from implementation of the general plans would be significant and unavoidable. In effect, the impact of the Project on farmlands is a consequence of the development pressures and a subset of the unavoidable impacts accounted for in these environmental impact reports.

The Build alternatives could accelerate the conversion of these areas, depending on when the Project is constructed versus the timing of other, unrelated projects in the ASA. Although construction of the Project could precede other developments, the planning decisions in county and city general plans to allow these farmlands to be converted is a reflection of the development pressure on them. This could also be an indication of their relative value compared to other farmlands that are being actively protected by zoning and in the general plans.

Because the Project would affect a relatively small amount of farmland beyond the impact accounted for in the general plans, the incremental impact to farmlands as a result of any of the Build alternatives would be minimal.

Important Farmlands

The direct impacts to prime farmlands, unique farmlands, farmlands of statewide importance, and farmlands of local importance would vary modestly between the Build alternatives (Table 3.1-15 [page 3-97]). Direct impacts to prime farmlands would range from about 40 ha (100 ac) to 50 ha (125 ac). Direct impacts to unique farmlands would range from 8.6 to 15 ha (21 to 37 ac); farmlands of statewide importance, 40 to 44 ha (100 to 109 ac); and farmlands of local importance, 207 to 211 ha (511 to 523 ac). All told, Build Alternative 2b would have the smallest direct impact, at about 301 ha (744 ac), and Build Alternative 1b would have the most, at 343 ha (848 ac), a variance of about 13 percent.

Potential indirect impacts would be relatively small compared to direct impacts and would not vary greatly from one alternative to the other. Most indirect impacts would be to farmlands of local importance. If all impacts to all important farmlands were combined, Build Alternative 2b (and Design Option 2b1) would have the smallest impact, at about 333 ha (822 ac), and Build Alternative 1a would have the most, at about 349 ha (862 ac), a variance of about 5 percent (Table 3.1-16 [page 3-100]). No one alternative would have the smallest impact across all classes of important farmland.

All of the Build alternatives received an FCIRS of 116 to 120. In accordance with the FPPA guidelines, projects receiving an FCIRS of less than 160 need not be given further consideration for protection, and no additional alternatives need to be analyzed to minimize impacts to important farmlands.

Appendix G of the CEQA Guidelines states that a project that would “convert prime agricultural land to nonagricultural use or impair the agricultural productivity, would normally have a significant effect on the environment.” There is no regulation or precedent for determining what level of impact constitutes a significant effect.

The combined direct and indirect impacts of each of the Build alternatives would amount to less than 1 percent of the important farmlands in Riverside County (Table 3.1-16 [page 3-100]). Assuming that indirect impacts would be minimized, the Build alternatives would affect less than 0.2 percent of the county’s important farmlands.

Although some prime farmland and other important farmland would be affected by each of the Build alternatives, because of the relatively small amount of important farmland in Riverside County that would be affected and the consideration of development pressure to convert these lands to other uses in regional general plans (discussed previously), the potential impact to important farmlands as a result of any of the Build alternatives is not considered substantial.

Williamson Act Land

The Build alternatives would impact Williamson Act land, as shown in Tables 3.1-15 (page 3-97) and 3.1-17 (page 3-104). Build Alternatives 1a and 2a would directly impact a total of 22.0 ha (54.4 ac) on six parcels, and Build Alternatives 1b and 2b would impact about 10.1 ha (25.0 ac) on two parcels. Because the Project would be a new alignment, it must comply with the requirements of Government Code (GC) Section 51292, which states the following:

> *No public agency or person shall locate a public improvement within an agricultural preserve unless the following findings are made:*
>
> *(a) The location is not based primarily on a consideration of the lower cost of acquiring land in an agricultural preserve.*
>
> *(b) If the land is agricultural land covered under a contract pursuant to this chapter for any public improvement, that there is no other land within or outside the preserve on which it is reasonably feasible to locate the public improvement.*

The Build alternatives were developed through a lengthy planning process that included a number of design and environmental concerns, including effects on all types of farmlands. The Build alternatives were chosen based on various environmental studies, design restrictions, cost, public outreach, and federal, state, and local agency feedback. Each Build alternative would impact, to some degree, parcels under a Williamson Act contract. However, the Project would meet the Section 51292 criteria because the location of the alternatives is not based primarily on cost, nor are there other reasonably feasible alternatives. It is not practicable to avoid locating this Project on land covered by a Williamson Act contract.

Table 3.1-17 Detailed Impacts to Williamson Act Lands by Build Alternative

Assessor's Parcel Number (APN)	Status of Williamson Act Contract	Classification of Williamson Act Contract (Prime or Non-Prime)	Impacts	Project Alternative				
				No Build Alternative	Build Alternative 1a	Build Alternative 1b OR Design Option 1b1	Build Alternative 2a	Build Alternative 2b OR Design Option 2b1
					Roadway Segments A, E, G, I, J, L, N (hectares [acres])	Roadway Segments B, C, G, I, K, M, N (hectares [acres])	Roadway Segments A, F, H, I, K, L, N (hectares [acres])	Roadway Segments B, D, H, I, J, M, N (hectares [acres])
431020009	Nonrenewal	Prime	Permanent Direct	0		8.66 ha (21.4 ac)		8.66 ha (21.4 ac)
431020013	Preserve	Prime	Permanent Direct	0	6.65 ha (16.44 ac)		6.65 ha (16.44 ac)	
431020014	Preserve	Prime	Permanent Direct	0	0.00004 ha (0.000099 ac)		0.00004 ha (0.000099 ac)	
431020018	Nonrenewal	Prime	Permanent Direct	0	N/A[a]		N/A[a]	
431020019	Nonrenewal	Prime	Permanent Direct	0	N/A[a]		N/A[a]	
431020020	Nonrenewal	Prime	Permanent Direct	0	4.69 ha (11.6 ac)		4.69 ha (11.6 ac)	
431030017	Nonrenewal	Prime	Permanent Direct	0		N/A[a]		N/A[a]
431100001	Nonrenewal	Prime	Permanent Direct	0		1.46 ha (3.62 ac)		1.46 ha (3.62 ac)
431120004	Preserve	Prime	Permanent Direct	0	4.03 ha (9.95 ac)		4.03 ha (9.95 ac)	
431120006	Preserve	Prime	Permanent Direct	0	3.08 ha (7.6 ac)		3.08 ha (7.6 ac)	
431130030	Preserve	Prime	Permanent Direct	0	3.54 ha (8.76 ac)		3.54 ha (8.76 ac)	
Grand Total, All Impacts				0	21.99 ha (54.34 ac)	10.12 ha (25.01 ac)	21.99 ha (54.34 ac)	10.12 ha (25.01 ac)

Source: Community Impact Assessment, August 2010; Technical Report Addendum Memorandum, Community Impact Assessment, August 2010; Riverside County Agricultural Division, Assessor County Clerk Recorder, Box Springs District Office, 2008

Note: N/A = Not applicable

[a]These parcels are within the ASA; however, they would not be acquired to accommodate the Project ROW.

The Williamson Act parcels that would be impacted by the Project are located in the city of San Jacinto, which has no zoned farmlands in its general plan. As noted in Section 3.1.3.2 (page 3-91), the direct, permanent impacts related to these areas were addressed under CEQA in the general plan environmental impact report for the City of San Jacinto (San Jacinto 2006). The discussion on page 5.2-10 of the EIR prepared for the City of San Jacinto General Plan shows that there would be unavoidable, significant impacts to farmlands as part of the city's development (San Jacinto 2006). These areas would be converted due to other conditions even if the Project did not proceed. The intent of the general plan is to allow the conversion of the existing farmland to some other use in the future.

Build Alternatives 1a and 2a would have more than twice the total impact on Williamson Act lands as Build Alternatives 1b and 2b. Also, while 40 percent of the properties affected by Build Alternatives 1a and 2a are nonrenewal status (meaning that the Williamson Act contract is in the process of being terminated), all of the properties affected by Build Alternatives 1b and 2b are nonrenewal. Indirect impacts are not expected, assuming that access to and/or continued operation of the remainder of these parcels would not be substantially affected by the Build alternatives and that the Williamson Act contracts would not be nullified for entire parcels. The peripheral impacts to Parcel 431120004 from Roadway Segment L (Alternatives 1a and 2a) would not affect buildings or substantially limit the livestock operation. The parcel would retain its current access from the west along Warren Road. Roadway Segment M (Build Alternatives 1b and 2b) would bisect Parcel 431020009. The portions of this row cropland to the east and west of the Build alternative could remain in production and satisfy the terms of the Williamson Act contract, assuming that alternate access to these parcels could be provided. Consequently, it is not likely that the Project would nullify the Williamson Act contract for any parcels that are 40.4 ha (100 ac) or larger.

Therefore, because the impacts to most Williamson Act lands from the Build alternatives would be peripheral and the unaffected portions of these parcels could remain in agricultural or open space use in accordance with the Williamson Act contracts, the potential effect on Williamson Act parcels is not considered to be significant.

Zoned Farmlands

As a result of careful siting of the Build alternatives, zoned farmlands are limited in the Project area. Except in one central location that would be crossed by all of the Build alternatives, the Project would not impact lands set aside for agriculture in the general plans.

All of the Build alternatives would have a minor impact on Riverside County and City of Hemet zoned farmlands (Table 3.1-15 [page 3-97]). The direct impacts would vary slightly from one alternative to another. Build Alternatives 1a and 2b would have a total direct impact of about 29 ha (72 ac), while Build Alternatives 1b and 2a would have a total direct impact of about 31 ha (66 ac). The total impacts to Riverside County zoned farmlands would affect less than 0.01 percent of the total zoned farmland in the county (72,915 ha [180,178 ac]), while the impacts to City of Hemet zoned farmlands would affect less than 1 percent of the total zoned farmland in the city (743 ha [1,837 ac]).

The affected zoned agricultural lands are at the periphery of agricultural zones, and none of the Build alternatives would divide large designated agricultural zones. Additionally, the Project is included in the Circulation Element of the Riverside County General Plan and the Transportation Element of the City of Hemet 1992 General Plan. Thus, the impacts to zoned farmlands are considered unavoidable and insignificant.

Farm Units

The number of farm units (adjacent parcels with one owner and used for the same purpose) is a rough indicator of the number of individual farm operations that could be affected by the Project. Although, no level of significance is attached to this number, it is desirable to affect the lowest number of farm units possible and thereby disrupt farm production as little as possible. Each of the Build alternatives would impact nearly the same number of farm units as the other alternatives. The exception is Build Alternative 1b, which would affect slightly more.

Temporary Impacts

Although not expected during construction of the Project, temporary impacts to farmlands and agricultural operations could include the following:

- Reduction or loss of access for farm-related vehicles due to temporary lane or road closures
- Temporary loss of services necessary for farm operations, such as water and electricity

Measures to minimize temporary impacts during construction will be implemented to maintain agricultural operations in the Project area. These are discussed in Section 3.1.3.4.

3.1.3.4 Avoidance, Minimization, and/or Mitigation Measures

Existing Farmlands, Important Farmlands, and Farm Units

The Build Alternatives have been developed to minimize impacts to industry, residents, and the environment as much as possible. In the balance, some farmland would unavoidably be impacted by the Project. Most of that farmland is expected to be converted to nonagricultural uses over time in the general plans that cover the Project area.

Despite the consensus that development pressure will ultimately convert these lands, the general plans include measures to minimize impacts to farmlands and encourage the continued agricultural use of these lands. While some measures can be implemented in review of proposed development plans, many measures are implemented at the discretion of the landowners. The planning process, involving the local, county, and regional planning agencies, verified the consistency of the Project with the mitigation measures outlined in these plans to the extent possible.

Project Compliance with the General Plans

As a land development, the Project cannot be entirely consistent with preservation of farmland within its direct impact area. However, careful siting of the Build alternatives and involving the local, county, and regional planning agencies has helped to minimize the impacts to prime and other farmlands in a manner consistent with the intent of the general plans.

- **Planned Farmland Conversion Areas**. That most of the impacts of the Project would be in planned farmland conversion areas, as specified in the general plans, is consistent with those plans.

- **Minimize the Right-of-Way**. As much as possible, the Build alternatives have been sited along existing roadways to reduce the amount of land affected by new alignment. Additionally, the Build alternatives consider topography to minimize the width of right-of-way needed to perform the necessary grading to create a safe roadway profile. The narrower right-of-way also minimizes the area of impact of the Project, to farmlands as well as other adjacent land uses. Such planning and design is consistent with the conservation of farmland.

- **Minimize Impacts to Farm Buildings**. The Build alternatives have been developed to minimize impacts to farm buildings on farmland parcels that are peripherally affected. As stated in Section 3.1.4.2, (page 3-139), none of the Build alternatives or design options would result in a displacement of farm buildings, and the Project is in compliance with the Uniform Relocation Assistance Program.

Regional and local general plans include provisions for buffers between active farmlands and other uses. The buffers are setback distances that are maintained between agricultural operations and residential development to reduce potential conflicts. The buffers would be specified during the design and layout of new land developments when they are adjacent to existing farmlands. In some regards, the Project could be consistent with the buffer provisions between agricultural and other uses, notably residential uses. The roadway could provide a suitable buffer between these land uses, particularly where it would be sited along an existing roadway. For example, assuming a progression of residential land development from east to west in San Jacinto, the proposed Roadway Segment L could provide a needed buffer between the existing livestock yards to the west and planned residential developments to the east.

Other design considerations will also help to minimize impacts to agriculture. These include drainage facilities and standard best management practices during construction and operation of the highway to minimize adverse effects to surface and ground water that are sources for agriculture (discussed in Section 3.2.2 [page 3-284]).

Although no mitigation measures are proposed for the above impacts, to minimize potential permanent and temporary impacts to existing farmlands, important farmlands, and farm units, the following measures will be incorporated into the Project:

AG-1 **Maintain Access to Existing Farmlands.** Access to existing farmlands, all remaining active fields, and farm units will be maintained during construction for farm-related vehicles. Long-term indirect impacts to farmlands will be minimized by modifying driveways and farm lanes in cooperation with the landowners to maintain access to parcel remnants. Modifications will be made to minimize the cost and inconvenience to the landowner. Such efforts will reduce the impacts to the farmland and the producers, as well as reducing the Project right-of-way acquisition costs.

AG-2 **Coordination with Owners.** Coordination and implementing activities will take place with property owners to notify them of any short-term loss of services, such as water and electricity, or other requirements for maintaining farming activities. Timing of any short-term loss of service will occur during times that will not disrupt farming operations.

Williamson Act Lands

Each Build alternative would impact, to some degree, parcels under a Williamson Act contract. However, the location of the alternatives was not based primarily on cost, nor are there other reasonably feasible alternatives. The Build alternatives were chosen based on various environmental studies, design restrictions, cost, and federal, state, and local agency feedback. It is not practicable to avoid locating this Project on land covered by a Williamson Act contract.

The following measure will take place to ensure that all applicable government codes are adhered to regarding acquisition of Williamson Act lands:

AG-3 **Notification of Williamson Act Land Acquisition.** The Department and RCTC will notify the CDC of any acquired Williamson Act lands within 10 days of the acquisition.

Zoned Farmlands

Except in one central area that would be crossed by all of the Build alternatives, the Project would not impact lands set aside for agriculture in the general plans.

Each of the Build alternatives would impact less than 0.01 percent of the zoned farmlands in Riverside County. Additionally, the Project is included in the Circulation Element of the Riverside County General Plan; therefore, no avoidance, minimization, or mitigation measures are proposed for impacts to zoned farmlands.

Similar to Riverside County zoned farmlands, all Build alternatives would impact a small percentage of the zoned farmlands in the city of Hemet. Less than 1 percent of the zoned farmlands in the city of Hemet would be impacted by any of the Build alternatives. This is a small portion of the zoned farmlands in the city. The Project corridor is also included in the Transportation Element of the City of Hemet 1992 General Plan; therefore, no avoidance, minimization, or mitigation measures are proposed for impacts to zoned farmlands.

3.1.4 Community Impacts

3.1.4.1 Community Character and Cohesion

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). The Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

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

Affected Environment

The discussion and analysis in this section is based on the environmental review and analysis completed for the Community Impact Assessment (CIA) of August 2010 and the Draft Relocation Impact Report of July 2010.

A community is a population rooted in one place, where the daily life of each member involves contact with, and dependence on, other members of the same population (Department 1997). This section discusses communities from south to north along the alignments of the four Build alternatives and examines their character and cohesion based on land use, geographic characteristics, and demographic data.

For this discussion, the term *character* is generally defined as features or traits that combine to form the individual nature of a community. Clusters of similar or associated land uses contribute to the overall character of an area and are used in the determination of communities. Geographic features that connect (or sometimes divide) an area, such as topography, transportation corridors, conveyance facilities, and political/jurisdictional boundaries, also contribute to the character of an area.

For this discussion, the term *cohesion* is generally defined as the degree to which residents have a sense of belonging to their neighborhood, their level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. This discussion considers the social characteristics of the people who live in a community because these characteristics can provide indicators of cohesion. Specific to cohesion, some studies indicate that residential stability and longevity can be a strong community link. Single-family home ownership and ethnic homogeneity can encourage social interaction and provide a sense of cohesion. In general, the elderly tend to have more social interaction in their communities because they have more available time to become involved (Department 1997). In addition, residents who walk or use public transportation for travel tend to correlate with a higher degree of community cohesion. While there can be many indicators of cohesion, this evaluation considers the demographic characteristics of age, ethnicity, household size and tenure, and transit dependency (household vehicle availability).

For the cohesion discussion, demographic data for each community are based on the census block group that best corresponds to that community and are used, as appropriate, to describe the communities evaluated for the Project. The source of the demographic data presented in this discussion is the 2000 United States Census, specifically Summary File 3 (SF 3), which supports a complete demographic data set at the block group level. Although the California Department of Finance (CDOF) has made more recent demographic data available, those data are not at the block group level.

As described in Section 3.1.1 (page 3-7), the Project area historically was dominated by agricultural uses. However, the area is rapidly urbanizing, and much of the existing agricultural land is planned for future development, primarily residential (County 2003a, Hemet 1992, San Jacinto 2006). The city of Hemet is moderately developed, with much of the agricultural area planned for urban development, and the city of San Jacinto is in the process of an agriculture-to-urban conversion. In contrast, Winchester is an established rural community with little ongoing change.

Businesses along and near existing SR 79 include a mix of those that cater to traffic that is just passing through the community (service stations, fast food) and those that cater to local and regional residents (auto dealer, drug store, shopping centers, casual restaurants, or professional services). Businesses catering to regional traffic are more concentrated on SR 74/Florida Avenue from Warren Road to San Jacinto Street, while those catering to local and regional residents are common along Florida Avenue and along San Jacinto Street.

The Project area generally is rural in character, consisting of small and large farmsteads, dairies, rural residences, and modern subdivisions. Scattered historical mining features such as adits, tailing piles, haul roads, and rock walls are visible on the landscape. Individual farmsteads can be found along Warren Road and Ramona Expressway, as well as on other roads that cross the Project study area. The built environment resources in the study area reflect the historical development of the valley, which has been dominated by agriculture for the last 100 years. The built environment resources that were identified in the Historic Property Survey Report (June 2010) help to characterize the communities defined for the Project:

- Winchester Community
- Rural Winchester Community
- Green Acres Community
- Emerging Hemet Community
- Tres Cerritos Hills Community
- Emerging San Jacinto Community
- Emerging Sunrise Community
- Gateway Specific Plan/River Community

Development in the San Jacinto Valley throughout the nineteenth century was varied, but themes such as rural settlement and agriculture consistently influenced change over the years. Subsequently, construction of water-conveyance and transportation systems altered the local terrain in the region and provided technological advances that furthered the development of agriculture and additional settlement. The Colorado River Aqueduct (CRA) is a 1930s system that conveys water from the Colorado River to much of Southern California. The CRA is located in the northern portion of the study area and specifically in the Emerging San Jacinto Community, Emerging Sunrise Community, and Gateway Specific Plan/River Community. The San Diego Canal is a late 1940s to late 1950s water-conveyance system located east of the study area. The San Jacinto Valley Railway was established in the late 1880s and is located in the Winchester Community and Rural Winchester Community.

Residences, dairies, and farmsteads also help characterize the communities defined for the Project. The CBJ Dairy is a late 1950s residence and dairy located in the Gateway Specific Plan/River Community. The Ramona Boulevard Property is a late 1950s residence and former farmstead located in the Emerging Sunrise Community. The Wilhelm Ranch is an early 1900s farmstead with multiple outbuildings (schoolhouse, bunkhouse, apiary, milk house, workshop, garage, tank house, irrigation machine building, and concrete reservoir) located in Tres Cerritos Hills Community. The Vanderlinden Property is a modern farmstead consisting of a ranch house, modular house, sheds, water tower, and a 1900s barn, located in the West Hemet Hills Community. The Haddock Street Property is a late 1950s vernacular residence located in the Winchester Community.

The Braswell Property is an early 1950s modern adobe block residence located in the Emerging Hemet Community. The Bidondo Property also is an early 1950s modern adobe residence located in the West Hemet Hills Community. The Shannon Drive Property is a 1940s modern adobe block residence located in the West Hemet Hills Community. The Reflection Lake Recreational Vehicle Resort is an early 1950s man-made lake and in the late 1960s was developed into a recreational vehicle resort located in the Emerging San Jacinto Community.

The landscape of western Riverside County is characterized by terrain that varies from broad valleys with rocky outcrops to foothills and dramatic peaks. Compared to eastern Riverside County, the western portion contains the largest concentration of population and has experienced the greatest growth pressures over the past 30 years. The majority of this population is concentrated on the valley floors, where the topography is amenable to development.

Study Area Communities

The Project would be located in portions of unincorporated Riverside County, as well as in the cities of Hemet and San Jacinto. The Riverside County discussion applies primarily to the southern half of the Project, and the city of Hemet discussion applies primarily to the central portion of the Project. The city of San Jacinto discussion includes the northern portion of the Project with a small area that overlaps unincorporated Riverside County. This portion of Riverside County is within the City of San Jacinto sphere of influence and is part of a designated neighborhood in the City of San Jacinto General Plan. The following communities will be analyzed for the Project and are shown in Figure 3.1-16:

- Winchester Community
- Rural Winchester Community
- Green Acres Community
- Emerging Hemet Community
- Tres Cerritos Hills Community
- Emerging San Jacinto Community
- Emerging Sunrise Community
- Gateway Specific Plan/River Community

Riverside County

The southern half of the Project area and a small area at the northern Project limit are in unincorporated western Riverside County, as shown in Figure 3.1-16. These areas are dominated by agriculture and rural residential development.

The communities and neighborhoods in the southern half of the Project are discussed below.

Winchester Community

Winchester is designated a unique community by the Riverside County General Plan and is distinguished by its land use and geographic and demographic characteristics. Winchester is characterized by a small, western-themed town center at the intersection of SR 79/Winchester Road and Simpson Road. Small, low-density residential uses on large parcels surround the town center along a grid pattern of north-south local streets named for United States presidents (County 2003b). Winchester includes agricultural, services/facilities, and rural residential uses. Agricultural uses become more prominent as distance from the town center increases.

The community boundaries for Winchester are East Grand Avenue on the north, Olive Avenue on the south, Patterson Avenue on the east, and Leon Road on the west, as shown in Figure 3.1-16.

Winchester is framed by several regionally significant geographic features, including Double Butte Mountain in the north and Salt Creek Channel in the south. In addition, the San Jacinto Branch Line (County 2003b) traverses the community. North-south access is provided by SR 79/Winchester Road; east-west access is provided by Olive Avenue and Simpson Road.

The community of Winchester is completely represented by census block group 427.22. As shown in Table 3.1-18 (page 3-114), almost 50 percent of the Winchester population is “working age,” between 25 and 64 years old. The majority of the population is White, and slightly more than one-third state that their heritage is Hispanic or Latino. Most households are composed of three or more people, and less than 5 percent are one-person households. Almost 40 percent of the homeowners are long-term residents, having lived in this community for 11 years or more. All households in the census block group reported having at least one vehicle available.

Rural Winchester Community

Rural Winchester is distinguished by its land use and geographic characteristics. The community is characterized by agricultural, commercial/industrial, residential, rural residential, services/facilities, and undeveloped uses. Agricultural properties are scattered throughout the community and include croplands, horse farms, farm markets, and nurseries that frequently contain barns/silos, irrigation infrastructure, farm equipment storage, and animal pens/stalls. Commercial uses front SR 74/Florida Avenue, residential neighborhoods are clustered along SR 74/Florida Avenue, California Avenue, and Stowe Avenue, and rural residential homes are scattered throughout the community.

The community boundaries for Rural Winchester are SR 74/Florida Avenue on the north, San Diego Canal on the east, and undeveloped areas on the south and west, as shown in Figure 3.1-16. Vacant/rocky hillsides and undeveloped land in the south are excluded from the Rural Winchester Community because these lands are influenced by activities associated with Diamond Valley Lake or are uncharacteristic of the rural and agricultural nature of the area.

Double Butte Mountain, West Hemet Hills, the San Diego Canal, and a number of paved and unpaved local access streets and farm access roads are defining features of the Rural Winchester landscape. North-south access for the community is provided by existing SR 79/Winchester Road and Warren Road. Major east-west access across the San Diego Canal is provided by Domenigoni Parkway in the south and SR 74/Florida Avenue in the north.

As shown in Table 3.1-18 (page 3-114), almost 50 percent of the population is working age, between 25 and 64 years old. The majority of the population is White, and approximately one-third state that their heritage is Hispanic or Latino. Approximately 31 percent of all households are composed of two people, but the percentage of one-person households is only slightly less. More than 50 percent of the homeowners are long-term residents, having lived in this community for 11 years or more. Approximately 4 percent of the households in Rural Winchester reported having no vehicle.

Green Acres Community

The Green Acres Community is designated a unique community by the Riverside County General Plan and is distinguished by existing land use and geographic characteristics. Nestled in the eastern foothills of the Lakeview Mountains, Green Acres is a small, residential community at the intersection of SR 74/Florida Avenue and SR 79/Winchester Road. Animal keeping is an important element of the local lifestyle (County 2003b).

The community boundaries for Green Acres are the Lakeview Mountains on the north, Calvert Avenue and SR 79/Winchester Road on the east, undeveloped areas on the south, and Cortrite Avenue on the west, as shown in Figure 3.1-16.

Green Acres is geographically characterized by the Lakeview Mountains on the north and Double Butte Mountain to the southwest. North-south access for the community is provided by SR 79/Winchester Road, and east-west access is provided by SR 74/Florida Avenue.

As shown in Table 3.1-18 (page 3-114), the United States Census block that best represents Green Acres is the same as the one for the Rural Winchester Community. Almost 50 percent of the population is working age, between 25 and 64 years old. The majority of the population is White, and approximately one-third state that their heritage is Hispanic or Latino. Approximately one-third of all households are composed of two people, but the number of one-person households is only slightly less. More than 50 percent of the homeowners in Green Acres are long-term residents, having lived in this community for 11 years or more. Approximately 4 percent of the households reported having no vehicle.

City of Hemet

The central portion of the Project lies along the western edge of the city of Hemet, from Florida Avenue on the south to Esplanade Avenue on the north, as shown in Figure 3.1-16. This part of Hemet is transitioning from agriculture and rural residential to modern residential development. The Hemet communities and neighborhoods identified for the Project are discussed below.

Table 3.1-18 Representative Demographic Data

Demographic Data	Winchester	Rural Winchester	Green Acres	Emerging Hemet	Tres Cerritos Hills	Emerging San Jacinto	Emerging Sunrise	Gateway Specific Plan/ River
Representative Census Block Group (and Census Code)	427.22 (2)	427.23 (2)	427.23 (2)	427.21 (2)	435.04 (2)	427.21 (2)	435.10 (2)	435.10 (1)
Age[a] (P8)								
25-64 years[b]	50%	48%	48%	57%	44%	57%	44%	47%
65 years and older[c]	9%	19%	19%	13%	23%	13%	25%	28%
Race[a] (P6)								
White alone	73%	75%	75%	79%	79%	79%	81%	88%
Other[d]	27%	25%	25%	21%	21%	21%	19%	12%
Hispanic or Latino[a,e] (P7)	35%	31%	31%	23%	22%	23%	31%	16%
Household Size[f] (H16)								
1 person household	5%	27%	27%	19%	32%	19%	25%	31%
2 person household	30%	31%	31%	31%	30%	31%	33%	45%
3 or more person household	65%	17%	17%	50%	38%	50%	42%	24%
Homeowner Tenure[f] (H38)								
2-5 years	24%	18%	18%	26%	36%	26%	21%	33%
6-10 years	25%	20%	20%	28%	24%	28%	18%	21%
11 years or more	39%	53%	50%	39%	23%	39%	49%	33%
Households With No Available Vehicle[f] (H44)	0	4%	4%	0	4%	0	3%	5%

Source: 2000 United States Census, Summary File 3 (SF 3). The population and housing data are known as "Sample Data" because they are obtained from the 2000 Census long-form questionnaire asked of a sample (generally 1 in 6) of the persons and housing units (Census 2000).

[a]This percentage is based on the total population for the entire Census block.

[b]This age group is considered to be "working age."

[c]This age group is considered to be "retirement age."

[d]Other represents the remaining race categories defined by the Census: Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian and other Pacific Islander, some other race, and two or more races.

[e]The percentages for race and Hispanic or Latino heritage do not add to 100 percent because persons of Hispanic or Latino heritage may be members of any race classification.

[f]This percentage is based on the total number of households for the entire Census block.

Emerging Hemet Community

Emerging Hemet is distinguished by its land use, geographic, and demographic characteristics. The community is characterized by agricultural, commercial/industrial, residential, rural residential, services/facilities, and undeveloped uses. Agricultural lands, primarily crop lands, are scattered throughout the community. A master-planned residential neighborhood composed of recently constructed low- to medium-density residential homes, combined with a public golf course and country club, is located north of SR 74/Florida Avenue and west of California Avenue. Rural residential neighborhoods composed of large homes on large lots, many with an equestrian focus, are clustered along local streets north of Devonshire Avenue and south of Esplanade Avenue, between the San Diego Canal and Lakeview Mountain foothills. Although portions of the Emerging Hemet Community are unincorporated, the area lies within the City of Hemet sphere of influence, indicating a potential for future annexation. The City of Hemet General Plan designates a residential development trend for this historically rural agricultural area (Hemet 1992).

The Emerging Hemet Community is bounded by the cities of Hemet and San Jacinto on the north, San Diego Canal on the east, SR 74/Florida Avenue on the south, and the Lakeview Mountains on the west, as shown in Figure 3.1-16.

The Lakeview Mountains, San Diego Canal, and several local transportation corridors are defining features of the Emerging Hemet landscape. North-south access is provided by Warren Road, but California Avenue provides residential neighborhoods more direct access to SR 74/Florida Avenue. East-west access across the San Diego Canal is limited to SR 74/Florida Avenue.

As shown in Table 3.1-18 (page 3-114), 57 percent of the population is of working age, between 25 and 64 years old. The majority of the population is White, and approximately 23 percent state that their heritage is Hispanic or Latino. Approximately 50 percent of the households are composed of three or more people. Almost 40 percent of the homeowners are long-term residents, having lived in this community for 11 years or more. All households reported having at least one vehicle available.

Tres Cerritos Hills Community

The Tres Cerritos Hills Community is distinguished by its land use, geographic, and demographic characteristics. It is characterized by agricultural, commercial, and residential uses, and services/facilities lands. Existing agricultural uses are being replaced with modern low- to medium-density residential developments. New residential neighborhoods are composed of detached homes on small lots with walled perimeters. They are located along Devonshire, Cawston, and Esplanade Avenues.

The community boundaries for Tres Cerritos Hills are Esplanade Avenue on the north, Cawston Avenue on the east, SR 74/Florida Avenue on the south, and Warren Road on the west, as shown in Figure 3.1-16. For this discussion, established residences east of Cawston Avenue are excluded from the Tres Cerritos Hills Community because they are uncharacteristic of the new residential development in the area and are geographically separated by Cawston Avenue.

The Tres Cerritos Hills, San Diego Canal, and several local transportation corridors are defining features of the Tres Cerritos Hills landscape. North-south access for the community is provided by Warren Road and Cawston Avenue. East-west access is provided by SR 74/Florida Avenue in the south and Esplanade Avenue in the north.

As shown in Table 3.1-18 (page 3-114), 44 percent of the population is working age, between 25 and 64 years old. The majority of the population is White, and approximately 22 percent state that their heritage is Hispanic or Latino. More than one-third of the households are composed of three or more people, but the number of one-person households is only slightly less. Thirty-six percent of the homeowners have lived in their homes between 2 and 5 years, and 23 percent have lived there 11 years or more. Approximately 4 percent of the households reported having no vehicle.

City of San Jacinto

The city of San Jacinto generally is characterized by commercial and residential development east of Sanderson Avenue and agricultural and undeveloped uses, including vacant/rocky hillsides, west of Sanderson Avenue. The northern portion of the Project lies within the western portion of the city of San Jacinto and its sphere of influence, from Esplanade Avenue on the south to the San Jacinto River on the north, as shown in Figure 3.1-16.

The San Jacinto General Plan includes a "Neighborhood Planning Concept" to help plan for growth and to ensure that adequate levels of public services and facilities are available. Neighborhoods have been defined for areas east of Sanderson Avenue. The communities identified for the Project encompass the designated Sunrise and River neighborhoods. For this discussion, the Sunrise Neighborhood is addressed as part of the Emerging Sunrise Community, and the River Neighborhood is addressed as part of the Gateway Specific Plan/River Community. The San Jacinto General Plan also designates a specific area for the "Gateway Specific Plan," which the City plans to develop into 688 ha (1,700 ac) of business park, office park, regional commercial, and residential uses. The San Jacinto General Plan area is strategically located around the proposed SR 79 realignment to promote the new roadway as the primary entryway into San Jacinto from the north (San Jacinto 2006). The San Jacinto communities and neighborhoods identified for the Project are discussed below.

Emerging San Jacinto Community

The Emerging San Jacinto Community is distinguished from surrounding areas by its land use and geographic characteristics. The community is characterized by undeveloped land, including vacant/rocky hillsides, and limited agricultural and commercial uses. The San Jacinto General Plan designates low-density residential development in hilly areas and open space along the Casa Loma Canal. Construction of a residential development has begun on the northwest corner of Warren Road and Cottonwood Avenue. A small commercial area, the Reflection Lake Recreational Vehicle Resort, is on the southeast corner of Warren Road and Cottonwood Avenue and offers camping and fishing.

The community boundaries for Emerging San Jacinto are the city of San Jacinto boundary on the north and west, Casa Loma Canal on the east, and the Hemet/San Jacinto boundary on the south, as shown in Figure 3.1-16.

The Lakeview Mountains and Casa Loma Canal are defining features of the community landscape. Major north-south access is provided by Warren Road, beginning at Cottonwood Avenue. However, no east-west access over the Casa Loma Canal currently exists.

As shown in Table 3.1-18 (page 3-114), the United States Census block that best represents Emerging San Jacinto is the same block that best represents the Emerging Hemet Community. More than 56 percent of the population is of working age, between 25 and 64 years old. The majority of the population is White, and approximately 23 percent state that their heritage is Hispanic or Latino. Approximately 50 percent of the households are composed of three or more people. Almost 40 percent of the homeowners are long-term residents, having lived in this community for 11 years or more. All households reported having at least one vehicle available.

Emerging Sunrise Community

The Emerging Sunrise Community is distinguished from surrounding areas by its land use and demographic characteristics. In addition, the portion of this community east of Sanderson Avenue, between Cottonwood Avenue and Ramona Expressway, is designated as “Sunrise Neighborhood” in the San Jacinto General Plan (San Jacinto 2006). The Emerging Sunrise Community includes areas east and west of Sanderson Avenue because they share similar land use characteristics and are geographically close.

The boundaries for the Emerging Sunrise Community are Ramona Expressway on the north, Sanderson Avenue on the east, Esplanade Avenue on the south, and Warren Road on the west, as shown in Figure 3.1-16.

The Emerging Sunrise Community is primarily agricultural, with croplands, dairies, and poultry farms and a limited number of rural residential homes. Low-density residential development is clustered north and south of Cottonwood Avenue, and services/facilities are located north of the Casa Loma Canal and at the San Jacinto Reservoir. Major north-south access is provided by Warren Road and Sanderson Avenue. East-west access is provided by Cottonwood Avenue in the south and Ramona Expressway in the north.

As shown in Table 3.1-18 (page 3-114), approximately 44 percent of the population is working age, between 25 and 64 years old. Approximately 25 percent are retirement age, more than 65 years old. The majority of the population is White, and approximately one-third state that their heritage is Hispanic or Latino. Forty-two percent of the households are composed of three or more people. Almost 50 percent of the homeowners have lived in their homes for 11 years or more. Approximately 3 percent of the households reported having no vehicle.

Gateway Specific Plan/River Community

The Gateway Specific Plan/River Community is distinguished by land use designations in the San Jacinto General Plan. Most of this community is designated “Gateway Specific Plan,” but the area east of Sanderson Avenue, between Ramona Expressway and the San Jacinto River, is designated “River Neighborhood” in the San Jacinto General Plan. The northwestern corner of the “Sunrise Neighborhood” is also included in this community (San Jacinto 2006). The Gateway Specific Plan/River Community incorporates areas east and west of Sanderson Avenue because they share similar land use characteristics and are geographically close.

The boundaries for the Gateway Specific Plan/River Community are the Gateway Specific Plan/City of San Jacinto boundary on the north, the River Neighborhood on the east, and the Gateway Specific Plan/city boundary on the south and west, as shown in Figure 3.1-16.

The community is primarily agricultural, with some low-density residential and commercial development. Major north-south access is provided by Sanderson Avenue. East-west access is provided by Ramona Expressway.

As shown in Table 3.1-18 (page 3-114), approximately 47 percent of the population is of working age, between 25 and 64 years old, and approximately 28 percent are retirement age. The majority of the population is White, and approximately 16 percent state that their heritage is Hispanic or Latino. Almost one-half of the households are composed of two people. Approximately one-third of the homeowners have lived in their homes between 2 and 5 years, and about one-third have lived there 11 years or more. Approximately 5 percent of the households reported having no vehicle.

Community Services

In addition to the parks and recreation areas discussed in Section 3.1.1, Land Use (page 3-7), and emergency services discussed in this section, community services such as daycare, retirement/assisted living centers, community centers, airports, museums, post offices, waste disposal facilities, and schools contribute to the character and cohesion of a community. Community service facilities are listed in Table 3.1-19 and are discussed below. The facilities in the study area are shown in Figure 3.1-17. Schools are discussed separately in the section that follows (page 3-119).

Daycare facilities in the Project area provide child care for infants and toddlers (up to preschool age). Retirement/assisted living centers provide adult care for seniors. No rehabilitation centers are located in the study area. Francis Domenigoni Community Center provides activity and meeting space for Winchester and surrounding communities. Hemet-Ryan Airport provides ground support, fuel services, maintenance, and aircraft storage services to fixed-base operators and recreational flyers. It is the site of the Ryan Field Museum and California Department of Forestry and Fire Protection (CAL FIRE) air operations at Ryan Air Attack Base (RCEDA 2007; RCFD 2003a, 2003c). The Patterson House/Winchester Museum is a historic home owned by the Winchester Historical Society of Pleasant Valley and has been closed indefinitely to the public (Winchester 2008). The Winchester Post Office provides postal service to Winchester and surrounding communities; post office facilities for the cities of Hemet and San Jacinto are located outside the study area. No city halls, courts, or libraries are in the study area.

Table 3.1-19 Community Care and Public Service Facilities

Facility	Address
Daycare Facilities	
Antoinette Moore Family Childcare	1536 Calle San Sebastian, San Jacinto
Dunham's Family Daycare	1731 Aspen Court, San Jacinto
Gross Family Daycare	950 Tucson Court, San Jacinto
Haywood's Family Daycare	700 Idyllwild Drive, San Jacinto
Kristy's Kids and More	318 Kirby Street, San Jacinto

Table 3.1-19 Community Care and Public Service Facilities

Facility	Address
Magic Carousel Daycare	748 Sweet Clover Loop, San Jacinto
One, Two, Three Discovery Street Daycare	5285 Satinstone Drive, Hemet
Rivero Family Daycare	735 Sweet Clover Loop, San Jacinto
Retirement/Assisted Living Centers	
Hemet West Retirement Home	5001 W. Florida Avenue, Hemet
Parkside Gardens Retirement Home	2789 Rafferty Road, Hemet
Other Facilities	
Francis Domenigoni Community Center	32665 Haddock Street, Winchester
Hemet-Ryan Airport	Waldon Weaver Road, Hemet
Ryan Field Museum	4280 Waldon Weaver Road, Hemet
Patterson House/Winchester Museum	28030 Patterson Avenue, Winchester
Winchester Post Office	28453 Winchester Road, Winchester
Lamb Canyon Sanitary Landfill	16411 Lamb Canyon Road, Beaumont

Source: Community Impact Assessment, August 2010

The Riverside County Waste Management Department (RCWMD) operates the Lamb Canyon Sanitary Landfill (Lamb Canyon Landfill), located in Beaumont, approximately 4.8 km (3 mi) north of the study area and outside the area shown in Figure 3.1-17. Lamb Canyon Landfill is defined as a Class III sanitary landfill and is permitted to accept up to 2,722 metric tons (3,000 tons) per day of nonhazardous solid waste and construction/demolition waste. As a regional disposal facility, the Lamb Canyon Landfill receives waste generated anywhere within Riverside County and serves the cities of Hemet and San Jacinto and unincorporated portions of the study area. Lamb Canyon landfill has a remaining capacity of approximately 15,985,000 cubic meters (20,908,000 cubic yards) and is expected to last until the first quarter of 2023 (CIWMB 2007, Ma 2005). Given its proximity, Lamb Canyon Landfill would serve most of the solid-waste-disposal needs of the Project. However, construction and demolition debris would be disposed of at an appropriate recycling facility. There should be relatively little Project-related solid waste. Cut-and-fill requirements are balanced, and there would be no substantial demolition requirement because most of the Project would be on a new alignment.

Schools

For this discussion of schools, the analysis of Project impacts considers the school facility and its associated attendance area. An attendance area is defined for each school by the governing school district and represents the geographic area of student attendance for that school.

Schools located within the study area are governed by either the Hemet Unified School District (HUSD) or the San Jacinto Unified School District (SJUSD). Some attendance areas of other school districts are in the study area, but they are on the periphery and not affected by the Project. Therefore, this discussion will address only HUSD and SJUSD schools and attendance areas. Schools and their attendance areas are illustrated in Figures 3.1-18 through 3.1-20.

Hemet Unified School District

HUSD serves approximately 23,000 students in fifteen elementary schools, four middle schools, four high schools, and four alternative schools. All HUSD schools are on a traditional 9-month school schedule with a 3-month summer break (HUSD 2007). The HUSD schools within the study area are listed in Table 3.1-20.

Table 3.1-20 HUSD Schools

School	Address	Location by Figure Number
Elementary Schools		
Cawston Elementary School	4000 W. Menlo Avenue	Figure 3.1-18
Fruitvale Elementary School	2800 W. Fruitvale Avenue	Figure 3.1-18
Harmony Elementary School	1500 S. Cawston Avenue	Figure 3.1-18
McSweeny Elementary School[a]	451 W. Chambers Avenue	Figure 3.1-18
Whittier Elementary School[a]	400 W. Whittier Avenue	Figure 3.1-18
Winchester Elementary School	28751 Winchester Road	Figure 3.1-18
Middle Schools		
Diamond Valley Middle School[b]	291 W. Chambers Street	Figure 3.1-19
Santa Fe Middle School[b]	831 E. Devonshire Avenue	Figure 3.1-19
High Schools		
Alessandro Continuation High School[c]	26866 S. San Jacinto Street	Figure 3.1-20
Tahquitz High School (future)[d]	4425 W. Commonwealth Avenue	Figure 3.1-20
West Valley High School[b, e]	3401 Mustang Way	Figure 3.1-20

Source: Community Impact Assessment, August 2010

[a]This school is outside the study area, but its attendance area is within the study area. However, the Project would not affect access to the school. Therefore, it is not discussed further.

[b]This school is outside the study area, but its attendance area is within the study area. Because the Project has the potential to affect access to this school, it is carried forward for further discussion.

[c]Alessandro Continuation High School is attended by students ages 16 and older. Its attendance area is the entire HUSD.

[d]As of the Project baseline date of January 30, 2007, Tahquitz High School was not in operation, and its attendance area had not been determined. Therefore, it is listed for informational purposes and is not discussed further.

[e]The attendance area for West Valley High School is the entire HUSD.

San Jacinto Unified School District

SJUSD serves approximately 9,000 students in six elementary schools, two middle schools, one high school (grades 9 through 12), and one alternative high school (grades 10 through 12). The elementary schools follow a multitrack, year-round calendar; the middle school and high schools are on a traditional 9-month schedule (SJUSD 2007). The SJUSD schools and attendance areas are listed in Table 3.1-21.

Table 3.1-21 SJUSD Schools

School	Address	Location by Figure Number
Elementary Schools		
Clayton A. Record Junior Elementary School	1600 Malaga Drive	Figure 3.1-18
De Anza Elementary School	1089 De Anza Drive	Figure 3.1-18
San Jacinto Elementary School[a]	136 N. Ramona Boulevard	Figure 3.1-18

Table 3.1-21 SJUSD Schools

School	Address	Location by Figure Number
Middle Schools		
Monte Vista Middle School	181 N. Ramona Boulevard	Figure 3.1-19
North Mountain Middle School[a]	1202 Seventh Street	Figure 3.1-19
High Schools		
Mountain View Alternative High School[b]	699 Young Street	Figure 3.1-20
San Jacinto High School[c, d]	500 Idyllwild Drive	Figure 3.1-20

Source: Community Impact Assessment, August 2010

[a]This school is outside the study area, but its attendance is within the study area. However, the Project would not affect access to the school. Therefore, it is not discussed further.

[b]Mountain View High School is an alternative learning center for students who do not fit into a traditional comprehensive high school setting. Its attendance area is the entire SJUSD.

[c]The attendance area for San Jacinto High School is the entire SJUSD.

[d]San Jacinto High School is outside the study area, but its attendance area is within the study area. Because the Project has the potential to affect access to this school, it is carried forward for further discussion.

Private Schools

The city of Hemet has 10 private schools that serve students from kindergarten through grade 12. The city of San Jacinto has one private school that serves students from preschool through grade 8. None of these private schools is located within the study area (Directory 2007a, 2007b).

Colleges

Mt. San Jacinto College is an accredited two-year public institution located in the city of San Jacinto. Mt. San Jacinto College is not located within the study area (SJ College 2007).

Environmental Consequences

This section addresses potential community impacts from each of the Project alternatives. Community character would be impacted if the Project alters the appearance or geographic setting of a community. Community cohesion would be impacted if the Project introduces a barrier to continued social interaction that results in the division, disruption, or isolation of a community (Department 1997). This analysis of impacts to character and cohesion addresses the following communities that would be situated along the alignments of the Build alternatives and design options (from south to north):

- Winchester Community
- Rural Winchester Community
- Green Acres Community
- Emerging Hemet Community
- Tres Cerritos Hills Community
- Emerging San Jacinto Community
- Emerging Sunrise Community
- Gateway Specific Plan/River Community

The analysis also addresses impacts to character and cohesion that could result from Project-related changes to such community services as daycares, retirement/assisted living centers, community centers, airports, museums, post offices, waste disposal facilities, and schools. The potential for economic impacts from a change in traffic patterns is described in the following sections.

Permanent Impacts

No Build Alternative

The No Build Alternative has implications both for the areas where the realignment is proposed and for the communities through which the existing highway passes. While there are no specific plans, it is reasonable to expect incremental improvements along the existing route. For example, signal-timing changes or diversion of additional traffic to Sanderson Avenue might be undertaken by local authorities to relieve some problems. Although these would have some benefit, they are not the comprehensive solution that the SR 79 realignment would provide. With continued rapid growth in Hemet and San Jacinto, existing roadways would continue to operate at reduced levels of service. Heavier congestion would subdivide the communities and disrupt access to community services.

For communities on the western side of Hemet and San Jacinto, the No Build Alternative would have a different, but equally disruptive set of consequences. Growth would continue at the same levels as forecast by local authorities. Planning, zoning, utilities, and access are in place to support development of the land in the area. No build means that a major highway construction project would not occur, although wide-scale residential and commercial development would continue. Local plans to improve local streets would continue to improve access to the lands under development. Local traffic would continue to mix with regional traffic, potentially requiring more lane capacity on local streets than planned, or local streets would experience reduced levels of service.

All Build Alternatives and Design Options

Overall Study Area

The Build alternatives and design options would introduce a north-south highway that would divert traffic from the eastern side of the San Jacinto Valley to the western side. This would reduce congestion on the east side and provide a more appropriate highway facility on the west side, both for regional traffic and local businesses and residents seeking to travel north and south. The highway would have relatively little impact on east-west linkages because almost every existing road would be bridged. Existing north-south features, such as the Hemet Channel, San Diego Canal, the Tres Cerritos Hills, and other natural or man-made barriers already limit an unrestricted flow from the western parts of the valley and funnel access to a limited number of locations. The Project is designed with these locations in mind and would not further restrict east-west movement. The Build alternatives and design options would supplement existing roads, such as Winchester Road and Warren Road, with a higher capacity and higher speed road that would occasion different impacts in resource areas such as air quality and noise. These resources are addressed in detail in other sections of this environmental document and are not duplicated here. Visual/aesthetics, including nighttime light, is addressed in Section 3.1.7 (page 3-211). Air quality is addressed in Section 3.2.6 (page 3-353). Noise is addressed in Section 3.2.7 (page 3-378).

Because the communities that the Project would cross are different from each another and the impacts would be localized, the impacts to each of the study area communities are discussed separately, as detailed below.

Study Area Communities

Communities that would be traversed by the Project are considered to be directly impacted. Communities that would be located adjacent to the Project are considered to be indirectly impacted.

The Project impacts to the Emerging Hemet, Tres Cerritos Hills, Emerging San Jacinto, and the Gateway Specific Plan/River communities would be the same for all of the Build alternatives because, as discussed below, the Build alternatives would not differ in these areas. Impacts to Winchester, Rural Winchester, Green Acres, and Emerging Sunrise would vary from one Build alternative to another, so the potential impacts to these communities are discussed for each Build alternative later in this section. Potential impacts to the study area communities from the Build Alternative 1b base condition, Design Option 1b1, Build Alternative 2b base condition, and Design Option 2b1 would be the same because the roadway alignments would not vary significantly. Therefore, unless otherwise indicated, the following discussions address the Build alternatives and design options collectively.

Emerging Hemet Community. The Build alternatives and design options would be located parallel to the San Diego Canal, in agricultural, residential, rural residential, services/facilities, and undeveloped areas of the Emerging Hemet Community. The proposed Project would realign an existing roadway within a developing area. The realigned roadway would be uncharacteristic of the predominantly flat, rural landscape of this community. Portions of the roadway would be constructed on embankments, and bridges as high as approximately 10 m (33 ft) would be required at Devonshire Avenue, Tres Cerritos Avenue, and Esplanade Avenue. The Build alternatives and design options would include noise barriers at specific locations to address noise abatement requirements. The Build alternatives and design options would dominate views from nearby areas and block views of more distant elements of the landscape. The character of the Emerging Hemet community would be impacted because the proposed Project would alter the appearance and geographic setting.

The Build alternatives and design options would be located in rural residential areas, but along the edges of existing developments. These residential areas are bordered on the east by existing geographic barriers to social interaction (Warren Road and the San Diego Canal). The alternatives would require the realignment of Warren Road and Tres Cerritos Avenue and modified local access from Warren Road to Maze Stone Court. However, these local street improvements would not impede access or mobility within the community or introduce a barrier that results in a division, disruption, or isolation of the community. Therefore, the Build alternatives and design options would not divide or adversely affect the cohesion of the Emerging Hemet Community.

Utility Relocation Area 1 would be located in an area that is currently undeveloped and is geographically separated from nearby residential development. Utilities that would be relocated to this area likely would be buried. Therefore, the utility relocation area would not alter the overall character or affect the cohesion of the Emerging Hemet Community.

Tres Cerritos Hills Community. The Build alternatives would be located in a small area of agricultural land at the northwestern corner of the Tres Cerritos Hills Community and in undeveloped land along the western edge of the community. The Project would realign an existing roadway in an area dominated by the undeveloped Tres Cerritos Hills and developing residential areas. Portions of the roadway would be constructed on embankments, and an approximately 10-m (33-ft) -high bridge would be required at Tres Cerritos Avenue. The Build alternatives would include noise barriers at specific locations to address noise abatement requirements. The proposed Project would alter the appearance and geographic setting, and, therefore, the character of this portion of the community would be impacted. However, implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

The Build alternatives would require the realignment of Warren Road and modified local access at Alabaster Drive/Esplanade Avenue. However, these local street improvements would not impede access or mobility within the community or introduce a barrier that results in a division, disruption, or isolation of the community. In addition, the alternatives would not be located in residential neighborhoods, but along the western edge of the community, which is surrounded by existing geographic barriers to social interaction, including Warren Road, Esplanade Avenue, and the Tres Cerritos Hills. Therefore, the Build alternatives would not divide or affect the cohesion of the Tres Cerritos Hills Community.

Emerging San Jacinto Community. The Build alternatives would be located in a small area of agricultural land at the southeast corner of the Emerging San Jacinto Community. Immediately to the east, the Project would traverse the flat agricultural areas of the Emerging Sunrise Community. Portions of the roadway would be constructed on embankment, and an approximately 8-m (26-ft) -high bridge would be required at Cottonwood Avenue, making the roadway readily visible from the commercial area of Reflection Lake Recreational Vehicle Resort. The Build alternatives would include noise barriers at specific locations to address noise abatement requirements. The proposed Project would directly alter the appearance and geographic setting and, therefore, the alter character of this small area of the Emerging San Jacinto Community. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

The Build alternatives would not be expected to affect community cohesion because they would not divide one part of the community from another and would not impede social interaction among residents or introduce a barrier that results in a division, disruption, or isolation of the community. Existing local access within the community would not be modified. The Build alternatives would provide transportation infrastructure for improved regional access to the community and surrounding areas. Therefore, no impacts to community cohesion would occur.

Gateway Specific Plan/River Community. The Build alternatives would traverse the central portion of the Gateway Specific Plan/River Community in a north-south direction, through agricultural and undeveloped areas. The Project would realign an existing roadway in this area and would require the realignment of Sanderson Avenue. Portions of the roadway would be constructed on embankment, and an approximately 8-m (26-ft) -high interchange would be required at Ramona Expressway. The Build alternatives would include noise barriers at specific locations to address noise abatement requirements. The proposed Project would alter the appearance and geographic setting of the Gateway Specific Plan/River Community. However, implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

The Build alternatives would divide the Gateway Specific Plan/River Community, but the new roadway would be on an alignment similar to existing Sanderson Avenue, which serves as a barrier to community interaction. Rather than create a new barrier, the Project would effectively extend the width of existing Sanderson Avenue, which is currently over capacity and has only two travel lanes (one lane in each direction). The Build alternatives would not be expected to affect community cohesion because they would not divide one part of the community from another and would not impede social interaction among residents or introduce a barrier that results in a division, disruption, or isolation of the community. Therefore, the Project is not expected to affect the cohesion of the Gateway Specific Plan/River Community.

Utility Relocation Area 2 would be in an agricultural area that is currently undeveloped. Established utilities in the area support existing land uses, so the designated utility area likely would blend with surrounding land uses. Therefore, the utility relocation area would not alter the overall character of the community or affect its cohesion.

Community Services

Permanent direct impacts to community services could occur for all services (including their associated property) located within the Project direct impact area, including daycares, retirement/assisted living centers, community centers, airports, museums, post offices, waste disposal facilities, and schools. However, with the exception of school attendance areas, no service facilities or their associated property exist within the Project direct impact area (schools are addressed later in this section).

The Project would not physically affect the local street network other than cul-de-sacs proposed along Winchester and Milan Roads (Milan Road is a very low-volume local road less than a mile long that serves approximately 10 rural residences), the realignment of Warren Road and Sanderson Avenue, and minor access modifications to the complex at Alabaster Drive/Esplanade Avenue and Maze Stone Court/Warren Road. Localized modifications to travel patterns would result from cul-de-sacs, realignments, and access adjustments. However, the alternative corridors closely parallel existing barriers such as the Hemet Channel, the San Diego Canal, the Casa Loma Canal, and the Tres Cerritos Hills. With only a few exceptions, interchanges or intersections are planned at all local cross streets. While the changes would be permanent, the impact on access to community services, none of which is located on a road that would be directly affected by the modifications, would be imperceptible.

Project operation would be expected to produce a small amount of refuse, debris, and landscape trimmings over the life of the Project. The amount of material produced would represent a relatively small contribution to the overall planned capacity at Lamb Canyon Landfill. To the extent practicable, materials would be recycled at appropriate facilities. Disposal and recycling would be conducted in accordance with normal procedures and applicable policies and regulations. Although the specific quantities of material requiring disposal are not known, the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) would be implemented to address permanent impacts. Lamb Canyon Landfill and appropriate recycling facilities would be used regardless of the Build alternative or design option that is identified as the Preferred Alternative and, therefore, are not discussed further.

Although no schools are present in the Project direct impact area, the Project would traverse a number of school attendance areas. If the Project physically separates the school facility from the area where students live, modifications of routes to and from the school would be necessary. Such modifications are common from year to year and are not considered a substantial impact. Schools and their attendance areas, therefore, are not discussed further in the specific Build alternative discussions.

Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) would address the potential permanent impacts to the affected school attendance areas. The Project does not propose the construction of residences or other facilities that would result in an increased number of students. Therefore, no permanent impacts would occur to overall school enrollment.

A goal of the Project is to reduce congestion and improve traffic flow. This would involve removal of some traffic from the principal commercial thoroughfares in Hemet and San Jacinto. It would improve conditions for pedestrians and local traffic, but could reduce the pass-by traffic on which some businesses depend. For businesses that do not depend on pass-by traffic, improved traffic conditions could increase patronage in local shops, resulting in a net benefit. The potential for negative impacts on local businesses would be limited by the size of the Hemet-San Jacinto area because the large economic base would continue to draw people to the area to purchase goods and services. Leong and Weisbrod look at many bypass studies and note a generally consistent story. Highway bypasses are seldom either devastating or the savior of a community business district. The locational shift in traffic can cause some existing businesses to turn over or relocate, but net economic impacts on the broader community are usually relatively small (positive or negative) (Leong 2000). Substantial traffic would remain on Florida Avenue and San Jacinto Street that would provide a customer base for businesses that depend on pass-by traffic. While some businesses could lose customers, traffic and access issues are not compensable under federal law. That is, businesses affected by changes in traffic (such as bypassed business on old routes) are not eligible for loss-of-goodwill payments and other benefits.

Build Alternative 1a

The following discussion pertains only to potential impacts to the study area communities defined for Build Alternative 1a because community services were collectively addressed previously for all of the Build alternatives (page 3-125).

Build Alternative 1a would be located in the communities of Winchester, Rural Winchester, Emerging Hemet, Tres Cerritos Hills, Emerging San Jacinto, Emerging Sunrise, and Gateway Specific Plan/River. It would be east of the community of Green Acres. The assessment of impacts to the Emerging Hemet, Tres Cerritos Hills, Emerging San Jacinto, and the Gateway Specific Plan/River communities would be the same for all of the Build alternatives, and these impacts were discussed at the beginning of this section (page 3-123). The permanent impacts of Build Alternative 1a to the communities of Winchester, Rural Winchester, Green Acres, and Emerging Sunrise are discussed below.

Winchester Community

Build Alternative 1a would be located in agricultural, commercial/industrial, residential, rural residential, and services/facilities areas in the southeastern corner of the Winchester Community. This alternative would realign an existing roadway in a small, rural community that currently has few signalized intersections and a number of unpaved local streets. It would include noise barriers at specific locations to address noise abatement requirements. The character of the Winchester Community would be impacted because the proposed Project would alter the appearance and geographic setting. However, implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 1a would be located along the eastern edge of residential development in Winchester. Therefore, it would not be expected to affect community cohesion because it would not divide one part of the community from another and would not impede social interaction among residents or introduce a barrier that results in a division, disruption, or isolation of the community. The community would not be isolated because the Project would provide transportation infrastructure for improved regional access to the community and surrounding areas.

Rural Winchester Community

Build Alternative 1a would be located in agricultural, commercial/industrial, residential, rural residential, services/facilities, and undeveloped areas of the Rural Winchester Community. This alternative would place a realigned existing roadway in a rural area that is dotted with agricultural lands, dirt farm roads, and rural residential homes. Portions of the roadway would be constructed on embankment, and interchanges or bridges would be required at a number of locations. The highest structure would be a bridge, approximately 20 m (65 ft) high, proposed at Stowe Road. The bridge would dominate views from nearby areas and block views of more distant elements of the landscape. This alternative would include noise barriers at specific locations to address noise abatement requirements. In addition, this alternative would require substantial roadway cuts through a ridge at the Project terminus in the southern portion of Rural Winchester, as well as through the western exterior of the West Hemet Hills, located in the northern portion of Rural Winchester. Removal of substantial amounts of these existing hillsides would be readily visible to Rural Winchester and surrounding communities. Build Alternative 1a would alter the appearance and geographic setting of the predominantly flat, rural area and, therefore, would affect the character of the community. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 1a would traverse the central portion of the Rural Winchester Community and pass through residential and rural residential development. It would require that access be removed along SR 79/Winchester Road, north and south of Domenigoni Parkway and along East Grand Avenue and Milan Road west of Stueber Lane. As a result, Build Alternative 1a would divide the community of Rural Winchester and could impede social interaction and isolate residents, thereby affecting the cohesion of this rural community. Implementation of the mitigation measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) would address potential permanent impacts to community cohesion.

Green Acres Community

Build Alternative 1a would be located in the West Hemet Hills of Rural Winchester, which are east of the Green Acres Community. This alternative would include a substantial roadway cut through the western exterior of the hills. Removal of a substantial amount of this hillside would be readily visible to the Green Acres Community. Build Alternative 1a would alter the appearance and geographic setting of Rural Winchester, as viewed from Green Acres, thereby affecting the character of the Green Acres Community. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 1a would not be expected to affect community cohesion because it would not divide one part of the Green Acres Community from another and would not impede social interaction among the residents or introduce a barrier that results in a division, disruption, or isolation of the community. Existing local access within the community would not be modified. This alternative would provide transportation infrastructure for improved regional access to the community and surrounding areas. Therefore, Build Alternative 1a would not affect community cohesion.

Emerging Sunrise Community

Build Alternative 1a would be located in agricultural, rural residential, services/facilities, and undeveloped areas of the Emerging Sunrise Community. The proposed Project would realign an existing roadway in agricultural areas of the community. Portions of the roadway would be constructed on embankment, and interchanges or bridges would be required at a number of locations. The highest structures would be interchanges, approximately 8 m (26 ft) high, proposed at Cottonwood and Sanderson Avenues. These interchanges would dominate views from nearby areas and block views of more distant elements of the landscape. Build Alternative 1a would be uncharacteristic of the existing landscape. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 1a would be located in the western portion of this agricultural community, where agricultural lands dominate the landscape. Commercial and residential development occurs away from the alignment, east along Sanderson Avenue and south along Cottonwood Avenue. The nearest residential development would be immediately east of Build Alternative 1a, along Cottonwood Avenue, and is surrounded by agricultural lands that serve as barriers to social interaction with other residential parts of the Emerging Sunrise Community. Therefore, Build Alternative 1a is not expected to affect the cohesion of the Emerging Sunrise Community. This Build alternative would be constructed to provide access at Esplanade Avenue, Cottonwood Avenue, and a future roadway (to be constructed as part of a separate project). It would not impede access or mobility within the community or introduce a barrier that would result in a division, disruption, or isolation of the community.

Build Alternative 1b

The following discussion pertains only to potential impacts to the study area communities intersected by Build Alternative 1b. Community services were collectively addressed previously for all of the Build alternatives (page 3-125).

Build Alternative 1b would be located in the communities of Rural Winchester, Emerging Hemet, Tres Cerritos Hills, Emerging San Jacinto, Emerging Sunrise, and Gateway Specific Plan/River. It would be east of the communities of Winchester and Green Acres. Because the assessment of impacts to the Emerging Hemet, Tres Cerritos Hills, Emerging San Jacinto, and the Gateway Specific Plan/River communities would be the same for all the Build alternatives, these communities were discussed at the beginning of this section (page 3-123). The permanent impacts of Build Alternative 1b to the communities of Winchester, Rural Winchester, Green Acres, and Emerging Sunrise are discussed below.

Winchester Community

Build Alternative 1b would be located in the flat, agricultural and rural residential areas of Rural Winchester, which are east of the Winchester Community. This alternative would realign an existing roadway in a rural area that is dotted with agricultural lands, dirt farm roads, and residential homes. Build Alternative 1b would require substantial cuts through a ridge at the Project terminus in the southern portion of Rural Winchester, thus would alter the appearance and geographic setting of Rural Winchester as viewed by the Winchester Community. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 1b would not be expected to affect community cohesion because it would be located outside and to the east of the Winchester Community. This alternative would not divide one part of the Winchester Community from another and would not impede social interaction among residents or introduce a barrier that would result in a division, disruption, or isolation of the community. The community would not be isolated because the Project would provide transportation infrastructure for improved regional access to the community and surrounding areas.

Rural Winchester Community

Build Alternative 1b would be located in agricultural, commercial/industrial, residential, rural residential, services/facilities, and undeveloped areas of the Rural Winchester Community. This alternative would realign an existing roadway in a rural area that is dotted with agricultural lands, dirt farm roads, and rural residential homes. Portions of the roadway would be constructed on embankment, and interchanges or bridges would be required at a number of locations. The highest structure would be a bridge, approximately 20 m (65 ft) high, proposed at Stowe Road. The bridge would dominate views from nearby areas and block views of more distant elements of the landscape. This alternative would include noise barriers at specific locations to address noise abatement requirements. In addition, this alternative would include substantial roadway cuts through a ridge at the Project terminus in the southern portion of Rural Winchester, as well as through the center of the West Hemet Hills, located in the northern portion of Rural Winchester. Removal of substantial amounts of these existing hillsides would be readily visible to Rural Winchester and surrounding communities. Build Alternative 1b would alter the appearance and geographic setting of the predominantly flat, rural area and, therefore, would affect the character of the community. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 1b would traverse the central portion of the Rural Winchester Community and would pass through residential and rural residential development. It also would require that access be removed north and south of Domenigoni Parkway and along East Grand Avenue and Milan Road, west of Stueber Lane. As a result, Build Alternative 1b would divide the community of Rural Winchester and could impede social interaction and isolate residents, thereby affecting the cohesion of this rural community. Implementation of the mitigation measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) would address potential permanent impacts to community cohesion.

For access at Simpson Road and Olive Avenue, Build Alternative 1b would bridge SR 79 over Simpson Road, allowing east-west access along Simpson Road to continue during and after Project construction, and would bridge SR 79 over Salt Creek Channel, allowing east-west access along Olive Avenue to continue during and after Project construction.

Green Acres Community

Build Alternative 1b would be located in the West Hemet Hills of Rural Winchester, which are east of the Green Acres Community. This alternative would include a substantial roadway cut through the western exterior of the hills. Removal of a substantial amount of this hillside would be readily visible to the Green Acres Community. Build Alternative 1b would alter the appearance and geographic setting of Rural Winchester, as viewed from Green Acres, thereby affecting the character of the Green Acres Community. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 1b would not be expected to affect community cohesion because it would not divide one part of the Green Acres Community from another and would not impede social interaction among residents or introduce a barrier that results in a division, disruption, or isolation of the community. Existing local access within the community would not be modified. This alternative would provide transportation infrastructure for improved regional access to the community and surrounding areas. Therefore, Build Alternative 1b would not affect community cohesion.

Emerging Sunrise Community

Build Alternative 1b would be located in agricultural, rural residential, services/facilities, and undeveloped areas of the Emerging Sunrise Community. The proposed Project would realign an existing roadway in a flat, agricultural area of the community. Portions of the roadway would be constructed on embankment, and interchanges or bridges would be required at a number of locations. The highest structures would be interchanges, approximately 8 m (26 ft) high, proposed at Cottonwood and Sanderson Avenues. These interchanges would dominate views from nearby areas and block views of more distant elements of the landscape. Build Alternative 1b would be uncharacteristic of the existing landscape and would alter the appearance and geographic setting. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 1b would be located in the eastern portion of this community, where agricultural lands dominate the landscape. Commercial and residential development, which is the most sensitive to effects on cohesion, occurs away from the alignment, east along Sanderson Avenue and south along Cottonwood Avenue. The nearest residential development is located immediately east of the alternative, along Cottonwood Avenue, and is surrounded by agricultural lands that serve as barriers to social interaction with other residential parts of the Emerging Sunrise Community. Therefore, Build Alternative 1b is not expected to affect the cohesion of the Emerging Sunrise Community. This alternative would be constructed to provide access at Esplanade Avenue, Cottonwood Avenue, and Sanderson Avenue. It would not impede access or mobility within the community.

Design Option 1b1

The impacts associated with Design Option 1b1 would be the same as those presented for Build Alternative 1b, except that Design Option 1b1 includes additional access between SR 79/Winchester Road and realigned SR 79. The northbound off-ramp and southbound on-ramp connections at East Newport Road that are proposed in association with Design Option 1b1 would provide more direct access to and from realigned SR 79 in the community of Rural Winchester than would be provided under the base condition. As a result of the direct access connection between realigned SR 79 and Winchester Road, community access between Winchester and Rural Winchester and outside areas would be improved with Design Option 1b1 compared to Build Alternative 1b. The improved access associated with Design Option 1b1 would help Winchester retain its identity as a separate community rather than being absorbed into a larger community.

In addition, the access at Olive Avenue and Simpson Road would differ from Build Alternative 1b. Design Option 1b1 would place cul-de-sacs on Olive Avenue and Simpson Road on either side of realigned SR 79, discontinuing east-west access along these local streets.

Build Alternative 2a

The following discussion pertains only to potential impacts to the study area communities intersected by Build Alternative 2a. Community services were collectively addressed previously for all of the Build alternatives (page 3-125).

Build Alternative 2a would be located in the communities of Winchester, Rural Winchester, Emerging Hemet, Tres Cerritos Hills, Emerging San Jacinto, Emerging Sunrise, and Gateway Specific Plan/River. It would be east of the community of Green Acres. The assessment of impacts to the Emerging Hemet, Tres Cerritos Hills, Emerging San Jacinto, and the Gateway Specific Plan/River communities would be the same for all the Build alternatives, and these impacts were discussed at the beginning of this section (page 3-123). The permanent impacts from Build Alternative 2a to the communities of Winchester, Rural Winchester, Green Acres, and Emerging Sunrise are discussed below.

Winchester Community

Build Alternative 2a would be located in agricultural, commercial/industrial, residential, rural residential, and services/facilities areas in the southeastern corner of the Winchester Community. The proposed Project would realign an existing roadway in a small, rural community that currently has few signalized intersections and a number of unpaved local streets. The character of the Winchester Community would be impacted because the proposed Project would alter the appearance and geographic setting. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 2a would be located along the eastern edge of residential development in Winchester. Therefore, it would not be expected to affect community cohesion because it would not divide one part of the community from another and would not impede social interaction among residents or introduce a barrier that would result in a division, disruption, or isolation of the community. The community would not be isolated because the Project would provide transportation infrastructure for improved regional access to the community and surrounding areas.

Rural Winchester Community

Build Alternative 2a would be located in agricultural, commercial/industrial, residential, rural residential, services/facilities, and undeveloped areas of the Rural Winchester Community. The proposed Project would realign an existing roadway in a rural area that is characterized by agricultural lands, dirt farm roads, and rural residential homes. Portions of the roadway would be constructed on embankment, and interchanges or bridges would be required at a number of locations. The highest structure would be a bridge, approximately 20 m (65 ft) high, proposed at Stowe Road. The bridge would dominate views from nearby areas and block views of more distant elements of the landscape. In addition, this alternative would include substantial roadway cuts through a ridge at the Project terminus in the southern portion of Rural Winchester, as well as through the western exterior of the West Hemet Hills, which are located in the northern portion of Rural Winchester. Removal of substantial amounts of these existing hillsides would be readily visible to Rural Winchester and surrounding communities. Build Alternative 2a would alter the appearance and geographic setting of the predominantly flat, rural area and, therefore, would affect the character of the community. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 2a would traverse the central portion of the Rural Winchester Community and pass through residential and rural residential development. It would require that access be removed along SR 79/Winchester Road, north and south of Domenigoni Parkway, and along East Grand Avenue and Milan Road, west of Stueber Lane. Although Build Alternative 2a would divide the community of Rural Winchester, crossings that would be built at almost every existing roadway would minimize the potential effect on cohesion.

Green Acres Community

Build Alternative 2a would be located in the West Hemet Hills of Rural Winchester, which are east of the Green Acres Community. This alternative would include a substantial roadway cut through the interior of the hills. However, the western exterior of the West Hemet Hills would remain in place for Build Alternative 2a and would physically and visually shield the roadway from the Green Acres Community and would not impact the appearance or geographic setting. Therefore, community character would not be affected.

Build Alternative 2a would not be expected to affect community cohesion because it would not divide one part of the Green Acres Community from another and would not impede social interaction among residents or introduce a barrier that results in a division, disruption, or isolation of the community. Existing local access within the community would not be modified. This alternative would provide transportation infrastructure for improved regional access to the community and surrounding areas. Therefore, Build Alternative 2a would not impact community cohesion.

Emerging Sunrise Community

Build Alternative 2a would be located in agricultural, rural residential, services/facilities, and undeveloped areas of the Emerging Sunrise Community. The proposed Project would realign an existing roadway in the flat, agricultural areas of the community. Portions of the roadway would be constructed on embankment, and interchanges or bridges would be required at a number of locations. The highest structures would be interchanges, approximately 8 m (26 feet) high, proposed at Cottonwood Avenue and Sanderson Avenue. These interchanges would dominate views from nearby areas and block views of more distant elements of the landscape. Build Alternative 2a would be uncharacteristic of the existing landscape and would alter the appearance and geographic setting. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 2a would be located in the western portion of this agricultural community, where agricultural lands dominate the landscape. Commercial and residential development, which is the most sensitive to effects on cohesion, occurs away from the alignment, east along Sanderson Avenue and south along Cottonwood Avenue. The nearest residential development is located immediately east of this alternative, along Cottonwood Avenue, and is surrounded by agricultural lands that serve as barriers to social interaction with other residential parts of the Emerging Sunrise Community. Therefore, Build Alternative 2a is not expected to affect the cohesion of the Emerging Sunrise Community. Build Alternative 2a would be constructed to provide access at Esplanade Avenue and Cottonwood Avenue and to a future roadway (to be constructed as part of a separate project). It would not impede access or mobility within the community.

Build Alternative 2b

The following discussion pertains only to potential impacts to the study area communities intersected by Build Alternative 2b. Community services were collectively addressed previously for all of the Build alternatives (page 3-125).

Build Alternative 2b would be located in the communities of Rural Winchester, Emerging Hemet, Tres Cerritos Hills, Emerging San Jacinto, Emerging Sunrise, and Gateway Specific Plan/River. It would be east of the communities of Winchester and Green Acres. Because the assessment of impacts to the Emerging Hemet, Tres Cerritos Hills, Emerging San Jacinto, and the Gateway Specific Plan/River communities would be the same for all the Build alternatives, the impacts to these communities were discussed at the beginning of this section (page 3-123). The permanent impacts of Build Alternative 2b to the communities of Winchester, Rural Winchester, Green Acres, and Emerging Sunrise are discussed below.

Winchester Community

Build Alternative 2b would traverse the flat, agricultural and rural residential areas of Rural Winchester to the east of the Winchester Community. The proposed Project would realign an existing roadway in a rural area that is dotted with agricultural lands, dirt farm roads, and residential homes. In addition, the new roadway would include substantial cuts through a ridge at the Project terminus in the southern portion of Rural Winchester. Build Alternative 2b would alter the appearance and geographic setting of Rural Winchester as viewed by the Winchester Community. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 2b would not be expected to affect community cohesion because it would be located outside and to the east of the community of Winchester. This alternative would not divide one part of the community from another and would not impede social interaction among residents or introduce a barrier that results in a division, disruption, or isolation of the community. The community would not be isolated because the Project would provide transportation infrastructure for improved regional access to the community and surrounding areas.

Rural Winchester Community

Build Alternative 2b would be located in agricultural, commercial/industrial, residential, rural residential, services/facilities, and undeveloped areas of the Rural Winchester Community. The proposed Project would realign an existing roadway in a rural area that is dotted with agricultural lands, dirt farm roads, and rural residential homes. Portions of the roadway would be constructed on embankment, and interchanges or bridges would be required at a number of locations. The highest structure would be a bridge, approximately 20 m (65 ft) high, proposed at Stowe Road. The bridge would dominate views from nearby areas and block views of more distant elements of the landscape. This alternative would include substantial roadway cuts through a ridge at the

Project terminus in the southern portion of Rural Winchester, as well as through the center of the West Hemet Hills, located in the northern portion of Rural Winchester. Removal of substantial amounts of these existing hillsides would be readily visible to Rural Winchester and surrounding communities. Build Alternative 2b would alter the appearance and geographic setting of the predominantly flat, rural area and, therefore, would affect the character of the community. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 2b would traverse the central portion of the Rural Winchester community and pass through residential and rural residential development. It would remove access along East Grand Avenue and Milan Road, west of Stueber Lane. As a result, Build Alternative 2b would divide the community of Rural Winchester and could impede social interaction and isolate residents, thereby affecting the cohesion of this rural community. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) would address potential permanent impacts to community cohesion.

With Build Alternative 2b, access would be removed along SR 79/Winchester Road north and south of Domenigoni Parkway and along East Grand Avenue and Milan Road west of Stueber Lane. For access at Simpson Road and Olive Avenue, Build Alternative 2b would bridge SR 79 over Simpson Road, allowing east-west access along Simpson Road to continue during and after Project construction, and would bridge SR 79 over Salt Creek Channel, allowing east-west access along Olive Avenue to continue during and after Project construction.

Green Acres Community

Build Alternative 2b would be located east of the Green Acres Community, traversing Rural Winchester in the nearby West Hemet Hills. This alternative would include a substantial roadway cut through the interior of the hills. However, the western exterior of the West Hemet Hills would remain in place for Build Alternative 2b and would physically and visually shield the roadway from the Green Acres Community and would not impact the appearance or geographic setting. Therefore, no community character impacts would occur.

Build Alternative 2b would not be expected to affect community cohesion because it would not divide one part of the Green Acres Community from another and would not impede social interaction among residents or introduce a barrier that results in a division, disruption, or isolation of the community. Existing local access within the community would not be modified. This alternative would provide transportation infrastructure for improved regional access to the community and surrounding areas. Therefore, Build Alternative 2b would not impact community cohesion.

Emerging Sunrise Community

Build Alternative 2b would be located in agricultural, rural residential, services/facilities, and undeveloped areas of the Emerging Sunrise Community. The proposed Project would realign an existing roadway in a flat, agricultural area of the community. Portions of the roadway would be constructed on embankment, and interchanges or bridges would be required at a number of locations. The highest structures would be interchanges, approximately

8 m (26 ft) high, proposed at Cottonwood Avenue and Sanderson Avenue. These interchanges would dominate views from nearby areas and block views of more distant elements of the landscape. Build Alternative 2b would be uncharacteristic of the existing landscape and would alter the appearance and geographic setting. In addition, this alternative would include noise barriers at specific locations to address noise abatement requirements. Implementation of the measures discussed under Avoidance, Minimization, and/or Mitigation Measures in this section (page 3-138) and in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would address potential permanent impacts to community character.

Build Alternative 2b would be located in the eastern portion of this agricultural community, where agricultural lands dominate the landscape. Commercial and residential development, which is the most sensitive to effects on cohesion, occurs away from the alignment, east along Sanderson Avenue and south along Cottonwood Avenue. The nearest residential development is located immediately east of the alternative, along Cottonwood Avenue, and is surrounded by agricultural lands that serve as barriers to social interaction with other residential parts of the Emerging Sunrise Community. Therefore, Build Alternative 2b is not expected to affect the cohesion of the Emerging Sunrise Community. The alternative would be constructed to provide access at Esplanade Avenue, Cottonwood Avenue, and Sanderson Avenue. It would not impede access or mobility within the community.

Design Option 2b1

The impacts associated with Design Option 2b1 would be the same as those presented for Build Alternative 2b, except that Design Option 2b1 includes additional access between SR 79/Winchester Road and realigned SR 79. The northbound off-ramp and southbound on-ramp connections at East Newport Road proposed in association with Design Option 2b1 would provide more direct access to and from realigned SR 79 within the community of Rural Winchester than would be provided under the base condition. In addition, as a result of the direct access connection between realigned SR 79 and Winchester Road, community access between Winchester and Rural Winchester and outside areas would be improved with Design Option 2b1 compared to Build Alternative 2b. The improved access associated with Design Option 2b1 would help Winchester retain its identity as a separate community rather than being absorbed into a larger community.

At Olive Avenue and Simpson Road, however, Design Option 2b1 would place cul-de-sacs on either side of realigned SR 79, discontinuing east-west access along these local streets.

Temporary Impacts

Community character and cohesion impacts resulting from construction of the proposed roadway within the study area communities defined for the Project generally are considered to be permanent because the Project roadway, utility relocation areas, and connections to Hemet Channel would remain after construction is complete. However, temporary impacts to community character and cohesion would occur if construction activities affect circulation patterns or access to or from community services as a result of temporary road closures or detours that limit access or parking.

No Build Alternative

The No Build Alternative would be located outside the communities identified for the Project and would not be associated with any Project-related construction. Without construction, no temporary impacts related to community services would occur. However, the existing roadway would continue to operate at reduced or degraded levels of service, which could disrupt access to and from services. Although there are no specific plans for improving existing SR 79 in Hemet and San Jacinto, it is reasonable to expect incremental improvements along Florida Avenue and San Jacinto Street. These would result in temporary impacts to access to community services, but would not provide the comprehensive solution to traffic problems that a relocated highway would provide. Likewise, local communities have plans to improve roadways on the western boundaries of Hemet and San Jacinto to at least four-lane arterials. While these proposed projects would provide improved access to developable lands, the access would be mostly along an east-west axis and would not provide relief to regional traffic heading primarily north and south. There would, however, be temporary construction impacts to access to community services.

All Build Alternatives and Design Options

Potential temporary impacts to community character and cohesion would be similar regardless of the Build alternative or design option that is identified as the Preferred Alternative and, therefore, are discussed for the collective Project as opposed to a specific Build alternative or design option.

The Build alternatives and design options would require short-term and long-term traffic detours. Short-term traffic detours within existing rights-of-way would be necessary at various SR 79 bridge crossings of local streets and could occur in any of the communities identified for the Project. Bridge construction activities would include the construction and removal of bridge falsework and other short-term construction activities. Short-term traffic detours would be required for street closures that occur up to a maximum of 10 consecutive nights and for no more than 8 hours per night at each location over the duration of Project construction. Several short-term traffic detours are expected at bridge sites over the duration of Project construction. Because these detours would occur within established transportation corridors for short periods (less than 30 days) and would be limited to nighttime hours, they would not be expected to affect community character or cohesion.

Construction of the Devonshire Avenue bridge over the new roadway would require traffic to be detoured onto California Avenue, SR 74/Florida Avenue, and Warren Road. These long-term detours would occur in the Emerging Hemet and Tres Cerritos Hills communities. Although the detours would be long term (more than 30 consecutive days), they would occur within established transportation corridors that are part of the existing local circulation system and would not divide or disrupt the study area communities defined for this analysis. However, long-term detours would produce temporary disruption of circulation patterns that might adversely affect access to community service facilities located within the study area, including the following schools:

Hemet Unified School District

- Cawston Elementary School
- Winchester Elementary School

- Diamond Valley Middle School
- Santa Fe Middle School
- Alessandro Continuation High School
- West Valley High School

San Jacinto Unified School District

- Clayton A. Record, Jr. Elementary School
- De Anza Elementary School
- Mountain View High School
- San Jacinto High School

Project construction would temporarily disrupt community character and cohesion due to the number of construction vehicles accessing the Project site via the existing local street and highway system. The Project would balance earthwork cuts and fills, limiting the need to bring in fill materials. Excavated materials would be used onsite, and haul routes would be inside the Project ROW. This would limit the number of construction vehicles using the local street system. For this reason, impacts due to construction-related traffic are expected to be minimal. Additionally, the balanced cut-and-fill combined with the limited need to demolish existing structures along a new alignment means that there would be little solid waste to haul to the Lamb Canyon Landfill.

Implementation of the measures discussed below would address potential temporary impacts to community character and cohesion resulting from access restrictions to community services.

Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

Potential impacts associated with the No Build Alternative would not be Project related and would not require mitigation.

All Build Alternatives and Design Options

Implementation of the measures presented below would address permanent and temporary impacts to community character and cohesion from the Build alternatives and design options.

COM-1 **Establish Pedestrian/Bike/Equestrian Paths.** The Riverside County Transportation Commission (RCTC) will be responsible for the design of pedestrian/bike/equestrian paths for the East Newport Road overcrossing and Olive Avenue and Stowe Road undercrossings of realigned SR 79.

Community Services

COM-2 **School District Coordination**. RCTC will be responsible for contacting the Hemet and San Jacinto Unified School Districts to confirm the school attendance areas that would be bisected by the Project. Once affected schools are identified, coordination will be conducted to avoid disruption of access.

COM-3 **Traffic Management Plan for Access**. The Traffic Management Plan prepared for the Project will identify traffic control measures (construction cones, signs, etc.) and detour routes to manage circulation during construction and maintain adequate access to community services. It will also include outreach and public communication plans.

COM-4 **Recycling during Operations**. The Department will be responsible for managing Project operation and maintenance activities to ensure that refuse, debris, and landscape trimmings will be reused or recycled at a suitable recycling facility as appropriate. This will reduce the amount of material disposed at Lamb Canyon Landfill.

Study Area Communities

The Project would involve substantial removal of existing hillsides and creation of large and visually prominent cut slopes. These impacts would occur primarily in hilly areas of the Rural Winchester Community (south of Domenigoni Parkway and in the West Hemet Hills), but would be visible to surrounding communities. The measures listed in Visual/Aesthetics Section 3.1.7.4 (page 3-244) would be implemented to address impacts to community character associated with the creation of high embankments, large cut slopes, large overcrossings, and noise barriers.

3.1.4.2 Relocations and Real Property Acquisitions

Regulatory Setting

The Department's Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix D (Volume 2) for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 United States Code [USC] 2000d, et seq.). Please see Appendix C (Volume 2) for a copy of the Department's Title VI Policy Statement.

Affected Environment

The discussion and analysis in this section is based on the environmental review and analysis completed for the Draft Relocation Impact Report of July 2010 and the Community Impact Assessment (CIA) of August 2010.

The Project is associated with relocations and partial acquisitions of residential and nonresidential properties. Relocations would occur when acquisition of a property results in the displacement of occupants. Partial acquisitions would occur when acquisition of a property is limited to a small area and where full use of the remaining property and structures could continue. The effect of property acquisitions can best be determined when considered in the context of the community or population potentially affected—specifically, characteristics such as population, growth, housing and property values, and local government fiscal resources.

Both primary and secondary sources were consulted for collection of information to support the discussion of relocations and real property acquisitions. These included public agencies, newspapers, public documents, Multiple Listing Service (MLS), Western Riverside Council of Governments (WRCOG 2006), Loop-Net, Win2Data, and Data Quick Services, local real estate professionals, and right-of-way (ROW) estimates.

Population and Growth

The Project would be located in southwestern Riverside County, an area that is experiencing rapid development and population growth. The population of western Riverside County is expected to increase by 73 percent, from the 2000 population of 1,545,387 (Census 2000) to an estimated 2,675,648, by 2020 (CDOF 2004). The cities of Hemet and San Jacinto also are experiencing rapid growth. The city of Hemet population of 58,812 in 2000 (Census 2000) is expected to increase to 138,496 by 2020 (SCAG 2004), while the city of San Jacinto is expected to increase from 23,779 in 2000 (Census 2000) to 37,197 in 2020 (SCAG 2004). Additional population and growth characteristics of the Project study area are provided in Sections 3.1.1, Land Use (page 3-7), and 3.1.2, Growth (page 3-66).

Housing and Property Values

According to the Draft Relocation Impact Report of July 2010, the Project area is one of mixed residential and commercial use. The replacement neighborhoods studied for the Draft Relocation Impact Report were in the unincorporated community of Winchester and the cities of Hemet and San Jacinto. The area housing stock varies greatly, from low-income housing to premium-acreage horse properties. Housing is a combination of new and older homes, both single-family and mobile homes. The housing is primarily single family, with a median value of $450,000; median gross rent is $618. Of the 886 housing units studied in Winchester, Hemet, and San Jacinto, 73 percent were owner occupied and 27 percent were renter occupied. Eleven percent of the housing units were for sale.

Fiscal Resources

The discussion of fiscal resources presents data that are readily available from the State of California, Riverside County, City of Hemet, and City of San Jacinto.

Riverside County

General Fund revenues and expenditures for Riverside County for fiscal years 2003 through 2006 are provided in Table 3.1-22. During this period, revenue from property taxes contributed about 12 percent annually to overall General Fund revenue. Sales and use taxes, on the other hand, were responsible for about 1.3 percent of the annual General Fund revenue.

Table 3.1-22 Riverside County General Fund Revenue and Expenditures (in Thousands $)

	Fiscal Years			
	2003	2004	2005	2006
Revenue				
Taxes	258,596	305,132	346,248	457,117
Property	209,978	242,646	268,266	328,332
Sales and Use	22,444	26,633	33,091	37,532
Other	26,174	35,853	44,891	91,253
Licenses, Permits, and Franchise Fees	25,677	26,418	22,343	21,733
Fines, Forfeitures, and Penalties	37,241	43,297	70,578	62,984
Use of Money and Property	63,164	48,097	77,455	115,636
Aid from Federal Government	428,433	430,970	446,628	451,036
Aid from State Government	696,466	713,146	705,289	830,634
Aid from other Governmental Agencies	46,099	46,750	55,661	69,042
Charges for Services	327,918	368,497	383,497	439,594
Other Revenue	132,900	100,404	146,800	110,870
Total Revenues	2,016,494	2,082,711	2,254,499	2,558,646
Expenditures				
General Government	204,861	217,416	250,568	270,340
Public Protection	613,781	677,798	1,039,822	855,133
Public Ways and Facilities	120,490	133,973	111,088	141,017
Health and Sanitation	339,123	365,727	339,444	346,738
Public Assistance	570,458	576,267	652,069	629,553
Education	9,261	10,241	9,889	11,108
Recreation and Culture	10,722	9,242	20,058	12,727
Debt Service	68,863	56,641	80,891	119,223
Cost	-	504	9,283	4,925
Capital	22,489	1,604	9,680	25,639
Total Expenditures	**1,960,048**	**2,049,413**	**2,522,792**	**2,416,403**

Source: Riverside County Center for Demographic Research/Transportation and Land Management Agency. *Riverside County Projections, 2006*, December 2006

In California, sales tax is assessed on purchases at the point of sale. The sales tax rate is set by the California Board of Equalization (BOE) and is typically updated on April 1 and/or October 1. As of April 1, 2007, the sales tax rate for Riverside County and the cities within the county was 7.75 percent. Of this amount, 6.25 percent goes to the state, 1 percent goes to the place of sale, and the remaining 0.5 percent goes to special districts (BOE 2007).

Property taxes are typically assessed at the county level and are limited to a base rate of 1 percent by Proposition 13 (Article 13A of the California state constitution). However, the actual property tax rate assessed on a particular property might include an amount for debt service on any bonds approved by popular vote.

City of Hemet

City of Hemet fiscal year General Fund revenue and expenditures for fiscal years 1995/96 through 2004/05 are shown in Table 3.1-23 (page 3-143). During this period, annual City revenue from property taxes averaged about 12 percent of the overall General Fund revenue. The contribution of revenue from other taxes (sales taxes, hotel occupancy taxes, property transfer taxes, franchise taxes, etc.) averaged about 40 percent of the total General Fund revenue during the same period.

Table 3.1-23 City of Hemet – General Fund Revenue and Expenditures (in Thousands $)

	Fiscal Year									
	1995/1996	**1996/1997**	**1997/1998**	**1998/1999**	**1999/2000**	**2000/2001**	**2001/2002**	**2002/2003**	**2003/2004**	**2004/2005**
Revenue										
Property Taxes	2,547	2,399	2,545	2,597	2,742	2,685	2,787	3,055	3,371	3,325
Other Taxes	5,464	5,712	6,847	7,484	8,789	9,587	9,262	10,306	11,097	13,034
Licenses and Permits	313	420	412	661	1,004	1,059	951	1,945	2,652	4,842
Intergovernmental Revenue	2,305	2,408	2,512	2,910	3,429	3,729	3,782	3,928	3,238	5,521
Charges for Current Services	3,452	3,652	3,519	3,855	3,958	3,658	4,303	2,873	4,465	5,256
Fines, Forfeits, and Penalties	94	81	109	376	735	382	307	475	405	351
Investment Income	293	260	274	270	458	581	354	259	260	340
Miscellaneous	395	1,295	111	161	288	431	701	392	481	577
TOTAL	**14,863**	**16,227**	**16,329**	**18,314**	**21,403**	**22,114**	**22,447**	**23,233**	**25,969**	**32,886**
Expenditures										
General Government	1,630	1,709	1,877	2,064	2,211	2,305	2,685	291	38	605
Public Safety	11,411	11,600	11,382	11,996	13,139	13,704	16,317	18,012	19,653	23,289
Community Development	1,441	1,453	1,571	1,625	2,060	2,269	2,518	3,123	3,428	3,944
Public Works	1	5	5	5	238	2	11	1	0	0
Parks	313	316	618	663	692	743	839	891	748	836
Library	859	919	1,002	1,097	1,031	1,166	1,259	1,321	1,744	1,933
Capital Projects	101	108	295	145	1,378	853	956	533	110	86
Debt Services	25	142	153	153	152	154	302	305	186	23
TOTAL	**15,881**	**16,252**	**16,903**	**17,748**	**19,901**	**21,196**	**24,887**	**24,477**	**25,907**	**30,716**

Source: Hemet 2005

City of San Jacinto

City of San Jacinto fiscal year 2007/08 General Fund revenue by source is shown in Table 3.1-24. Unlike the City of Hemet, statistics on General Fund revenue and expenditures over a number of fiscal years were not readily available for the City of San Jacinto. The fiscal year 2007/08 data show that the City expected to receive about $17.56 million in General Fund revenue. Of this amount, $2.36 million (13.4 percent) was expected to be in the form of property taxes, while $1.85 million (10.5 percent) was expected to be from sales tax revenue.

Table 3.1-24 City of San Jacinto 2007/08 Revenue by Source ($)

	Fiscal Year 2007/08
Revenue by Source	–
Property and Property Transfer Tax	2,360,600
Sales Tax	1,850,000
Franchise Tax and Licenses	1,155,000
Construction and Public Works Permits	1,700,000
Other Revenue	2,102,528
Motor Vehicle Licenses	3,221,435
Planning/Building Fees	1,137,395
Admin Overhead Allocation	2,775,637
Inter-Fund Transfers In/Grants	1,262,290
Total Revenue	17,564,885

Source: San Jacinto 2007

Environmental Consequences

With Department oversight, RCTC would be responsible for implementing and administering the Department Relocation Assistance Program for the Project (see Appendix D [Volume 2]). The program is based on the following federal and state laws.

Several federal and state laws govern property acquisition procedures. The Uniform Relocation Assistance and Real Properties Acquisition Policies Act of 1970 (Uniform Act), as amended, mandates that certain relocation services and payments be made available to eligible residents, businesses, and nonprofit organizations displaced as a direct result of programs or projects undertaken by a federal agency or with federal financial assistance. The Uniform Act provides for uniform and equitable treatment of persons displaced from their homes or businesses who are eligible for assistance and establishes uniform and equitable land acquisition policies. Generally, the Uniform Act requires that all aspects of property acquisition, including notice, appraisal, negotiation, and payment, be as reasonable and fair as possible and be handled as expeditiously as practicable.

According to Section 6018 of the Relocation Assistance and Real Property Acquisitions Guidelines (CCR 25, Section 1.6), the provisions of the California Relocation Act (Government Code Sections 7260-7277) shall apply in the absence of federal funds and/or involvement if a public entity undertakes a project and consequently must provide relocation assistance and benefits. The California Relocation Act, which is consistent with the intent and guidelines of the Uniform Act, seeks to ensure the consistent and fair treatment of owners of real property, encourage and expedite acquisitions by agreement to avoid litigation and relieve congestion in the courts, and promote confidence in public land acquisitions.

The Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 requires both financial assistance and programmatic assistance to eligible displaced persons, businesses, and nonprofits, as described below.

Financial Assistance

Eligible displaced businesses and nonprofit organizations are entitled to compensation for reasonable moving expenses, direct losses of tangible personal property (not to exceed the cost of moving such property), expenses of searching for replacement property, and expenses of reestablishing a small business or nonprofit organization (not to exceed $10,000). In lieu of the foregoing payments, a displaced business or nonprofit can elect to receive a fixed relocation assistance payment of between $1,000 and $20,000.

Programmatic Assistance

Eligible displaced persons, businesses, and nonprofit organizations are entitled to certain programmatic assistance in addition to monetary compensation. This assistance takes the form of coordinated relocation planning and counseling and may include recommendations on replacement housing or new business locations, information on other government assistance programs, and any other advisory services that may minimize the hardships of relocation. Programmatic assistance also would include the provision of certain “last resort” housing in the event that comparable replacement housing that is decent, safe, and sanitary is not available to displaced persons.

Direct Impacts

A permanent relocation impact would occur if a home or business were displaced by the Project. A displacement would result in residents moving their households and businesses moving their inventory and customer base to a different location. In some cases, these relocations could have positive results and in other cases, negative results.

No Build Alternative

Under the No Build Alternative, there would be no ROW acquisition and, therefore, no Project-related relocations or effect on property values or property tax revenue.

All Build Alternatives and Design Options

The discussion of direct and indirect permanent relocation impacts is presented below for the Build alternatives and design options. Specific Build alternative discussions are provided to quantify the number of displacements, as appropriate. However, impacts that are the same from all Build alternatives are discussed collectively for the Project.

Although each Build alternative would result in the loss of a few homes and businesses, ongoing development in this fast-growing area would offset any related loss of property-tax revenue. No net loss of tax revenue to local jurisdictions would be likely.

The number of anticipated residential and commercial displacements would vary by Project alternative, as discussed below.

Build Alternative 1a

Build Alternative 1a would result in the displacement of 42 residential units, composed of 26 single-family homes and 16 mobile homes. An estimated 134 residents would be displaced. In addition, 14 commercial units, composed of 5 retail, 2 nonprofit, and 7 service establishments, with a total of 89 employees, would be displaced. No farm buildings would be displaced.

Build Alternative 1b and Design Option 1b1

Build Alternative 1b would result in the displacement of 37 residential units, composed of 22 single-family homes and 15 mobile homes. An estimated 106 residents would be displaced. In addition, 14 commercial units, composed of 5 retail, 1 nonprofit, and 8 service establishments, with a total of 90 employees, would be displaced. No farm buildings would be displaced.

Build Alternative 2a

Build Alternative 2a would result in displacement of 39 residential units, composed of 17 single-family homes and 22 mobile homes. An estimated 107 residents would be displaced. In addition, 14 commercial units, composed of 5 retail, 2 nonprofit, and 7 service establishments, with a total of 89 employees, would be displaced. No farm buildings would be displaced.

Build Alternative 2b and Design Option 2b1

Build Alternative 2b would result in displacement of 29 residential units, composed of 14 single-family homes and 15 mobile homes. An estimated 75 residents would be displaced. In addition, 13 commercial units, composed of 4 retail, 1 nonprofit, and 8 service establishments, with a total of 86 employees, would be displaced. No farm buildings would be displaced.

Summary of Direct Impacts

The largest number of residential displacements would occur with Build Alternative 1a (42 displacements), while the least would occur with Build Alternative 2b and Design Option 2b1 (29 displacements). These displacements are shown in Table 3.1-25 (page 3-148).

According to the Draft Relocation Impact Report of July 2010, the housing stock available in neighboring communities would be sufficient for finding comparable replacement dwellings that satisfy the decent, safe, and sanitary standards for relocating the displaced residents from the impacted area. As stated earlier, the primary and secondary sources used in the compilation of the report included public agencies, newspapers, public documents, the MLS, WRCOG (2006), and local real estate professionals. Using March 2007 MLS data, the report states that a total of 101 housing units (83 single family, 14 mobile homes, and 4 multiple family) were for sale out of the 886 total housing units available. In addition, a total of 100 housing units were for rent. The percentage of single-family and multiple-family units available for sale was 3 percent and for rent was 4 percent. Mobile homes had 2 percent for sale and 5 percent for rent. Given the growth and diversity of the residential market, and the low number of residential displacements, the report concludes that, "Adequate resources (availability, funds, staffing, time) exist for all displaces." The replacement area used as the basis for relocation resources is in Winchester, Hemet, and San Jacinto. In addition, a supplemental review of the current housing stock was reviewed in 2012 (Realtor 2012a). It indicated that a total of 621 single-family residences (370 Hemet, 143 San Jacinto, 108 Winchester) and 186 mobile homes (158 Hemet, 20 San Jacinto, 8 Winchester) were currently for sale. This additional information supports the market availability in the San Jacinto Valley, which is expected to remain adequate through the time of the displacement. The Project is not expected to significantly impact the local housing stock, and no unique issues are expected.

Direct impacts on commercial displacement are expected to occur and would vary by business type, location of existing property, and site for relocation. They could include reduction in commercial businesses activities, including sales, accessibility for deliveries/distribution, number of employees, and size or condition of replacement building and/or facility. The number of commercial displacements required for the construction of the proposed Project would generally be about the same among all the Build alternatives. A total of 14 displacements would occur with Build Alternatives 1a or 1b, Design Option 1b1, or Build Alternative 2a. A total of 13 displacements would occur with Build Alternative 2b or Design Option 2b1. These displacements are shown in Table 3.1-25 (page 3-148). The types of commercial displacements would include retail, nonprofit, and service providers. Similar to the number of total displacements by Build alternative, the types of commercial displacements would also be consistent among the Build alternatives. It is not expected that the commercial business could continue to operate if these relocations would not occur. It is possible that commercial businesses could relocate to the commercial districts in Hemet and San Jacinto (along Florida Avenue or San Jacinto Street). If the commercial business would require a larger parcel for relocation, land would be available in the western portions of the San Jacinto Valley. The number of employees displaced would also be consistent and are 86 (Build Alternative 1b and Design Option 1b1), 89 (Build Alternatives 1a and 2a), and 90 (Build Alternative 2b and Design Option 2b1). Given the low number of commercial displacements and the market availability of commercial properties, adequate resources exist for all displaces. The replacement area is considered in Winchester, Hemet, and San Jacinto. The Project is not expected to significantly impact the commercial property stock, and no unique issues are expected. In addition, a supplemental review of the current commercial property stock took place in 2012 (Realtor 2012b). It indicated that a total of 40 commercial properties (26 Hemet, 12 San Jacinto, 2 Winchester) were currently for sale. This additional information supports the market availability in the San Jacinto Valley, which is expected to remain adequate through the time of the displacement. Because acquisition and relocation services have not been initiated with owners, the details concerning commercial relocations have not been finalized. Owner preferences are expected to weigh on the relocation decisions for each commercial property. However, it would be expected that these relocations would occur.

Table 3.1-25 Number of Displacements by Project Alternative

Affected Environment	**Build Alternative 1a** Roadway Segments A, E, G, I, J, L, N	**Build Alternative 1b (including Design Option 1b1)** Roadway Segments B, C, G, I, K, M, N	**Build Alternative 2a** Roadway Segments A, F, H, I, K, L, N	**Build Alternative 2b (including Design Option 2b1)** Roadway Segments B, D, H, I, J, M, N
Residential Units				
Single Family	26	22	17	14
Multifamily	0	0	0	0
Mobile Home	16	15	22	15
Total Residential Units	42	37	39	29
Number of Residents	134	106	107	75
Commercial Units				
Retail	5	5	5	4
Nonprofit	2	1	2	1
Service	7	8	7	8
Total Commercial Units	14	14	14	13
Number of Employees	89	90	89	86
Total Units Displaced	56	51	53	42
Total Persons Displaced[a]	223	196	196	161

Source: Community Impact Assessment, August 2010

[a]Some of these persons also may be residential displacements.

Indirect Impacts

No Build Alternative

Under the No Build Alternative, there would be no ROW acquisition and, therefore, no Project-related relocations or effect on property values or property tax revenue.

All Build Alternatives and Design Options

Permanent relocations would be required as part of ROW acquisition for the Project and could result in indirect impacts to property values and property tax revenue. In addition, the Project would require relinquishment of existing SR 79 to the local jurisdictions (Riverside County, City of Hemet, and City of San Jacinto), which could affect their revenue flows. Because indirect impacts would be the same for all alternatives, the discussion below is for the Project rather than for individual alternatives.

The Project is expected to have few, if any, economic impacts from relocations. The number of potential relocations would be small, and the real estate market is large. The impact would be distributed over an area stretching from Winchester to San Jacinto at a minimum. Potential relocation areas are comparable to the displacement areas. The unincorporated area of Winchester and the cities of Hemet and San Jacinto have adequate housing stock available that would satisfy the decent, safe, and sanitary standards for relocating persons displaced from the impacted area.

In undeveloped zones, commercial land value may increase significantly as use changes from agricultural to commercial. In the case of residential property development in undeveloped zones, the value of a development on the town side of a bypass was found not to differ appreciably from that in the city at large unless the undeveloped property had poor highway access (WSTC 1980). The value of potential residential development on the other side of the bypass might be less because the undeveloped zone is perceived to be cut off from town (Portland 1999).

The Department would relinquish responsibility for continued operation and maintenance of the portions of the existing roadway that are no longer SR 79 to the appropriate local governments (County of Riverside, City of Hemet, and City of San Jacinto). Local governments would need to accommodate these changes in their financial planning, programming, and operating budgets.

Temporary Impacts

There would be no temporary impacts resulting from Project relocations. Therefore, all potential relocation impacts associated with the Project would be considered permanent impacts.

Avoidance, Minimization, and/or Mitigation Measures

A relatively small number of relocations would be required as a result of this Project. The unincorporated area of Winchester and the cities of Hemet and San Jacinto have adequate housing stock available that would satisfy the decent, safe, and sanitary standards for relocating residents who are displaced from the impacted area.

Permanent Impacts

Implementation of the measure presented below would address permanent impacts from the Build alternatives and design options.

RELOC-1 **Relocation Assistance**. The Riverside County Transportation Commission (RCTC), as the agency responsible for relocations, will implement and administer, with Department oversight, the California Department of Transportation Relocation Assistance Program to provide relocation assistance or compensation to eligible persons and businesses in accordance with the federal Uniform Relocation Assistance and Property Acquisition Act of 1970, as amended (42 United States Code Sections 4601-4655) and the California Relocation Act (California Government Code, Section 7260 et. seq.).

Temporary Impacts

There would be no Project-related temporary impacts associated with either the No Build Alternative or Build alternatives. Therefore, no avoidance, minimization, and/or mitigation measures are required.

3.1.4.3 Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2000, the year of the most recent available Census data, this was $16,700 for a family of four. For 2007, the baseline year for the analyses in this report, this was $21,203 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. The Department's commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C (Volume 2) of this document.

Affected Environment

This analysis documents whether the Project may potentially result in disproportionately high and adverse impacts to minority and low income populations. The study area for evaluating potential environmental justice impacts consists of the census block groups that would be within 0.8 km (0.5 mi) of Project Build alternatives. Census blocks are the smallest geographic unit for which socioeconomic data (e.g., race, ethnicity, household income, etc.) are reported by the United States Census Bureau. Census block groups are composed of several census blocks and are the smallest geographic unit for which the Census reports income data.

Data from the 2000 Census on minority and low-income populations was used. The United States Census Bureau provides a definition of minority and low-income populations. Minority populations, for purposes of EO 12898, include both racial minorities and ethnic minorities. Racial minorities are people with the following origins: Black/African American, American Indian and Alaskan Native, Asian, and Native Hawaiian and other Pacific Islander. Individuals who identify themselves as Hispanic[5] are considered ethnic minorities. Low-income populations were identified as those that are below the poverty line established by the United States Department of Health and Human Services poverty guidelines—noted previously as $16,700 for a family of four in 2000.

The proportions of racial and ethnic minority populations were calculated for all census block groups. Similarly, the proportion of low-income population was calculated for all census block groups.

As shown in Table 3.1-26, the environmental justice study area for the Project had a total population of 18,595 in 2000. Of this number, 18.0 percent were members of a racial minority, and 22.8 percent were of members of an ethnic (Hispanic) minority. Because some individuals are probably members of both groups, the total population is the sum of the two racial groups, “White” and “Racial Minority,” in Table 3.1-26. Compared to the environmental justice study area, the racial minority population is slightly higher in the city of Hemet (19.5 percent) and more than 10 percent higher in the city of San Jacinto (31.4 percent), in Riverside County (34.5 percent), or in the state of California (40.6 percent). The proportion of Hispanics in the study area (22.8 percent) is virtually identical to proportion of Hispanics in Hemet (23.0 percent) and substantially less than San Jacinto (40.9 percent), Riverside County (36.2 percent), or the state (32.4 percent). There are proportionately fewer racial minorities and ethnic (Hispanic) minorities in the study area than in any of the comparative geographic areas.

Table 3.1-26 Distribution of Racial and Ethnic (Hispanic) Minority Populations in the Environmental Justice Study Area

Geographic Area	Total	White	Racial Minority[a]	Ethnic (Hispanic) Minority[b]
Study Area	18,595	15,252 82.0%	3,343 18.0%	4,239 22.8%
Hemet	58,770	47,338 80.5%	11,432 19.5%	13,585 23.1%
San Jacinto	23,923	16,418 68.6%	7,505 31.4%	9,583 40.3%
Riverside County	1,545,387	1,011,508 65.5%	533,879 34.5%	559,575 36.2%
California	33,871,648	20,122,959 59.4%	13,748,689 40.6%	10,969,132 32.4%

Source: 2000 United States Census – Summary File 1 (SF 1) 100-Percent Data

[a]Non-Hispanic Minority includes the following U.S. Census Categories: Black, American Indian, Alaskan Native, and Native Hawaiian and other Pacific Islander.

[b]Hispanic Minority includes those people who classified themselves on the US Census questionnaire as Mexican-American, Chicano, Mexican, Mexicano, Puerto Rican, Cuban, Central or South American, or other Hispanic. Members of this group may be of any race and are therefore also counted in one of the race-related categories. Ethnic (Hispanic) Minority should not be added to the Racial Minority.

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5 Hispanics or Latinos are those people who classified themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the Census 2000 questionnaire – “Mexican, Mexican American, Chicano,” “Puerto Rican,” or “Cuban,” as well as those who indicated that they are ”other Spanish/Hispanic/Latino.” Members of this group may be of any race.

Table 3.1-27 presents the distribution of racial and ethnic (Hispanic) minorities in each of the roadway segments and shows which census block groups would be contained in each roadway segment. Roadway Segments C (Build Alternative 1a) and E (Build Alternative 1b) would have the highest proportion of racial minorities at 21.5 percent. Roadway Segments C and E would also have the highest proportion of the Hispanic ethnic minority (30.5 percent). Segment B would have the lowest proportion of racial minorities (16.3 percent) and ethnic (Hispanic) minorities (17.1 percent).

Table 3.1-27 Census Block Groups and Racial and Ethnic Minority Populations Present in Each Roadway Segment

Roadway Segment	Includes CBGs[a]	Total	White	Racial Minority[b]	Ethnic (Hispanic) Minority[c]
A	427.12.1 427.22.2	6,200	5,081 82.0%	1,119 18.0%	1,349 21.8%
B	427.12.1	4,960	4,150 83.7%	810 16.3%	849 17.1%
C	427.22.2 427.23.2	3,430	2,694 78.5%	736 21.5%	1,046 30.5%
D	427.23.2	2,190	1,763 80.5%	427 19.5%	546 24.9%
E	427.23.2	3,430	2,694 78.5%	736 21.5%	1,046 30.5%
F	427.22.2 427.23.2	2,190	1,763 80.5%	427 19.5%	546 24.9%
G	427.22.2 427.23.2	2,190	1,763 80.5%	427 19.5%	546 24.9%
H	427.21.2 427.23.2	4,332	3,479 80.3%	853 19.7%	1,094 25.3%
I	427.21.2 435.04.2	4,827	3,901 80.8%	926 19.2%	1,099 22.8%
J	427.21.2 435.04.2 435.10.2	2,279	1,797 78.9%	482 21.1%	666 29.2%
K	427.21.2 435.04.2 435.10.2	7,106	5,698 80.2%	1,408 19.8%	1,765 24.8%
L	435.10.2	2,279	1,797 78.9%	482 21.1%	666 29.2%
M	435.10.2	2,279	1,797 78.9%	482 21.1%	666 29.2%
N	435.10.1	2,279	2,710 78.9%	482 21.1%	666 18.7%

Source: 2000 United States Census – Summary File 1 (SF 1) 100-Percent Data

[a]Census Block Group

[b]Racial Minority includes the following U.S. Census Categories: Black, American Indian, Alaskan Native, and Native Hawaiian and other Pacific Islander. Also included are people who identified as two or more races or with some other race. Also included are people who identified themselves as two or more races or with some other race. Ethnic (Hispanic) Minority should not be added to the Racial Minority.

[c]Hispanic Minority includes those people who classified themselves on the U.S. Census questionnaire as Mexican-American, Chicano, Mexican, Mexicano, Puerto Rican, Cuban, Central or South American, or other Hispanic. Members of this group may be of any race and are therefore also counted in one of the race-related categories.

The racial/ethnic minority population in the study area is shown by Build alternative in Table 3.1-28. In 2000, 18,595 people were living in the CBGs within 0.8 km (0.5 mi) of where Build Alternative 1a, Build Alternative 1b (including Design Option 1b1), and Build Alternative 2a would be. Of these, 3,343 persons (18.0 percent) were members of a racial minority, and 4,239 persons (22.8 percent) were members of an ethnic (Hispanic) minority.

There were 17,355 people living in the CBGs within 0.8 km (0.5 mi) of where Build Alternative 2b (including Design Option 2b1) would be. Of these, 3,034 people (17.5 percent) were members of a racial minority, and 3,739 people (21.5 percent) were members of an ethnic (Hispanic) minority. All Build alternatives would have a minority population lower than those of Hemet, San Jacinto, Riverside County, or the state of California.

Table 3.1-28 Distribution of Racial and Ethnic (Hispanic) Minority Populations in the Environmental Justice Study Area

Build Alternative	Total	White	Racial Minority[a]	Ethnic (Hispanic) Minority[b]
1a	18,595	15,252 82.0%	3,343 18.0%	4,239 22.8%
1b (including Design Option 1b1)[c]	18,595	15,252 82.0%	3,343 18.0%	4,239 22.8%
2a	18,595	15,252 82.0%	3,343 18.0%	4,239 22.8%
2b (including Design Option 2b1)[c]	17,355	14,321 82.5%	3,034 17.5%	3,739 21.5%

Source: 2000 United States Census – Summary File 1 (SF 1) 100-Percent Data

[a]Racial Minority includes the following U.S. Census Categories: Black, American Indian, Alaskan Native, and Native Hawaiian and other Pacific Islander.

[b]Hispanic Minority includes those people who classified themselves on the U.S. Census questionnaire as Mexican-American, Chicano, Mexican, Mexicano, Puerto Rican, Cuban, Central or South American, or other Hispanic. Members of this group may be of any race and are counted within one of the race-related categories. Ethnic (Hispanic) Minority should not be added to the Racial Minority.

[c]Information presented for the base condition of Build Alternatives 1b and 2b is the same for Design Options 1b1 and 2b1. Because there is no variation between the base condition and the design options, the information is given only once.

The distribution of low-income population in the study area and for the cities of Hemet and San Jacinto, Riverside County, and the state is shown in Table 3.1-29 (page 3-154). In keeping with standard U.S. Census practice, some institutional residents, such as inmates and college students, are excluded from poverty computations, so the total population in Table 3.1-29 is slightly less than those shown in some previous tables. The total population for whom poverty was determined in 2000 in the environmental justice study area was 18,447. Of this number, 12.5 percent were low income. The low-income proportion of the population in the study area (12.5 percent) was less than in any of the comparative geographic areas.

Table 3.1-29 Distribution of Low-Income Population within the Environmental Justice Study Area and in Comparative Geographic Areas

Area	Total Population[a]	Low-Income Population	Percent Low Income
Study Area	18,447	2,304	12.5%
City of Hemet	57,626	9,374	16.3%
City of San Jacinto	23,704	4,803	20.3%
Riverside County	1,511,153	214,084	14.2%
California State	33,100,044	4,706,130	14.2%

Source: 2000 United States Census

[a]Population numbers are those for whom poverty was determined and exclude institutional residents such as inmates and full-time college students, which is standard Census Bureau practice.

Table 3.1-30 provides the distribution of low-income populations in each of the roadway segments. Roadway Segments J (Build Alternatives 1a and 2b), L (Build Alternatives 1a and 2a), M (Build Alternatives 1b and 2b), and N (all Build alternatives) would have the highest proportion of low-income residents, at 17.0 percent. Roadway Segment B (Build Alternatives 1b and 2b) would have the lowest proportion of low-income residents, at 7.0 percent. Eight of these roadway segments would have a higher proportion of low-income populations than found in Hemet, but the differences are all less than 1.0 percent. All roadway segments would have a lower proportion of low-income residents than San Jacinto. Eight of the roadway segments would have a higher proportion of low-income residents than is found statewide or countywide.

Table 3.1-30 Distribution of Low-Income Population within the Roadway Segments

Roadway Segment	Total Population[a]	Low-Income Population	Percent Low Income
A	5,965	441	7.4%
B	4,765	334	7.0%
C	3,406	472	13.9%
D	2,206	365	16.5%
E	3,406	472	13.9%
F	2,206	365	16.5%
G	2,206	365	16.5%
H	4,419	732	16.6%
I	4,914	628	12.8%
J	2,285	388	17.0%
K	7,199	1,016	14.1%
L	2,285	388	17.0%
M	2,285	388	17.0%
N	2,285	388	17.0%

Source: 2000 United States Census

[a]Population numbers are those for whom poverty was determined and exclude institutional residents such as inmates and full-time college students, which is standard Census Bureau practice.

The distribution of low-income population within the study area is shown by Build alternative in Table 3.1-31. Each of these numbers is lower than the comparable categories for Hemet, San Jacinto, the county, and the state (Table 3.1-29 [page 3-154]).

Table 3.1-31 Distribution of Low-Income Population within the Study Area by Project Alternative

Build Alternative	Total Population[a]	Low-Income Population	Percent Low Income
1a	18,447	2,304	12.5%
1b (including Design Option 1b1)[b]	18,447	2,304	12.5%
2a	18,447	2,304	12.5%
2b (including Design Option 2b1)[b]	17,247	2,197	12.7%

Source: 2000 United States Census

[a]Population numbers are those for whom poverty was determined and exclude institutional residents such as inmates and full-time college students, which is standard Census Bureau practice.

[b]Information presented for the base condition of Build Alternatives 1b and 2b is the same for Design Options 1b1 and 2b1. Because there is no variation between the base condition and the design options, the information is given only once.

Low-income populations are present in the study area, but they are less prevalent than they are in the nearby comparative areas such as Hemet and San Jacinto or in the larger comparative areas such as Riverside County and the state.

Environmental Consequences

To determine whether the Project could have a "disproportionately high and adverse impact" on minority and low-income populations, various factors were considered, including potential adverse impacts, both temporary and permanent. Temporary adverse impacts are impacts that could result from construction of the facility and supporting infrastructure. Permanent adverse impacts are impacts that could result from operation of the facility. Potential permanent adverse impacts were evaluated in regard to relocation and ROW acquisition, traffic and transportation, air quality, noise and vibration, visual/aesthetics, hazardous materials, and cultural resources.

No Build Alternative

The No Build Alternative assumes that no roadway improvements would be made to the portion of SR 79 between Domenigoni Parkway and Gilman Springs Road, except those projects currently included in the general plans of Riverside County, the City of Hemet, and the City of San Jacinto. As a result, there would be no Project-related change along this portion of SR 79. The No Build Alternative would have no impacts, either positive or negative, on minority populations or low-income populations who live in the Project vicinity.

All Build Alternatives and Design Options

The data above (in the Affected Environment section [page 3-150]) illustrates that the proportion of racial minorities, ethnic (Hispanic) minorities, and low-income populations that would be affected by the Build alternatives (including the two design options) would be consistently less than in the County of Riverside and the state of California. With limited exceptions, none of which are statistically significant, a comparable proportional relationship exists between the Project and the cities of Hemet and San Jacinto.

Technical studies and analyses that address noise and vibration, traffic and transportation, air quality, hazardous materials, cultural resources, and relocation and ROW acquisition have been performed for this Project. These studies and analyses were reviewed to determine whether any of the Project alternatives would have disproportionately high and adverse impacts on minority and low-income population groups. Although the Project is expected to result in some impacts, these impacts would affect all demographic components of the population in the Project area equally. No disproportionately high and adverse impacts to minority or low-income populations have been identified in conjunction with the Project.

Likewise, the Project would have offsetting benefits that would accrue equally to all demographic components in the community. Residents, businesses, and visitors would be afforded a more reliable and safer highway. A critical link in the local and regional circulation system would be improved. For details about the Project benefits, see the purpose and need discussions in Section 1.2 (page 1-4).

Conclusion

This determination of environmental consequences is based on the results of the technical studies conducted for the proposed Project. It also takes the following into consideration:

- The similarity of impacts to minority and low-income populations compared to the general population
- The effectiveness of proposed avoidance, minimization, and/or mitigation measures and Project enhancements being applicable to all portions of the population in the Project area equally
- The offsetting benefits of the transportation facility being equally applicable to all portions of the population in the Project area

Therefore, no disproportionately high and adverse effect on minority and/or low-income population groups would result from any of the Project Build alternatives or design options.

Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, the Project will not cause disproportionately high and adverse effects on any minority or low-income populations per EO 12898 regarding environmental justice. Accordingly, no measures would be required.

3.1.5 Utilities/Emergency Services

Resource-specific study areas have been defined for utilities and emergency services. The utilities study area consists of the direct impact areas of the Project, which include the PIA, utilities relocation areas, connections to Hemet Channel outside the Project ROW, and traffic detours. The emergency services study area is defined as the direct impact areas of the Project, plus an additional 3.22 km (2 mi).

Information was collected for the utilities study area through direct coordination with utility providers. Limited field verification surveys were conducted from 2005 to 2007 for:

- Cable television
- Electricity
- Natural gas
- Sewer
- Telephone
- Water

The utilities information is considered to be the most accurate available information at the time it was collected (Righetti 2006).

Information was collected for emergency services through initial written contact in 2004 and 2005, plus subsequent confirmation via telephone contact and website research in 2007 for:

- Fire protection
- Police protection
- Hospitals

3.1.5.1 Affected Environment

The discussion and analysis of utilities/emergency services is based on the environmental review and conclusions presented in the CIA of August 2010. The study areas identified for utilities/emergency services contain a number of facilities and associated service areas in the cities of Hemet and San Jacinto and unincorporated areas of Riverside County. Utilities are shown in Figure 3.1-21a through f. Emergency services facilities in or near the Project area are shown in Figure 3.1-22.

Utilities

For this analysis, the local utilities and providers are as follows:

- Cable television service – Time Warner Cable
- Electricity service – Southern California Edison (SCE)
- Natural gas service – Southern California Gas Company (SCG)
- Water service – Eastern Municipal Water District (EMWD)
- Water conveyance – Metropolitan Water District of Southern California (MWD)
- Sewer service – EMWD
- Telephone service – Verizon
- Railroad – San Jacinto Branch Line (RCTC)

Privately owned cellular communications towers are located in the southern portion of the Project study area. The towers would be in Roadway Segment G (Build Alternative 1a or 1b, Design Option 1b1), as shown in Figure 3.1-21b.

Emergency Services

Emergency services include fire, police, and hospitals.

Fire Protection

- City of Hemet Fire Department (HFD)
- Riverside County Fire Department (RCFD), including contracted fire protection for the City of San Jacinto, and in cooperation with the California Department of Forestry and Fire Protection (CAL FIRE)

Police Protection

- California Highway Patrol (CHP)
- City of Hemet Police Department (HPD)
- Riverside County Sheriff's Department (RCSD), including contracted police protection for the City of San Jacinto

Hospitals

- Hemet Valley Medical Center

Although the Project would be in the areas served by these providers, some of the actual facilities, such as police and fire stations, would be located outside the Project area.

Fire Protection

Fire departments that service the study area are shown in Figure 3.1-22, and are listed in Table 3.1-32.

Table 3.1-32 Fire Departments

Facility	Address
Services Facilities within the Study Area	
Ryan Air Attack Base	4710 W. Stetson Avenue, Hemet
Hemet Station #3	4110 W. Devonshire Avenue, Hemet
Hemet Station #4	4710 W. Stetson Avenue, Hemet
Winchester Fire Station #34	32655 Haddock Street, Winchester
West San Jacinto Fire Station #78	2450 W. Cottonwood Avenue, Hemet

Table 3.1-32 Fire Departments

Facility	Address
Services Facilities outside the Study Area	
Hemet Station #1 Headquarters	220 N. Juanita Avenue, Hemet
Hemet Station #2	895 W. Stetson Avenue, Hemet
Hemet Station #5	120 N. Hemet Street, Hemet
San Jacinto Fire Station #25	132 S. San Jacinto, San Jacinto

Source: Community Impact Assessment, August 2010

CAL FIRE operates Ryan Air Attack Base at Hemet-Ryan Airport, providing aerial fire protection with air tankers and helicopters in the study area. The attack base is staffed by 1 battalion chief, 5 fire captains, 7 pilots, 4 engineers, and 16 firefighters. The fleet consists of an air attack plane, two tankers, and one helicopter (RCFD 2003a).

HFD has a service area of approximately 6,734 ha (16,640 ac), encompassing the entire city of Hemet. The HFD operates five permanently staffed fire stations. All Hemet fire stations provide fire protection and emergency response in the study area, but only two stations are located inside the study area, Hemet Fire Station #3 and Hemet Fire Station #4. Station #3 is staffed by three people and provides one engine, one brush engine, one reserve engine, and a communications trailer. Station #4 is staffed by three people and provides one engine and one hazardous materials unit (HFD 2007). HFD and CAL FIRE have a mutual-aid agreement for CAL FIRE to service areas outside the city limits (Roth 2004, HFD 2007).

The RCFD Bautista Division provides fire protection to the Hemet Valley and the San Jacinto Mountain range, including the city of San Jacinto and unincorporated areas of Riverside County. Two permanently staffed Bautista Division fire stations are present in the study area, Winchester Fire Station #34 and West San Jacinto Fire Station #78, shown in Figure 3.1-22 (RCFD 2003b). Winchester Fire Station #34 provides one medic engine and one hazardous materials support unit. West San Jacinto Fire Station #78 provides one City engine (RCFD 2003c).

Police Protection

Police departments that service the study area are shown in Figure 3.1-22 and are listed in Table 3.1-33.

Table 3.1-33 Police Departments

Facility	Address
California Highway Patrol	195 Highland Springs Avenue, Beaumont
Hemet Police Department	45 E. Latham Avenue, Hemet
Hemet Station	43950 Acacia Avenue, Hemet
San Jacinto Police Department	160 W. Sixth Street, San Jacinto

Source: Community Impact Assessment, August 2010

The CHP provides traffic management for county roads and state highways in the study area and assists local law enforcement when necessary. The CHP Border Division, San Gorgonio Pass Office, is located outside the study area in the city of Beaumont (Finale 2004, CHP 2006).

The HPD has a service area of approximately 6,734 ha (16,640 ac), encompassing the entire city of Hemet. HPD has one main station located outside the study area that provides full police protection and emergency response and two substations, also located outside the study area, that are staffed by volunteers to handle minor community service matters. HPD has mutual-aid agreements for short-term emergency assistance with the RCSD, the Murrieta Police Department, and the CHP (HPD 2007).

The RCSD provides police protection and emergency response to unincorporated areas of Riverside County and contract cities, including the city of San Jacinto. RCSD has one permanently staffed police station located outside the study area in the unincorporated area of Riverside County, east of the city of Hemet (Hemet Station). Another permanently staffed police station is located outside the study area in the city of San Jacinto (San Jacinto Police Department) (RCSD 2007a, 2007b; Vest 2004).

Hospitals

Hemet Valley Medical Center provides 24-hour emergency and inpatient/outpatient medical care to the cities of Hemet and San Jacinto and unincorporated areas of Riverside County, including the study area (HVMC 2007). Hemet Valley Medical Center is located at 1117 East Devonshire Avenue, approximately 4.3 km (2.6 mi) east of the study area, as shown in Figure 3.1-22.

Project Alternatives

The following provides a summary of the affected environment for the Project alternatives.

No Build Alternative

Existing SR 79 is located within established right-of-way through some of the most heavily developed portions of the cities of Hemet and San Jacinto, but outside the study areas identified for utilities/emergency services. A number of underground and overhead utilities are located along the existing roadway, including, but not limited to, cable television, electricity, natural gas, sewer, telephone, and water. Existing SR 79 provides access to emergency services made available by fire and police departments and hospitals.

All Build Alternatives and Design Options

The affected environment for utilities and emergency services applies to all Build alternatives and design options.

Utilities

There are established cable television, electricity, natural gas, sewer, telephone, and water utilities in the area. The Colorado River Aqueduct (CRA), a major water-conveyance system, also traverses the study area. The San Jacinto Branch Line crosses the southern portion of the study area.

Emergency Services

The Build alternatives (including design options) would be located within 3.2 km (2.0 mi) of the services discussed below.

Fire Protection

Fire protection and emergency response are provided to the area by HFD and RCFD. It is expected that Hemet Fire Station #3, Winchester Fire Station #34, and West San Jacinto Fire Station #78 would provide service to the study area.

Police Protection

Police protection and emergency response services are provided by CHP, HPD, and RCSD.

Hospitals

Hemet Valley Medical Center provides medical care to the area.

3.1.5.2 Environmental Consequences

Permanent Impacts

Permanent direct impacts to utilities/emergency services are defined as the removal, alteration, or relocation of facilities or services in the Project direct impact area. A direct utility impact would occur to all utilities that intersect the Project, except for Project crossings of the CRA, which would be designed and constructed consistent with applicable Department and MWD standards. A direct services impact would occur to all services (and their associated properties) located in the Project direct impact area. However, no services or their associated properties exist in the Project direct impact area. Therefore, no permanent direct impacts to services would occur.

For this discussion, permanent indirect impacts to utilities/emergency services are defined as the disruption of access and/or use. Disruption of utility access and/or use would occur only in the Project direct impact area. No indirect impacts to utilities would occur. Indirect impacts to emergency services would be the disruption of access to and from a facility or its service area or an adverse effect on the performance of a service.

This section describes the potential permanent impacts of the Project alternatives.

No Build Alternative

The No Build Alternative assumes that no roadway improvements would be made to the portion of SR 79 between Domenigoni Parkway and Gilman Springs Road, except those projects currently included in the general plans of Riverside County, the City of Hemet, and the City of San Jacinto. As a result, there would be no Project-related change to utilities along this portion of SR 79. The No Build Alternative would not address current or projected traffic congestion, circulation, or safety problems related to SR 79 between Domenigoni Parkway and Gilman Springs Road. Without improvement, the existing roadway would continue to operate at reduced or degraded levels of service, which could disrupt access to and from services and adversely affect overall use and performance, including emergency response times.

All Build Alternatives and Design Options

Each of the Build alternatives and design options would have similar impacts to utilities and emergency services, as discussed below. Unless otherwise noted, the assessment of impacts is presented for the collective Project as opposed to a specific Build alternative or design option. Implementation of the measures discussed in Section 3.1.5.3 (page 3-165), would address permanent impacts to utilities and services.

Utilities

With the exception of the CRA, the utilities present in the Project ROW would be relocated to local streets or designated utility corridors outside the ROW. Department policy does not allow utilities within state ROW (Department 2003a). There would be no relocation of major utilities for the Project. The most efficient management of the relocation of minor utility lines will be coordinated during design. Cellular towers are located in the West Hemet Hills, where Roadway Segment G would pass. These towers would be relocated if Build Alternative 1a or 1b or Design Option 1b1 is identified as the Preferred Alternative.

All Project crossings of the CRA would be designed and constructed in accordance with Department and MWD design requirements. The roadway would never come into direct contact with the CRA facilities, nor would it put weight or pressure on these facilities that would adversely affect the structural integrity of the CRA system. Compliance with MWD design requirements would ensure that no alteration of facilities or interruption in service would occur as a result of building the Project. Implementation of the minimization measures discussed in Section 3.1.5.3 (page 3-165) would address potential permanent impacts associated with the relocation of other utilities to areas outside the Project ROW.

With Design Options 1b1 and 2b1, the Project would include a near-grade crossing of the San Jacinto Branch Line by the realigned SR 79 along Roadway Segments C and D. There would be no impact to the access along SR 79 because vehicles traveling along the roadway would not be stopped at the crossing. The SR 79 structural section would fill over the top of the existing tracks. It would not sever them, so that rail activity could continue in the future if necessary. There would be an impact to rail operations because the near-grade crossing would prohibit use of the rail line at the SR 79 crossing. However, RCTC, the owner of the rail line, has confirmed that it has not been in operation over the past 5 years. Implementation of minimization measure UTIL-3, discussed in Section 3.1.5.3 (page 3-165) would fully address potential operational impacts to the San Jacinto Branch Line.

Emergency Services

Overall, any of the Build alternatives would have a positive impact on emergency services. During construction, appropriate detours would be available, and all providers of emergency services would be aware of the Project, so no impact should occur. Following construction, the realigned road would provide better circulation both along the new alignment and through Hemet and San Jacinto, where removal of excess traffic would improve traffic flow.

Fire and Police Protection

The Project would traverse the service areas for the HFD and RCFD and could affect emergency response provided by Winchester Fire Station #34, Hemet Fire Stations #3 and #4, and West San Jacinto Fire Station #78. Because CAL FIRE operations at Ryan Air Attack Base are aerial rather than ground based, the Project would not interfere with these emergency operations.

The Project would traverse the service areas for the CHP, HPD, and RCSD. In addition, the CHP would be responsible for primary patrol of realigned SR 79. Implementation of the minimization measures discussed in Section 3.1.5.3 (page 3-165) would address these permanent impacts and ensure that response times would not be affected.

Design Options 1b1 and 2b1 would place cul-de-sacs on Olive Avenue and Simpson Road, on either side of realigned SR 79, discontinuing east-west access along these local streets, which has the potential to affect emergency services if these routes are used for emergency response. Equally good routes would continue to be available in the immediate vicinity, so adverse impacts would be unlikely. Implementation of measures SERV-1 and SERV-2, discussed in Section 3.1.5.3 (page 3-165), would address this impact.

With Design Options 1b1 and 2b1, the near-grade crossing of the San Jacinto Branch Line by SR 79 could affect emergency services. Traffic delays at this crossing could affect emergency response when the tracks are open. However, with the Project, the railroad crossing would be designed to be consistent with applicable safety and design standards. Implementation of the minimization measures discussed in Section 3.1.5.3 (page 3-165), would address this impact and ensure that response times would not be affected.

The completed SR 79 would provide an alternative transportation route that would enable traffic to travel longer distances at higher speeds, but it also would increase traffic volumes, which could impact fire and police response/patrol. Implementation of the minimization measures discussed in Section 3.1.5.3 (page 3-165), would address these potential permanent impacts and ensure that response times would not be negatively affected.

Hospitals

The Project should result in improved access to Hemet Valley Medical Center, which is located just north of Florida Avenue and just west of San Jacinto Street. The Project does not propose the construction of residences or other facilities that would result in an increased number of hospital patients or need for additional facilities. Therefore, no permanent impacts would occur.

Temporary Impacts

Temporary impacts to utilities/emergency services are defined as the disruption of access and/or service during Project construction. Disruption of utility service could occur within the direct impact area of the Project during utility relocations.

Temporary impacts to utilities/emergency services could occur if construction activities affect circulation patterns, such as with temporary road closures and detours that limit access or parking, or adversely affect the performance of a service. No services or their associated properties exist within the direct impact area of the Project. Therefore, no direct temporary impacts would occur.

The assessment of indirect temporary impacts is focused on the disruption of access to and from services and the continued ability of service providers to supply acceptable levels of service during Project construction.

The following section summarizes the potential temporary impacts from the Project alternatives.

No Build Alternative

The No Build Alternative would not cause temporary impacts to utilities/emergency services. Any impacts associated with the No Build Alternative would not be Project related.

All Build Alternatives and Design Options

Each of the Build alternatives and design options would have similar impacts to utilities and emergency services, as discussed below. Implementation of the minimization measures discussed in Section 3.1.5.3 (page 3-165), would address potential temporary impacts to these services.

Utilities

Construction of Project crossings over the CRA would not impede MWD water conveyance or service because this facility is beneath the ground surface. Although some excavation would be required for at-grade crossings of the CRA, the excavation would not come into direct contact with the CRA. The at-grade crossings would not put weight or pressure on the CRA that would adversely affect the structural integrity of the aqueduct system. Compliance with Department and MWD design requirements would ensure that no alteration of facilities or interruption in service would occur as a result of building the Project.

Cable television, electricity, natural gas, sewer, telephone, and water utilities could be temporarily disrupted during construction of the Project. Implementation of the minimization measures discussed in Section 3.1.5.3 (page 3-165), would address these potential temporary impacts.

Emergency Services

Fire and Police Protection

Project construction could temporarily disrupt circulation patterns and affect the ability of fire and police to respond to emergency calls. Fire protection that is provided by HFD and RCFD has the potential to be impacted. Because CAL FIRE operations at Ryan Air Attack Base are aerial based rather than ground based, the Project would not interfere with these emergency operations.

No police stations are located inside the study area. However, police protection provided by the CHP, HPD, and RCSD has the potential to be impacted if patrol routes are affected by traffic delays and detours during Project construction. Implementation of the minimization measures listed in Section 3.1.5.3 (page 3-165) would address these potential temporary impacts and ensure that emergency response times would not be affected.

Hospitals

No hospitals are located inside the study area. Project construction would be unlikely to disrupt circulation patterns or adversely affect access to Hemet Valley Medical Center even temporarily because it would be some distance from any construction activity. However, if access were impeded during Project construction, implementation of the measures listed in Section 3.1.5.3 (page 3-165) would help minimize the potential for even temporary impacts.

3.1.5.3 Avoidance, Minimization, and/or Mitigation Measures

Permanent Impacts

No Build Alternative

Potential impacts associated with the No Build Alternative would not be Project related and, therefore, would not require mitigation.

All Build Alternatives and Design Options

The Build alternatives and design options would require implementation of the minimization measures below to address permanent impacts.

Utilities

UTIL-1 **Coordination with Utility Companies.** During final design, RCTC will be responsible for conducting early coordination with utility companies to determine which utilities need to be relocated outside the proposed Project ROW. The Project Engineer will seek:

(1) To avoid utility relocations

(2) If relocation is necessary, to relocate utilities across the SR 79 right-of-way or within other existing public rights-of-way and/or easements

(3) If relocation is outside existing or proposed public right-of-way and/or easements, to relocate in a manner that will minimize environmental impacts from construction and ongoing maintenance and repair activities

UTIL-2 **Roadway Segment G Utility Tower Relocations.** RCTC will be responsible for the relocation of the two utilities towers within Roadway Segment G. This would require a new site that would provide for the same coverage as achieved by the current towers. This measure is contingent on Roadway Segment G being included in the Selected Alternative.

UTIL-3 **Temporary Detour for Railroad.** This measure will be implemented as necessary if either of the design options is identified as the Preferred Alternative. Given the infrequency of rail operations along the San Jacinto Branch Line, at least 2 weeks prior to the time when annual train operations must cross SR 79, RCTC will contact the Department in writing with detailed operational requirements (date, time, etc.) for the train crossing. In accordance with these stated requirements, the Department will design and implement a temporary detour from SR 79 onto local streets, including appropriate road blocks and signage, for no more than 8 consecutive nighttime hours in accordance with all Department design and safety standards. Once the temporary detour is in place, the Department will remove the portions of SR 79 that obstruct the railroad ROW, so that the train may safely cross the SR 79, in accordance with all applicable safety standards. Once the train has successfully crossed SR 79, the SR 79 roadway will be returned to predisturbance conditions consistent with all applicable Department design and safety standards, prior to being reopened to public travel. To address the impacts to traffic, a Transportation Management Plan will be developed to identify, sign, and/or notify the general public about the closure and detour routes. In addition, emergency service providers will be notified about closure locations to allow them to identify alternate routes for emergency response.

Emergency Services

SERV-1 **Coordination with Emergency Responders Prior to Opening Year (2015).** Prior to Opening Year (2015), RCTC will coordinate with the emergency responders listed below to ensure that, if necessary, response routes can be established or updated and additional personnel can be secured to ensure that emergency response in the Project area continues to meet applicable requirements.

- California Highway Patrol
- City of Hemet Fire Department
- City of Hemet Police Department
- Riverside County Fire Department (including contracted fire protection for the City of San Jacinto)
- Riverside County Sheriff's Department (including contracted police protection for the City of San Jacinto)

Temporary Impacts

No Build Alternative

Potential temporary impacts associated with the No Build Alternative would not be Project related and would not require mitigation.

All Build Alternatives and Design Options

The Build alternatives and design options would require implementation of the minimization measures presented below to address temporary impacts.

Utilities

UTIL-4 **Notification of Underground Service Alert.** The construction contractor will notify Underground Service Alert (USA) prior to Project construction to ensure that the location of all utility lines within the Project ROW are correctly marked prior to groundbreaking. Coordination with USA also would identify the presence of previously unknown or unmarked utilities, ensuring proper relocation and avoidance of existing utilities in Utility Relocation Area 2.

UTIL-5 **Utility Relocation.** Prior to construction, RCTC and the construction contractor will coordinate with the utility providers responsible for utility relocations to avoid interruption or disruption of service and in accordance with the Traffic Management Plan prepared for the Project to avoid impacts to circulation and emergency response times.

Emergency Services

Mitigation Measures

SERV-2 **Coordination of Temporary Detours with Emergency Responders.** Prior to and during construction, RCTC and the construction contractor will coordinate all temporary detour plans with the emergency responders listed below to ensure that, if necessary, affected response routes can be established or updated and additional personnel can be secured to ensure that emergency response in the Project area continues to meet applicable requirements.

- California Highway Patrol
- City of Hemet Fire Department
- City of Hemet Police Department
- Riverside County Fire Department (including contracted fire protection for the City of San Jacinto)
- Riverside County Sheriff's Department (including contracted police protection for the City of San Jacinto)

3.1.6 Traffic and Transportation/Pedestrian and Bicycle Facilities

3.1.6.1 Regulatory Setting

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

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally-assisted programs is governed by the USDOT regulations (49 CFR Part 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to Federal-aid projects, including Transportation Enhancement Activities.

3.1.6.2 Affected Environment

The discussion and analysis of traffic and transportation/pedestrian and bicycle facilities was developed based on the results of the Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009. In October 2012, the Department submitted a memorandum confirming that the November 2009 traffic analysis is still valid.

The Department is responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as the portion of the Interstate Highway System within state boundaries. The Department also is involved in the support of intercity passenger rail service in California, as well as the use of alternative modes of transportation.

Department District 8 encompasses Riverside and San Bernardino counties. The Department designs, constructs, and maintains the California State Highway System within the two counties. Thus, the Department is responsible for upgrading and maintaining SR 79.

Regional and Local Government

The Southern California Association of Governments (SCAG) is a council of governments for six counties, including Riverside County. SCAG is a regional planning agency and serves as a forum for regional issues relating to transportation, the economy and community development, and the environment. SCAG is responsible for developing the Regional Transportation Plan (RTP) and Federal Transportation Improvement Plan (FTIP) and performing the conformity analysis for transportation plans and projects (SCAQMD 1993). SCAG is required to develop, update, and maintain the RTP on a 4-year cycle based on the revised planning requirements set forth by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The FTIP is a listing of capital improvement transportation projects proposed over a 6-year period and is developed to implement the programs and projects contained in the RTP.

Policy C 2.1 of the Riverside County General Plan, Circulation Element, states that the County is to maintain the following countywide target levels of service (LOS):

> *LOS C along all County-maintained roads and conventional state highways. As an exception, LOS D may be allowed in Community Development areas, only at intersections of any combination of Secondary Highways, Major Highways, Arterials, Urban Arterials, Expressways, conventional state highways, or freeway ramp intersections. LOS E may be allowed in designated community centers to the extent that it would support transit-oriented development and walkable communities.*

No specific guidance is given for mainline freeway segments. Levels of service are defined in Table 3.1-35 (page 3-172).

Riverside County is a Transportation Management Area (TMA). RCTC functions as the Congestion Management Agency (CMA) under California requirements.

Section 500.103 of the Federal Management System defines TMA as an urbanized area with a population over 200,000 (as determined by the latest decennial census) or other area when TMA designation is requested by the governor and the Metropolitan Planning Organization (MPO) or affected local officials and officially designated by the administrators of the FHWA and the Federal Transit Administration (FTA). The TMA designation applies to the entire metropolitan planning area(s).

Under state law, the Congestion Management Programs (CMPs) are prepared and maintained by the respective CMAs. According to the 2007 Riverside County Congestion Management Program, the minimum LOS threshold in the County of Riverside is LOS E. Therefore, when a CMP street or highway falls to LOS F, a deficiency plan must be required. Preparation of a deficiency plan would be the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency would also be required to coordinate with the development of the plan. The plan must contain mitigation measures, including consideration of Transportation Demand Management (TDM) strategies and transit alternatives, as well as a schedule for mitigating the deficiency.

Both the City of Hemet and the City of San Jacinto maintain general plans for their cities. The City of San Jacinto has established a peak hour LOS D or better as acceptable for all intersections along the designated street and highway system in its Circulation Plan. Projects that may result in an increase in traffic must prepare a traffic analysis that evaluates long-term impacts of the project and any mitigation necessary to ensure that the project achieves or maintains the peak hour intersection LOS D standard.

Existing Traffic and Transportation Environment

Roadway Characteristics

Table 3.1-34 contains descriptions of roadway conditions based on field observations in December 2004. The number of travel lanes, the median type (if any), the speed limit, the jurisdiction, the ultimate general plan classification, and any remarkable circumstances are noted. Facilities with an ultimate classification of "Arterial" and above are included in Table 3.1-34.

Generally, the existing roadway has two or four total travel lanes and does not have raised medians.

Table 3.1-34 Roadway Conditions

Roadway	Jurisdiction	Median Type	Number of Lanes	Speed Limit (mph)	Ultimate General Plan Classification
Winchester Road (SR 79) between:					
1. Newport Road and Domenigoni Parkway	County of Riverside	Undivided	2	55	Expressway
2. Domenigoni Parkway and Simpson Avenue	County of Riverside	Undivided	2	55	Expressway
3. Simpson Avenue and Florida Avenue	County of Riverside	Undivided	2	45	Expressway

Table 3.1-34 Roadway Conditions

Roadway	Jurisdiction	Median Type	Number of Lanes	Speed Limit (mph)	Ultimate General Plan Classification
Florida Avenue (SR 74/SR 79) between:					
4. Amanda Avenue (just west of Winchester Road) and Winchester Road	County of Riverside	TWTL	4	55	Expressway
5. Winchester Road and Warren Road (SR 79)	County of Riverside/ City of Hemet	Undivided	4	55	Expressway
6. Warren Road and Sanderson Avenue (SR 79)	City of Hemet	TWTL	4	30	Expressway/Major
7. Sanderson Avenue and State Street (SR 79)	City of Hemet	TWTL	4	30	Major
8. State Street and San Jacinto Street (SR 79)	City of Hemet	TWTL	4	30	Major
9. San Jacinto Street and Columbia Street	County of Riverside	TWTL	4	30	Major
San Jacinto Street between:					
10. Mayberry Street and Florida Avenue	County of Riverside/ City of Hemet	Undivided	2	10	Secondary
11. Florida Avenue and East Oakland Avenue (SR 79)	City of Hemet	TWTL	4	30	Secondary
12. Menlo Avenue and Commonwealth Avenue (SR 79)	City of Hemet/City of San Jacinto	TWTL	4	30	Secondary
13. Esplanade Avenue and Seventh Street (SR 79)	City of San Jacinto	Undivided	4	45	Secondary
14. Seventh Street and Main Street (SR 79)	City of San Jacinto	TWTL	2	30	Secondary
Ramona Boulevard between:					
15. Main Street and State Street (SR 79)	City of San Jacinto	Undivided	2	30	Secondary
16. State Street and Sanderson Avenue	City of San Jacinto	Undivided	2	45	Secondary
State Street between:					
17. Mayberry Street and Florida Avenue	City of Hemet	Undivided	2	30	Secondary
18. Florida Avenue and Oakland Avenue	City of Hemet	Undivided	4	35	Secondary
19. Menlo Avenue and Esplanade Avenue	City of Hemet/City of San Jacinto	TWTL	4	40	Secondary/Major
20. Esplanade Avenue and Cottonwood Avenue	City of San Jacinto	TWTL	4	45	Major
21. Cottonwood Avenue and Ramona Boulevard	City of San Jacinto	TWTL	4	45	Major
22. Ramona Boulevard and Ramona Expressway (SR 79)	City of San Jacinto	Undivided	4	45	Major
Ramona Expressway between:					
23. San Jacinto Street and State Street	City of San Jacinto	Undivided	2	55	Urban Arterial
24. State Street and Sanderson Avenue (SR 79)	City of San Jacinto	Undivided	2	55	Urban Arterial
25. Sanderson Avenue and Warren Road	City of San Jacinto/ County of Riverside	Undivided	2	55	Expressway
26. Warren Road and Bridge Street	City of San Jacinto/ County of Riverside	Undivided	2	55	Expressway

Table 3.1-34 Roadway Conditions

Roadway	Jurisdiction	Median Type	Number of Lanes	Speed Limit (mph)	Ultimate General Plan Classification
Warren Road between:					
27. Domenigoni Parkway and Simpson Road	County of Riverside	Undivided	2	55	Secondary
28. Simpson Road and Harrison Avenue	City of Hemet/County of Riverside	Undivided	2	55	Secondary
29. Harrison Avenue and Stetson Avenue	City of Hemet	Undivided	2	55	Secondary
30. Stetson Avenue and Florida Avenue	City of Hemet	Undivided	2	55	Secondary
31. Florida Avenue and Devonshire Avenue	City of Hemet	Undivided	2	55	Secondary
32. Esplanade Avenue and Cottonwood Avenue	City of San Jacinto	Undivided	2	40	Arterial
33. Cottonwood Avenue and Ramona Expressway	City of San Jacinto	Undivided	2	55	Arterial
Sanderson Avenue between:					
34. Domenigoni Parkway and Harrison Avenue	City of Hemet	TWTL	4	45	Major
35. Harrison Avenue and Stetson Avenue	City of Hemet	TWTL	4	50	Major
36. Stetson Avenue and Florida Avenue	City of Hemet	TWTL	4	30	Major
37. Florida Avenue and Devonshire Avenue	City of Hemet	TWTL	4	50	Major
38. Menlo Avenue and Esplanade Avenue	City of Hemet	TWTL	4	50	Major
39. Esplanade Avenue and Cottonwood Avenue	City of San Jacinto	TWTL	2	55	Major
40. Cottonwood Avenue and Ramona Boulevard	City of San Jacinto	TWTL	2	55	Major
41. Ramona Boulevard and Ramona Expressway	City of San Jacinto	Undivided	2	55	Major
42. Ramona Expressway and Gilman Springs Road (SR 79)	City of San Jacinto/ County of Riverside	Undivided	4	60	Major
Lamb Canyon Road (SR 79)					
43. Gilman Springs Road and Interstate 10	County of Riverside	Paved median with concrete barrier	4	60	Expressway
Domenigoni Parkway between:					
44. Winchester Road and Warren Road	County of Riverside	Unpaved dirt median	4	60	Urban Arterial
45. Warren Road and Sanderson Avenue	County of Riverside/ City of Hemet	Unpaved dirt median	4	60	Urban Arterial
Cottonwood Avenue between:					
46. Warren Road and Sanderson Avenue	City of San Jacinto	Undivided	2	50	Arterial
47. Lyon Avenue and State Street	City of San Jacinto	Undivided	2	50	Arterial

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: TWTL = Two Way, Two Lane

Roadway Traffic Volumes

The traffic analysis for the Project uses 2004 as the baseline, which represents the existing conditions in 2004, the NOP year. Because it has been several years since those original data were collected, an updated data collection and analysis was conducted in November 2009 to confirm that the traffic volumes are still consistent with the NOP year.

The initial traffic volumes represent 2004 conditions. All daily and peak hour traffic counts were made in September 2003 or later. In 2009, because 5 years had elapsed since the existing counts were conducted, more recent counts were obtained to determine whether the 2004 counts were still appropriate to use as the basis for the study's forecasts. The recent counts were compared with the 2004 counts to determine the magnitude of traffic growth during the 5-year period. These growth percentages were then compared with the projected 5-year growth from the study's forecasts. Actual traffic growth in the study area has been consistently less than the projected growth. Because observed recent traffic growth is well within the parameters of the 2004 to 2035 traffic growth forecasts, the long-term growth forecasts based on the 2004 counts still provide an appropriate basis for evaluating the traffic impacts of the Project, and they form the basis of these traffic forecasts and analyses. In October 2012, the Department submitted a memorandum confirming that the November 2009 traffic analysis is still valid. The memorandum states that since 2009, the study area has experienced economic downturn and no significant, sustained economic improvement. Therefore, it was concluded that the traffic growth from 2009 to 2012 would still be less than the projected growth, and the current traffic analysis would still be appropriate.

Figure 3.1-23 presents the existing roadway count locations in the Project study area. Figure 3.1-24 presents the average daily traffic volume counts on the local roadways. The highest traffic volumes in the area are on Florida Avenue between Winchester Road and San Jacinto Street (where SR 79 and SR 74 are concurrent). Other roadways with high daily traffic volume include portions of Sanderson Avenue, State Street, and Domenigoni Parkway.

Roadway Level of Service

Table 3.1-35 is a description of the LOS designations for roadways. Generally, LOS C or better implies very little, if any, congestion on the roadway. LOS E represents a condition in which the roadway is at capacity and motorists encounter congestion. LOS F means severe congestion. The County of Riverside considers LOS C the desirable standard for roadways.

Table 3.1-35 Roadway Level of Service Description

Level of Service	Operating Conditions
A	Free flow, with no restrictions on maneuvering or operating speeds. Minimal or no delay.
B	Stable flow, with some restrictions on maneuvering or operating speeds. Nominal delays.
C	Stable flow, with more restrictions on speed and maneuverability. Some delays.
D	Approaching unstable flow. Restricted speed and maneuverability. Delays encountered at intersections.
E	Unstable flow, with some stoppages. Constitutes maximum capacity by definition. Extensive delays at some locations.
F	Forced flow, with many stoppages. Low operating speeds, extensive queuing and very extensive delays.

Source: *Highway Capacity Manual*, 2000

LOS was evaluated for both daily and peak hour traffic. Table 3.1-36 is a summary of the County of Riverside traffic volume thresholds for daily traffic. The table includes the range of LOS designations for various roadway classifications.

Table 3.1-36 County of Riverside Traffic Volume Thresholds

Roadway Classification	Number of Lanes	Maximum Two-Way Traffic Volume (ADT)		
		Level of Service C	Level of Service D	Level of Service E
Collector	2	10,400	11,700	13,000
Secondary[a]	2	10,400	11,700	13,000
Secondary	4	20,700	23,300	25,900
Major[a]	2	13,700	15,400	17,100
Major	4	27,300	30,700	34,100
Arterial	2	14,400	16,200	18,000
Arterial	4	28,700	32,300	35,900
Mountain Arterial	2	12,900	14,500	16,100
Mountain Arterial	4	29,800	29,000	32,200
Urban Arterial	4	28,700	32,300	35,900
Urban Arterial	6	43,100	48,500	53,900
Urban Arterial	8	57,400	64,600	71,800
Expressway	4	32,700	36,800	40,900
Expressway	6	49,000	55,200	61,300
Expressway	8	65,400	73,500	81,700
Freeway	4	61,200	68,900	76,500
Freeway	6	94,000	105,800	117,500
Freeway	8	128,400	144,500	160,500
Freeway	10	160,500	180,500	200,600
Ramp	1	16,000	18,000	20,000

Source: Riverside County - Link Volume Capacities/Level of Service for Riverside County Roadways.

Note: ADT = average daily traffic

[a]The LOS C, D, and E capacity values for a two-lane Secondary and a two-lane Major were determined by dividing the four-lane capacity in half and rounding the resulting number to the nearest hundred.

Table 3.1-37 is a comparison of daily traffic volume to the capacity of sections of the existing roadway, along with the LOS of the roadway section based on the traffic volume thresholds of the County of Riverside for various LOS designations.

Table 3.1-37 Existing Average Daily Traffic Volumes and LOS

Existing Roadway	Roadway Classification/Lanes[a]	2004 Daily Traffic Volumes	LOS C Roadway Capacity[b]	LOS
Winchester Road (SR 79) between:				
1. Newport Road and Domenigoni Parkway	Arterial/2	27,162	14,400	F
2. Domenigoni Parkway and Simpson Avenue	Arterial/2	8,280	14,400	C or better
3. Simpson Avenue and Florida Avenue	Arterial/2	7,927	14,400	C or better

Table 3.1-37 Existing Average Daily Traffic Volumes and LOS

Existing Roadway	Roadway Classification/Lanes[a]	2004 Daily Traffic Volumes	LOS C Roadway Capacity[b]	LOS
Florida Avenue (SR 74/SR 79) between:				
4. Amanda Avenue (just west of Winchester Road) and Winchester Road	Expressway/4	30,722	32,700	C or better
5. Winchester Road and Warren Road (SR 79)	Expressway/4	29,897	32,700	C or better
6. Warren Road and Sanderson Avenue (SR 79)	Expressway/4	27,879	32,700	C or better
7. Sanderson Avenue and State Street (SR 79)	Major/4	32,972	27,300	D
8. State Street and San Jacinto Street (SR 79)	Major/4	28,407	27,300	D
9. San Jacinto Street and Columbia Street	Major/4	24,713	27,300	C or better
San Jacinto Street between:				
10. Mayberry Street and Florida Avenue	Secondary/2	12,893	10,400	E
11. Florida Avenue and East Oakland Avenue (SR 79)	Secondary/4	14,547	20,700	C or better
12. Menlo Avenue and Commonwealth Avenue	Secondary/4	15,153	20,700	C or better
13. Esplanade Avenue and Seventh Street (SR 79)	Secondary/4	14,576	20,700	C or better
14. Seventh Street and Main Street (SR 79)	Secondary/2	13,676	10,400	F
Ramona Boulevard between:				
15. Main Street and State Street (SR 79)	Secondary/2	9,846	10,400	C or better
16. State Street and Sanderson Avenue	Secondary/2	4,757	10,400	C or better
State Street between:				
17. Mayberry Street and Florida Avenue	Secondary/2	12,231	10,400	E
18. Florida Avenue and Oakland Avenue	Secondary/4	16,808	20,700	C or better
19. Menlo Avenue and Esplanade Avenue	Secondary/4	16,997	20,700	C or better
20. Esplanade Avenue and Cottonwood Avenue	Major/4	16,135	27,300	C or better
21. Cottonwood Avenue and Ramona Boulevard	Major/4	17,697	27,300	C or better
22. Ramona Boulevard and Ramona Expressway (SR 79)	Major/4	19,022	27,300	C or better
Ramona Expressway between:				
23. San Jacinto Street and State Street	Arterial/2	14,185	14,400	C or better
24. State Street and Sanderson Avenue (SR 79)	Arterial/2	20,857	14,400	F
25. Sanderson Avenue and Warren Road	Arterial/2	16,704	14,400	E
26. Warren Road and Bridge Street	Arterial/2	15,740	14,400	D
Warren Road between:				
27. Domenigoni Parkway and Simpson Road	Secondary/2	6,413	10,400	C or better
28. Simpson Road and Harrison Avenue	Secondary/2	12,315	10,400	E
29. Harrison Avenue and Stetson Avenue	Secondary/2	10,702	10,400	D
30. Stetson Avenue and Florida Avenue	Secondary/2	13,268	10,400	F
31. Florida Avenue and Devonshire Avenue	Secondary/2	9,988	10,400	C or better
32. Esplanade Avenue and Cottonwood Avenue	Arterial/2	8,002	14,400	C or better
33. Cottonwood Avenue and Ramona Expressway	Arterial/2	8,319	14,400	C or better
Sanderson Avenue between:				
34. Domenigoni Parkway and Harrison Avenue	Major/4	11,503	27,300	C or better
35. Harrison Avenue and Stetson Avenue	Major/4	21,993	27,300	C or better
36. Stetson Avenue and Florida Avenue	Major/4	25,917	27,300	C or better
37. Florida Avenue and Devonshire Avenue	Major/4	24,628	27,300	C or better
38. Menlo Avenue and Esplanade Avenue	Major/4	19,408	27,300	C or better
39. Esplanade Avenue and Cottonwood Avenue	Major/2	14,040	13,700	D
40. Cottonwood Avenue and Ramona Boulevard	Major/2	14,117	13,700	D

Table 3.1-37 Existing Average Daily Traffic Volumes and LOS

Existing Roadway	Roadway Classification/Lanes[a]	2004 Daily Traffic Volumes	LOS C Roadway Capacity[b]	LOS
41. Ramona Boulevard and Ramona Expressway	Major/2	12,075	13,700	C or better
42. Ramona Expressway and Gilman Springs Road (SR 79)	Major/4	28,531	27,300	D
Lamb Canyon Road (SR 79)				
43. Gilman Springs Road and Interstate 10	Arterial/4	33,945	28,700	E
Domenigoni Parkway between:				
44. Winchester Road and Warren Road	Urban Arterial/4	19,962	28,700	C or better
45. Warren Road and Sanderson Avenue	Urban Arterial/4	16,757	28,700	C or better
Cottonwood Avenue between:				
46. Warren Road and Sanderson Avenue	Arterial/2	1,204	14,400	C or better
47. Lyon Avenue and State Street	Arterial/2	4,567	14,400	C or better

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: Roadways with an ultimate general plan classification of Expressway that currently have two lanes were classified as two-lane Arterials under existing conditions.

For General-Purpose Information Only:

[a]The LOS C, D, and E capacity values for a two-lane Secondary and a two-lane Major were determined by dividing the four-lane capacity in half and rounding the resulting number to the nearest hundred.

[b]Source: Riverside County – Link Volume Capacities/Level of Service for Riverside County Roadways

Many of the existing sections of roadway have LOS C or better, with the following exceptions:

- Winchester Road (SR 79) between Newport Road and Domenigoni Parkway
- Florida Avenue (SR 74) between Sanderson Avenue and San Jacinto Street
- San Jacinto Street between Mayberry Street and Florida Avenue
- San Jacinto Street between Seventh Street and Main Street
- State Street between Mayberry Street and Florida Avenue
- Ramona Expressway between State Street and Bridge Street
- Warren Road between Simpson Road and Florida Avenue
- Sanderson Avenue between Esplanade Avenue and Ramona Boulevard
- Sanderson Avenue between Ramona Expressway and Gilman Springs Road
- Lamb Canyon Road between Gilman Springs Road and Interstate 10 (I-10)

In Table 3.1-37, the capacity of the roadway section reflects the existing configuration of the section, rather than the ultimate classification of the roadway. For example, if a section of roadway would have four lanes ultimately, but now has two lanes, the capacity value for a two-lane, rather than a four-lane, facility is used.

The determination of LOS on the basis of daily traffic volume thresholds provides a general indication of the operating conditions on a roadway. A more definitive analysis tool is available, as described in the 2000 update of the *Highway Capacity Manual* (HCM), which uses peak hour traffic volumes to determine the quality of arterial traffic flow through a number of intersections along the roadway. The results of the arterial peak hour analysis are presented in Table 3.1-38 (page 3-176). Generally, the peak hour analysis confirms the results of the daily analysis in that all of the arterials indicate traffic flow at LOS C or better.

Table 3.1-38 Summary of Peak Hour Arterial Analysis

		Existing Conditions			
		AM Peak Hour		PM Peak Hour	
Arterial		Speed (kph [mph])	LOS	Speed (kph [mph])	LOS
1.	**SR 79** between Newport Road and Florida Avenue				
	Northbound	53.4 (33.2)	C	66.5 (41.3)	B
	Southbound	67.6 (42.0)	B	72.3 (44.9)	A
2.	**Warren Road** between Domenigoni Parkway and Ramona Expressway				
	Northbound	76.8 (47.7)	A	71.9 (44.7)	A
	Southbound	72.3 (44.9)	A	70.7 (43.9)	A
3.	**Sanderson Avenue** between Domenigoni Parkway and Ramona Expressway				
	Northbound	59.7 (37.1)	B	62.4 (38.8)	B
	Southbound	64.4 (40.0)	B	65.0 (40.4)	B
4.	**State Street** between Florida Avenue and Ramona Expressway				
	Northbound	55.8 (34.7)	B	54.7 (34.0)	B
	Southbound	55.7 (34.6)	B	54.2 (33.7)	B
5.	**San Jacinto Street** between Florida Avenue and Ramona Boulevard				
	Northbound	48.1 (29.9)	B	47.5 (29.5)	B
	Southbound	43.6 (27.1)	B	44.3 (27.5)	B
6.	**Domenigoni Parkway** between SR 79 and Sanderson Avenue				
	Eastbound	81.1 (50.4)	A	84.7 (52.6)	A
	Westbound	72.7 (45.2)	A	73.1 (45.4)	A
7.	**Florida Avenue (SR 74/SR 79)** between SR 79 and San Jacinto Street				
	Eastbound	51.5 (32.0)	A	50.9 (31.6)	A
	Westbound	52.8 (32.8)	C	52.3 (32.5)	C
8.	**Esplanade Avenue** between Warren Road and San Jacinto Street				
	Eastbound	61.6 (38.3)	A	61.3 (38.1)	A
	Westbound	62.3 (38.7)	A	61.2 (38.0)	A
9.	**Cottonwood Avenue** between Warren Road and State Street				
	Eastbound	66.1 (41.1)	B	65.3 (40.6)	B
	Westbound	71.9 (44.7)	A	71.6 (44.5)	A
10.	**Ramona Boulevard** between San Jacinto Street and Sanderson Avenue				
	Northbound	42.0 (26.1)	B	40.4 (25.1)	B
	Southbound	48.3 (30.0)	B	48.3 (30.0)	B
11.	**Ramona Expressway** between State Street and Sanderson Avenue				
	Northbound	65.8 (40.9)	B	74.4 (46.2)	A
	Southbound	80.2 (49.8)	A	81.0 (50.3)	A

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: Speed is expressed in kilometers per hour (kph) (miles per hour [mph]).

Intersection Characteristics and Traffic Volumes

Table 3.1-39 contains a list of the 30 intersections analyzed and the date of the peak period traffic count at each intersection. Figure 3.1-25 is a map of the intersections, and Figure 3.1-26 presents the type of traffic control and the number of lanes at each of the intersections. Traffic signals control traffic at most of the intersections that were analyzed. Figure 3.1-27 presents the morning and afternoon peak hour traffic volumes at the 30 intersections. Because Gilman Springs Road was closed to traffic at the time of the counts, traffic volumes at the intersections in the vicinity were estimated using historical count data.

Table 3.1-39 Study Area Intersections

Location		Peak Hour Counts (Day/Date)
1.	SR 79/Newport Road	Wednesday/11-3-2004
2.	SR 79/Domenigoni Parkway	Tuesday/11-30-2004
3.	SR 79/Simpson Road	Thursday/10-28-2004
4.	SR 79/Florida Avenue	Wednesday/10-27-2004
5.	Warren Road /Domenigoni Parkway	Tuesday/11-30-2004
6.	Warren Road/Harrison Avenue	Wednesday/10-27-2004
7.	Warren Road/Stetson Avenue	Thursday/6-10-2004
8.	Warren Road/Florida Avenue	Thursday/6-10-2004
9.	Warren Road/Esplanade Avenue	Wednesday/2-4-2004
10.	Warren Road/Cottonwood Avenue	Wednesday/2-4-2004
11.	Warren Road/Ramona Expressway	Wednesday/2-4-2004
12.	Sanderson Avenue/Domenigoni Parkway	Tuesday/11-30-2004
13.	Sanderson Avenue/Harrison Avenue	Wednesday/10-27-2004
14.	Sanderson Avenue/Stetson Avenue	Tuesday/11-30-2004
15.	Sanderson Avenue/Florida Avenue	Tuesday/11-30-2004
16.	Sanderson Avenue/Esplanade Avenue	Tuesday/4-13-2004
17.	Sanderson Avenue/Cottonwood Avenue	Tuesday/4-13-2004
18	Sanderson Avenue/Ramona Boulevard	Wednesday/10-27-2004
19.	Sanderson Avenue/Ramona Expressway	Wednesday/10-27-2004
20.	Sanderson Avenue (northbound)/Gilman Springs Road[a]	N/A
21.	Sanderson Avenue (southbound)/Gilman Springs Road[a]	N/A
22.	Lyon Avenue/Cottonwood Avenue	Thursday/10-28-2004
23.	State Street/Florida Avenue	Thursday/9-9-2004
24.	State Street/Esplanade Avenue	Thursday/10-28-2004
25.	State Street/Cottonwood Avenue	Thursday/10-28-2004
26.	State Street/Ramona Boulevard	Wednesday/10-27-2004
27.	State Street/Ramona Expressway	Tuesday/10-26-2004
28.	San Jacinto Street/Florida Avenue	Thursday/10-28-2004
29.	San Jacinto Street/Esplanade Avenue	Tuesday/10-26-2004
30.	San Jacinto Street/Ramona Boulevard/Main Street	Wednesday, 10-27-2004

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: N/A = not applicable

[a]Sanderson Avenue/Gilman Springs Road is currently under construction. Counts from 1997 were used, and a 5 percent growth rate per year was applied.

Intersection Level of Service

Table 3.1-40 shows the LOS and control delay thresholds used to evaluate intersection LOS. LOS was determined using the methods in the HCM. Table 3.1-41 is a summary of the results of the analysis. Under current traffic conditions, 7 intersections have LOS D or worse during the morning or afternoon peak hours, or both. The remaining 23 intersections have LOS C or better in both peak hours.

Table 3.1-40 Intersection Level of Service Description

Level of Service	Signalized Intersections: Average Delay per Vehicle (seconds)	Unsignalized Intersections: Average Delay per Vehicle (seconds)
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Source: *Highway Capacity Manual*, 2000

Note: ≤ = less than or equal to

> = more than

Table 3.1-41 Summary of Intersection Operations for Existing Conditions

Intersection		Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1.	SR 79/Newport Road	U	49.2	**E**	71.3	**F**
2.	SR 79/Domenigoni Parkway	S	747.9	**F**	123.0	**F**
3.	SR 79/Simpson Road	U	13.7	B	13.5	B
4.	SR 79/Florida Avenue	S	15.0	B	16.3	B
5.	Warren Road /Domenigoni Parkway	S	21.6	C	17.2	B
6.	Warren Road/Harrison Avenue	U	36.6	**E**	25.4	**D**
7.	Warren Road/Stetson Avenue	U	14.9	B	18.9	C
8.	Warren Road/Florida Avenue	S	34.8	C	34.6	C
9.	Warren Road/Esplanade Avenue	U	11.6	B	15.4	C
10.	Warren Road/Cottonwood Avenue	U	11.0	B	14.1	B
11.	Warren Road/Ramona Expressway	S	17.9	B	22.5	C
12.	Sanderson Avenue/Domenigoni Parkway	S	22.8	C	19.8	B
13.	Sanderson Avenue/Harrison Avenue	S	12.9	B	10.8	B
14.	Sanderson Avenue/Stetson Avenue	S	28.1	C	36.7	**D**
15.	Sanderson Avenue/Florida Avenue	S	36.1	**D**	43.9	**D**
16.	Sanderson Avenue/Esplanade Avenue	S	15.5	B	16.0	B
17.	Sanderson Avenue/Cottonwood Avenue	S	11.2	B	11.8	B
18	Sanderson Avenue/Ramona Boulevard	S	5.0	A	4.2	A
19.	Sanderson Avenue/Ramona Expressway	S	46.6	**D**	29.6	C
20.	Sanderson Avenue NB/Gilman Springs Road	U	24.8	C	13.8	B
21.	Sanderson Avenue SB/Gilman Springs Road	U	14.1	B	19.7	C
22.	Lyon Avenue/Cottonwood Avenue	U	8.5	A	9.9	A

Table 3.1-41 Summary of Intersection Operations for Existing Conditions

Intersection		Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
23.	State Street/Florida Avenue	S	23.5	C	26.4	C
24.	State Street/Esplanade Avenue	S	21.9	C	23.9	C
25.	State Street/Cottonwood Avenue	S	12.6	B	11.2	B
26.	State Street/Ramona Boulevard	S	19.8	B	20.4	C
27.	State Street/Ramona Expressway	S	23.1	C	25.9	C
28.	San Jacinto Street/Florida Avenue	S	36.9	**D**	38.5	**D**
29.	San Jacinto Street/Esplanade Avenue	S	23.7	C	26.4	C
30.	San Jacinto Street/Ramona Boulevard/Main Street	S	134.5	**F**	388.2	**F**

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: S = Signalized, U = Unsignalized, NB = northbound, SB = southbound

Delay is expressed in average seconds of delay per vehicle during the peak hour.

LOS ratings D and worse are in bold type.

Vehicle Classification

Vehicle classification counts were obtained on sections of eight arterials, one freeway location (I-10 east of SR 79), and at four intersections. Figure 3.1-28 is a map of the vehicle classification count locations. On the arterial sections, vehicle classification counts were made by machine for a 1-week period to reflect the daily fluctuation of truck traffic. In addition, at each arterial location, manual vehicle classification counts were made on one weekday between the hours of 7:00 AM and 11:00 AM and between 2:00 PM and 6:00 PM. These manual counts were for the purpose of calibrating the machine vehicle classification counts. The vehicle classification count on I-10 was for one weekday during daylight hours (between 6:00 AM and 6:00 PM). The intersection vehicle classification counts were made during the peak periods as part of the intersection turning movement counts. Vehicle classification counts on Interstate 215 (I-215) were obtained from the Department's truck traffic database (Department 2010b).

Table 3.1-42 (page 3-180) presents the vehicle classification counts for the I-10 freeway for each hour between 6:00 AM and 6:00 PM. I-10 counts are utilized because it is expected that many of the trucks currently using I-10 would use the realigned SR 79 as a shortcut from I-10 to the ports. Table 3.1-43 (page 3-180) shows the truck traffic for the I-215 freeway from the Department truck traffic database. Table 3.1-44 (page 3-181) shows the results of the vehicle classification counts on the seven arterials for each day in the 1-week counting period. On average, trucks represent approximately 16 percent of the traffic stream on I-10. According to the Department truck traffic database, the average number of trucks on I-215 between Route 74 and Cactus Avenue is about 11 percent. On the arterial street system, weekday truck percentages are highest on Warren Road and Sanderson Avenue (15 to 19 percent) and lowest on SR 79 and SR 74 (8 to 13 percent).

Table 3.1-42 Vehicle Classification for I-10 Freeway Location

Time		EASTBOUND			WESTBOUND		
		Total	**Total Trucks**	**% Trucks**	**Total**	**Total Trucks**	**% Trucks**
06:00	AM	597	113	18.9%	444	54	12.2%
07:00	AM	699	117	16.7%	601	80	13.3%
08:00	AM	688	103	15.0%	632	100	15.8%
09:00	AM	662	121	18.3%	616	129	20.9%
10:00	AM	464	97	20.9%	605	113	18.7%
11:00	AM	626	121	19.3%	583	103	17.7%
12:00	PM	710	133	18.7%	687	106	15.4%
13:00	PM	630	137	21.7%	745	143	19.2%
14:00	PM	758	139	18.3%	815	161	19.8%
15:00	PM	783	93	11.9%	822	114	13.9%
16:00	PM	668	91	13.6%	1,051	159	15.1%
17:00	PM	735	65	8.8%	739	92	12.4%
TOTALS		**8,020**	**1,330**	**16.6%**	**8,340**	**1,354**	**16.2%**

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Table 3.1-43 Truck Traffic for I-215 Freeway Locations

Description of Locations on I-215	AADT	Truck AADT	Percentage of Trucks	Year	Estimated/ Verified
South Junction SR 74 (South)	72,000	5,220	7.3%	2005	Estimated
South Junction SR 74 (North)	88,000	10,384	11.8%	1984	Estimated
Perris, North Junction SR 74	82,000	10,824	13.2%	1984	Estimated
Perris, D Street	99,000	11,880	12.0%	1986	Verified
Cactus Avenue (South)	120,000	12,240	10.2%	1984	Estimated
South Junction SR 74 (South)	72,000	5,220	7.3%	2005	Estimated
Average			**10.9%**		

Source: 2009 Annual Average Daily Truck Traffic on the California State Highway System (Department 2010b)

Note: AADT = Annual Average Daily Traffic

Table 3.1-44 Vehicle Classification Counts

	Monday			Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday		
Roadway Section	Total	Total Trucks	% Trucks	Total	Total Trucks	% Trucks	Total	Total Trucks	% Trucks	Total	Total Trucks	% Trucks	Total	Total Trucks	% Trucks	Total	Total Trucks	% Trucks	Total	Total Trucks	% Trucks
SR 79 South of Domenigoni Parkway																					
Northbound	15,825	1,304	8.2%	14,295	1,088	7.6%	13,353	1,125	8.4%	14,270	1,635	11.5%	13,301	1,007	7.6%	12,849	1,244	9.7%	10,409	713	6.8%
Southbound	16,626	1,295	7.8%	15,756	1,410	8.9%	16,820	1,361	8.1%	14,201	1,491	10.5%	16,007	1,501	9.4%	12,253	1,121	9.1%	11,886	954	8.0%
SR 74 West of Winchester Road																					
Eastbound	15,508	1,511	9.7%	16,068	1,557	9.7%	16,053	1,737	10.8%	12,863	1,351	10.5%	14,977	1,341	9.0%	12,406	1,003	8.1%	9,770	853	8.7%
Westbound	16,561	2,224	13.4%	15,361	2,337	15.2%	16,080	2,162	13.4%	15,237	1,424	9.3%	15,405	1,969	12.8%	9,359	2,075	22.2%	7,908	1,540	19.5%
Ramona Expressway West of Warren Road																					
Eastbound	7,261	964	13.3%	7,597	1,019	13.4%	7,665	1,173	15.3%	6,504	905	13.9%	5,448	740	13.6%	7,492	602	8.0%	5,534	387	7.0%
Westbound	6,519	756	11.6%	6,426	835	13.0%	6,567	840	12.8%	6,440	794	12.3%	4,866	569	11.7%	4,390	571	13.0%	4,534	490	10.8%
SR 79 North of Gillman Springs Road																					
Northbound	7,708	1,008	13.1%	8,976	1,342	15.0%	10,917	1,506	13.8%	11,428	1,500	13.1%	8,172	1,035	12.7%	7,594	1,037	13.7%	6,084	767	12.6%
Southbound	12,391	1,119	9.0%	12,791	1,128	8.8%	13,508	1,223	9.1%	12,303	1,044	8.5%	13,081	1,092	8.3%	12,220	738	6.0%	10,623	698	6.6%
SR 74 East of San Jacinto Boulevard																					
Eastbound	10,858	1,476	13.6%	11,001	1,435	13.0%	10,707	1,364	12.7%	6,550	810	12.4%	10,107	1,292	12.8%	11,604	1,377	11.9%	9,435	978	10.4%
Westbound	11,857	1,404	11.8%	12,467	1,353	10.9%	12,203	1,477	12.1%	12,203	1,420	11.6%	12,259	1,263	10.3%	10,959	1,221	11.1%	9,507	890	9.4%
Sanderson North of Esplanade Avenue																					
Northbound	5,352	938	17.5%	5,374	942	17.5%	5,734	1,108	19.3%	5,335	981	18.4%	5,595	1,064	19.0%	5,999	997	16.6%	4,842	773	16.0%
Southbound	6,490	951	14.7%	6,395	1,016	15.9%	6,862	999	14.6%	5,971	916	15.3%	6,247	913	14.6%	7,031	824	11.7%	6,073	666	11.0%
Warren Road North of Esplanade Avenue																					
Northbound	4,045	620	15.3%	4,030	645	16.0%	4,323	707	16.4%	3,989	703	17.6%	4,125	729	17.7%	3,378	370	11.0%	2,702	254	9.4%
Southbound	4,014	762	19.0%	3,986	743	18.6%	4,363	825	18.9%	3,867	702	18.2%	3,922	700	17.8%	3,509	437	12.5%	3,211	385	12.0%

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

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Existing Accident Rates

The Department's electronic database of accident history is called Traffic Accident Surveillance and Analysis System (TASAS). The most common report from TASAS is the "Table B" Selective Accident Rate Calculation report, which includes accident data calculations for any highway or section of highway, ramps, or intersections for any period specified. The report shows both actual and average accident rates, total accidents, fatalities, injuries, multi-vehicles, wet, dark, persons killed and injured, and the significance.

According to TASAS Table B, inside the Project limits, the actual accident rate on SR 79 is 1.59 per million vehicle miles, which is 30 percent higher than the statewide average rate of 1.22 for similar facilities. The accident rates and the types of accidents within the study area for a 3-year period from January 1, 2008, through December 31, 2010, are provided in Table 3.1-45 and Table 3.1-46 (page 3-184), respectively.

The most common types of accidents reported within the Project limits (Domenigoni Parkway to Gilman Springs Road) were rear-end (32 percent), broadside (29 percent), and hit-object (16 percent) accidents. Rear-end and broadside collisions are typically congestion-related accidents (Spainhour 2005). Also, the large number of access points along existing SR 79 increases the frequency of turning movements into and out of driveways and intersections. This increases the number of conflict points and the potential for accidents. Also, due to geometric designs that are insufficient for STAA vehicles, heavy vehicles more than 12.2 m (40 ft) long are not allowed on existing SR 79. However, smaller trucks (less than 12.2 m [40 ft] long) are allowed, and some large trucks must use SR 79 for local deliveries. Mixing local and regional traffic on a facility with nonstandard geometric elements, along with the numerous access points, creates safety issues along existing SR 79.

According to data and statistics from FHWA and Caltrans' *2001 Collision Data on California State Highways* (FHWA 2007d, Department 2001), accident rates are typically lower for freeways and expressways than arterials because freeways and expressways eliminate most or even all at-grade intersections and signals, which reduces the number of head-on, broadside, and pedestrian-related collisions. Reducing congestion and the overall amount of traffic on the existing alignment can be expected to reduce the number of rear-end, broadside, and sideswipe accidents.

Table 3.1-45 Actual and Average Accident Rates from January 1, 2008 to December 31, 2010

Location	Total Number of Accidents	Actual Rates (Mainline rates are per million vehicle miles)			Statewide Average Rates (Mainline rates are per million vehicle miles)		
		F*	F + I**	TOTAL	F*	F + I**	TOTAL
PM R15.15/R33.79 – Domenigoni Parkway to Gilman Springs Road	139	0.023	0.70	1.59	0.023	0.48	1.22

Source: Caltrans, TASAS Selective Record Retrieval for the period of January 1, 2008, to December 31, 2010.

Note: Post miles (PM) are the limits of this traffic data. These, although similar, are not the same as the Project limits.

* Fatal
** Fatal and injury

Table 3.1-46 Summary of Types of Accidents from January 1, 2008 to December 31, 2010

Location	Head-On	Sideswipe	Rear-End	Broadside	Hit Object	Overturn	Pedestrian	Other	Total
PM R15.15/R33.79 – Domenigoni Parkway to Gilman Springs Road	7%	9%	32%	29%	16%	3%	3%	1%	100%

Source: Caltrans, TASAS Selective Record Retrieval for the period of January 1, 2008, to December 31, 2010.

Note: Post miles (PM) are the limits of this traffic data. These, although similar, are not the same as the Project limits.

Existing Pedestrian and Bicycle Facility Environment

Both the County of Riverside and City of San Jacinto General Plans emphasize the importance of pedestrian and bicycle facilities to encourage and promote the use of alternative modes of travel. A summary of existing pedestrian and bicycle facilities is provided in Table 3.1-47. No existing bike paths or sidewalks would be in the vicinity of the Build alternatives. In some cases, bike paths are designated in a general plan, but none of them have been built, nor are there plans to build them. In many of those cases, the designated roadway shoulder is not suitable for use by bicyclists or pedestrians.

Table 3.1-47 Summary of Pedestrian and Bicycle Facilities

Roadway Section	Pedestrian Facilities	Bicycle Facilities
Winchester Road	No sidewalks.	None
Florida Avenue	Sidewalks on one side west of Sanderson Avenue with missing sections between new developments. Sidewalks on both sides from Sanderson Avenue to Columbia Street. No sidewalk on either side between California Avenue and Warren Road, in the Project study area.	No bike path, although Class II Bike Lane, Class I Bike Path/Bike Trail are designated
San Jacinto Street	Sidewalks on both sides for majority of the street, with some missing sections.	None
Ramona Boulevard	Sidewalks on both sides from Main Street to State Street. West of State Street, sidewalks exist mostly on one side adjacent to new developments.	None
State Street	Sidewalks continuous on both sides.	Class II Bike Trail
Ramona Expressway	No sidewalks for the majority of the roadway except on sections adjacent to new developments.	Class I Bike Path/Bike Trail
Warren Road	No sidewalks.	No bike trail/path, although Class II Bike Trail and Class I Bike Path/Bike Trail are designated along portions
Sanderson Avenue	Sidewalks are continuous on both sides to Esplanade Avenue and then on one side to Cottonwood Avenue. There are no sidewalks north of Cottonwood Avenue.	Class II Bike Trail, Class I Bike Path/Bike Trail
Lamb Canyon Road	No sidewalks.	None
Domenigoni Parkway	No sidewalks.	Class I Bike Path/Regional Trail

Table 3.1-47 Summary of Pedestrian and Bicycle Facilities

Roadway Section	Pedestrian Facilities	Bicycle Facilities
Cottonwood Avenue	Sidewalks on one side with some missing links between developments. Sidewalks are continuous on both sides near State Street. No sidewalk from Warren Road for about 0.8 km (0.5 mi) east.	No bike trail, although Class II Bike Trail designated

Source: County of Riverside General Plan, 2003; City of San Jacinto General Plan, 2006; City of Hemet General Plan, 1992

3.1.6.3 Environmental Consequences

Study Methods and Procedures

The planning horizon year for analysis is 2035, 20 years beyond the expected opening year of 2015. To develop forecasts for 2035 analysis, a series of travel demand forecast modeling and post-processing analyses were conducted.

The SCAG RTP, approved by the FHWA in 2004, addresses a planning horizon year of 2030, and the SCAG 2030 regional travel demand forecasting model was used as the starting-point for traffic forecasting in this study.

The network in the 2030 SCAG model includes regional projects that are expected to be constructed. However, a more refined analysis was available from the ongoing Mid County Parkway (MCP) study. The MCP study team developed a sub-area traffic model based on the SCAG 2030 regional model. Because the MCP and SR 79 corridors would meet at a common point (in the Ramona Expressway/Sanderson Avenue area) and because both projects are of interest to the same jurisdictions, it was agreed that the MCP model would be used to generate the traffic forecasts for both studies. The MCP and SR 79 study teams worked together to develop network characteristics, the Traffic Analysis Zone (TAZ) system, socioeconomic data, and other modeling assumptions appropriate for both studies.

The SCAG 2030 regional model incorporates regional facilities per the Plan tier of improvements in the SCAG RTP. This is considered a financially constrained network and represents a regional network that can be reasonably expected to be in place by 2030. This network was used as the basis of the forecasts.

The SCAG regional model produces daily and peak-period forecasts and incorporates a heavy-duty vehicle component. These forecasts were used as the basis for forecasting average daily traffic (ADT) volumes on study area roadways and peak hour volumes at study area intersections.

Even though the sub-area model includes more zone and network detail than the regional model, the model was not validated to the level of replicating existing traffic volumes on individual streets in the focus area, so the raw model output does not consistently provide forecast volumes that are representative of future conditions. For example, in several locations, the model's No Build forecast volume is less than the existing traffic count at that location. To adjust for these modeling inconsistencies, a post-processing step was applied to ensure that the forecast volumes reflect appropriate traffic volume growth over and above the existing ADT count volume. In the No Build scenario, the following adjustments were made:

- For streets with a model forecast volume less than the existing ADT count, the adjusted forecast was generated by increasing the existing ADT count by 30 percent (consistent with the model's estimate of overall traffic growth percentage in the area).
- For streets with a low growth forecast, the No Build forecast was developed by increasing the existing ADT by 20 percent.

The 2030 Build forecast volumes were determined by adding the difference in the Build and No Build model volumes to the forecasted No Build volume. After the post-processing, the forecast volumes for both the No Build Alternative and the Build alternative were factored from 2030 to 2035.

Because the regional model horizon year is 2030 and the Project analysis year is 2035, an extrapolation method was developed to increase the 2030 forecasts to 2035. Consistent with the MCP project, a growth rate of 1.9 percent per year, compounded for five years (10 percent total), was applied to 2030 traffic volume projections to estimate 2040 traffic volumes on all facilities in the study area. This factor is based on the SCAG projections of population and employment between 2025 and 2030.

Permanent Impacts

For traffic analysis, permanent impacts were assessed by comparing the traffic operations for the 2035 No Build Alternative to those of the 2035 Build alternatives. Four Build alternatives have been proposed by RCTC and the Department to realign existing SR 79. For the analysis of traffic impacts, two alternatives have been analyzed. The different alignments do not substantially affect traffic; therefore, the traffic analysis assumes the modeled alignment, Build Alternative 2b (called the 2035 Build Alternative for this analysis). Permanent pedestrian and bicycle impacts are discussed later in this section (see page 3-205).

No Build Alternative

With this alternative, there would be no SR 79 improvements before 2035, the planning horizon year, beyond any improvements that are programmed. The following are major assumptions for the 2035 No Build Alternative:

- MCP would be a six-lane freeway.
- Arterial streets would be built to city or county general plan classification standards by 2035. In the study area, this assumption is consistent with the 2030 lane assumptions in the SCAG RTP.
- Improvements planned by the Department and the County of Riverside for the portion of SR 79 between Hunter Road and Newport Road would be in place. There would be no further improvements on this portion of SR 79 before 2035.
- All regional facilities would be in accordance with the SCAG RTP.

Figure 3.1-29 presents 2035 daily traffic volume forecasts on selected portions of local roadways for the No Build Alternative. Table 3.1-48 (page 3-187) is a comparison of the daily traffic volume to the capacity of the roadway, along with the LOS of the roadway based on the traffic volume thresholds of the County of Riverside for various LOS designations. The ultimate general plan classification is also noted. In Table 3.1-48 (page 3-187), the capacity of the roadway reflects the ultimate classification of the roadway.

Table 3.1-48 2035 No Build Average Daily Traffic Volumes and LOS

Local Roadway	Ultimate General Plan Classification/Lanes	2035 No Build Daily Traffic Volumes	LOS C Roadway Capacity[a]	LOS
Winchester Road (SR 79) between:				
1. Newport Road and Domenigoni Parkway[a]	Major/4	36,800	27,300	F
2. Domenigoni Parkway and Simpson Avenue[a]	Major/4	38,200	27,300	F
3. Simpson Avenue and Florida Avenue[a]	Major/4	35,100	27,300	F
Florida Avenue (SR 74/SR 79) between:				
4. Amanda Avenue (just west of Winchester Road) and Winchester Road	Expressway/6	41,300	49,000	C or better
5. Winchester Road and Warren Road[a]	Expressway/6	57,500	49,000	E
6. Warren Road and Sanderson Avenue[a]	Expressway/6	48,400	49,000	C or better
7. Sanderson Avenue and State Street[a]	Major/4	36,300	27,300	F
8. State Street and San Jacinto Street[a]	Major/4	31,200	27,300	D
9. San Jacinto Street and Columbia Street	Major/4	27,200	27,300	C or better
San Jacinto Street between:				
10. Mayberry Street and Florida Avenue	Secondary/4	16,800	20,700	C or better
11. Florida Avenue and East Oakland Avenue[a]	Secondary/4	18,900	20,700	C or better
12. Menlo Avenue and Commonwealth Avenue[a]	Secondary/4	28,600	20,700	F
13. Esplanade Avenue and Seventh Street[a]	Secondary/4	20,800	20,700	D
14. Seventh Street and Main Street[a]	Secondary/4	16,400	20,700	C or better
Ramona Boulevard between:				
15. Main Street and State Street[a]	Secondary/4	12,100	20,700	C or better
16. State Street and Sanderson Avenue	Secondary/4	6,200	20,700	C or better
State Street between:				
17. Mayberry Street and Florida Avenue	Secondary/4	15,900	20,700	C or better
18. Florida Avenue and Oakland Avenue	Secondary/4	21,900	20,700	D
19. Menlo Avenue and Esplanade Avenue	Secondary/4	18,700	20,700	C or better
20. Esplanade Avenue and Cottonwood Avenue	Major/4	17,700	27,300	C or better
21. Cottonwood Avenue and Ramona Boulevard	Major/4	19,500	27,300	C or better
22. Ramona Boulevard and Ramona Expressway[a]	Major/4	20,900	27,300	C or better
Ramona Expressway between:				
23. San Jacinto Street and State Street	Urban Arterial/6	32,100	43,100	C or better
24. State Street and Sanderson Avenue[a]	Urban Arterial/6	36,000	43,100	C or better
25. Sanderson Avenue and Warren Road	Expressway/4	31,800	32,700	C or better
26. Warren Road and Bridge Street	Expressway/4	25,500	32,700	C or better
Warren Road between:				
27. Domenigoni Parkway and Simpson Road	Secondary/4	8,300	20,700	C or better
28. Simpson Road and Harrison Avenue	Secondary/4	16,000	20,700	C or better
29. Harrison Avenue and Stetson Avenue	Secondary/4	13,900	20,700	C or better
30. Stetson Avenue and Florida Avenue	Secondary/4	15,900	20,700	C or better
31. Florida Avenue and Devonshire Avenue	Secondary/4	15,500	20,700	C or better
32. Esplanade Avenue and Cottonwood Avenue	Arterial/4	21,000	28,700	C or better
33. Cottonwood Avenue and Ramona Expressway	Arterial/4	17,500	28,700	C or better

Table 3.1-48 2035 No Build Average Daily Traffic Volumes and LOS

Local Roadway	Ultimate General Plan Classification/Lanes	2035 No Build Daily Traffic Volumes	LOS C Roadway Capacity[a]	LOS
Sanderson Avenue between:				
34. Domenigoni Parkway and Harrison Avenue	Major/4	31,900	27,300	E
35. Harrison Avenue and Stetson Avenue	Major/4	26,400	27,300	C or better
36. Stetson Avenue and Florida Avenue	Major/4	35,800	27,300	F
37. Florida Avenue and Devonshire Avenue	Major/4	36,400	27,300	F
38. Menlo Avenue and Esplanade Avenue	Major/4	33,600	27,300	E
39. Esplanade Avenue and Cottonwood Avenue	Major/4	27,000	27,300	C or better
40. Cottonwood Avenue and Ramona Boulevard	Major/4	22,600	27,300	C or better
41. Ramona Boulevard and Ramona Expressway	Major/4	23,300	27,300	C or better
42. Ramona Expressway and Gilman Springs Road[a]	Expressway/4	48,800	32,700	F
Lamb Canyon Road (SR 79)				
43. Gilman Springs Road and Interstate 10[a]	Freeway/4	49,600	61,200	C or better
Domenigoni Parkway between:				
44. Winchester Road and Warren Road	Urban Arterial/6	34,300	43,100	C or better
45. Warren Road and Sanderson Avenue	Urban Arterial/6	29,900	43,100	C or better
Cottonwood Avenue between:				
46. Warren Road and Sanderson Avenue	Arterial/4	2,400	28,700	C or better
47. Lyon Avenue and State Street	Arterial/4	8,500	28,700	C or better

Source: Riverside County – Link Volume Capacities/Level of Service for Riverside County Roadways

Note: For General-Purpose Information Only

[a]Roadway is part of existing SR 79.

As shown in Table 3.1-48, many of the roadways in the study area, particularly on Ramona Boulevard, Ramona Expressway, Warren Road, Domenigoni Parkway, and Cottonwood Road, are projected to operate at LOS C or better. A total of 14 roadways, including several along existing SR 79, would operate at LOS D or worse with the projected daily volumes under the 2035 No Build alternative. The following local roadways would operate at unacceptable levels of service:

- Winchester Road (SR 79) between Newport Road and Florida Avenue (SR 74)
- Florida Avenue (SR 74/SR 79) between Winchester Road and Warren Road
- Florida Avenue (SR 74/SR 79) between Sanderson Avenue and San Jacinto Street (SR 79)
- San Jacinto Street (SR 79) between Menlo Avenue and Commonwealth Avenue (SR 79)
- San Jacinto Street (SR 79) between Esplanade Avenue and Seventh Street
- State Street between Florida Avenue and Oakland Avenue
- Sanderson Avenue between Domenigoni Parkway and Harrison Avenue
- Sanderson Avenue between Stetson Avenue and Devonshire Avenue
- Sanderson Avenue between Menlo Avenue and Esplanade Avenue
- Sanderson Avenue (SR 79) between Ramona Expressway and Gilman Springs Road

Figure 3.1-30 shows the future lane configurations at each of the study intersections as well as the traffic control type for the 2035 No Build Alternative. The future lanes at each intersection were determined using the "Highway Lane Requirements" (Table C-2) from the County of Riverside's General Plan Circulation Element. This reference is based on the ultimate general plan classification of the intersecting roadways.

Based on the lane configurations, traffic signals were assumed at all of the locations that are currently unsignalized, with the exception of Warren Road and Harrison Avenue. Morning and afternoon peak hour intersection turning movement volumes were estimated for the 2035 No Build Alternative using the existing intersection counts and factoring them based on the growth ratio derived by comparing the 2035 Forecasted No Build Daily Traffic Volumes to the Existing ADT volumes. Figure 3.1-31 presents the morning and afternoon peak hour traffic volumes at the 30 intersections for the 2035 No Build Alternative.

Table 3.1-49 provides the results of the analysis for 2035 No Build traffic conditions. Of the 30 study intersections, 12 are projected to operate at LOS D, E, or F in the 2035 No Build Alternative. The remaining intersections would operate at LOS C or better. The following intersections would operate at unacceptable LOS under 2035 No Build traffic conditions:

- Winchester Road (SR 79) and Domenigoni Parkway – PM peak hour only
- Winchester Road (SR 79) and Simpson Avenue – AM peak hour only
- Winchester Road (SR 79) and Florida Avenue – AM and PM peak hours
- Warren Road and Harrison Avenue – AM and PM peak hours
- Warren Road and Florida Avenue – AM and PM peak hours
- Sanderson Avenue and Domenigoni Parkway – AM and PM peak hours
- Sanderson Avenue and Stetson Avenue – AM and PM peak hours
- Sanderson Avenue and Florida Avenue – AM and PM peak hours
- Sanderson Avenue and Esplanade Avenue – PM peak hour only
- Sanderson Avenue and Ramona Expressway – AM and PM peak hours
- San Jacinto Street and Florida Avenue – PM peak hour only
- San Jacinto Street and Main Street and Ramona Boulevard – AM and PM peak hours

Table 3.1-49 Intersection Operations for the 2035 No Build Alternative

Intersection		Existing Conditions					2035 No Build Alternative				
		Control	AM Peak Hour		PM Peak Hour		Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
1.	Winchester Road/Newport Road	U	49.2	**E**	71.3	**F**	S	6	A	7	A
2.	Winchester Road/Domenigoni Parkway	S	747.9	**F**	123.0	**F**	S	20	B	46	**D**
3.	Winchester Road/Simpson Road	U	13.7	B	13.5	B	S	40	**D**	16	B
4.	Winchester Road/Florida Avenue	S	15.0	B	16.3	B	S	57	**E**	86	**F**
5.	Warren Road/Domenigoni Parkway	S	21.6	C	17.2	B	S	22	C	17	B
6.	Warren Road/Harrison Avenue	U	36.6	**E**	25.4	**D**	U	54	**F**	23	C

Table 3.1-49 Intersection Operations for the 2035 No Build Alternative

		Existing Conditions					2035 No Build Alternative				
			AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
Intersection		Control	Delay	LOS	Delay	LOS	Control	Delay	LOS	Delay	LOS
7.	Warren Road/Stetson Avenue	U	14.9	B	18.9	C	S	28	C	27	C
8.	Warren Road/Florida Avenue	S	34.8	C	34.6	C	S	39	**D**	36	**D**
9.	Warren Road/Esplanade Avenue	U	11.6	B	15.4	C	S	20	B	19	B
10.	Warren Road/Cottonwood Avenue	U	11.0	B	14.1	B	S	5	A	7	A
11.	Warren Road/Ramona Expressway	S	17.9	B	22.5	C	S	22	C	27	C
12.	Sanderson Avenue/Domenigoni Parkway	S	22.8	C	19.8	B	S	138	**F**	61	**E**
13.	Sanderson Avenue/Harrison Avenue	S	12.9	B	10.8	B	S	20	B	25	C
14.	Sanderson Avenue/Stetson Avenue	S	28.1	C	36.7	**D**	S	49	**D**	111	**F**
15.	Sanderson Avenue/Florida Avenue	S	36.1	**D**	43.9	**D**	S	102	**F**	236	**F**
16.	Sanderson Avenue/Esplanade Avenue	S	15.5	B	16.0	B	S	18	B	47	**D**
17.	Sanderson Avenue/Cottonwood Avenue	S	11.2	B	11.8	B	S	11	B	19	B
18.	Sanderson Avenue/Ramona Boulevard	S	5.0	A	4.2	A	S	13	B	18	B
19.	Sanderson Avenue/Ramona Expressway	S	46.6	**D**	29.6	C	S	90	**F**	51	**D**
20.	Sanderson NB Avenue/Gilman Springs Road	U	24.8	C	13.8	B	S	11	B	5	A
21.	Sanderson SB Avenue/Gilman Springs Road	U	14.1	B	19.7	C	S	10	B	4	A
22.	Lyon Avenue/Cottonwood Avenue	U	8.5	A	9.9	A	S	18	B	24	C
23.	State Street/Florida Avenue	S	23.5	C	26.4	C	S	26	C	33	C
24.	State Street/Esplanade Avenue	S	21.9	C	23.9	C	S	22	C	23	C
25.	State Street/Cottonwood Avenue	S	12.6	B	11.2	B	S	12	B	10	A
26.	State Street/Ramona Boulevard	S	19.8	B	20.4	C	S	22	C	23	C
27.	State Street/Ramona Expressway	S	23.1	C	25.9	C	S	27	C	26	C
28.	San Jacinto Street/Florida Avenue	S	36.9	**D**	38.5	**D**	S	31	C	37	**D**
29.	San Jacinto Street/Esplanade Avenue	S	23.7	C	26.4	C	S	24	C	28	C
30.	San Jacinto Street/Ramona Boulevard/Main Street	S	134.5	**F**	388.2	**F**	S	76	**E**	268	**F**

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: S = Signalized, U = Unsignalized, SB = southbound, NB = northbound

Delay is expressed in average seconds of delay per vehicle during the peak hour.

Intersection #11 would be a freeway interchange under Build conditions.

Intersection #19 would not intersect the freeway.

Warren Avenue would not connect between Florida Avenue and Esplanade Avenue under Build conditions.

LOS ratings D and worse are in bold text.

Build Alternative

The configuration of existing SR 79 and No Build Alternative is the base case for the traffic modeling. The model for the 2035 Build Alternative assumes that the SR 79 realignment would be a new four-lane freeway facility with interchanges at Domenigoni Parkway, Stetson Avenue, Florida Avenue, Tres Cerritos Avenue, Esplanade Avenue, Cottonwood Avenue, Sanderson Avenue, and Ramona Expressway (MCP) that would be added to the No Build network. The 2035 Build Alternative also assumes that MCP would be a six-lane freeway, that arterial streets would be built to general plan classification standards, that improvements planned for the portion of SR 79 between Hunter Road and Newport Road would be in place, and that all regional facilities would be in accordance with the SCAG RTP; thus the Build alternative assumptions are consistent in both studies.

Build Alternative Traffic Volumes and LOS

Figure 3.1-32 shows the 2035 daily traffic volumes on the study area roadways for the 2035 Build Alternative. Figure 3.1-33 presents 2035 daily traffic volumes for the local roadways along SR 79 in its new realignment. Table 3.1-50 contains a comparison of the daily traffic volume to the capacity of the roadway, along with the LOS of the roadway based on the traffic volume thresholds of the County of Riverside for various LOS designations. The ultimate general plan classification is also noted. Figure 3.1-34 shows the peak hour volumes on the mainline SR 79 by direction. The maximum peak hour, peak-direction volume on the mainline SR 79 is forecast to be approximately 4,000, with most of the peak hour volumes ranging from approximately 2,500 to 4,000.

As shown in Table 3.1-50, construction of the Build Alternative would improve 10 of the 14 deficient roadways from unacceptable levels of service (D, E, or F) to LOS C or better. The following local roadways would operate at LOS D or worse under 2035 Build Alternative conditions:

- Florida Avenue between Sanderson Avenue and State Street
- Florida Avenue between State Street and San Jacinto Street
- San Jacinto Street between Menlo Avenue and Commonwealth Avenue
- Sanderson Avenue between Ramona Expressway and Gilman Springs Road

Table 3.1-50 2035 Build Alternative Average Daily Traffic Volumes and LOS

Roadway	Ultimate General Plan Classification/Lanes	2035 Build Daily Traffic Volumes	LOS C Roadway Capacity[a]	LOS
Winchester Road between:				
1. Newport Road and Domenigoni Parkway[b]	Major/4	1,200	27,300	C or better
2. Domenigoni Parkway and Simpson Avenue[b]	Major/4	3,400	27,300	C or better
3. Simpson Avenue and Florida Avenue[b]	Major/4	3,900	27,300	C or better
Florida Avenue (SR 74) between:				
4. Amanda Avenue (just west of Winchester Road) and Winchester Road	Expressway/6	28,000	49,000	C or better
5. Winchester Road and Warren Road[b]	Expressway/6	29,200	49,000	C or better
6. Warren Road and Sanderson Avenue[b]	Expressway/6	32,800	49,000	C or better
7. Sanderson Avenue and State Street[b]	Major/4	35,900	27,300	F
8. State Street and San Jacinto Street[b]	Major/4	30,400	27,300	D
9. San Jacinto Street and Columbia Street	Major/4	26,600	27,300	C or better
San Jacinto Street between:				
10. Mayberry Street and Florida Avenue	Secondary/4	16,900	20,700	C or better
11. Florida Avenue and East Oakland Avenue[b]	Secondary/4	17,300	20,700	C or better
12. Menlo Avenue and Commonwealth Avenue[b]	Secondary/4	26,100	20,700	F
13. Esplanade Avenue and Seventh Street[b]	Secondary/4	18,500	20,700	C or better

Table 3.1-50 2035 Build Alternative Average Daily Traffic Volumes and LOS

Roadway	Ultimate General Plan Classification/Lanes	2035 Build Daily Traffic Volumes	LOS C Roadway Capacity[a]	LOS
14. Seventh Street and Main Street[b]	Secondary/4	14,700	20,700	C or better
Ramona Boulevard between:				
15. Main Street and State Street[b]	Secondary/4	12,200	20,700	C or better
16. State Street and Sanderson Avenue	Secondary/4	6,700	20,700	C or better
State Street between:				
17. Mayberry Street and Florida Avenue	Secondary/4	15,700	20,700	C or better
18. Florida Avenue and Oakland Avenue	Secondary/4	16,800	20,700	C or better
19. Menlo Avenue and Esplanade Avenue	Secondary/4	17,900	20,700	C or better
20. Esplanade Avenue and Cottonwood Avenue	Major/4	14,200	27,300	C or better
21. Cottonwood Avenue and Ramona Boulevard	Major/4	19,800	27,300	C or better
22. Ramona Boulevard and Ramona Expressway[b]	Major/4	21,300	27,300	C or better
Ramona Expressway between:				
23. San Jacinto Street and State Street	Urban Arterial/6	33,600	43,100	C or better
24. State Street and Sanderson Avenue[b]	Urban Arterial/6	37,300	43,100	C or better
25. Sanderson Avenue and Warren Road	Freeway/4	51,400	61,200	C or better
26. Warren Road and Bridge Street	Freeway/4	58,400	61,200	C or better
Warren Road between:				
27. Domenigoni Parkway and Simpson Road	Secondary/4	7,800	20,700	C or better
28. Simpson Road and Harrison Avenue	Secondary/4	7,400	20,700	C or better
29. Harrison Avenue and Stetson Avenue	Secondary/4	5,600	20,700	C or better
30. Stetson Avenue and Florida Avenue	Secondary/4	9,100	20,700	C or better
31. Florida Avenue and Devonshire Avenue	Secondary/4	1,800	20,700	C or better
32. Esplanade Avenue and Cottonwood Avenue	Arterial/4	7,900	28,700	C or better
33. Cottonwood Avenue and Ramona Expressway	Arterial/4	11,700	28,700	C or better
Sanderson Avenue between:				
34. Domenigoni Parkway and Harrison Avenue	Major/4	6,300	27,300	C or better
35. Harrison Avenue and Stetson Avenue	Major/4	9,900	27,300	C or better
36. Stetson Avenue and Florida Avenue	Major/4	18,400	27,300	C or better
37. Florida Avenue and Devonshire Avenue	Major/4	21,600	27,300	C or better
38. Menlo Avenue and Esplanade Avenue	Major/4	24,800	27,300	C or better
39. Esplanade Avenue and Cottonwood Avenue	Major/4	26,900	27,300	C or better
40. Cottonwood Avenue and Ramona Boulevard	Major/4	26,300	27,300	C or better
41. Ramona Boulevard and Ramona Expressway	Major/4	1,300	27,300	C or better
42. Ramona Expressway and Gilman Springs Road[b]	Expressway/4	47,200	32,700	F
Lamb Canyon Road (SR 79)				
43. Gilman Springs Road and Interstate 10[b]	Freeway/4	54,800	61,200	C or better
Domenigoni Parkway between:				
44. Winchester Road and Warren Road	Urban Arterial/6	8,000	43,100	C or better
45. Warren Road and Sanderson Avenue	Urban Arterial/6	13,300	43,100	C or better
Cottonwood Avenue between:				
46. Warren Road and Sanderson Avenue	Arterial/4	4,700	28,700	C or better
47. Lyon Avenue and State Street	Arterial/4	7,600	28,700	C or better

Table 3.1-50 2035 Build Alternative Average Daily Traffic Volumes and LOS

Roadway	Ultimate General Plan Classification/Lanes	2035 Build Daily Traffic Volumes	LOS C Roadway Capacity[a]	LOS
SR 79 (Freeway) between:				
48. Newport Road and Domenigoni Parkway	Freeway/4	68,800	61,200	D
49. Domenigoni Parkway and Stetson Avenue	Freeway/4	66,200	61,200	D
50. Stetson Avenue and Florida Avenue	Freeway/4	55,500	61,200	C or better
51. Florida Avenue to Tres Cerritos Avenue	Freeway/4	49,800	61,200	C or better
52. Tres Cerritos Avenue to Esplanade Avenue	Freeway/4	49,300	61,200	C or better
53. Esplanade Avenue to Cottonwood Avenue	Freeway/4	46,100	61,200	C or better
54. Cottonwood Avenue to Sanderson Avenue	Freeway/4	41,500	61,200	C or better
55. Sanderson Avenue to Ramona Boulevard	Freeway/4	55,600	61,200	C or better
56. Ramona Boulevard to (just north of SR 79/MCP interchange)	Freeway/4	51,300	61,200	C or better

[a]*Source*: Riverside County – Link Volume Capacities/Level of Service for Riverside County

Note: For General-Purpose Information Only

[b]Roadway is part of existing SR 79

Table 3.1-50 includes the LOS analyses for nine portions of roadway along SR 79. The 2035 forecast daily volumes on SR 79 range from 41,500 to 68,800, which are consistent with a freeway facility with an LOS C capacity of 61,200. SR 79 is projected to operate at LOS C or better along the entire length of the Project, with two exceptions. The portions between Newport Road and Domenigoni Parkway and between Domenigoni Parkway and Stetson Avenue are projected to operate at LOS D.

The projected SR 79 volumes substantially exceed the capacity of an expressway. The capacity for a four-lane expressway at LOS C is 32,700 ADT. All nine portions of the roadway along the new SR 79 alignment would exceed this capacity.

Build Alternative Intersection Analysis

Morning and afternoon peak hour intersection turning movement volumes were estimated for the 2035 Build Alternative by factoring the existing intersection counts based on the growth ratio between the 2035 forecasted daily traffic volumes and the existing ADT. Figure 3.1-35 shows the assumed intersection lane geometry and traffic control for the 2035 Build Alternative. Figure 3.1-36 shows the morning and afternoon peak hour traffic volumes at the 30 intersections.

The 2035 Build Alternative analysis assumes freeway/arterial interchanges with signalized intersections and the planned ramp configurations at each interchange for the seven cross streets along the SR 79 realignment.

The intersection of SR 79 and MCP would be a freeway-to-freeway interchange, but it is not analyzed in this study because the new interchange would be analyzed and built by the Mid County Parkway project. Figure 3.1-37 shows the lane requirements at the intersections of each freeway/arterial interchange along SR 79 for the 2035 Build Alternative. Peak hour turning movement volumes were estimated for the SR 79 intersections based on the daily traffic volumes from the SCAG 2030 regional model. Figure 3.1-38 shows the morning and afternoon peak hour traffic volumes at the SR 79 interchanges.

Table 3.1-51 provides a summary of the results of the LOS analysis at the 30 intersections for 2035 Build Alternative traffic conditions. With MCP in place, Warren Avenue and Ramona Expressway would have an interchange with the 2035 Build Alternative. In addition, Sanderson Avenue would have an intersection with Ramona Expressway and an intersection with the at-grade portion of MCP. Ramona Expressway would have access through an SR 79 service interchange to SR 79.

Table 3.1-51 Summary of Intersection Operation for the 2035 No Build Alternative and 2035 Build Alternative

		2035 No Build Alternative					2035 Build Alternative				
			AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
	Intersection	Control	Delay	LOS	Delay	LOS	Control	Delay	LOS	Delay	LOS
1.	Winchester Road/Newport Road	S	6	A	7	A	S	7	A	5	A
2.	Winchester Road/Domenigoni Parkway	S	20	B	46	**D**	S	13	B	9	A
3.	Winchester Road/Simpson Road	S	40	**D**	16	B	S	23	C	26	C
4.	Winchester Road/Florida Avenue	S	57	**E**	86	**F**	S	24	C	25	C
5.	Warren Road /Domenigoni Parkway	S	22	C	17	B	S	20	B	20	B
6.	Warren Road/Harrison Avenue	U	54	**F**	23	C	U	14	B	11	B
7.	Warren Road/Stetson Avenue	S	28	C	27	C	S	23	C	24	C
8.	Warren Road/Florida Avenue	S	39	**D**	36	**D**	S	31	C	30	C
9.	Warren Road/Esplanade Avenue	S	20	B	19	B	S	26	C	25	C
10.	Warren Road/Cottonwood Avenue	S	5	A	7	A	S	11	B	13	B
11.	Warren Road/Ramona Expressway	S	22	C	27	C	S	N/A	N/A	N/A	N/A
12.	Sanderson Avenue/Domenigoni Parkway	S	138	**F**	61	**E**	S	20	B	22	C
13.	Sanderson Avenue/Harrison Avenue	S	20	B	25	C	S	17	B	16	B
14.	Sanderson Avenue/Stetson Avenue	S	49	**D**	111	**F**	S	44	**D**	41	**D**
15.	Sanderson Avenue/Florida Avenue	S	102	**F**	236	**F**	S	40	**D**	57	**E**
16.	Sanderson Avenue/Esplanade Avenue	S	18	B	47	**D**	S	15	B	21	C
17.	Sanderson Avenue/Cottonwood Avenue	S	11	B	19	B	S	11	B	20	B
18	Sanderson Avenue/Ramona Boulevard	S	13	B	18	B	S	12	B	13	B
19.	Sanderson Avenue/Ramona Expressway	S	90	**F**	51	**D**	S	N/A	N/A	N/A	N/A
20.	Sanderson NB Avenue/Gilman Springs Road	S	11	B	5	A	S	11	B	5	A
21.	Sanderson SB Avenue/Gilman Springs Road	S	10	B	4	A	S	10	B	12	B
22.	Lyon Avenue/Cottonwood Avenue	S	18	B	24	C	S	17	B	23	C
23.	State street/Florida Avenue	S	26	C	33	C	S	26	C	29	C
24.	State Street/Esplanade Avenue	S	22	C	23	C	S	22	C	23	C
25.	State Street/Cottonwood Avenue	S	12	B	10	A	S	11	B	10	A
26.	State Street/Ramona Boulevard	S	22	C	23	C	S	24	C	23	C
27.	State Street/Ramona Expressway	S	27	C	26	C	S	24	C	22	C

Table 3.1-51 Summary of Intersection Operation for the 2035 No Build Alternative and 2035 Build Alternative

	Intersection	2035 No Build Alternative					2035 Build Alternative				
		Control	AM Peak Hour		PM Peak Hour		Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
28.	San Jacinto Street/Florida Avenue	S	31	C	37	**D**	S	30	C	36	**D**
29.	San Jacinto Street/Esplanade Avenue	S	24	C	28	C	S	24	C	26	C
30.	San Jacinto Street/Ramona Boulevard/Main Street	S	76	**E**	268	**F**	S	78	**E**	273	**F**

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: Intersection 11 would be a freeway interchange under Build conditions, and Intersection 19 would not intersect the freeway. Warren Avenue would not connect between Florida Avenue and Esplanade Avenue under Build conditions.

S = Signalized, U = Unsignalized, NB = northbound, SB = southbound, N/A = not applicable

Delay is expressed in average seconds of delay per vehicle during the peak hour.

LOS ratings D and worse are in bold text.

Of the remaining 28 study intersections, 4 intersections are projected to operate at LOS D, E, or F in the 2035 Build Alternative. Construction of the Build alternative would improve 7 of the 12 deficient intersections in the No Build Alternative to acceptable LOS (LOS C or better), 1 deficient intersection would be eliminated (Sanderson Avenue/Ramona Expressway), 2 would have an improved LOS but still would operate at LOS D or E during at least one peak hour, and 2 intersections would be essentially unaffected because they are not close to either the new SR 79 alignment or the MCP (San Jacinto Street/Florida Avenue and San Jacinto Street/Ramona Boulevard/Main Street). The remaining intersections would operate at LOS C or better. The following intersections would operate at unacceptable LOS under 2035 Build Alternative traffic conditions:

- Sanderson Avenue and Stetson Avenue – AM and PM peak hours (LOS D)
- Sanderson Avenue and Florida Avenue – AM and PM peak hours (LOS D and E)
- San Jacinto Street and Florida Avenue – PM peak hour only (LOS D)
- San Jacinto Street and Main Street and Ramona Boulevard – AM and PM peak hours (LOS E and F)

In addition to the individual intersection evaluation, the LOS at the ramp terminal intersections at each freeway interchange was determined using the HCM methods. Table 3.1-52 provides a summary of the results of the analysis of 2035 Build Alternative traffic conditions for the seven SR 79 freeway/arterial interchanges.

Table 3.1-52 Summary of Interchange Intersection Operations for the 2035 Build Alternative

Intersection	2035 Build Alternative				
	Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
SR 79/Domenigoni Parkway SB Ramps	S	31	C	12	B
SR 79/Domenigoni Parkway NB Ramps	S	12	B	15	B
SR 79/McCall-Stetson SB Ramps	S	14	B	15	B
SR 79/McCall-Stetson NB Ramps	S	19	B	27	C

Table 3.1-52 Summary of Interchange Intersection Operations for the 2035 Build Alternative

Intersection	2035 Build Alternative				
	Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
SR 79/Florida SB Ramps	S	8	A	18	B
SR 79/Florida NB Ramps	S	7	A	28	C
SR 79/Tres Cerritos SB Ramps	S	14	B	13	B
SR 79/Tres Cerritos NB Ramps	S	17	B	17	B
SR 79/Esplanade SB Ramps	S	14	B	15	B
SR 79/Esplanade NB Ramps	S	16	B	15	B
SR 79/Cottonwood SB Ramps	S	6	A	10	A
SR 79/Cottonwood NB Ramps	S	17	B	17	B
SR 79/Sanderson EB Ramps	S	6	A	8	A
SR 79/Sanderson WB Ramps	S	18	B	18	B
SR 79/Mid County Parkway SB Ramps[a]	N/A	N/A	N/A	N/A	N/A
SR 79/Mid County Parkway NB Ramps[a]	N/A	N/A	N/A	N/A	N/A

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: Analysis assumes SR 79 Realignment Build Alternative 2b (Roadway Segments B, D, H, I, J, M, N), which is called 2035 Build Alternative and represents all Project Build alternatives for the analysis.

S = Signalized, U = Unsignalized, NB = northbound, SB = southbound, EB = eastbound, WB = westbound, N/A = not applicable

Delay is expressed in average seconds of delay per vehicle during the peak hour.

[a]This interchange would be a freeway-to-freeway interchange.

Assuming the planned ramp configurations at each freeway/arterial interchange, the SR 79 ramp terminal intersections at each freeway/arterial interchange are projected to operate at LOS C or better in the peak hour at all locations.

Table 3.1-53 (page 3-197) is a comparison of the traffic operations on the study area roadways under existing (2004 Base Year), future no build, and future build conditions. There are 47 sections of roadway in Table 3.1-53. Comparing the 2004 Base Year to the 2035 No Project, 23 sections are projected to remain at the same LOS, and 12 sections are projected to get worse by 2035. There are also 12 sections where the 2035 No Project LOS would be better because of other network improvements.

When comparing the 2035 Build Alternative and the 2035 No Project, 37 sections would remain at the same LOS, and 10 sections would improve with the 2035 Build Alternative. None of the sections would have a better LOS in the 2035 No Project scenario. Comparing the 2035 Build Alternative against the 2004 Base Year, 31 sections would remain at the same LOS. Of the 16 sections that would have a different LOS, 13 sections would improve with the 2035 Build Alternative, even with the increased traffic between 2004 and 2035. Three sections would have a better LOS in the 2004 Base Year compared to the 2035 Build Alternative.

Table 3.1-53 2004 Base Year, 2035 No Project, and 2035 Build Alternative Average Daily Traffic Volumes and LOS

Study Area Roadway	2004[a] Base Year			2035 No Project			2035 Build Alternative		
	LOS C Roadway Capacity	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[b]	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[b]	Daily Traffic Volumes	LOS
Winchester Road (SR 79) between:									
1. Newport Road and Domenigoni Parkway	14,400	27,162	**F**	27,300	36,800	**F**	27,300	1,200	C or better
2. Domenigoni Parkway and Simpson Avenue	14,400	8,280	C or better	27,300	38,200	**F**	27,300	3,400	C or better
3. Simpson Avenue and Florida Avenue	14,400	7,927	C or better	27,300	35,100	**F**	27,300	3,900	C or better
Florida Avenue (SR 74/SR 79) between:									
4. Amanda Avenue (just west of Winchester Road) and Winchester Road	32,700	30,722	C or better	49,000	41,300	C or better	49,000	28,000	C or better
5. Winchester Road and Warren Road	32,700	29,897	C or better	49,000	57,500	**E**	49,000	29,200	C or better
6. Warren Road and Sanderson Avenue	32,700	27,879	C or better	49,000	48,400	C or better	49,000	32,800	C or better
7. Sanderson Avenue and State Street	27,300	32,972	**D**	27,300	36,300	**F**	27,300	35,900	**F**
8. State Street and San Jacinto Street	27,300	28,407	**D**	27,300	31,200	**D**	27,300	30,400	**D**
9. San Jacinto Street and Columbia Street	27,300	24,713	C or better	27,300	27,200	C or better	27,300	26,600	C or better
San Jacinto Street (SR 79) between:									
10. Mayberry Street and Florida Avenue	10,400	12,893	**E**	20,700	16,800	C or better	20,700	16,900	C or better
11. Florida Avenue and Menlo Avenue	20,700	14,547	C or better	20,700	18,900	C or better	20,700	17,300	C or better
12. Menlo Avenue and Esplanade Avenue	20,700	15,153	C or better	20,700	28,600	**F**	20,700	26,100	**F**
13. Esplanade Avenue and Seventh Street	20,700	14,576	C or better	20,700	20,800	**D**	20,700	18,500	C or better
14. Seventh Street and Main Street	10,400	13,676	**F**	20,700	16,400	C or better	20,700	14,700	C or better
Ramona Boulevard (SR 79) between:									
15. Main Street and State Street	10,400	9,846	C or better	20,700	12,100	C or better	20,700	12,200	C or better
16. State Street and Sanderson Avenue	10,400	4,757	C or better	20,700	6,200	C or better	20,700	6,700	C or better
State Street (SR 79) between:									
17. Mayberry Street and Florida Avenue	10,400	12,231	**E**	20,700	15,900	C or better	20,700	15,700	C or better
18. Florida Avenue and Oakland Avenue	20,700	16,808	C or better	20,700	21,900	**D**	20,700	16,800	C or better
19. Menlo Avenue and Esplanade Avenue	20,700	16,997	C or better	20,700	18,700	C or better	20,700	17,900	C or better

Table 3.1-53 2004 Base Year, 2035 No Project, and 2035 Build Alternative Average Daily Traffic Volumes and LOS

Study Area Roadway	2004[a] Base Year			2035 No Project			2035 Build Alternative		
	LOS C Roadway Capacity	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[b]	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[b]	Daily Traffic Volumes	LOS
20. Esplanade Avenue and Cottonwood Avenue	27,300	16,135	C or better	27,300	17,700	C or better	27,300	14,200	C or better
21. Cottonwood Avenue and Ramona Boulevard	27,300	17,697	C or better	27,300	19,500	C or better	27,300	19,800	C or better
22. Ramona Boulevard and Ramona Expressway	27,300	19,022	C or better	27,300	20,900	C or better	27,300	21,300	C or better
Ramona Expressway (SR 79) between:									
23. San Jacinto Street and State Street	14,400	14,185	C or better	43,100	32,100	C or better	43,100	33,600	C or better
24. State Street and Sanderson Avenue	14,400	20,857	**F**	43,100	36,000	C or better	43,100	37,300	C or better
25. Sanderson Avenue and Warren Road	14,400	16,704	**E**	32,700	31,800	C or better	61,200	51,400	C or better
26. Warren Road and Bridge Street	14,400	15,740	**D**	32,700	25,500	C or better	61,200	58,400	C or better
Warren Road between:									
27. Domenigoni Parkway and Simpson Road	10,400	6,413	C or better	20,700	8,300	C or better	20,700	7,800	C or better
28. Simpson Road and Harrison Avenue	10,400	12,315	**E**	20,700	16,000	C or better	20,700	7,400	C or better
29. Harrison Avenue and Stetson Avenue	10,400	10,702	**D**	20,700	13,900	C or better	20,700	5,600	C or better
30. Stetson Avenue and Florida Avenue	10,400	13,268	**F**	20,700	15,900	C or better	20,700	9,100	C or better
31. Florida Avenue and Devonshire Avenue	10,400	9,988	C or better	20,700	15,500	C or better	20,700	1,800	C or better
32. Esplanade Avenue and Cottonwood Avenue	14,400	8,002	C or better	28,700	21,000	C or better	28,700	7,900	C or better
33. Cottonwood Avenue and Ramona Expressway	14,400	8,319	C or better	28,700	17,500	C or better	28,700	11,700	C or better
Sanderson Avenue (SR 79) between:									
34. Domenigoni Parkway and Harrison Avenue	27,300	11,503	C or better	27,300	31,900	**E**	27,300	6,300	C or better
35. Harrison Avenue and Stetson Avenue	27,300	21,993	C or better	27,300	26,400	C or better	27,300	9,900	C or better
36. Stetson Avenue and Florida Avenue	27,300	25,917	C or better	27,300	35,800	**F**	27,300	18,400	C or better
37. Florida Avenue and Devonshire Avenue	27,300	24,628	C or better	27,300	36,400	**F**	27,300	21,600	C or better
38. Menlo Avenue and Esplanade Avenue	27,300	19,408	C or better	27,300	33,600	**E**	27,300	24,800	C or better
39. Esplanade Avenue and Cottonwood Avenue	13,700	14,040	**D**	27,300	27,000	C or better	27,300	26,900	C or better
40. Cottonwood Avenue and Ramona Boulevard	13,700	14,117	**D**	27,300	22,600	C or better	27,300	26,300	C or better

Table 3.1-53 2004 Base Year, 2035 No Project, and 2035 Build Alternative Average Daily Traffic Volumes and LOS

Study Area Roadway	2004[a] Base Year			2035 No Project			2035 Build Alternative		
	LOS C Roadway Capacity	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[b]	Daily Traffic Volumes	LOS	LOS C Roadway Capacity[b]	Daily Traffic Volumes	LOS
41. Ramona Boulevard and Ramona Expressway	13,700	12,075	C or better	27,300	23,300	C or better	27,300	1,300	C or better
42. Ramona Expressway and Gilman Springs Road	27,300	28,531	**D**	32,700	48,800	**F**	32,700	47,200	**F**
Lamb Canyon Road (SR 79) between:									
43. Gilman Springs Road and Interstate 10	28,700	33,945	**E**	61,200	49,600	C or better	61,200	54,800	C or better
Domenigoni Parkway between:									
44. Winchester Road and Warren Road	28,700	19,962	C or better	43,100	34,300	C or better	43,100	8,000	C or better
45. Warren Road and Sanderson Avenue	28,700	16,757	C or better	43,100	29,900	C or better	43,100	13,300	C or better
Cottonwood Avenue between:									
46. Warren Road and Sanderson Avenue	14,400	1,204	C or better	28,700	2,400	C or better	28,700	4,700	C or better
47. Lyon Avenue and State Street	14,400	4,567	C or better	28,700	8,500	C or better	28,700	7,600	C or better

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: LOS ratings D or worse are in bold text.

[a]2004 was used as the base year for the traffic analysis.

[b]Capacity of the roadway in 2035 reflects the ultimate general plan classification of the roadway.

Table 3.1-54 is a comparison of existing, future no build, and future build intersection operations. Of the 30 study intersections along existing SR 79 and local roads, 12 are projected to operate at LOS D, E, or F in 2035 in the No Project scenario, compared to eight in the 2004 Base Year. However, the 2035 analysis assumes additional turn lanes at intersections and assumes that eight of the nine unsignalized intersections will be signalized in 2035. If these improvements are not implemented as planned, most of the 30 study intersections will operate at LOS D or worse. In the 2035 Build Alternative scenario, only four intersections are projected to operate at LOS D or worse. The delay at those intersections would be essentially equal or much lower in the 2035 Build Alternative scenario.

Table 3.1-54 Intersection Operations for 2004 Base Year, 2035 No Project, and 2035 Build Alternative Conditions

Intersection		2004 Base Year					2035 No Project					2035 Build Alternative				
		Control	AM Peak Hour		PM Peak Hour		Control	AM Peak Hour		PM Peak Hour		Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
1.	Winchester Road/ Newport Road	U	49.2	**E**	71.3	**F**	S	6	A	7	A	S	7	A	5	A
2.	Winchester Road/ Domenigoni Parkway	S	747.9	**F**	123.0	**F**	S	20	B	46	**D**	S	13	B	9	A

Table 3.1-54 Intersection Operations for 2004 Base Year, 2035 No Project, and 2035 Build Alternative Conditions

		2004 Base Year					2035 No Project					2035 Build Alternative				
		Control	AM Peak Hour		PM Peak Hour		Control	AM Peak Hour		PM Peak Hour		Control	AM Peak Hour		PM Peak Hour	
	Intersection		Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
3.	Winchester Road/ Simpson Road	U	13.7	B	13.5	B	S	40	**D**	16	B	S	23	C	26	C
4.	Winchester Road/ Florida Avenue	S	15.0	B	16.3	B	S	57	**E**	86	**F**	S	24	C	25	C
5.	Warren Road/ Domenigoni Parkway	S	21.6	C	17.2	B	S	22	C	17	B	S	20	B	20	B
6.	Warren Road/ Harrison Avenue	U	36.6	**E**	25.4	**D**	U	54	**F**	23	C	U	14	B	11	B
7.	Warren Road/ Stetson Avenue	U	14.9	B	18.9	C	S	28	C	27	C	S	23	C	24	C
8.	Warren Road/ Florida Avenue	S	34.8	C	34.6	C	S	39	**D**	36	**D**	S	31	C	30	C
9.	Warren Road/ Esplanade Avenue	U	11.6	B	15.4	C	S	20	B	19	B	S	26	C	25	C
10.	Warren Road/ Cottonwood Avenue	U	11.0	B	14.1	B	S	5	A	7	A	S	11	B	13	B
11.	Warren Road/ Ramona Expressway	S	17.9	B	22.5	C	S	22	C	27	C	S	N/A	N/A	N/A	N/A
12.	Sanderson Avenue/ Domenigoni Parkway	S	22.8	C	19.8	B	S	138	**F**	61	**E**	S	20	B	22	C
13.	Sanderson Avenue/Harrison Avenue	S	12.9	B	10.8	B	S	20	B	25	C	S	17	B	16	B
14.	Sanderson Avenue/Stetson Avenue	S	28.1	C	36.7	**D**	S	49	**D**	111	**F**	S	44	**D**	41	**D**
15.	Sanderson Avenue/Florida Avenue	S	36.1	**D**	43.9	**D**	S	102	**F**	236	**F**	S	40	**D**	57	**E**
16.	Sanderson Avenue/ Esplanade Avenue	S	15.5	B	16.0	B	S	18	B	47	**D**	S	15	B	21	C
17.	Sanderson Avenue/ Cottonwood Avenue	S	11.2	B	11.8	B	S	11	B	19	B	S	11	B	20	B
18	Sanderson Avenue/Ramona Boulevard	S	5.0	A	4.2	A	S	13	B	18	B	S	12	B	13	B
19.	Sanderson Avenue/Ramona Expressway	S	46.6	**D**	29.6	C	S	90	**F**	51	**D**	S	N/A	N/A	N/A	N/A

Table 3.1-54 Intersection Operations for 2004 Base Year, 2035 No Project, and 2035 Build Alternative Conditions

	Intersection	2004 Base Year					2035 No Project					2035 Build Alternative				
		Control	AM Peak Hour		PM Peak Hour		Control	AM Peak Hour		PM Peak Hour		Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
20.	Sanderson NB Avenue/Gilman Springs Road	U	24.8	C	13.8	B	S	11	B	5	A	S	11	B	5	A
21.	Sanderson SB Avenue/Gilman Springs Road	U	14.1	B	19.7	C	S	10	B	4	A	S	10	B	12	B
22.	Lyon Avenue/ Cottonwood Avenue	U	8.5	A	9.9	A	S	18	B	24	C	S	17	B	23	C
23.	State Street/ Florida Avenue	S	23.5	C	26.4	C	S	26	C	33	C	S	26	C	29	C
24.	State Street/ Esplanade Avenue	S	21.9	C	23.9	C	S	22	C	23	C	S	22	C	23	C
25.	State Street/ Cottonwood Avenue	S	12.6	B	11.2	B	S	12	B	10	A	S	11	B	10	A
26.	State Street/ Ramona Boulevard	S	19.8	B	20.4	C	S	22	C	23	C	S	24	C	23	C
27.	State Street/ Ramona Expressway	S	23.1	C	25.9	C	S	27	C	26	C	S	24	C	22	C
28.	San Jacinto Street/Florida Avenue	S	36.9	**D**	38.5	**D**	S	31	C	37	**D**	S	30	C	36	**D**
29.	San Jacinto Street/Esplanade Avenue	S	23.7	C	26.4	C	S	24	C	28	C	S	24	C	26	C
30.	San Jacinto Street/Ramona Boulevard/Main Street	S	134.5	**F**	388.2	**F**	S	76	**E**	268	**F**	S	78	**E**	273	**F**

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: Intersection #11 would be a freeway interchange under Build conditions, and Intersection #19 would not intersect the freeway. Warren Avenue would not connect between Florida Avenue and Esplanade Avenue under the Build conditions.

S = Signalized, U = Unsignalized, SB = southbound, NB = northbound

Delay is expressed in average seconds of delay per vehicle during the peak hour.

LOS ratings D and worse are in bold text.

Traffic Effects of Design Options

Two design options to the base condition for Build Alternatives 1b and 2b are being considered. The proposed profile changes and the access changes under Design Options 1b1 and 2b1 would affect the corridor area south of Florida Avenue. The following design features would be associated with both design options:

- Add access ramps at realigned SR 79 and East Newport Road and existing SR 79/Winchester Road (the southern end of the Project study area). This change would provide more direct connections for traffic originating/terminating along Winchester Road south of Domenigoni Parkway and using SR 79 south of the study area. With this access modification, the intersection of Domenigoni Parkway with the southbound ramps of realigned SR 79 would not need an exclusive eastbound right-turn lane to function with an acceptable level of service in 2035.
- Access to realigned SR 79 at Simpson Road would be removed by cul-de-sacs on the east and west sides of the roadway. An interim signalized intersection would be provided during Opening Year (2015) at Simpson Road until the Ranchland Road interchange is constructed with its interchange at realigned SR 79. This would provide an access point to SR 79 between Florida Avenue and Domenigoni Parkway from the time this segment is constructed. Compared to the Project base condition, the design option would remove some traffic from the Domenigoni Parkway interchange during the interim condition (until the Ranchland Road/Future Street A connection and interchange are constructed), but the intersection at SR 79/Simpson Road is projected to operate at LOS E before 2020. However, little development is in the area that would be near the realigned SR 79, and alternative routes are available (for example, Domenigoni Parkway and the Ranchland Road/Future Street A) for drivers to cross realigned SR 79.
- Olive Avenue would be closed at cul-de-sacs on the east and west sides of the realigned SR 79. This change would have a minimal effect on traffic operations. Little development exists along Olive Avenue in the area that would be near realigned SR 79, and alternative routes are available (for example, Domenigoni Parkway and Simpson Road until the Ranchland Road/Future Street A connection is constructed) for drivers to cross realigned SR 79.
- The design option changes to the vertical profile would include a near-grade crossing over the San Jacinto Branch Line by the realigned SR 79. The near-grade crossing over the existing railroad would be approximately 0.9 to 2.4 m (3 to 8 ft) above grade. With the near-grade crossing, there would be no impact to traffic because vehicles traveling along SR 79 would not be stopped at the crossing. There would be an impact to rail operations because the near-grade crossing would prohibit use of the rail line at the SR 79 crossing. However, the San Jacinto Branch Line has not been in operation over the past 5 years. Because of this, potential operational impacts to the San Jacinto Branch Line can be fully addressed through mitigation (see Section 3.1.6.4 [page 3-209]).
- The design option changes to the vertical profile would also include a truck climbing lane in the northbound direction along Roadway Segments C and G (Design Option 1b1) and D and H (Design Option 2b1) (Domenigoni Parkway to south of California Avenue). As shown in Table 3.1-50 (page 3-191), nine sections of the SR 79 realignment are projected to operate at LOS C or better under 2035 conditions, with two exceptions. The sections between Newport Road and Domenigoni Parkway and between Domenigoni Parkway and Stetson Avenue are projected to operate at LOS D with the SR 79 realignment classified as a four-lane freeway. The design option change to add the truck climbing lane would increase the capacity of the roadway (to a five-lane freeway) and would improve the traffic operations along Roadway Segments C, D, G,

and H. As shown in Table 3.1-55 (page 3-203), the addition of the truck climbing lane would improve the section between Domenigoni Parkway and Stetson Avenue from LOS D to LOS C or better.

Table 3.1-55 2035 Build Alternative Average Daily Traffic Volumes and LOS with Northbound Truck Lane

Roadway	Ultimate General Plan Classification/Lanes Design Option	2035 Build Daily Traffic Volumes	LOS C Roadway Capacity[a]	LOS
SR 79 (Freeway) between:				
48. Newport Road and Domenigoni Parkway	Freeway/4	68,800	61,200	**D**
49. Domenigoni Parkway and Stetson Avenue	Freeway/5	66,200	77,600	C or better
50. Stetson Avenue and Florida Avenue	Freeway/5	55,500	77,600	C or better
51. Florida Avenue to Tres Cerritos Avenue	Freeway/4	49,800	61,200	C or better
52. Tres Cerritos to Esplanade Avenue	Freeway/4	49,300	61,200	C or better
53. Esplanade Avenue to Cottonwood Avenue	Freeway/4	46,100	61,200	C or better
54. Cottonwood Avenue to Sanderson Avenue	Freeway/4	41,500	61,200	C or better
55. Sanderson Avenue to Ramona Boulevard	Freeway/4	55,600	61,200	C or better
56. Ramona Boulevard to (just north of SR 79/MCP interchange)	Freeway/4	51,300	61,200	C or better

[a] *Source*: Figure C-3 Link/Volume Capacity/Level of Service for Riverside County Roadways, Riverside County General Plan, Chapter 4: Circulation Element

Summary of Permanent Impacts (Traffic)

The Project would be constructed as a limited-access expressway with grade-separated intersections. According to data from the FHWA website and the Department's *2001 Collision Data on California State Highways*, accident rates are typically lower for freeways and expressways than arterials because freeways and expressways do not have at-grade intersections and signals (FHWA 2007d, Department 2001).

FHWA data show that fatality rates (per million vehicle miles) on interstates are significantly less than arterials, collectors, and local roads:

- Interstates – 0.70
- Arterials – 1.38
- Collectors – 1.99
- Local – 1.94

The Department's 2001 Collision Data shows similar results for fatality rates and for combined (fatal, injury, and property damage) accident rates:

- Freeways – 0.92
- Non-Freeways – 1.49

Design elements for the proposed Project to improve safety should separate local and regional traffic and reduce the volumes on the existing alignment, which is expected to decrease the total number of accidents. The new alignment would reduce the volumes on the existing alignment by approximately 30 percent on average (calculation based on a comparison of the 2035 No Build and 2035 Build average daily traffic volumes on existing SR 79 from Table 3.1-48 [page 3-187] and Table 3.1-50 [page 3-191]). Also, keeping truck traffic and oversize vehicles off local roads would improve the safety and pavement structure of these local roads.

Section Analysis

The projected volumes on the realigned section of SR 79 (41,500 to 68,800 ADT) are consistent with a freeway facility, and SR 79 is projected to operate at LOS C or better along the entire length of the Project, except the sections between Newport Road and Domenigoni Parkway and between Domenigoni Parkway and Stetson Avenue, which are projected to operate at LOS D. The volumes projected for these sections substantially exceed the capacity of an expressway. The capacity for a four-lane expressway at LOS C is 32,700 ADT.

Construction of a Build alternative would improve the operations on portions of several arterial streets, Winchester Road, Florida Avenue, and Sanderson Avenue, from LOS F to LOS D or better.

The maximum peak hour one-direction volume on the mainline SR 79 is approximately 4,000, with most of the peak hour volumes ranging from approximately 2,500 to 4,000.

Intersection Analysis

Of the 30 study intersections, 12 are projected to operate at LOS D, E or F in the 2035 No Build Alternative. Construction of the Build alternatives would improve 7 of these intersections to acceptable levels (LOS C or better), 1 intersection would be eliminated (Sanderson Avenue/Ramona Boulevard), 2 intersections would improve but still have LOS D in at least one peak hour (Sanderson Avenue /Stetson Avenue, Sanderson Avenue/Florida Avenue), and 2 intersections would be unaffected because they are not close to either SR 79 or the MCP (San Jacinto Street/Florida Avenue, San Jacinto Street/Ramona Boulevard/Main Street).

Assuming the planned ramp configurations at each interchange, the intersections at each freeway/arterial interchange are projected to operate at LOS C or better in the peak hour at all locations.

Permanent Impacts (Design Options)

The access modifications to East Newport Road would result in a positive impact by providing access from existing SR 79/Winchester Road to the northbound and southbound ramps of realigned SR 79.

With the near-grade crossing over the San Jacinto Branch Line, there would be an impact to rail operations at this location because the near-grade crossing would prohibit use of the rail line at the SR 79 crossing. A measure is proposed for the design options to address the near-grade crossing over the San Jacinto Branch Line (see Section 3.1.6.4 [page 3-209]).

The addition of the northbound truck climbing lane through the West Hemet Hills would result in a positive impact to traffic operations. The addition of the truck climbing lane would increase the capacity of the roadway from a four-lane freeway to a five-lane freeway and would improve the traffic operations along Roadway Segments C, D, G, and H. The LOS on the section between Domenigoni Parkway and Stetson Avenue would improve from LOS D to LOS C or better.

Permanent Impacts (Pedestrian and Bicycle)

In general, the Project would result in positive impacts to both pedestrian and bicycle transportation. While the new SR 79 facility (as an expressway or freeway) would not include pedestrian or bicycle facilities, it would take high volumes of vehicular traffic off existing surface streets in Hemet and San Jacinto. These streets (e.g., Florida Avenue, State Street) currently serve both pedestrian and bicycle transportation. With reduced vehicular traffic, the ease of travel and level of safety for nonvehicular users would increase. With the Project, there may be increased vehicular traffic at some existing streets where there are new interchanges (e.g., Cottonwood Avenue). However, pedestrian facilities (such as sidewalks and crosswalks) would be included at the interchange, and bicyclists can use other routes. Overall, the positive impacts associated with reduced traffic on surface streets would mean that there are no negative impacts for pedestrian and bicycle transportation.

The Project is not currently associated with the construction of new bus stops, terminals, or rapid rail facilities. If this type of transportation system is considered in the future once the Project is operational, all ADA requirements would be met as required by the Accessibility Guidelines for Buildings and Facilities (ADA 2002). Compliance with the ADA requirements of a future multimodal transportation system would be documented as part of that separate project.

The local agencies should provide or continue to provide programs that encourage and promote the use of alternative modes of travel, including TDM strategies such as ridesharing, telecommuting, improvements to pedestrian and bicycles facilities, and public transportation infrastructure improvements.

Temporary Impacts

Traffic Detours

Traffic detours would be required to maintain local traffic circulation during construction of the Project when local roadways are closed. Three main types of traffic detours would be required for the Project (short-term, long-term, and constructed traffic detours). They are described in Table 3.1-56 (page 3-206). There is no identified need for detours that would be longer than 10 days but less than 30 days.

Table 3.1-56 Traffic Detours

Type	Period of Use	Definition
Short-Term Traffic Detour	Up to a maximum of 10 consecutive days	Use of existing local streets within the Project area to divert traffic flow during the construction and removal of bridge falsework and during other short-duration construction activities. Short-term traffic detours would occur at night only, for no more than 8 hours at a time.
Long-Term Traffic Detour	More than 30 days	Use of existing local streets within the Project area to divert traffic flow during construction of bridges.
Constructed Traffic Detour	Remain in place until construction at that location is complete	Use of temporary paved roadways constructed within the Project ROW to divert existing traffic flow around interchange and bridge construction. These detours would be removed after bridge or grade-separated interchange (ramp) construction activities are complete.

Source: Final Project Description, November 2007

Short-Term Traffic Detours

Short-term traffic detours would be required outside the Project ROW for nighttime street closures during bridge construction. Bridge construction activities would include the construction and removal of bridge falsework and other short-term construction activities. Short-term traffic detours would be required for street closures that occur up to a maximum of 10 consecutive nights and for no more than 8 hours per night at each location over the duration of Project construction. Several short-term traffic detours are expected to be necessary at bridge construction sites over the duration of Project construction.

Short-term street closures and associated short-term detour routes would be identified and signed to provide notice to the general public. Emergency service providers would be notified of street closure locations to allow for their identification of alternative routes for emergency response. The approval of any short-term detour plans using local streets would be included in the Traffic Management Plan.

Long-Term Traffic Detours

Typically, a long-term traffic detour is defined by the Department when street closures are required for more than 11 consecutive days. However, long-term traffic detours as defined for the Project are when street closures occur for more than 30 consecutive days because of bridge construction activities. A long-term traffic detour would be required outside the Project ROW for the construction of the Devonshire Avenue Bridge over SR 79 prior to Opening Year (2015). The long-term traffic detour would divert local eastbound and westbound traffic from Devonshire Avenue. Eastbound traffic would be directed south along California Avenue, east along SR 74/Florida Avenue, and north along Warren Road. Westbound traffic would be directed south along Warren Road, west along SR 74/Florida Avenue, and north along California Avenue. The location of the long-term traffic detour is illustrated in Figure 2.2-12 (at the end of Chapter 2). As required by a Transportation Management Plan, long-term detour routes would be identified, signed, or noticed to the general public. In addition, emergency service providers would be notified of street closure locations to allow them to identify alternate routes for emergency response.

Constructed Traffic Detours

Constructed traffic detours would be required within the Project ROW at locations on East Newport Road and Sanderson Avenue, where traffic on local cross streets would be blocked by Project construction activities. At these locations, sufficient space is available immediately adjacent to the existing roadway to construct a temporary detour route. The construction of this temporary detour route is a constructed traffic detour. Constructed traffic detours would require the realignment of the existing roadway, with temporary paving to direct traffic around interchange and bridge construction. These detours would remain in place until the construction activity at that location is complete. All constructed traffic detours would be removed prior to Opening Year (2015). The location of the constructed traffic detours for Roadway Segments A (Build Alternatives 1a and 2a) and B (Build Alternatives 1b and 2b and design options) would be at East Newport Road. The location of the constructed traffic detours for Roadway Segments L (Build Alternatives 1b and 2b), M (Build Alternatives 1a and 2a), and N (all Build alternatives) would be at Sanderson Avenue. Constructed traffic detours are illustrated in Figure 2.2-12 (at the end of Chapter 2).

Phased Construction

Temporary traffic impacts were assessed by evaluating construction phasing. The four recommended phases for constructing the Project are discussed in Section 2.2.1.3 (page 2-20).

Impact Analysis

To assess the traffic impacts, an interim horizon model was developed to estimate section and intersection volumes and the associated peak hour LOS along Winchester Road, Warren Road, and Sanderson Avenue through the study area in the years between 2004 (the traffic study base year) and 2035 (the traffic study horizon year). Afternoon peak hour traffic conditions were used for the phasing analysis because afternoon volumes are typically greater than morning peak volumes.

The LOS at the study area intersections were estimated based on total volumes entering each intersection and the intersection lane geometry, and the roadway capacities were scaled to represent intersection constraints so that the roadway LOS result provides an estimate of the intersection LOS along each section based on the directional peak hour volume. The section and intersection LOS estimates were used to identify congested locations in this corridor during the various interim timeframes, and appropriate improvement strategies were then identified to maintain acceptable traffic service levels. The resulting staging plan identifies needed improvements to the north-south streets, as well as the desirable timing for constructing the four new phases of the realigned SR 79.

The interim horizon years for this analysis (2013, 2017, 2020, and 2025) were selected because they represent the years in which traffic service levels in the corridor exceed acceptable threshold levels (worse than LOS D). Pedestrian and bicycle impacts are discussed at the end of this section (page 3-208).

Year 2013 Analysis

The left side of Figure 3.1-39 illustrates the projected LOS conditions in Year 2013. By 2013, most of the stop-sign-controlled intersections along Winchester Road and Warren Road were projected to operate at unacceptable levels of service. In addition, the intersections at Sanderson Avenue/Florida Avenue, Sanderson Avenue/Esplanade Avenue, and Sanderson Avenue/Ramona Expressway were projected to operate at LOS E or F without improvements. The intersections at Winchester Road/Florida Avenue, Sanderson Avenue/Florida Avenue, Sanderson Avenue/Esplanade Avenue, and Sanderson Avenue/Ramona Expressway are projected to operate at LOS E.

Year 2017 Analysis

The left side of Figure 3.1-40 illustrates the projected LOS conditions in Year 2017, assuming that the recommended Year 2013 improvements have been made. The intersection at Sanderson Avenue/Florida Avenue is projected to operate at LOS E.

Year 2020 Analysis

The left side of Figure 3.1-41 illustrates the projected LOS conditions in Year 2020, assuming that the recommended Year 2017 improvements have been made. The intersection at Sanderson Avenue/Stetson Avenue is projected to operate at LOS E; other locations are LOS D or better.

Year 2025 Analysis

The left side of Figure 3.1-42 illustrates the projected LOS conditions in Year 2025, assuming that the recommended Year 2020 improvements have been made. The intersections at Sanderson Avenue/Esplanade Avenue, Sanderson Avenue/Florida Avenue, Sanderson Avenue/Stetson Avenue, and Winchester Road/ Domenigoni Parkway are projected to operate at LOS E; other intersections are LOS D or better.

Pedestrian and Bicycle Impacts

Most construction would take place off existing roads, so the impacts to pedestrian and bicycle traffic would be minimal. The biggest impacts would be on existing surface streets (e.g., Cottonwood Avenue) where new interchanges would be constructed. During construction, there would likely be temporary closures to sidewalks. In addition, there may be reductions in lane widths or lane closures that reduce the comfort and safety level for bicycles. While both pedestrian and bicycle transportation can be accommodated with other facilities, there would be a minor temporary impact to these modes during construction of the Project.

3.1.6.4 Avoidance, Minimization, and/or Mitigation Measures

Permanent Impacts

For the analysis of traffic impacts, one Build alternative has been analyzed. The different alignments under consideration for SR 79 do not vary substantially in the way they affect traffic. Therefore, the Build alternative is based on Build Alternative 2b. The following section addresses minimization and mitigation measures for permanent traffic impacts of the Build alternative and Design Options 1b1 and 2b1. Mitigation measures for permanent pedestrian and bicycle impacts are addressed in the last section of this topic (page 3-210).

Build Alternative

For daily traffic, construction of the Build alternative would improve 10 of the 14 deficient existing local arterial roadways from unacceptable levels of service (D, E, or F) to LOS C or better. Four are projected to operate at LOS D or worse under the 2035 Build alternative conditions. Because the Project would improve operations on these local roadways (although still not to LOS C or better), no mitigation measures are needed.

For existing intersections, construction of the Build alternative would improve 7 of the 12 deficient intersections in the No Build Alternative to acceptable levels of service (LOS C or better)—one deficient intersection would be eliminated (Sanderson Avenue/Ramona Expressway), two intersections would have improved LOS but still would operate at LOS D or E during at least one peak hour (Sanderson Avenue/Stetson Avenue, Sanderson Avenue/ Florida Avenue), and two intersections would be essentially unaffected because they are not close to either SR 79 or the MCP (San Jacinto Street/Florida Avenue, San Jacinto Street/Ramona Boulevard/Main Street). Because the Project would not worsen operations at these intersections (although still not to LOS C or better), no mitigation measures are needed.

For the new ramp terminal intersections at the seven SR 79 freeway/arterial interchanges (a total of 14 new intersections), all locations are projected to operate at LOS C or better in the peak hour. Therefore, no mitigation measures are needed.

Design Options

The access modifications to Olive Avenue and Simpson Road would permanently remove east-west access along these roadways on either side of realigned SR 79. According to the Riverside County General Plan Circulation Element, Olive Avenue is designated a “Secondary” roadway west of SR 79/Winchester Road (County 2003a). Furthermore, 2007 geographic information system (GIS) data from Riverside County indicate that Olive Avenue is designated a “Secondary” roadway up to a distance 822 m (0.5 mi) east of Patterson Avenue. Simpson Road is designated a “Major Roadway” in the Riverside County General Plan Circulation Element (County 2003a). Access modifications to Olive Avenue and Simpson Road would require coordination with Riverside County to assess appropriate actions related to the classification (or reclassification) of these roadways as part of the County’s approved circulation system. Mitigation measure LU-6 (see Section 3.1.1.1 [page 3-25]) is proposed for the design options to coordinate the change to the Riverside County General Plan Circulation Element that would be required if access on Olive Avenue and Simpson Road were modified.

UTIL-3 (see Section 3.1.5.3 [page 3-165]) is proposed for the design options to address the near-grade crossing over the San Jacinto Branch Line if the tracks need to be used in the future.

The impact of closing SR 79 and detouring traffic onto local streets would result in a secondary impact to vehicular traffic. However, because the impact would be short term and would occur seldom, if at all, no mitigation is recommended other than the Transportation Management Plan included in mitigation measure UTIL-3 (Section 3.1.5.3 [page 3-165]).

Pedestrian and Bicycle

Because there would be no permanent impacts to pedestrian and bicycle transportation, no mitigation measures are required.

Temporary Impacts

Temporary impacts to traffic associated with construction would be mitigated with the implementation of a phased Traffic Management Plan (TMP) for each phase of the Project. As part of the TMP conducted for Phase 1, potential impacts to subsequent phases would also be assessed. The plan will address construction-related traffic congestion impacts and mitigate where appropriate. The TMP will include coordination with Riverside County, the City of Hemet, and the City of San Jacinto to minimize delays to motorists.

A detailed phased TMP will be prepared during the plans, specifications, and estimate (PS&E) phase of the Project when staged-construction and traffic-handling details have been developed.

A preliminary assessment of construction-related traffic impacts based on the expected Project phasing was conducted. The following paragraphs summarize locations that will be included in the evaluation of the TMP based on refinements to construction sequencing and other construction activities that are currently unknown. Specific improvements will be determined at that time.

Year 2013 Analysis

To maintain acceptable traffic conditions in the corridor, the following intersections and roads may require enhancements by 2013 (potential improvements are shown on the right in Figure 3.1-39):

- Warren Road/Harrison Avenue intersection
- Warren Road/Stetson Avenue intersection
- Warren Road/Esplanade Avenue intersection
- Winchester Road/Florida Avenue intersection
- Sanderson Avenue/Florida Avenue intersection
- Sanderson Avenue/ Stetson Avenue intersection
- Sanderson Avenue/Esplanade Avenue intersection
- Sanderson Avenue/ Ramona Expressway intersection
- Winchester Road Domenigoni Parkway to Florida Avenue

Year 2017 Analysis

To maintain acceptable traffic conditions in the corridor, realigned SR 79 is expected to be open from Florida Avenue to north of Cottonwood Avenue by 2017. This improvement is shown on the right in Figure 3.1-40.

Year 2020 Analysis

To maintain acceptable traffic conditions in the corridor, the second phase of realigned SR 79 (from Florida Avenue to Domenigoni Parkway) is expected to be open by 2020.

Completion of realigned SR 79 from Domenigoni Parkway to Sanderson Avenue would attract additional through traffic to the corridor from other routes. Therefore, the intersection of Sanderson Avenue/Cottonwood Avenue may require enhancements by 2020 (potential improvements are shown on the right in Figure 3.1-41).

Year 2025 Analysis

To maintain acceptable traffic conditions in the corridor, Phase 4 of the SR 79 Realignment (from Newport Road to Domenigoni Parkway) is expected to be open by 2025. In addition, intersection enhancements may be necessary at Sanderson Avenue/Esplanade Avenue and Sanderson Avenue/Stetson Avenue. The realignment and intersection enhancements are shown on the right in Figure 3.1-42.

Temporary Impacts (Pedestrian and Bicycle)

Temporary impacts to pedestrian and bicycle transportation associated with construction would be mitigated with the implementation of the TMP for the Project. The plan will address impacts and mitigation for nonvehicular transportation modes and will include coordination with Riverside County, the City of Hemet, and the City of San Jacinto to limit disruption to existing trails and bike paths during construction and identify detours, if necessary.

The TMP data sheet for the Project was prepared and completed in November 2008. A more detailed TMP will be prepared during the PS&E phase of the Project.

3.1.7 Visual/Aesthetics

3.1.7.1 Regulatory Setting

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

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

3.1.7.2 Affected Environment

The discussion and analysis of visual/aesthetics is based on the environmental review and conclusions presented in the Final Visual Impact Assessment (VIA) of June 2009 and the Technical Report Addendum Memorandum, Visual Impact Assessment, of June 2010.

The County of Riverside, the City of San Jacinto, and the City of Hemet have goals and policies that pertain to aesthetics associated with transportation projects within their jurisdiction. A summary of those goals and policies is provided below.

Riverside County General Plan

The Riverside County General Plan is an advisory document that applies to unincorporated parts of Riverside County and comprises eight elements (Land Use, Circulation, Multipurpose Open Space, Safety, Noise, Housing, Air Quality, and Administration) (County 2003a). The parts of the General Plan that address visual resource issues are the Vision Statement, Land Use Element, Circulation Element, and Multipurpose Open Space Element. The general plan also contains 19 area plans to provide more detailed guidance for specific parts of the county. The Harvest Valley/Winchester and San Jacinto Area Plans apply to the unincorporated areas that a realigned SR 79 would pass through.

The General Plan Vision Statement emphasizes the "remarkable environmental setting" of Riverside County and stresses the importance of "sustaining the permanent viability of the unique landforms and ecosystems that define this environment."

The Land Use Element specifies that landforms be preserved because "natural slopes are one of Riverside County's primary aesthetic resources. Foothill and mountain areas, which are visible throughout the County, create a dramatic backdrop for local communities and help define the character of the County." The following land use policies provide more specific guidance.

- Policy LU 11.1(a): Require that hillside development minimize alteration of the natural landforms and natural vegetation.
- Policy LU 11.1(d): Restrict development on visually significant ridgelines, canyon edges and hilltops through sensitive siting and appropriate landscaping to ensure development is visually unobtrusive.

The Multipurpose Open Space Element echoes this vision, providing for the protection of the scenic resources "that are visible to the general public and considered visually attractive." These include "natural landmarks and prominent or unusual features of the landscape." These features often form scenic backdrops to urban areas that "include hillsides and ridges that rise above urban or rural areas or highways." The following open space policy provides more specific guidance.

- Policy OS 21.1: Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.

The Land Use Element also calls for the preservation of topographic features as natural boundaries between communities. The individual and distinctive quality of Riverside communities is maintained in part by "retaining distinct edges and sufficient open space between scattered urbanized areas." The following land use policy provides more specific guidance.

- Policy LU 3.5: Prepare a community separators map or overlay that will illustrate the intent of the County of Riverside and its residents that the County's distinctive community identities be maintained and not be absorbed in a sea of continuous suburban development. Topographical and geographical features such as mountains, hills, rivers, and floodplains should constitute the community separators in most cases.

The Circulation and Land Use Elements apply special visual significance to highways that are officially recognized as Eligible or Designated State Scenic Highways. SR 79 has not been recognized as a State Scenic Highway; however, within the Project area, it intersects the part of SR 74 that is an Eligible State Scenic Highway. Roadways are designated "Eligible" based on their "abundant natural visual resources, including low-lying valleys, mountain ranges, rock formations, rivers, and lakes." The following land use and circulation policies provide more specific guidance.

- Policy C 19.1: Preserve scenic routes that have exceptional or unique visual features in accordance with Caltrans' Scenic Highways Plan.
- Policy LU 13.1: Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.
- Policy LU 13.8: Avoid the blocking of public views by solid walls.

The Circulation Element calls for native plant landscaping on highways. The following circulation policies provide specific guidance.

- Policy C 5.1: Encourage Caltrans to install and maintain landscaping and other mitigation elements along expressways and highways, especially when they are adjacent to existing residential or other noise sensitive uses.
- Policy C 5.2: Encourage the use of drought-tolerant native plants and the use of recycled water for roadway landscaping.

Harvest Valley/Winchester Area Plan (Riverside County General Plan)

The Harvest Valley/Winchester Area Plan (HVWAP) emphasizes the preservation of the landforms that form the scenic backdrop to its communities (County 2003a). These landforms contribute to the "remarkable environmental setting" for which Riverside County is known. The following policy provides specific guidance.

- Policy HVWAP 6.1: Development of the hilltop area shall be designed to maintain the scenic value of the hills and avoiding slope scarring.

In addition, the HVWAP promotes the preservation of landforms to "help define the edges of and separation between communities." Maintaining visual boundaries between communities is integral to preserving their individuality and unique character.

The HVWAP defines the following landmarks as particularly "unique features."

- Lakeview Mountains, which "create a valuable scenic backdrop," and "large rock outcroppings and boulders accent the slopes."
- Double Butte is a steep, dual-peaked mountain located between Winchester and Homeland.
- Diamond Valley Lake is an 800,000-acre-foot reservoir that provides critical water storage for much of Southern California. Riverside County hopes to increase tourism, and the plan notes that "potential recreational opportunities available at the Diamond Valley facility include bicycle, hiking and equestrian trails, camping, fishing, boating, golfing, and picnicking."

Riverside County intends to develop the unincorporated community of Winchester as "an important tourist and transit hub for the region due to its proximity to the Diamond Valley Lake." The County plans to expand upon the current rural character of Winchester to develop a "compact downtown core designed in an Old West Theme."

The HVWAP encourages the protection of the landscape of Scenic Highways. The following policy provides specific guidance.

- Policy HVWAP 14.1: Protect the scenic highways in the Harvest Valley/Winchester planning area from change that would diminish the aesthetic value of adjacent properties in accordance with the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.

The Harvest Valley/Winchester Area Plan requires adherence to lighting requirements. The following policy provides specific guidance.

- Policy HVWAP 9.1: Adhere to the lighting requirements specified in County Ordinance No. 655 for standards that are intended to limit light leakage and spillage that may interfere with the operations of the Mount Palomar Observatory.

San Jacinto Area Plan (Riverside County General Plan)

The San Jacinto Area Plan is also dedicated to the protection of the natural environment (County 2003a). The plan promotes the preservation of the remarkable vistas that "San Jacinto Valley area offers in every direction." In particular, it emphasizes the San Jacinto River, which is a major scenic resource for the valley. The following policies provide more specific guidance.

- Policy SJVAP 3.6: Require the placement and design of roadways to be compatible with the natural character of the River corridor.
- Policy SJVAP 3.7: Discourage the addition of local road crossings. If any additional crossing is allowed, careful consideration shall be given to location, design, and landscaping to take advantage of the scenic character of the River and to avoid destruction of its natural values.

City of San Jacinto General Plan

The Land Use and Resource Management Elements of the City of San Jacinto General Plan address scenic resources (San Jacinto 2006). The Land Use Element states that "the visual character of the community is defined by the surrounding agricultural resources and mountain views. Future development should be compatible with the preservation of these resources." Protection of ridgelines and hillsides is specifically mentioned. The following policies provide more specific guidance.

- Policy LU 6.5: Encourage the use of project design features that reduce impacts to important local and regional environmental resources.
- Policy LU 6.7: Preserve and enhance public views of the mountains and hillsides and other scenic vistas.
- Policy LU 6.8: Preserve large groupings of trees, rock outcroppings, and other valuable scenic resources.
- Policy RM 1.1: Conserve important natural resources such as mature trees, rock outcroppings, hills, ridges, and other prominent landforms, as open space.
- Policy RM 1.6: Discourage grading of hillside areas and on slopes greater than 25 percent.

City of Hemet General Plan

The City of Hemet General Plan (Hemet 1992) establishes policies for the ultimate build out of the city through a comprehensive management strategy for future growth and change. The general plan identifies specific goals to manage growth and maintain a traditional small-town feel, while creating and maintaining a functional, healthful, and desirable place for citizens to live and do business. The general plan establishes the year 2010 as the benchmark date for general plan policy and identifies regionally balanced goals based on seven major issue areas: community development, economic development, public services and facilities, transportation, public health and safety, resource management, and housing. The community development area goals specific to visual goals are listed below.

b. Community Character and Design: Physical development and environmental management whose visual traits emphasize Hemet's unique identity and character.

c. Community Structure: To maintain the special character and identity of Hemet area as a collection of distinct districts with unique assets and traits, each contributing to the overall image of the community.

d. Neighborhood Planning Areas: Protection and enhancement of the unique features and characteristics of individual neighborhoods within the Hemet General Plan study area.

Process for Visual Impact Analysis

The process used in this analysis generally follows the guidelines outlined in the publication *Visual Impact Assessment for Highway Projects* (FHWA 1981).

Six principal steps required to assess visual impacts were carried out.

- Define the project setting and viewshed
- Identify key views for visual assessment
- Analyze existing visual resources and viewer response
- Depict the visual appearance of project alternatives

- Assess the visual impacts of project alternatives
- Propose methods to mitigate adverse impacts

Existing Visual Environment

Regional Landscape

The landscape of western Riverside County is characterized by terrain that varies from broad valleys with rocky outcrops to foothills and dramatic peaks. Compared to eastern Riverside County, the western portion contains the largest concentration of population and has experienced the greatest growth pressures over the past 30 years. Most of this population is concentrated on the valley floors, where the topography is amenable to development.

The region is bisected by northwest-southeast-trending ranges, the most prominent of which are the San Jacinto and Santa Rosa Mountains to the east and the Santa Ana Mountains to the west. Broad valleys in between the ranges are marked by localized peaks (such as the Lakeview Mountains), hills, and rock outcrops.

The San Jacinto River, which flows from the Santa Rosa and San Jacinto Mountains, cuts through the middle of western Riverside County on its way to Lake Elsinore. Several reservoirs, which provide water supplies and recreational opportunities, are located in western Riverside County and include Lake Mathews, Lake Perris, Lake Skinner, Vail Lake, and Diamond Valley Lake.

Landscape Units

The study area includes the SR 79 Project limits and surrounding areas from which the Project may be visible or that would be affected by the Project. To provide a clear description of the existing visual setting and to define anticipated impacts, the study area has been divided into two landscape units, the North Valley and South Valley Landscape Units (shown in Figure 3.1-43). Descriptions of both landscape units are provided below.

North Valley Landscape Unit

The North Valley Landscape Unit contains the Project area north of Esplanade Avenue. This area is in the northwestern part of the San Jacinto Valley and is almost entirely within the boundaries of the city of San Jacinto. The terrain is generally flat except for the Lakeview Mountains, which rise just west of the Project area, and the San Jacinto Mountains that rise farther away to the northeast. Existing land uses are agricultural, rural residential, equestrian estates, and mobile home parks.

The eastern and southeastern portions of the landscape unit are the most suburbanized, and this suburbanization increases toward central San Jacinto. The San Jacinto commercial district is located along San Jacinto Street and State Street. Industrial facilities are primarily found in the southwestern portion of the city around Esplanade Avenue.

The northern and western portions of the landscape unit are characterized by agricultural and rural residential land uses, the north portion being the most sparsely developed. The dominant agricultural operations are dairies, horse farms, and sod farms. However, many agricultural parcels are being converted into residential subdivisions like the ones recently completed along Cottonwood Avenue and Esplanade Avenue.

The San Jacinto River traverses the northeastern part of the landscape unit. The form of the river changes from its natural state to a physically constrained drainage channel in the more urbanized areas. The Colorado River Aqueduct and Casa Loma Canal cross the landscape unit farther south.

South Valley Landscape Unit

The South Valley Landscape Unit contains the Project area south of Esplanade Avenue. This area is in the southwestern part of the San Jacinto Valley and is partly under the jurisdiction of the City of Hemet and partly under the jurisdiction of Riverside County. The areas south of Esplanade Avenue and east of Rancheria Avenue are under the jurisdiction of the City of Hemet. The areas to the west are unincorporated and include the communities of Winchester and Green Acres.

This landscape unit is fairly hilly, containing the Lakeview Mountains in the northwest and scattered hills and buttes such as Double Butte, West Hemet Hills, and Tres Cerritos Hills. Perhaps the most prominent feature is Diamond Valley Lake in the south, an 800,000-acre-foot reservoir completed by the Metropolitan Water District of Southern California (MWD) in 2002. The reservoir itself is off limits to recreational activities except fishing. However, the slopes surrounding the reservoir have a trail system, and the eastern dam area contains a swimming pool and soccer field. The North Hills Trail runs along the slopes on the north rim of Diamond Valley Lake, roughly paralleling Domenigoni Parkway.

Other water features in the area are the San Diego Canal and Salt Creek Channel. The San Jacinto Branch Line tracks cross the Project area.

Land use in the southern landscape unit includes a mix of agriculture, especially horse farming, commercial operations associated with the Hemet-Ryan Airport, and emerging residential subdivisions. Horse farms are most common in the southern portion of the Project study area and typically consist of a residence combined with paddocks, a barn, and training equipment. Commercial developments are clustered along SR 74 (Florida Avenue). The single-family subdivisions include older residences with modest units originally targeted at retirees, along with newer, more exclusive units.

Project Viewshed

A viewshed is a subset of a landscape unit and includes all areas from which a site or feature (in this case the Build alternatives proposed for the Project) has the potential to be visible. The limits of a viewshed are defined as the visual limits of the area from which the feature of interest has the potential to be seen. Viewsheds chosen for this Project include locations within both landscape units where viewers are likely to be affected by visual changes brought about by the Project features. For this analysis, viewsheds are the areas defined by the boundaries of the landscape units. However, it is important to note that in many of the flat areas, views toward Project features would be screened to varying degrees by structures or vegetation and, in some cases, by intervening topography.

Existing Visual Resources and Viewer Response

FHWA Method of Visual Resource Analysis

Identify Visual Character

Visual character is descriptive and nonevaluative, which means it is based on defined attributes that are neither good nor bad in themselves. A change in visual character cannot be described as having good or bad attributes until it is compared with the viewer response to that change. If there is public preference for the established visual character of a regional landscape and resistance to a project that would contrast with that character, then changes in the visual character can be evaluated.

Assess Visual Quality

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the viewshed. The FHWA states that this method should correlate with public judgments of visual quality well enough to predict those judgments. This approach is particularly useful in highway planning because it does not presume that a highway project is necessarily an eyesore. This approach to evaluating visual quality can also help identify specific methods for mitigating each adverse impact that may occur as a result of a project. Three criteria are used for evaluating visual quality.

- 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 man-made components in the landscape.

Existing Visual Resources

Existing Visual Character

North Valley Landscape Unit

Views in the North Valley Landscape Unit are primarily of agricultural fields, dairy farms, rural residences, equestrian estates, mobile home parks, and residential subdivisions set against the slopes of the Lakeview Mountains, San Jacinto Mountains, and Tres Cerritos Hills. The hill slopes are largely undeveloped and feature rocky outcrops iconic of the southwest and the Mojave Desert. While most housing is still rural, a few residential subdivisions are visible within 1.6 km (1 mi) of the Project, and several more are being planned, particularly along the eastern and western edge of the Project. Infrastructure elements such as electric transmission lines are also visible throughout the landscape unit. Light industrial and commercial developments are found along major streets. Water features such as the Casa Loma Canal, Colorado River Aqueduct, and San Jacinto River are all channelized in the North Valley Landscape Unit.

South Valley Landscape Unit

Views in the South Valley Landscape Unit are primarily of rural residences set against rugged, undeveloped slopes. The South Valley Landscape Unit is quite hilly; views of the Lakeshore Mountains, Tres Cerritos Hills, West Hemet Hills, and Double Butte frame the communities. The primary views toward the Project area from Hemet and unincorporated communities such as Green Acres and Winchester are of rural residences, equestrian estates, and mobile home parks. Residential subdivisions make up a small but growing percentage of land use. At present, at least three residential subdivisions are within 1.6 km (1 mi) of the Project area, with plans for several more, particularly along the eastern edge of Hemet. A few infrastructure facilities are visible, including the Hemet-Ryan Airport approximately 3.2 km (2 mi) east of the Project, the San Jacinto Branch Line rail corridor, and the electric transmission lines located throughout the Project area. Major surface streets are bordered by a mix of light industrial and commercial properties.

Existing Visual Quality

North Valley Landscape Unit

The North Valley Landscape Unit may be characterized as having moderate visual quality. Although the hills that form the backdrop to the northern San Jacinto Valley are highly vivid, they tend to fade into the background due to poor air quality. The foreground contains elements such as rural residences, residential subdivisions, and agriculture with moderate levels of unity and intactness. However, interspersed industrial and infrastructure elements (such as light industrial and commercial centers, channelized canals, and electric transmission towers) diminish these values.

South Valley Landscape Unit

The South Valley Landscape Unit may be characterized as having moderately high visual quality. The landscape contains scattered hills and buttes of high vividness. Although devoid of lush vegetation, the slopes contain a species mix that is typical of Mojave Desert flora, as well as distinctive rocky outcrops and ridgelines. These slopes dominate the landscape and form the backdrop to the built environment. The vividness of the landforms is tempered by the built environment, which has moderate levels of intactness and unity. The landscape is characterized by a combination of residential elements such as rural residences; equestrian estates; mobile home parks; and subdivisions, with infrastructure elements such as electric transmission lines, the Hemet-Ryan Airport, and the San Jacinto Branch Line.

Methods of Predicting Viewer Response

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

Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' responses 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 resource 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. Analysts can learn about these special resources and community aspirations for visual quality through citizen participation procedures, as well as from local publications and planning documents.

Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, type of viewer activity, duration of their view, speed at which the viewer moves, and position of the viewer. High viewer exposure reinforces the importance of early consideration of design, art, and architecture and their roles in managing the visual resource effects of a project.

Existing Viewer Sensitivity

The communities located along the Project have developed general, community, and master plans that contain goals and policies that indicate residents' values and expectations for their visual environment. The following sections describe some of the guidelines that illustrate which visual features are important to local communities.

Riverside County

The Riverside County General Plan identifies the landscape of the San Jacinto Valley as "remarkable" and "outstanding" due to its unique landforms and sweeping vistas. It finds these aesthetic qualities central to the valley's character and advocates the protection of ridgelines as integral to maintaining this aesthetic resource and to providing natural backdrops and separators between communities. Riverside County also stresses landscaping with native vegetation to mitigate the impact of development projects. Key policies identified in the Riverside County General Plan are listed below (County 2003a).

- Require that hillside development minimize alteration of the natural landforms and natural vegetation.
- Development of the hilltop area shall be designed to maintain the scenic value of the hills, avoiding slope scarring.
- Western Riverside County has a special visual quality created by the numerous landforms at varying scales that pop up from the valley floors.
- Vistas to and from the [San Jacinto] valley are exceptional.
- Natural slopes are one of Riverside County's primary aesthetic resources. Foothill and mountain areas, which are visible throughout the County, create a dramatic backdrop for local communities and help define the character of the County. Hillside areas also provide an important location for habitat as well as for certain lifestyle choices.
- Restrict development on visually significant ridgelines, canyon edges and hilltops through sensitive siting and appropriate landscaping to ensure development is visually unobtrusive.
- Preserving the scenic background and natural resources of this extensive valley system gives meaning to the "remarkable environmental setting" portion of the overall Riverside County Vision. Not only that: these open spaces also help define the edges of and separation between communities, which is another important aspect of the Vision.

- Ensure that the design and appearance of new landscaping, structures, equipment, signs, or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment.
- Encourage Caltrans to install and maintain landscaping and other mitigation elements along expressways and highways, especially when they are adjacent to existing residential or other noise sensitive uses.
- Encourage the use of drought-tolerant native plants and the use of recycled water for roadway landscaping.
- Discourage the addition of local road crossings. If any additional crossing is allowed, careful consideration shall be given to location, design, and landscaping to take advantage of the scenic character of the [San Jacinto] River and to avoid destruction of its natural values.

San Jacinto

The City of San Jacinto seeks to protect its scenery, in particular its ridgelines and rocky outcrops. Key policies identified in the San Jacinto General Plan are listed below (San Jacinto 2006).

- Preserve large groupings of trees, rock outcroppings, and other valuable scenic resources. Preserve and enhance public views of the mountains and hillsides and other scenic vistas.
- Ensure new development is compatible with its natural surroundings and the built environment in terms of architecture, scale, grading, and massing.
- Require the use and maintenance of extensive landscaping in new development and redevelopment projects to beautify the surroundings, screen outdoor uses, provide shade, establish pedestrian paths, buffer incompatible land uses, and provide visual interest.
- Conserve important natural resources such as mature trees, rock outcroppings, hills, ridges, and other prominent land forms, as open space.
- Discourage grading of hillside areas and on slopes greater than 25 percent.

Hemet

The City of Hemet seeks to protect its scenery, in particular its unique identity and character. The City of Hemet General Plan recognizes that although Hemet will not remain physically small, the premise of the general plan is to retain the character and desirable qualities of a traditional small town, even if Hemet will not be, in fact, a small town. The key to this concept is to create and preserve the small-town feel of each neighborhood (Hemet 1992).

Existing Viewer Groups, Viewer Exposure, and Viewer Awareness

Roadway Users

Thousands of drivers, bicyclists, and pedestrians using local streets would have frequent, short-duration views of the Project roadway. This would be particularly true of roadway users near Roadway Segments C, D, E, and F that would include 3.2 km (2 mi), on average, of roadway elevated at least 6 meters (m) (20 feet [ft]) above the surrounding landscape. Overpasses would be built over most local streets that intersect the Project corridor. The views of roadway users would be impacted by having to go under these overpasses. These viewers would likely be sensitive to such changes in their everyday commute. In addition to use of local roads, users of the following state routes and local highways would be sensitive to changes in their views.

SR 74 (W. Florida Avenue)

The Project would be visible along a portion of SR 74, an Eligible State Scenic Highway and gateway to the San Jacinto Valley from the west. Residents of the San Jacinto Valley may be sensitive to the visual impact of the Project on the gateway to their communities.

Domenigoni Parkway

The Project would be located along a portion of Domenigoni Parkway. Commercial and passenger vehicles would have foreground views of the Project because SR 79 would pass over Domenigoni Parkway in all of the Build alternatives. Drivers and passengers would likely have a moderate to high awareness of the Project and could be concerned about the effects of the Project on their views.

Ramona Expressway

The northern terminus of the Project would be just north of the Ramona Expressway. Roadway users would have foreground views of the Project because SR 79 would pass over the Ramona Expressway in all of the Build alternatives. Drivers and passengers would likely have a moderate to high awareness of the Project and could be concerned about the effects of the Project on their views.

Residents and Workers in Nearby Communities

San Jacinto

The Project would be visible to residents and workers entering or leaving San Jacinto from the west. Residents are assumed to be highly concerned about the views at entry points to their community, which are experienced by thousands of residents per day for a short duration. However, the views from their homes or places of employment would impact few San Jacinto residents or workers because the Project runs along the sparsely populated western edge of the community. Workers in San Jacinto are unlikely to be sensitive to the Project from their places of employment. The Project is not likely to be visible from the main commercial streets, San Jacinto Avenue and State Street, because they run parallel to the Project area, and the closest of the two streets is 4.8 km (3 mi) east of the nearest Build alternative.

Hemet

The Project would be visible to residents and workers entering and leaving Hemet on the two main gateways, SR 74 and Domenigoni Parkway. Residents are assumed to be highly concerned about the views at entry points to their community, which are experienced by thousands of residents per day for a short duration.

Like San Jacinto, relatively few Hemet residents would be impacted by the view from their homes because the Project runs along the sparsely populated western edge, far from the primary residential areas. There are several subdivisions that would be 1.6 to 3.2 km (1 to 2 mi) from the Project, but visibility from most of these is likely to be obscured by the Tres Cerritos Hills or West Hemet Hills or by landscaping, walls, or berms.

Workers in Hemet are unlikely to be sensitive to the Project from their places of employment. The Project is not likely to be visible from the main commercial district along SR 74 (Florida Avenue) east of Sanderson Avenue because the point at which the downtown commercial development commences is located 4 km (2.5 mi) east of the Project area.

Unincorporated Riverside County/Winchester/Green Acres

Residents of the unincorporated communities of Winchester, Green Acres, and surrounding areas are likely to be highly sensitive to the Project. Winchester residents would be particularly sensitive to Roadway Segment A, which would alter the gateway to Winchester from the south and be visible from its main street, Winchester Road. Thus Roadway Segment A would be visible to community members daily for both short and long durations.

The Project would also be visible to hundreds of residents who live in unincorporated Riverside County along or near the Project on rural residences and farms. These residents are likely to be highly sensitive to the Project to the extent that it would diminish the rural character of their surroundings. In particular, county residents, such as the residents of northeastern Winchester and Green Acres who live in the vicinity of Roadway Segments G, D, E, and H, are likely to be highly concerned about the impact of the Project on their vistas. Along Roadway Segments G, D, and H, the Project would reach elevations of up to 12.2 m (40 ft) as the roadway ascends the West Hemet Hills. This would also be the zone of the most extensive excavation and alteration of the ridgelines along the Project.

Recreational and Community Facility Users

Roadway Segment A (Build Alternatives 1a and 2a) would pass 0.4 km (0.25 mi) from Francis Domenigoni Community Center and Winchester Elementary School. Users of Winchester Elementary School playground and the park behind it would have foreground views of SR 79 for extended periods of time and would be sensitive to the effects of the Project on their views.

Under all Build alternatives, the Project would be visible from Ambassador Street Sports Field on Cottonwood Avenue. Users of the sports field would have immediate foreground views of the Project for extended periods of time and would be sensitive to the effects of the Project on their views.

Although the Project would not be visible from most of the Diamond Valley Lake area due to topography, the Project would be visible from the Clayton A. Record, Jr. Viewpoint. The Project may also be visible from parts of the North Hills Trail, which runs along the north rim of the lake. Users of these facilities would be able to see the Project as a small element in the middleground to background zones of these views and may be sensitive to the effects of the Project on these views.

3.1.7.3 Environmental Consequences

Permanent Impacts

Method of Assessing Project Impacts

NEPA requires consideration of visual resource impacts of projects in preparation of environmental documents. In the Federal Highway Administration visual analysis system, a project alternative could have a visual impact if it results in a substantial change in the overall visual character or quality that has an adverse effect on viewer response.

Visual resource change is the sum of the change in visual character and 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 projected visual quality after the project is constructed.

The viewer response to project changes is the sum of viewer exposure and viewer sensitivity to the project, as has been determined in Section 3.1.7.2 (page 3-211).

The resulting level of visual impact is determined by combining the severity of resource change with the degree to which people are likely to oppose the change.

Definition of Visual Impact Levels

Four visual impact levels are used to determine environmental consequences and their mitigation.

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

Analysis of Project Impacts by Key View

In consultation with the City of Hemet, the City of San Jacinto, and the County of Riverside, 22 key views were selected for analysis of the potential visual effects of the Project (Figure 3.1-43). Existing visual conditions at each viewpoint were photographically documented and were analyzed using the FHWA visual assessment methodology. This methodology includes preparing an evaluation rating sheet for each view. The evaluation entails assigning numerical scores to the various aesthetic dimensions of each view, resulting in an aggregate score that reflects the relative level of overall visual quality in the view. The rating sheet for each key view is provided in the June 2009 Final VIA, Appendix B, Visual Resource Survey Forms.

To provide a basis for determining the potential visual impacts of the Project, simulations were created of the key views as they would appear with the Project in place. The existing and with-Project representations of these key views are presented as the "A" and "B" variants in Figures 3.1-44 through 3.1-72.

The simulations are the result of a computer-modeling process and are accurate within the constraints of the available site and Project data. The simulations were developed using photographs taken with a 35-millimeter (mm) camera with a lens set to the equivalent of a 50-mm focal length. A combination of computer-aided drafting (CAD), geographic information system (GIS), and rendering programs were used to produce the images of the Project facilities.

The simulations depict the proposed grading, filling, roadways, and structures, but do not include Project landscaping, lighting, or signage. Designs of these features will be developed as part of the Corridor Master Plan and are not available yet.

The evaluation of the existing visual quality from each key viewpoint and of the degree to which the Project would alter the visual quality levels was made through a group process that involved the visual resource analysts responsible for preparing the VIA and two members of the Department District 8 Landscape Architecture staff. During a 2-day process, the evaluation panel reviewed photographs from each key viewpoint, discussed the existing conditions, and developed a consensus about these conditions. This consensus provided the basis for completing the existing-conditions portion of the FHWA rating sheets and assigning numerical scores to the various visual quality dimensions of the existing views. The FHWA numerical rating system uses a 7-point scale, in which a score of 1 is "very low" and a score of 7 is "very high." After the existing-condition evaluations were completed, the group examined simulations of the Project as seen from each of the key viewpoints and rated the quality of the view using the FHWA evaluation system. These evaluations and ratings were recorded in the with-Project portion of the FHWA rating sheets. Comparison of the FHWA rating scores for the existing views with the FHWA rating scores for the simulations provided a systematic basis for evaluating the visual change that would result from construction of the Project.

A summary of the Project impact by key view is presented in Table 3.1-57 (page 3-226). This summary includes a description of the area shown in each key view, the existing visual quality level, the proposed Project features, the resulting change in visual quality and character, and the likely viewer response.

A summary of the Project impact by roadway segment is presented in Table 3.1-58 (page 3-231). This summary includes a description of the physical extent of the proposed roadway segment (including cut and fill data, roadway elevations, and overcrossings), the character of the surrounding environment, and the likely viewer response.

Table 3.1-57 Analysis of Project Impacts by Key View

Key View	Roadway Segment/ Figure Number	Landscape Unit	Orientation	Existing Visual Quality Level[a]	Proposed Project Features	Change to Visual Quality/Character	Viewer Response	Resulting Visual Quality Level[a]	Change in Visual Quality Level[a]
1	Roadway Segment A/ Figure 3.1-44	South Valley	View looking north from SR 79 at Construction Road near Diamond Valley Lake	4.9	Multilane expressway constructed on what is now Winchester Road. Overpass constructed for Newport Road.	Overpass would block view of hills in distance, diminishing visual quality. Some rural character would be lost.	The landscape changes would occur at the southern gateway to Winchester, so thousands of travelers on SR 79 are likely to be sensitive to the change in views, although the views would be of short duration.	4.1	-0.8
	Roadway Segment B/ Figure 3.1-45	South Valley	View looking north from SR 79 at Construction Road near Diamond Valley Lake	4.9	Multilane expressway constructed that veers to the east. Overpass constructed for Newport Road.	Ridgelines on the right side of the image would be altered to make way for SR 79, including removal of most of the hill with rocky outcrops. Newport Road overpass would bisect the image. Some rural character would be lost.	The landscape changes would occur near the southern gateway of Winchester, so thousands of travelers on SR 79 are likely to be sensitive to the change in views, although the views would be of short duration. However, Roadway Segment B is not likely to be visible from within Winchester, although it may be visible to tens to hundreds of residents of rural Winchester.	3.9	-1.1
2	Roadway Segment A/ Figure 3.1-46	South Valley	View looking south from community of Winchester on Winchester Road at Finch Street	3.6	An elevated section of expressway across the southeastern edge of Winchester.	SR 79 would block the view of hills from the main street in Winchester. Community would lose some of its rural character.	Winchester residents are likely to be sensitive to these changes, which would diminish the rural/western character Winchester is trying to promote. These views would be experienced by hundreds of people per day for short and long duration. Users of Winchester Elementary School playground and Francis Domenigoni Community Center would have foreground views of SR 79 for extended periods of time and be sensitive to the effects of the Project on their views. Residents would also be concerned about the transformation of the character of the landscape from rural to more highly developed.	2.8	-0.8
3	Roadway Segment D/H or F/H/ Figure 3.1-47	South Valley	Aerial view looking northeast toward West Hemet Hills and Stowe Road from field just north of railroad	4.7	About 50 percent of the visible ridgeline in image would be removed and an expressway constructed in the gap.	Ridgeline dramatically altered. Area transformed from rural landscape to a transportation corridor.	Local residents are likely to be highly sensitive to changes to this hill, which forms a visual backdrop to their homes, a long-duration, frequent view.	3.3	-1.4

Table 3.1-57 Analysis of Project Impacts by Key View

Key View	Roadway Segment/ Figure Number	Landscape Unit	Orientation	Existing Visual Quality Level[a]	Proposed Project Features	Change to Visual Quality/Character	Viewer Response	Resulting Visual Quality Level[a]	Change in Visual Quality Level[a]
4	Roadway Segment D/H or F/H/ Figure 3.1-48	South Valley	View looking northeast toward West Hemet Hills from Grand Avenue near Patterson Avenue	4.9	About 40 percent of the visible ridgeline on the east side of the hill would be removed to make way for SR 79.	Obvious removal of a large portion of the ridgeline. Substantial increase in developed character.	Local residents are likely to be highly sensitive to changes in the ridgeline that forms a visual backdrop to their homes, a long-duration, frequent view.	3.7	-1.2
	Roadway Segment E/G or C/G/ Figure 3.1-49	South Valley	View looking northeast toward West Hemet Hills from Grand Avenue near Patterson Avenue	4.9	About 15 percent of the visible ridgeline on the west edge of the hill would be removed to make way for SR 79.	Cut face visible on west end of ridgeline. Increase in developed character.	Local residents are likely to be highly sensitive to changes in the ridgeline that forms a visual backdrop to their homes, a long-duration, frequent view.	4.4	-0.5
5	Roadway Segment D/H or F/H/ Figure 3.1-50	South Valley	View looking southwest along San Jacinto Branch Line from a point west of California Avenue	4.1	An overpass would be built across the San Jacinto Branch Line with berms on either side.	Project would increase level of development in view and close off expansive view.	Local residents are likely to be highly sensitive to changes in the ridgeline that forms a visual backdrop to their homes, a long-duration, frequent view.	2.8	-1.3
6	Roadway Segment D/H or F/H/ Figure 3.1-51	South Valley	View looking northeast toward West Hemet Hills from Milan Road near Patterson Avenue	4.5	About 15 percent of the visible ridgeline on the west edge of the hill would be removed to make way for the expressway.	A large road-cut would be visible along the western edge of hills. Increase in developed character.	Local residents are likely to be highly sensitive to changes in the ridgeline that forms a visual backdrop to their homes, a long-duration, frequent view.	3.9	-0.6
	Roadway Segment E/G or C/G/ Figure 3.1-52	South Valley	View looking northeast toward West Hemet Hills from Milan Road near Patterson Avenue	4.5	About 30 percent of the visible ridgeline in the center of the hill would be removed to make way for the expressway.	East side of ridgeline would be sharply angled and look obviously engineered. Substantial increase in developed character.	Local residents are likely to be highly sensitive to changes in the ridgeline that forms a visual backdrop to their homes, a long-duration, frequent view.	3.7	-0.8
7	Roadway Segment E/G or C/G/ Figure 3.1-53	South Valley	View looking north toward West Hemet Hills from a point south of Stowe Road	5.4	An expressway would be constructed through fields in the foreground and around the gap in the hills. Some slope cutting would be necessary to make way for the expressway.	Area transformed from an agricultural landscape to a transportation corridor. Substantial increase in developed character.	Local residents are likely to be highly sensitive to views of the expressway from their homes, a long-duration, frequent view.	4.3	-1.1

Table 3.1-57 Analysis of Project Impacts by Key View

Key View	Roadway Segment/ Figure Number	Landscape Unit	Orientation	Existing Visual Quality Level[a]	Proposed Project Features	Change to Visual Quality/Character	Viewer Response	Resulting Visual Quality Level[a]	Change in Visual Quality Level[a]
8	Roadway Segment D/H or F/H/ Figure 3.1-54	South Valley	View looking west toward Double Butte from Stowe Road near California Avenue	5.4	Very tall berms would be visible, along with an overpass over Stowe Road.	Impairment of the view of Double Butte Hills, a landmark feature.	Local residents and motorists on Stowe Road are likely to be moderately sensitive to middleground views. Exposure would be frequent but of short duration.	3.8	-1.6
	Roadway Segment E/G or C/G/ Figure 3.1-56	South Valley	View looking west toward Double Butte from Stowe Road near California Avenue	5.4	An overpass would be constructed over Stowe Road with berms on either side.	Minor impairment of the view of Double Butte Hills, a landmark feature.	Local residents and motorists on Stowe Road are likely to be moderately sensitive to middleground views. Exposure would be frequent but of short duration.	5.1	-0.3
9a	Roadway Segment G/ Figure 3.1-56	South Valley	View looking east toward the West Hemet Hills from SR 74/Florida Avenue at Parasol Road in Green Acres	3.5	A portion of the hillside in the foreground would be cut to make way for the expressway.	Large, angular, cut face would be visible. Substantial increase in developed character.	Large numbers of viewers on SR 79 are likely to be highly sensitive to this change. This view would be of short duration.	2.4	-1.1
9b	Roadway Segment G/ Figure 3.1-57	South Valley	View looking southeast toward West Hemet Hills from Florida Avenue and Calvert Avenue	4.9	A portion of the hillside in the foreground would be cut to make way for the expressway.	Large, angular, cut face would be visible. Substantial increase in developed character.	Large numbers of viewers on SR 79 are likely to be highly sensitive to this change. This view would be of short duration.	2.9	-2.0
10a	Roadway Segment G/ Figure 3.1-58	South Valley	View looking southwest toward the West Hemet Hills from a point south of Florida Avenue and east of California Avenue	3.5	A expressway constructed through an area dominated by RV parking. The expressway would cut through slopes in the distance.	RV parking lot would be replaced with roadway. Obvious removal of material from the hills in the middleground.	Viewers are likely to be sensitive to the Project because it would be visible from their homes or local access roads.	2.9	-0.6
10b	Roadway Segment H/ Figure 3.1-59	South Valley	View looking southwest toward the West Hemet Hills from a point south of Florida Avenue and east of California Avenue	3.4	An expressway constructed through an area dominated by RV parking. The expressway would cut through slopes in the distance.	RV parking lot would be replaced with roadway. Obvious removal of material from the hills in the middleground.	Viewers are likely to be sensitive to the Project because it would be visible from their homes or local access roads. Removal of the visually discordant recreational vehicle storage facility that is currently a prominent element of the view will contribute to an increase in the level of the view's visual quality.	4.1	0.7

Table 3.1-57 Analysis of Project Impacts by Key View

Key View	Roadway Segment/ Figure Number	Landscape Unit	Orientation	Existing Visual Quality Level[a]	Proposed Project Features	Change to Visual Quality/Character	Viewer Response	Resulting Visual Quality Level[a]	Change in Visual Quality Level[a]
11	Roadway Segment G/ Figure 3.1-60	South Valley	View looking south toward the West Hemet Hills from Florida Avenue at Corso Bellagio	4.3	An expressway constructed across the view of hills in the foreground.	Some obstruction of the view of the hills.	Residents of the area north of SR 74 and travelers along SR 74 are likely to be moderately sensitive to middleground views of the Project. Exposure would be frequent but of short duration.	3.7	-0.6
	Roadway Segment H/ Figure 3.1-61	South Valley	View looking south toward the West Hemet Hills from Florida Avenue at Corso Bellagio	4.3	A less visible elevated expressway constructed across the view of hills in the foreground.	Some obstruction of the view of the hills.	Residents of the area north of SR 74 and travelers along SR 74 are likely to be moderately sensitive to middleground views of the Project. Exposure would be frequent but of short duration.	3.8	-0.5
12	Roadway Segment G/H/ Figure 3.1-62	South Valley	View looking east toward Hemet from Florida Avenue at California Avenue	2.3	An expressway constructed across the view of mountains in the background.	View of entrance to Hemet somewhat diminished by the presence of the overpass and berms in the middleground.	Residents and commuters may be moderately sensitive to foreground views of the Project as they enter Hemet. Exposure would be frequent but of short duration.	2	-0.3
13	Roadway Segment H/ Figure 3.1-63	South Valley	View looking west toward Green Acres from Florida Avenue at San Diego Canal	2.7	An expressway constructed in the middleground.	View of exit from Hemet somewhat diminished by the presence of the overpass and berms in the middleground.	Residents and commuters may be moderately sensitive to foreground views of the Project as they leave Hemet. Exposure would be frequent but of short duration.	2.4	-0.3
	Roadway Segment G/ Figure 3.1-64	South Valley	View looking west toward Green Acres from Florida Avenue at San Diego Canal	2.7	An expressway constructed in the middleground.	View of exit from Hemet somewhat diminished by the presence of the overpass and berms in the middleground.	Residents and commuters may be moderately sensitive to foreground views of the Project as they leave Hemet. Exposure would be frequent but of short duration.	2.5	-0.2
14	Roadway Segment I/ Figure 3.1-65	South Valley	View looking east toward Tres Cerritos Hills from Tres Cerritos Avenue at Los Rancherias Road	4.8	An expressway constructed in the foreground.	Increase in developed character.	Nearby residents are likely to be highly sensitive to views of the expressway from their homes, a long-duration, frequent view.	4.4	-0.4
15	Roadway Segment J/ Figure 3.1-66	South Valley	View looking east from Esplanade Avenue near Trailwood Road	4.9	Two overpasses and off-ramp constructed.	Substantial increase in developed character.	Nearby residents are likely to be highly sensitive to views of the expressway from their homes or local access roads, a long-duration, frequent view.	3.6	-1.3
	Roadway Segment K/ Figure 3.1-67	South Valley	View looking east from Esplanade Avenue near Trailwood Road	4.9	Overpass and off-ramp constructed.	Substantial increase in developed character.	Nearby residents are likely to be highly sensitive to views of the expressway from their homes or local access roads, a long-duration, frequent view.	3.6	-1.3
16	Roadway Segment L/M/ Figure 3.1-68	North Valley	View looking west from Cottonwood Avenue near Cawston Avenue	3.9	An expressway constructed in the background.	Slight increase in developed character.	Viewers are likely to be sensitive to the roadway because it would be visible from their homes or local access roads.	3.7	-0.2

Table 3.1-57 Analysis of Project Impacts by Key View

Key View	Roadway Segment/ Figure Number	Landscape Unit	Orientation	Existing Visual Quality Level[a]	Proposed Project Features	Change to Visual Quality/Character	Viewer Response	Resulting Visual Quality Level[a]	Change in Visual Quality Level[a]
17	Roadway Segment M/ Figure 3.1-69	North Valley	View looking north from Sanderson Avenue north of Cottonwood Avenue	3.6	An expressway constructed in the background.	Minimal change to quality or character of views.	Travelers on Sanderson Avenue are likely to be moderately sensitive to the roadway.	3.3	-0.3
18	Roadway Segment L/M/ Figure 3.1-70	North Valley	View looking east from the Cove residential development	3.2	An expressway constructed in the background.	Minimal change to quality or character of views.	Residents are likely to be moderately sensitive to the roadway.	3.2	0.0
19	Roadway Segment M/ Figure 3.1-71	North Valley	View looking east from Sanderson Avenue between Cottonwood Avenue and Ramona Expressway	4.8	An expressway constructed in the background.	Increase in developed character.	Travelers on Sanderson Avenue are likely to be moderately sensitive to the roadway.	4.4	-0.4
20	Roadway Segment N/ Figure 3.1-72	North Valley	View looking east from Ramona Expressway near Sanderson Avenue	4.9	An expressway constructed in the foreground.	Substantial increase in developed character.	Eastbound travelers on the Ramona Expressway are likely to be moderately sensitive to the roadway because it will be a frequent, long-duration view.	4.7	-0.2

Source: Final Visual Impact Assessment, June 2009

[a]See Appendix B of the Final Visual Impact Assessment for detailed descriptions of key views and for ratings.

Table 3.1-58 Analysis of Project Impacts by Roadway Segment

Roadway Segment	Landscape Unit	Key View	Location	Character	Existing Visual Quality Level[a]	Viewer Sensitivity	Viewer Groups	Description of Changes	Viewer Response	Resulting Visual Quality Level[a]
A	South Valley	1, 2	Roadway Segment A would begin 305 m (1,000 ft) south of Newport Road and would extend 2.4 km (1.5 mi) to the north and end 152 m (500 ft) south of Haddock Street.	Southern end is mostly rural residential and open land. Northern end is residential within the community of Winchester.	KV 1: 4.9; KV 2: 3.6	High	Winchester residents, Domenigoni Parkway travelers, Winchester Road travelers	Almost 50 percent of this 2.4-km (1.5-mi) roadway segment would be elevated 6.1 m (20 ft) or more. 0.4 km (0.5 mi) would be cut through hills south of Winchester. It would cross over Domenigoni Parkway, Olive Avenue, and Salt Creek and would bridge under Newport Road.	Winchester residents are likely to be sensitive to changes occurring close to its southern gateway (frequent, short-duration views) and about the transformation of the character of the landscape from rural to more developed.	KV 1: 4.1; KV 2: 2.8
B	South Valley	1	Roadway Segment B would begin 305 m (1,000 ft) south of Newport Road and would extend 1.8 km (1.1 mi) to the north and east and end 152 m (500 ft) south of Domenigoni Parkway.	Mostly open space and rural residential.	KV 1: 4.9	Moderate	Rural Winchester residents, Domenigoni Parkway travelers	Almost 50 percent of this 1.8-km (1.1-mi) roadway segment would be elevated 3 m (10 ft). 0.5 km (0.3 mi) would be cut through West Hemet Hills. It would cross over Patton Avenue and Patterson Avenue.	Winchester residents are likely to be sensitive to changes occurring close to the southern gateway of their community (frequent, short-duration views). However, Roadway Segment B is not likely to be visible from within Winchester, although it may be visible to residents of rural Winchester.	KV 1: 3.9
C	South Valley	4, 6, 7, 8	Roadway Segment C would begin 152 m (500 ft) south of Domenigoni Parkway and would extend 3.7 km (2.3 mi) to the north and end 305 m (1,000 ft) north of Stowe Road.	Southern end is mostly undeveloped; northern end includes ranchettes.	KV 4: 4.9; KV 6: 4.5; KV 7: 5.4; KV 8: 5.4	High	Rural Winchester Residents, Domenigoni Parkway travelers	This 3.7-km (2.3-mi) roadway segment would be elevated 6.1 m (20 ft) or more. It would require no cuts. It would cross over four surface streets, Salt Creek, and San Jacinto Branch Line.	Rural Winchester residents are likely to be highly sensitive to changes in middleground and more distant views from their homes (long-duration, frequent view).	KV 4: 4.4; KV 6: 3.7; KV 7: 4.3; KV 8: 5.1
D	South Valley	3, 4, 5, 6, 8	Roadway Segment D would begin 152 m (500 ft) south of Domenigoni Parkway and would extend 4 km (2.5 mi) to the north and east and end 305 m (1,000 ft) north of Stowe Road.	Mostly undeveloped land.	KV 3: 4.7; KV 4: 4.9; KV 5: 4.1; KV 6: 4.5; KV 8: 5.4	High	Rural Winchester and rural Hemet residents, Domenigoni Parkway travelers	This 4-km (2.5-mi) roadway segment would all be elevated 6.1 m (20 ft) or more and would require almost no cuts. It would cross over three surface streets, Salt Creek, and San Jacinto Branch Line.	Rural Winchester and Hemet residents are likely to be highly sensitive to changes in views from their homes (long-duration, frequent view).	KV 3: 3.3; KV 4: 3.7; KV 5: 2.8; KV 6: 3.9; KV 8: 5.4

Table 3.1-58 Analysis of Project Impacts by Roadway Segment

Roadway Segment	Landscape Unit	Key View	Location	Character	Existing Visual Quality Level[a]	Viewer Sensitivity	Viewer Groups	Description of Changes	Viewer Response	Resulting Visual Quality Level[a]
E	South Valley	4, 6, 7, 8	Roadway Segment E would begin 152 m (500 ft) south of Haddock Street and would extend 3.2 km (2 mi) to the north and end 305 m (1,000 ft) north of Stowe Road.	Rural outskirts of community of Winchester, mostly ranchettes and agricultural parcels.	KV 4: 4.9; KV 6: 4.5; KV 7: 5.4; KV 8: 5.4	High	Winchester residents	This 3.2-km (2.0-mi) roadway segment would all be elevated 6.1 m (20 ft) or more and would require almost no cuts. It would cross over five surface streets, and San Jacinto Branch Line.	Rural residents are likely to be highly sensitive to changes in views from their homes (long-duration, frequent view).	KV 4: 4.4; KV 6: 3.7; KV 7: 4.3; KV 8: 5.1
F	South Valley	3, 4, 5, 6, 8	Roadway Segment F would begin 152 m (500 ft) south of Haddock Street and would extend 4 km (2.5 mi) to the north and east and end 305 (1,000 ft) north of Stowe Road.	Rural outskirts of community of Winchester, mostly ranchettes and agricultural parcels.	KV 3: 4.7; KV 4: 4.9; KV 5: 4.1; KV 6: 4.5; KV 8: 5.4	High	Rural Winchester and rural Hemet residents, and Domenigoni Parkway travelers	This 4-km (2.5-mi) roadway segment would all be elevated 6.1 m (20 ft) or more and would require almost no cuts. It would cross over four surface streets, and San Jacinto Branch Line.	Rural Winchester residents are likely to be highly sensitive to changes in views from their homes (long-duration, frequent view).	KV 3: 3.3; KV 4: 3.7; KV 5: 2.8; KV 6: 3.9; KV 8: 3.8
G	South Valley	4, 6, 7, 8, 9a, 9b, 10a, 11, 13	Roadway Segment G would begin 305 m (1,000 ft) north of Stowe Road and would extend 4 km (2.5 mi) to the north and east and end 152 m (500 ft) south of Devonshire Avenue.	Mostly undeveloped/ open space with some residential at north end. Central portion skirts the West Hemet Hills; northern portion is generally flat.	KV 4: 4.9; KV 6: 4.5; KV 7: 5.4; KV 8: 5.4; KV 9a: 3.5; KV 9b: 4.9; KV 10a: 3.5; KV 11: 4.3; KV 12: 2.3; KV 13: 2.7	High	Green Acres and Winchester residents, SR 74 travelers	This 4-km (2.5-mi) roadway segment would require 1.4 km (0.9 mi) of cuts through the western and northern edge of the West Hemet Hills and would be mostly elevated 6.1 m (20 ft) or higher. It would cross over two surface streets.	New highway and cut face of West Hemet Hills would be visible to Winchester and Green Acres residents. Hundreds of local residents are likely to be highly sensitive to changes in the ridgeline, which forms a visual backdrop to their homes (long-duration, frequent view).	KV 4: 4.4; KV 6: 3.7; KV 7: 4.3; KV 8: 5.1; KV 9a: 2.4; KV 9b 2.9; KV 10a: 2.9; KV 11: 3.7; KV 12: 2.0; KV 13: 2.4
H	South Valley	3, 4, 6, 8, 10b, 11, 12, 13	Roadway Segment H would begin 457 m (1,500 ft) north of Stowe Road and would extend 3.2 km (2 mi) to the north-northeast and end 152 m (500 ft) south of Devonshire Avenue.	Mostly undeveloped/open space with some residential at the north end of the segment. Southern part is very hilly and northern part is flat.	KV 3: 4.7; KV 4: 4.9; KV 6: 4.5; KV 8: 5.4; KV 10b: 3.4; KV 11: 4.3; KV 12: 2.3; KV 13: 2.7	High	Winchester, rural Winchester, and rural Hemet Residents, SR 74 travelers	This 3.2-km (2-mi) roadway segment would require a 0.8 km (0.5 mi) cut through the center of the West Hemet Hills and would be mostly elevated 6.1 m (20 ft) or higher. It would cross over California Avenue and SR 74.	New cut face of West Hemet Hills would be visible to Winchester, rural Winchester, and rural Hemet residents. Hundreds of residents are likely to be highly sensitive to changes in the ridgeline, which forms a visual backdrop to their homes (a long-duration, frequent view).	KV 3: 3.3; KV 4: 3.7; KV 6: 3.9; KV 8: 3.8; KV 10b: 4.1; KV 11: 3.8; KV 12: 2.0; KV 13: 2.5

Table 3.1-58 Analysis of Project Impacts by Roadway Segment

Roadway Segment	Landscape Unit	Key View	Location	Character	Existing Visual Quality Level[a]	Viewer Sensitivity	Viewer Groups	Description of Changes	Viewer Response	Resulting Visual Quality Level[a]
I	North/South Valley	14	Roadway Segment I would begin 152 m (500 ft) south of Devonshire Avenue and would extend 1.8 km (1.1 mi) to the north-northeast and end 152 m (500 ft) south of Hidden Springs Road.	Rural land characterized by ranchettes and flanked by the scenic Tres Cerritos Hills to the east.	KV 15: 4.7	High	Hemet and rural Hemet Residents	This 1.8-km (1.1-mi) stretch would require no cuts and would mostly be elevated 1.5 to 3 m (5 to 10 ft) high. SR 79 would cross under two surface streets.	The new expressway would be a long-duration, frequent view from tens of Hemet and rural Hemet residences.	KV 15: 4.4
J	North/South Valley	15	Roadway Segment J would begin 152 m (500 ft) south of Hidden Springs Road and would extend 2.3 km (1.4 mi) to the north-northeast and end and 244 m (800 ft) north of Seventh Street.	Rural land characterized by ranchettes with higher-density residential development to the east.	KV 15: 4.9	High	Hemet, rural Hemet, and rural San Jacinto residents	This 2.3-km (1.4-mi) roadway segment would require no cuts. Sixty percent would be elevated above 6.1 m (20 ft) and 30 percent from 1.5 to 3 m (5 to 10 ft). It would cross over three surface streets and San Diego Canal.	The new expressway would be a long-duration, frequent view from tens of Hemet, rural Hemet, and rural San Jacinto residences.	KV 15: 3.6
K	North Valley	15	Roadway Segment K represents a different expressway interchange configuration that would lie 152 m (500 ft) east of Roadway Segment J.	Rural land characterized by ranchettes with higher-density residential development to the east.	KV 15: 4.9	High	Hemet, rural Hemet, and rural San Jacinto residents	This 2.3-km (1.4-mi) roadway segment would require no cuts. Sixty percent would be elevated above 6.1 m (20 ft) and 30 percent from 1.5 to 3 m (5 to 10 ft). It would cross over three surface streets and San Diego Canal.	The new expressway would be a long-duration, frequent view from tens of Hemet, rural Hemet, and rural San Jacinto residences.	KV 15: 3.6
L	North Valley	16, 18	Roadway Segment L would begin 244 m (800 ft) north of Seventh Street. From there the segment would extend 5.5 km (3.4 mi) to the north and east and end near the Colorado River Aqueduct.	Mostly rural/agricultural land	KV 16: 3.9; KV 18: 3.2	Moderate	Rural San Jacinto residents, Ramona Expressway travelers	This 5.5-km (3.4-mi) roadway segment would require no cuts and would mostly be elevated 3 to 6.1 m (10 to 20 ft) high. It would cross under three surface streets and over the Casa Loma Canal and San Diego Aqueduct.	The new expressway would be a frequent, short-duration view to agricultural workers and to residents of new subdivisions on the southern end of Roadway Segment L.	KV 16: 3.7; KV 18: 3.2

Table 3.1-58 Analysis of Project Impacts by Roadway Segment

Roadway Segment	Landscape Unit	Key View	Location	Character	Existing Visual Quality Level[a]	Viewer Sensitivity	Viewer Groups	Description of Changes	Viewer Response	Resulting Visual Quality Level[a]
M	North Valley	16, 17, 18, 19	Roadway Segment M would begin 244 m (800 ft) north of Seventh Street. and would extend 5.3 km (3.3 mi) to the west and north and end near the Colorado River Aqueduct.	Rural but also includes a major water reclamation facility.	KV 16: 3.9; KV 17: 3.6; KV 18: 3.2; KV 19: 4.8	Moderate	Rural San Jacinto residents, Ramona Expressway travelers	This 5.3-km (3.3-mi) roadway segment would require 0.8 km (0.5 mi) of cuts and would mostly be elevated 3 to 6.1 m (10 to 20 ft) high. It would cross under two surface streets and over the Casa Loma Canal and San Diego Aqueduct.	The new expressway would be a frequent, short-duration view to agricultural workers and to residents of new subdivisions on the southern end of Roadway Segment M. It would also be visible to travelers along Sanderson Avenue	KV 16: 3.7; KV 17: 3.3; KV 18: 3.2; KV 19: 4.4
N	North Valley	20	Roadway Segment N would begin near the Colorado River Aqueduct and would extend 1.2 km (0.8 mi) to the north and end approximately 305 m (1,000 ft) south of the San Jacinto River.	Mostly rural with some commercial and residential development. A dairy is located north of Ramona Expressway.	KV 20: 4.9	Moderate	Rural San Jacinto residents, Ramona Expressway travelers	This 1.2-km (0.8-mi) roadway segment would require no cuts and would mostly be elevated 6.1 m (20 ft) or more. It would cross over Ramona Expressway.	The new expressway would be a frequent, short-duration view to travelers along the Ramona Expressway and to agricultural workers.	KV 20: 4.7

Source: Final Visual Impact Assessment, June 2009

Note: KV = Key View

See Appendix B of the Final Visual Impact Assessment for detailed descriptions of key views and for ratings.

[a]**Score Key:** 1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Analysis of Project Impacts by Alternative

No Build Alternative

Under the No Build Alternative, the Project would not be constructed and, therefore, would not cause any visual changes to the Project area. With the No Build Alternative, the only visual changes would be those that could be associated with a potential increase in surface street congestion over time.

All Build Alternatives and Design Options

The potential impacts of the Build alternatives and design options are presented in Table 3.1-59 (page 3-236) by roadway segment, key view, character, existing visual quality, viewer sensitivity, viewer groups, description of changes, viewer response, resulting visual quality, change in visual quality, and resulting viewer impact level.

The level of visual impact is determined by combining the change in visual character, the change in visual quality, the degree of exposure, and the degree of viewer sensitivity.

Change in Character

The Project would impart a more developed character to the landscape it passes through. The Project right-of-way would pass through two small communities, Winchester and Green Acres, and the outskirts of the cities of Hemet and San Jacinto. The character of this area is mostly rural, although a few residential subdivisions and commercial and industrial facilities would be located in the central and northern parts of the Project area.

Build Alternatives 1a and 2a would pass through the southeastern portion of Winchester and would be visible from much of the community because the majority of this stretch of SR 79 would be elevated at least 6 m (20 ft) above the surrounding landscape. As indicated in the analysis of Key View 2, the Project would be visible from the main street of Winchester, Winchester Elementary School playground, and from the Francis Domenigoni Community Center. The presence of an expressway in the immediate viewshed of the rural community of Winchester would substantially increase its urban character. In addition, the Project would block the view from Winchester of the hills to the south, and it would give the southern gateway to the community a more developed character.

Build Alternatives 1a and 1b would be visible from the community of Green Acres because these alternatives would require major slope cutting across the western and northern edges of the West Hemet Hills. The Project would cause scarring along these hills, which form the primary views from Green Acres to the east and southeast. These alternatives would substantially reduce the rural character of the views from Green Acres. The Design Option 1b1 alignment would be similar to Build Alternative 1b, but it would avoid some of the excavation and resulting scarring required by Build Alternative 1b. Design Option 1b1 would result in similar scarring to that from Build Alternative 1b on the northern side of the West Hemet Hills, but much less scarring on the western side.

Overall, Design Option 1b1 would cause the least change in character. Although Design Option 1b1 would be visible from Green Acres, it would be the least visible design option or Build alternative from Winchester, Hemet, and San Jacinto. Design Option 2b1 would not be visible from Green Acres, although it would be visible from parts of Winchester and likely would be visible from parts of Hemet and San Jacinto.

Table 3.1-59 Summary of Existing and Simulated Landscape Conditions by Build Alternative and Design Option

Build Alternative or Design Option	Roadway Segments	Key View	Character	Existing Visual Quality[a]	Viewer Sensitivity	Viewer Groups	Description of Changes	Viewer Response	Resulting Visual Quality[a]	Change in Visual Quality[a]	Resulting Visual Impact Level
Build Alternative 1a	A, E, G, I, J, L, N	1, 2, 4, 6, 7, 9a, 9b, 10a, 11, 12, 13, 14, 15, 16, 18, 20	Rural/ Small Town/ Residential	3.14	High (for residential portions)	Winchester and Hemet residents, SR 74 travelers	Build Alternative 1a would be built through the southeastern corner of the community of Winchester, through the western and northern edges of the West Hemet Hills, and through farmland along the western outskirts of San Jacinto. Massive road cuts in the West Hemet Hills would be visible from the community of Green Acres and more distantly from the community of Winchester. The Project would pass through the southwestern portion of Winchester, and because of its height (more than 6.1 m [20 ft]), it would be visible from most of the community and would block the view of hills to the south.	Winchester residents would be sensitive to the Project blocking views of the hills to the south. Travelers along State Eligible Scenic Highway 74 (Florida Avenue) would be sensitive to the obvious slope cutting. Hemet residents would be sensitive to the Project because it would be near the gateway to their community. Hundreds of residents in rural Winchester, Hemet, and San Jacinto with views of the Project would also be sensitive.	3.46	0.68	High
Build Alternative 1b	B, C, G, I, K, M, N	1, 4, 6, 7, 8, 9a, 9b, 10a, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20	Rural/ Small Town/ Residential	4.25	High (for residential portions)	Winchester and Hemet residents, SR 74 travelers	Build Alternative 1b would be built east of the community of Winchester, through the western and northern edges of the West Hemet Hills, and would proceed northward along the Casa Loma Canal, the route closest to central San Jacinto. Massive road cuts in the West Hemet Hills would be visible from the community of Green Acres and more distantly from the community of Winchester.	Travelers along State Eligible Scenic Highway 74 (Florida Avenue) would be sensitive to the obvious slope cutting. Hemet residents would be sensitive to obvious slope cutting near the gateway to their community. Hundreds of residents of rural Winchester, Hemet, and San Jacinto with views of the Project would be also be sensitive.	3.62	0.63	High

Table 3.1-59 Summary of Existing and Simulated Landscape Conditions by Build Alternative and Design Option

Build Alternative or Design Option	Roadway Segments	Key View	Character	Existing Visual Quality[a]	Viewer Sensitivity	Viewer Groups	Description of Changes	Viewer Response	Resulting Visual Quality[a]	Change in Visual Quality[a]	Resulting Visual Impact Level
Design Option 1b1	B, C, G, I, K, M, N	1, 4, 6, 7, 8, 9a, 9b, 10a, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20	Rural/ Small Town/ Residential	4.25	High (for residential portions)	Winchester and Hemet residents, SR 74 travelers	Like Build Alternative 1b, Design Option 1b1 would be built east of the community of Winchester, would proceed through the western and northern edges of the West Hemet Hills and northward along the Casa Loma Canal. However, the roadway would be lower than Build Alternative 1b in Roadway Segment C, thus would require lower berms and lower overpasses at local roads. In Roadway Segment G, the roadway design was altered to require less excavation in the West Hemet Hills, thus would produce fewer scars.	Travelers along State Eligible Scenic Highway 74 (Florida Avenue) would be sensitive to the obvious slope cutting. Hemet residents would be sensitive to obvious excavation near the gateway to their community. Residents of rural Winchester, Hemet, and San Jacinto with views of the Project would be also be sensitive.	3.62	0.58	High
Build Alternative 2a	A, F, H, I, K, L, N	1, 2, 3, 4, 5, 6, 8, 10b, 11, 12, 13, 14, 15, 16, 18, 20	Rural/ Small Town/ Residential	3.16	High (for residential portions)	Winchester and rural Hemet residents	Build Alternative 2a would be built through the southeastern corner of the community of Winchester, through the central part of the West Hemet Hills, and would proceed northward along the route farthest from central San Jacinto. Build Alternative 2a would require removal of a massive amount of the southern peak of the West Hemet Hills, leaving two pyramid-shaped cut slopes in its place. The roadway would pass through the southwestern portion of Winchester; because of its height (more than 6.1 m [20 ft]), it would be visible from most of the community and would block the view of hills to the south.	Winchester and rural Hemet residents would be sensitive to the cutting of the West Hemet Hills into two pyramid-shaped sections with potential long-range visibility. Winchester residents would be very sensitive to the Project blocking views of the hills to the south. All residents in rural Winchester, Hemet, and San Jacinto with views of the Project would also be sensitive.	3.53	0.64	High

Table 3.1-59 Summary of Existing and Simulated Landscape Conditions by Build Alternative and Design Option

Build Alternative or Design Option	Roadway Segments	Key View	Character	Existing Visual Quality[a]	Viewer Sensitivity	Viewer Groups	Description of Changes	Viewer Response	Resulting Visual Quality[a]	Change in Visual Quality[a]	Resulting Visual Impact Level
Build Alternative 2b	B, D, H, I, J, M, N	1, 3, 4, 5, 6, 8, 10b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20	Rural/ Small Town/ Residential	4.20	High (for residential portions)	All	Build Alternative 2b would be built east of the community of Winchester, through the central part of the West Hemet Hills, and would proceed northward along the Casa Loma Canal, the route closest to central San Jacinto. Build Alternative 2b would require removal of a massive amount of the southern peak of the West Hemet Hills, leaving two pyramid-shaped cut slopes in its place.	Winchester and rural Hemet residents would be sensitive to the cutting of the West Hemet Hills into two pyramid-shaped sections with potential long-range visibility. All residents in rural Winchester, Hemet, and San Jacinto with views of the Project would also be sensitive.	3.60	0.60	High
Design Option 2b1	B, D, H, I, J, M, N	1, 3, 4, 5, 6, 8, 10b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20	Rural/ Small Town/ Residential	4.20	High (for residential portions)	All	Like Build Alternative 2b, Design Option 2b1 would be built east of the community of Winchester, would proceed through the central part of the West Hemet Hills, then northward along the Casa Loma Canal, the route closest to central San Jacinto. However, the roadway would be lower than Build Alternative 2b in Roadway Segment D and would require lower berms and lower overpasses at local roads. In Roadway Segment H, the roadway would be would be cut less deeply into the West Hemet Hills, which would result in less road cut and scarring.	Winchester and rural Hemet residents would be sensitive to the cutting of the West Hemet Hills into two pyramid-shaped sections with potential long-range visibility. All residents in rural Winchester, Hemet, and San Jacinto with views of the Project would also be sensitive.	3.60	0.56	High

Source: Final Visual Impact Assessment, June 2009

Note: Information is presented first for the base condition of Build Alternatives 1b and 2b, followed by Design Options 1b1 and 2b1. If there is no variation between the base condition and the design options, the information is given only once.

[a]Average for all key views in each alternative. See Appendix B of the June 2009 Final Visual Impact Assessment for detailed descriptions of key views and for ratings.

Change in Visual Quality

The changes in visual quality associated with the Build alternatives and design options are summarized in Table 3.1-59 (page 3-236). The analysis of the simulations on which the conclusions summarized in this table are based suggests that each of the Build alternatives and design options would result in a high level of adverse change in visual quality and that the overall differences among alternatives in terms of change in visual quality would be marginal. Most of the adverse visual change would occur in the West Hemet Hills because all of the Build alternatives would require substantial cutting. Build Alternatives 1a and 1b would require road cuts, resulting in scarring along the western and northern sides of the West Hemet Hills. Build Alternatives 2a and 2b would require the removal of a substantial portion of the southern peak and would leave two pyramid-shaped cut slopes in its place.

Design Options 1b1 and 2b1 would also result in high levels of adverse change in visual quality. However, because the design options would require less excavation through the West Hemet Hills than the Build alternatives, Design Options 1b1 and 2b1 would cause the least amount of adverse change. Similar to Build Alternatives 1a and 1b, Design Option 1b1 would cause scarring along the northern and western sides of the West Hemet Hills, but it would cause less scarring on the western side than the base condition Build alternatives. Similar to Build Alternatives 2a and 2b, Design Option 2b1 would require removal of a substantial portion of the southern peak of the West Hemet Hills, but it would require less removal than either of the Build alternatives. The difference in visual quality between Design Options 1b1 and 2b1 would be marginal.

Degree of Exposure

The various Build alternatives would result in different degrees of exposure to existing viewer groups. Green Acres residents would have close-range views of Build Alternatives 1a and 1b and of Design Option 1b1 because these alternatives would require cuts along the western slopes of the West Hemet Hills immediately adjacent to their community. Winchester residents would have mid-range views of all of the Build alternatives at the West Hemet Hills but close-range views of Build Alternatives 1a and 2a as they pass through southeastern Winchester.

In the West Hemet Hills area, Build Alternatives 2a and 2b and Design Option 2b1 may be visible from limited parts of Hemet and San Jacinto, whereas Build Alternatives 1a and 1b and Design Option 1b1 would not be. In the rest of the Project area, the degree of exposure to all of the Build alternatives would be similar.

Few Hemet or San Jacinto residents or workers would be affected by views of the Project from their homes or places of employment because the Project would run along the sparsely populated outskirts of those cities. Even where residential subdivisions would be located near the Project, the potential for visibility from homes would be minimal because views would be screened by structures and vegetation. The analysis of Key Views 16 and 18 indicates that the impact on views from the entrances of two residential subdivisions would also be minimal or nonexistent. Key View 11 represents the view from the entrance to another residential subdivision that would be impacted by the Project, but the impact would be almost the same with all of the Build alternatives.

All Build alternatives and design options would be visible to travelers along State Eligible Scenic Highway SR 74 and the gateway to the San Jacinto Valley as a frequent but short-duration view. However, Build Alternatives 1a and 1b and Design Option 1b1 would be more visible to roadway users as a frontal view than the side view created by Build Alternatives 2a and 2b and by Design Option 2b1.

Degree of Sensitivity

The County of Riverside, City of Hemet, and City of San Jacinto have established policy goals to preserve their natural ridgelines, the scenic quality of their hills, and to avoid slope scarring. All Build alternatives and both design options would alter the natural ridgelines and cause scarring. Build Alternatives 1a and 1b would cause more visible scarring but less ridgeline alteration than Build Alternatives 2a and 2b. Design Options 1b1 and 2b1 would cause the least alteration in the West Hemet Hills. Design Option 1b1 would cause less scarring than Build Alternative 1b. Design Option 2b1 would cause less ridgeline alteration than Build Alternative 2b.

The San Jacinto Valley Area section of the Riverside County General Plan stresses the preservation of the aesthetic qualities of the San Jacinto River corridor. This Project comes within 0.3 km (0.2 mi) of the river but does not create any additional overcrossings.

The communities of Winchester and Green Acres are likely to be sensitive to the Project due to its proximity. As stated previously, Winchester would be most strongly affected by Build Alternatives 1a and 2a, and Green Acres would be affected by Build Alternatives 1a and 1b. Users of the Winchester Elementary School playground and the Francis Domenigoni community center would also be highly sensitive to Build Alternatives 1a and 2a.

Users of State Eligible Scenic Highway 74 are likely to be sensitive to visual impacts from all Build alternatives and both design options. However, these users would be impacted less substantially by Build Alternatives 2a and 2b and Design Option 2b1 because they present side views rather than frontal views.

Residents of the subdivision immediately north and east of the West Hemet Hills are also likely to be sensitive, and all of the Build alternatives are likely to affect them relatively equally.

Conclusion

All Build alternatives and both design options would result in high levels of adverse visual impacts. However, Design Option 1b1 or 2b1 would be marginally better in terms of visual character, visual quality, and degree of exposure and sensitivity.

All Build alternatives and both design options would impart a more developed character to the landscape and would affect the character of most of the Project area fairly equally.

Design Option 1b1 would impart slightly less change in character because it would be the least visible from most communities. Although Design Option 1b1 would be visible from Green Acres, it would be the least visible from Hemet, San Jacinto, or Winchester. Each of the Build alternatives and both design options would result in a high level of change in visual quality. Most of the adverse change would occur in the West Hemet Hills because all Build alternatives and both design options would require substantial cutting and excavation of the existing slope. The design options would result in the least amount of visual quality change.

The various Build alternatives would result in different degrees of exposure from existing viewer groups. Green Acres residents would have close-range views of Build Alternatives 1a and 1b and Design Option 1b1 because those alternatives would require cuts in the western slopes of the West Hemet Hills immediately adjacent to their community. Winchester residents would have mid-range views of all of the Build alternatives, but close range views of Build Alternatives 1a and 2a. With the two design options, Winchester residents would have a mid-range view of Design Option 2b1 but would not have direct views of Design Option 1b1. Hemet and San Jacinto residents would likely have oblique views of Build Alternatives 2a and 2b and Design Option 2b1. All of the Build alternatives would be visible to travelers along State Eligible Scenic Highway SR 74. However, Build Alternatives 1a and 1b and Design Option 1b1 would be more visible to roadway users as a frontal view than the side view created by Build Alternatives 2a and 2b and by Design Option 2b1. Overall, Design Option 1b1 would have the least exposure.

The County of Riverside, City of Hemet, and City of San Jacinto are sensitive to visual change and have established policy goals to preserve their natural ridgelines, the scenic quality of their hills, and to avoid slope scarring. All Build alternatives and both design options would alter the natural ridgelines and cause scarring and would be inconsistent with these policy goals.

Noise Barriers

Noise barriers have been proposed as an abatement measure for noise impacts generated by the Project. Noise barrier recommendations by Project segment or corridor have not been finalized, so all proposed noise barriers that passed the feasibility test were analyzed for potential visual impacts. Although the visual impact of any particular noise barrier would depend on its individual setting and height, noise barriers can be divided into three visual impact categories.

- Noise barriers at ground level
- Noise barriers on elevated roadways (looking at the Project corridor)
- Noise barriers on elevated roadways (looking from the Project corridor)

Noise barriers at ground level would cause the least adverse visual impact because they tend to be visible for shorter distances. On the other hand, noise barriers on elevated roadways would have the potential for the most substantial visual impacts because they would increase the height of the Project, making it more visible in views from the surrounding area, while diminishing views toward the surrounding landscape for motorists traveling on the Project roadway.

To illustrate potential effects associated with the three visual impact categories, proposed barriers representing each category were selected for visual simulation—Noise Barriers 1A-E1, 1A-G1, and 1A-L3. The noise barriers selected are also representative of various communities in the Project area. One of the selected barriers would be located in the community of Winchester, one in the city of Hemet (of which two different views were analyzed), and one in the city of San Jacinto.

Simulations of the selected noise barriers were superimposed on Project simulations at four key views: Key Views 2, 10a, 11, and 17. An analysis of the visual impacts with the addition of the noise barriers follows.

Noise Barrier 1A-E1

Noise Barrier 1A-E1 is shown in Figure 3.1-73. This proposed noise barrier would be located along the western side of Segment A and would extend from just east of Winchester Road to Simpson Road. Barrier 1A-E1 would be a maximum of 4.3 m (14 ft) high and 1,921 m (6,305 ft) long. This barrier was chosen for analysis because it is representative of noise barriers on elevated roadways (looking toward the Project corridor) and of noise barriers in communities.

Noise Barrier 1A-E1 would be visible from Key View 2 and was simulated with Project features in Figure 3.1-73. The addition of the noise barrier would diminish the visual character and quality of the view. The noise barrier would increase the overall height of the Project and make it substantially out of scale with the height of the surrounding community. The berm required by the Project would average 6.1 to 7.6 m (20 to 25 ft) high at this location. The noise barrier would add an additional 4.3 m (14 ft) to the Project height compared to the mostly one-story buildings that surround it. The height and the more than 1.6-km (1-mi) length of the noise barrier would make the area feel more enclosed and less rural. In addition, with the noise barrier, most of the view of the distant hills in the left side of the image would be blocked.

Key View 2 represents a view from the main street in the community of Winchester. Residents are likely to be sensitive to these changes, which would diminish the rural/western character that Winchester is trying to retain and create.

Noise Barrier 1A-G1

Noise Barrier 1A-G1 would be located on the northern side of Segment G and would extend from the northwestern side of the West Hemet Hills to Florida Avenue. It is proposed to be 4.3 m (14 ft) high and 1,786 m (5,861 ft) long. This barrier was chosen for analysis because it is representative of noise barriers on elevated roadways (looking both toward and from the Project corridor). Noise barrier 1A-G1 would be visible in Key Views 10a and 11 and was simulated in Figures 3.1-74 and 3.1-75. In both figures, the addition of Noise Barrier 1A-G1 diminishes the visual character and quality of the image.

In Key View 10a, the Project and noise barrier would be visible from above. In this location, the berm would be approximately 15 m (50 ft) high. The noise barrier would add 4.3 m (14 ft) to the Project height, causing it to loom even more over the surrounding neighborhoods. Structures of this height are out of scale with the rural and suburban houses and buildings in the image and make it feel more urban. Significantly, the noise barrier would eliminate the views to the north across the valley that motorists traveling along the Project corridor would otherwise experience.

In Figure 3.1-75 (Key View 11), Noise Barrier 1A-G1 is visible along the northern side of the Project corridor. In this image, the noise barrier raises the height of the Project and cuts off views of distant hills on the right side of the image.

Key Views 10a and 11 represent potential views of residents of Hemet, of motorists in the Project corridor, and of motorists along SR 74/Florida Avenue. Hemet residents are likely to be sensitive to the addition of the noise barrier because it would make the Project appear larger and more visible for long distances. Commuters are likely to be somewhat sensitive to the addition of the noise barrier because it would diminish views from the Project corridor and from SR 74.

Noise Barrier 1B-M4

Noise Barrier 1B-M4 is shown in Figure 3.1-76. This proposed noise barrier would be located along Sanderson Avenue and the east side of Segment M and would be as much as 4.3 m (14 ft) high and 2,566 m (8,420 ft) long. Noise Barrier 1B-M4 was chosen for analysis because it is representative of noise barriers at ground level.

Noise Barrier 1B-M4 would be visible in Key View 17 and was simulated with Project features in Figure 3.1-76. In the figure, the image is dominated by industrial and infrastructural elements, such as a water treatment plant, transmission lines, and a chainlink fence. The proposed noise barrier would partially obscure the water treatment plant, causing negligible visual impact on the character and quality of the image.

Noise Barrier 1B-M4 would be located in San Jacinto, and the area around it would likely be developed as residential subdivisions. These subdivisions would be surrounded by similar walls along Sanderson Avenue and other arterial streets, so the noise barriers would be consistent with the visual pattern that would be emerging in the area. In addition, the noise barrier is not likely to be visible from many of the future homes because other structures and trees would likely obstruct views. However, future residents could be sensitive to the addition of the noise barrier because it could affect their views when entering and leaving their subdivisions.

Conclusions

Noise barriers can cause adverse visual impacts if they eliminate distant views, dwarf buildings in close proximity, or make a community feel less rural or more enclosed. In general, lower barriers and barriers at ground level would have less visual impact than higher barriers and those on elevated roadways.

Noise barriers on elevated roadways would have the potential to create substantial visual impacts. Most Project noise barriers would exceed 0.8 km (0.5 mi) in length and 3.1 m (10 ft) in height. Where the addition these barriers would contribute to making the Project substantially higher than surrounding buildings, the character and quality of views in the area could be substantially altered. Noise barriers on elevated roadways would also have the potential to eliminate panoramic views that would otherwise be available to motorists.

Project Lighting

The Project would create new sources of nighttime light in its immediate vicinity; however, the visual effects of these new light sources are not likely to be substantial. New sources of light would come from traffic, new street lighting, and new signalization at off-ramp and on-ramp intersections. No new lighting is expected to be installed along the proposed highway, except for safety lighting at interchanges. Existing lighting would be modified or relocated as a part of the proposed Project. Lighting would be designed according to Department standards as part of the Corridor Master Plan.

The Project area is within 45 miles of the Palomar Observatory and, as such, must comply with Riverside County Ordinance 655 regulating light pollution. Ordinance 655 requires the use of low-pressure sodium bulbs or bulbs below 4,050 lumens for Project streetlights and the use of shielding to minimize light spillage into adjoining areas. The use of shielded light fixtures would prevent glare, which is defined by the Illuminating Engineering Society of North America (IES) as "the sensation produced by luminance in the visual field that is sufficiently greater than the luminance to which the eye has adapted to cause annoyance, discomfort, or loss of visual performance and visibility" (IES 1999).

Because Project light fixtures would be shielded, any visual impacts that result from Project lighting would likely be the result of vehicle lights. Visual impacts from vehicle lights would be minimized because most of the proposed highway would be elevated and vehicle lights would not be visible from communities at the ground surface. The proposed roadway would be elevated more than 3.04 m (10 ft) in the vicinity of the community of Winchester and the residential areas north of the West Hemet Hills. Noise barriers near these residential areas would further block light spillage from the proposed highway into the surrounding areas.

Signage

Signage for the Project will be designed in the Corridor Master Plan. Signage would be typical of freeway projects in California and would conform to what the public expects to see along a freeway corridor. Thus signage is not expected to generate substantial visual impacts. Furthermore, because the highway would be elevated, much of the signage would not be visible from the surrounding communities.

Temporary Impacts

Except for the No Build Alternative, each Build alternative and design option could result in temporary impacts to the visual environment during the construction period. These would include demolition of existing structures, placement of construction equipment, storage of materials, grading and earth movement, and traffic detours into surrounding streets. These impacts would be temporary and would cease after construction.

3.1.7.4 Avoidance, Minimization, and/or Mitigation Measures

Avoidance and Minimization Measures

Landscaping

RCTC and the Department would landscape the ROW in a manner that is consistent with Department landscape design guidelines and the standard Department budget prescription for Projects of this type. The final landscape plan for the Project will be developed jointly in conjunction with the District Landscape Architect as part of a Corridor Master Plan for the roadway. A Corridor Master Plan is a plan for the appearance of a highway corridor that is based on a comprehensive analysis and an integrated approach to the design of the highway's landscaping, noise barriers, and any other structures proposed for a project.

Although the details of the landscaping portion of the Corridor Master Plan would follow Department guidelines, certain aspects of the landscaping plan are specified here. Because of the dry climate, emphasis would be placed on use of native trees, shrubs, and ground cover. The landscape treatment would generally entail planting concentrations of trees and shrubs at interchanges, with less numerous plantings in the areas in between. Portions of the Project alignment visible from schools and parks would receive screening treatments, which would include planting trees, shrubs, and/or vines. If Build Alternative 1a or 2a is identified as the Preferred Alternative, landscaping, including trees, shrubs, and/or vines, would be employed to minimize the visual impact of the highway from the community of Winchester along Roadway Segment A. Similarly, if noise barriers are employed at locations visible from parks or schools or within Winchester, they would be screened with trees, shrubs, or vines to minimize their appearance.

Noise Barriers

Designs for noise barriers are under consideration. When feasible, they would be developed in the preparation of the Corridor Master Plan. The noise barriers would have design treatments to make them attractive landscape elements and to integrate them appropriately into the views toward the roadway from the surrounding area. Where appropriate and feasible, landscape plantings would be used to visually break up and soften the expanses of noise barriers.

Mitigation Measures

Even with the implementation of landscaping, based on the magnitude of the visual impacts identified in this analysis, many of the visual impacts would remain, and further measures would need to be taken to address these impacts. Visual mitigation for adverse Project impacts addressed as part of the key view assessments would consist of adhering to the design requirements presented below. These requirements would apply to all Project features from Opening Year in 2015 to the 20-Year Design Horizon in 2035. The requirements are arranged by Project feature and include design options in order of potential effectiveness. All visual mitigation would be designed and implemented with the concurrence of the District Landscape Architect.

VIS-1 **Corridor Master Plan**. Early in the planning and design of the Project, a Corridor Master Plan will be developed to unify all freeway improvements, including the roadway, structures, and roadside, to result in a collaborative, distinctive, cohesive integration of the corridor into the surrounding communities and the natural environment. The Corridor Master Plan will include roadside design and maintenance, vegetation management, noise barriers, retaining walls, storm water treatments, median barriers, guard rails, bridges, light pollution, preservation of historic and cultural features to ensure the visual cohesiveness of the corridor. It will include the identification of collaborative opportunities for the Department and others. The Corridor Master Plan should be specific and not only conceptual in design. Resources for development of the Corridor Master Plan will be provided from this parent project's roadway contract.

VIS-2 **Mitigation Planting/Highway Planting**. Mitigation planting/highway planting will be provided prior to the end of construction for each phase of the Project. It is expected that the year requirements for the plant establishment period will be set in the Corridor Master Plan based on the species selected, but will not be less than a 3-year minimum. The vegetative requirements may vary. Planting and plant establishment will be funded by this parent project's roadway contract.

VIS-3 **Plantings to Bring Down Apparent Scale**. The planting of trees, vines, and shrubs will be provided for the "softening" of structures, including walls and bridges, and to bring down their apparent scale.

VIS-4 **Minimize Visual Impacts with Revegetation**. Visual impacts will be minimized by revegetation, which will be achieved by planting trees, shrubs, and groundcover at interchanges and in more developed areas. Less developed, scenic, and rural areas will be revegetated to reproduce adjacent native cover. Slope areas adjacent to native cover will include container planting in addition to seeding to minimize visual impacts.

VIS-5 **Textured Noise Barriers**. Noise barriers and retaining walls will be heavily textured and colored a midrange to dark color that corresponds to that of adjacent soil. Walls facing public-use areas (streets, private yards, or recreation) will be heavily textured and colored a midrange to dark neutral color to minimize light reflection. Walls higher than 2.4 meters (m) (8 feet [ft]) and longer than 9.1 m (30 ft) will feature a wall cap and panel with detailing or site-specific designs such as local or historic references. These or other specific enhancements approved by the District Landscape Architect will minimize/mitigate community impacts by enhancing the regional "sense of place" and restoring visual scale to the surroundings.

VIS-6 **Aesthetic Treatment to Structures**. Aesthetic treatment to structures will provide opportunities for community identification and will be developed collaboratively in the Corridor Master Plan.

VIS-7 **Planting on Structures to Minimize Glare**. Landscaping will entail planting trees adjacent to concrete structures and vines on the structures themselves to minimize reflected light and glare.

VIS-8 **Concentrations of Trees and Shrubs at Interchanges**. Landscaping will entail planting concentrations of trees and shrubs at interchanges, with less numerous plantings in the areas in between.

VIS-9 **Screening Treatments in Winchester**. Portions of the Project alignment visible from schools and parks or Roadway Segment A in the community of Winchester will receive screening treatments, including the planting of trees, shrubs, and/or vines.

VIS-10 **Noise Barrier Screening in Winchester**. Noise barriers built at locations visible from parks or schools or within Winchester will be screened with trees, shrubs, or vines to minimize their visual impact.

Mitigation Proposed for Impacts Related to Removal of Hillsides and Creation of Cut Slopes

For each of the Build alternatives and design options, there would be substantial removal of existing hillsides and creation of large and visually prominent cut slopes. This would occur in the ridge at the southern end of the Project area that would be cut through by Build Alternative 1a or 2a (Roadway Segment A) or Build Alternative 1b or 2b or either design option (Roadway Segment B). These impacts would be most evident in the West Hemet Hills, where Build Alternative 2a or 2b or Design Option 2b1 (on Roadway Segment G) or Build Alternative 1a or

1b or Design Option 1b1 (on Roadway Segment H) would create highly visible impacts. There are no mitigation measures that can be taken to completely reduce the impact of the removal of large segments of the existing hillsides. However, the following measures would be implemented by RCTC and the Department to mitigate the impacts of the creation of large cut slopes.

VIS-11 **Prepare Contour Grading Plans.** Consistent with Section 304.4 of the Department's Highway Design Manual, prepare contour grading plans for all major cut slopes that provide for the rounding of the tops and ends of the cut slopes where the material is other than solid rock. Where the material is solid rock, a layer of earth or rock rubble overlying the rock will be rounded.

VIS-12 **Cut Slope Design.** To ensure that the cut slopes have a more natural appearance, the design of these slopes will be analyzed further and revised. In the current design, each of the slopes consists of a series of 3.7-m (12-ft) -wide benches intended to catch debris; these wide and regular benches create a somewhat artificial appearing slope. In the redesign, a single wide bench will be provided at the base of each cut slope to catch debris, and the regular series of wide benches on the slopes will be replaced by a series of 0.3-m to 0.6-m (1-ft to 2-ft) -wide steps intended to create niches for the establishment of vegetation. The design of these steps will be consistent with the guidance provided by Section 304.5 of the Department's Highway Design Manual, which recommends that they be irregular, varying by 20 percent in height. In addition, at the ends of the cuts, the steps will be designed to wrap around the rounded transitions to appear more natural.

VIS-13 **Over-Excavate Slopes.** Where feasible, over-excavate slopes cut into solid rock by 1.2 m (4 ft) and back fill with rock rubble. This will create a more natural appearance for the texture of slopes and will provide more opportunities for vegetation to become established.

VIS-14 **Create Artificial Draws.** On large cut slopes, create artificial draws (small depressions that extend up the slope and serve as drainage ways) that make visual sense in terms of their relationship to the surrounding topographic patterns. These artificial draws will be designed to break the cuts up into smaller visual units and to make the cut look less like an engineered slope.

VIS-15 **Weathering of Exposed Rock.** On cut slopes where the color of the exposed rock contrasts substantially with the color of the rock on the nearby slope areas, use a metallic oxide spray to artificially weather the surfaces of the newly exposed rock.

VIS-16 **Revegetate Cut Slopes.** Use hydroseeding and other planting methods, where feasible, on cut slopes to initiate the longer term process of natural slope revegetation.

Mitigation Proposed for Impacts Related to Fill Slopes

Each of the Build alternatives and design options would entail creation of fill slopes on which much of the roadway would be constructed. Along much of the route assumed in each of the Build alternatives, the roadway would be located on berms approximately 1.5 m (5 ft) in height. However, in places along all of the Build alternatives, the berms would be considerably higher, rising to heights of 6.1 m (20 ft) and more. The higher fill slopes would alter the visual character of rural environments, blocking views toward more distant elements of the landscape and dominating the views from nearby areas. To address these impacts, RCTC and the Department would undertake the following mitigation measures.

VIS-17 **Erosion Control.** Design the fill slopes to incorporate erosion control measures in a way that is effective in preventing erosion and that leaves the slopes as natural appearing as possible.

VIS-18 **Hydroseed Fill Slopes.** Hydroseed the fill slopes to establish a vegetative cover of native plants/grasses.

VIS-19 **Texturize Fill Slopes.** Incorporate rock rubble onto the surfaces of the fill slopes so that they have a highly textured natural appearance.

VIS-20 **Revegetate Fill Slopes.** Make strategic plantings of aesthetically and ecologically appropriate shrubs and trees on the fill slopes to visually break up large expanses of slope, to visually integrate the slopes into their surroundings, and to compensate for the loss of more distant views. The precise locations of these plantings will be based on detailed analyses conducted in preparing the Corridor Master Plan and will conform to Department landscape design guidelines and the standard Department budget prescription for projects of this type. The primary guidelines that will be followed are those in The Landscape Architecture PS&E Guide, January 2008, (US Customary Units) (*http://www.dot.ca.gov/hq/LandArch/lap_guide/index.htm*) (Department 2008).

VIS-21 **Benched Slopes.** Where slopes of 6.1 m (20 ft) or more need to be steepened, a combination of 4:1 and 2:1 transition benches will be constructed as feasible to optimize the opportunity for vegetation to be established.

VIS-22 **Fill Slope Design.** Available topsoil (approximately 0.3 m [1.0 ft]) and weathered rocks and boulders within the right-of-way will be separated and stockpiled for use in the finish grading of fill slopes, where feasible, to enhance aesthetics or vegetation reestablishment.

VIS-23 **Earthen Basins.** Earthen basins and other water quality treatment facilities will be designed with undulating outlines and sited with a variety of appropriate plant and inert material to blend with the surrounding terrain and landscape, rather than creating basins that require screening. The need for additional right-of-way to accommodate the facilities will also be considered.

VIS-24 **Nonreflective Materials.** Every effort will be made to select permanent fencing material for the Project that has a dark and dulled finish.

Mitigation Proposed for Impacts Related to Major Overcrossing Structures

All of the Build alternatives would require major overcrossing structures at several locations, both for the Project roadway as it crosses over surface streets and for surface streets that cross over the Project roadway. These structures have the potential to dominate views from nearby areas and to block views toward more distant landscape features. To mitigate their impacts, RCTC and the Department would undertake the following mitigation measure.

VIS-25 **Overcrossing Design.** Based on detailed analyses conducted during early planning and design, the design team, including landscape architects, will refine the design of the overcrossing structures to make them appear as light and open as feasible and incorporate design elements that will make them visually engaging and relate them to their settings. Overcrossing design elements will provide opportunities for community identification. The additional cost of the design refinements will not exceed 5 percent of the cost of constructing the overcrossing structures as they were originally designed.

Mitigation Proposed for Impacts Related to Noise Barriers

Noise barriers have been proposed as abatement for noise impacts generated by the Project. Particularly when constructed on elevated roadways, noise barriers have the potential to dominate views from nearby areas, to block more distant views, and to make communities feel less rural or more enclosed. To mitigate these impacts, RCTC and the Department would undertake the following mitigation measures:

VIS-26 **Noise Barrier Design Treatments.** Noise barriers will incorporate design treatments to make them attractive landscape elements and to integrate them into views toward the expressway and from the surrounding area.

VIS-27 **Noise Barrier Landscaping.** Landscaping will be implemented in front of noise barriers, in pedestrian areas, and where feasible in other areas to visually break up and soften the expanses of barrier surfaces.

VIS-28 **Noise Barrier Surfaces.** Noise barrier surfaces will be textured to avoid graffiti.

Mitigation for Impacts Related to Roadway Lighting

The following measure will be implemented as part of Project design to mitigate the effects from lighting along the roadway.

VIS-29 **Lighting.** Project operational lighting will comply with Riverside County Ordinance 655, which regulates night light pollution up to 45 miles from the Palomar Observatory.

3.1.8 Cultural Resources

3.1.8.1 Regulatory Setting

"Cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources are discussed below.

The National Historic Preservation Act of 1966 (NHPA), as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations [CFR] 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Program (23 United States Code 327). Pursuant to Stipulation XII of the Section 106 PA, the Department is using a phased approach to evaluation for this Project, as detailed in Section 3.1.8.2 (page 3-251).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. See Appendix B (Volume 2) for specific information regarding Section 4(f).

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as CA Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires the Department to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

Treatment of cultural resources for the SR 79 Realignment Project is consistent with certain policies and guidelines in the Riverside County, City of Hemet, and City of San Jacinto General Plans. The requirements of the cities and Riverside County would be fulfilled by compliance with Section 106 of the NHPA. Pertinent policies from the Riverside County General Plan include:

OS 19.2 Review all proposed development for the possibility of archaeological sensitivity

OS 19.4 Require a Native American Statement as part of the environmental review process on development projects with identified cultural resources

OS 19.5 Transmit significant development proposals for evaluation in relation to the destruction/preservation of potential historical sites and incorporating feasible mitigations.

Both Hemet and San Jacinto include provisions for protection and treatment of cultural resources in their general plans. In the City of Hemet General Plan, the goal of the Historic Resources and Cultural Heritage Program is to "provide a community which appreciates its unique history and which promotes protection, preservation, and restoration of significant cultural, historical, and architectural features" (Hemet 1992). The Resource Management Element of the City of San Jacinto General Plan strives to promote cultural awareness through preservation of historical and archaeological resources (San Jacinto 2006). Both cities also have specific requirements and guidelines for accomplishing these preservation goals.

3.1.8.2 Affected Environment

The discussion and analysis of cultural resources is based on records searches, field inventories, and the environmental review and conclusions presented in the Historic Property Survey Report (HPSR) of June 2010. The HPSR transmitted several technical studies (the Area of Potential Effects [APE] maps, the Archaeological Survey Report [ASR], the Historical Resources Evaluation Report [HRER], the Extended Phase I [XPI] Proposal and Report, and Public Participation, which includes Native American Consultation) to SHPO requesting concurrence on the NRHP eligibility of properties that would potentially be affected by the Project. To date, in accordance with PA Stipulation VIII.C.5, the Department has requested SHPO concurrence on determinations of eligibility for 12 built environment properties and 2 historical archaeological sites. SHPO concurred with the determinations on August 2, 2010 (see the SHPO concurrence letter at the end of Chapter 5 [Volume 2]). However, several properties remain unevaluated, as explained below.

Normally, the Department would evaluate the NRHP eligibility of all non-exemptable cultural resources within the APE, submit those findings to SHPO for concurrence, and propose a Finding of Effect (FOE) for the undertaking prior to public circulation of the Draft EIR/EIS. However, the evaluation of the historic significance of individual archaeological sites, unlike the built environment, usually requires the gathering of additional information through some type of ground-disturbing activity. Since ground-disturbing activities destroy some of the value of the archaeological property, those activities have been postponed until after public circulation of this Draft EIR/EIS. Once a Preferred Alternative is identified, the Department will perform the Section 106 evaluations on any archaeological sites located within that alternative's alignment to determine the properties' historical significance and fulfill the Department's responsibilities under Section 106. By limiting subsurface testing and additional study to those sites within the Preferred Alternative, the Department will avoid unnecessary impacts to sites on the other alternatives. To date, the identification of all properties (built environment and archaeological) has been completed, which allows for a comparison of the alternatives, and all properties (built environment and archaeological) that do not require physical disturbance of the property have been evaluated. These findings were reported in the HPSR and are summarized here. After public circulation of this Draft EIR/EIS, a Preferred Alternative will be identified, and the archaeological evaluation will be conducted based on that alternative. The archaeological evaluation would limit subsurface testing and additional study to the Preferred Alternative and would avoid unnecessary impacts to sites on other alternatives. Moreover, the Department will evaluate the resources in a broader regional/landscape context, with further Native American consultation.

The Department will seek concurrence on evaluations for as many as 22 prehistoric archaeological sites, three historical archaeological sites, and three multicomponent sites that would be evaluated, reported, and circulated for public comment in a Supplemental HPSR once a Preferred Alternative for the Project is identified. Following SHPO concurrence with the Supplemental HPSR, the Department will seek concurrence on a Finding of Effect (FOE) for the undertaking. If there is a finding of adverse effect, the Department will consult with SHPO to resolve the adverse effect and complete a Memorandum of Agreement, which would commit to the mitigation measures that will be implemented. Depending on the outcome of the Supplemental HPSR, the resources may also be protected as a Section 4(f) resource, which may require additional consideration and documentation.

Area of Potential Effects

The APE, as defined in 36 CFR 800.16, is the area within which the undertaking has the potential to directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. The Project footprint, which includes all potential permanent and temporary impacts, encompasses approximately 686 ha (1,695 ac) and constitutes the Project's area of direct impact. The APE also includes additional areas outside the area of direct impact where potential indirect effects (visual, atmospheric, access, etc.) on archaeological and built environment properties may occur. The APE, therefore, was extended to include the entirety of archaeological sites and of legal property boundaries of all parcels containing structures, excluding portions of large rural or undeveloped parcels that had no structures. Thus the APE encompasses approximately 1,023 ha (2,527 ac).

Records Search

Cultural resources literature and records searches of the Project study area were conducted at the Eastern Information Center (EIC) at the University of California, Riverside, on three occasions between 2004 and 2006. Records for all previously recorded cultural resources within a 1.6-km (1-mi) radius of the Project study area were obtained and are on file at the EIC.

The results of the records search revealed that 16 cultural resources had been previously identified in the records search study area, 12 of which were within the APE (eight prehistoric sites, one historical archaeological site, two multicomponent sites, and one built environment resource). Ten of these resources were, or will be, reevaluated (if in the Preferred Alternative) for the current Project, while the remaining two were exempted under the Section 106 PA (Section VIII.C.1), as set forth in the terms and conditions of Attachment 4.

Additional sources consulted in 2004, 2005, and 2006 include the NRHP, Office of Historic Preservation: Archaeological Determinations of Eligibility, California Register of Historical Resources (California Office of Historic Preservation), California Department of Parks and Recreation: Historic Properties Directory, California Points of Historical Interest, California Historical Landmarks, and California Inventory of Historic Resources, and a review of historical maps. Historical and archival research was conducted between March 2005 and December 2006 to provide background material for the historical context. During this time, several repositories and sources were consulted. These data are reported in the ASR and HRER (HPSR, Exhibits 2 and 3), which include detailed lists of repositories and sources.

Consulting Parties and Public Participation

Public Participation

Scoping for the Project was conducted in 2004 and 2005, when the public was given the opportunity to express concerns about the Project. No concerns regarding cultural resources were voiced at four public meetings held in Hemet, San Jacinto, and Winchester:

- City of Hemet Scoping Meeting (September 29, 2004)
- City of San Jacinto Scoping Meeting (October 6, 2004)
- Winchester Homeowners Association Meeting (October 6, 2005)
- Hemet Public Information Meeting (October 19, 2005)

Consultation with Local Historical Societies

Representatives from local historical societies were contacted in person as part of the Section 106 public participation process. Joan Walters, president of the Hemet-San Jacinto Valley Historical Society, and Gregg Cowdery of the Winchester Historical Society were contacted in December 2006. Both provided historical information about the Project area and expressed concern about potential impacts to structures at the Wilhelm Ranch (P-33-15751). This property was recorded in 2005 during initial surveys for the Project, and relevant discussion was included in the HPSR. However, in 2006, the property was razed by the property owner. Therefore, the property is no longer extant in the APE.

Native American Coordination

The Department coordinated Native American consultation under Section 106 (pursuant to the Department's assumption of FHWA's Section 106 authority) and maintained continuous contact with Native American groups and individuals and will continue to do so for the duration of the Project. The Native American Heritage Commission (NAHC) was contacted on May 12, 2005, regarding the SR 79 Realignment Project. On June 6, 2005, the NAHC responded, stating that the search of the Sacred Land files indicated the presence of Native American sacred sites in the immediate Project vicinity. The NAHC provided a list of Native American individuals/organizations that may have knowledge of cultural resources in the Project area.

Native American Section 106 consultation letters were sent in July 2005 to 14 individuals and tribal representatives from the NAHC list requesting information about any sacred lands or sites within the Project area. Interested individuals and representatives have participated in ongoing Section 106 consultation for the Project, including attending meetings, reviewing reports, monitoring archaeological fieldwork, and providing input on the NRHP evaluation of Native American sites in the APE.

The participating Native American groups and individuals have provided comments during meetings and in comment letters stating the importance of assessing bedrock milling features within a broader context. In particular, during a meeting held on September 14, 2009, a Santa Rosa tribal representative indicated that these sites are not isolated sites, but part of extended village areas. In a letter dated July 15, 2011, a Pechanga tribal representative recommended that the sites should be evaluated in a landscape approach.

NAHC correspondence letters and a table of contacts and Native American comments are presented in Exhibit 6 of the HPSR. Consultation will continue throughout the Section 106 process. Please see Section 5.6 (Volume 2, page 5-18) for a more detailed discussion of Native American Section 106 consultation.

Field Surveys

Cultural resource surveys resulted in the identification of 43 cultural resources within the APE. Of these, 31 are archaeological sites and 12 are built environment resources, which are discussed below.

Built Environment

Fieldwork to identify historic built environment resources was conducted in two stages, from March to May 2005 and from June to July 2006. Twelve built environment resources within the APE were evaluated. The remaining parcels in the APE were not evaluated. They were vacant, contained buildings constructed after 1961 (the 45-year cutoff date selected to allow 5 years for planning purposes prior to completion of the environmental document), or contained buildings constructed less than 50 years ago or that appeared to be less than 50 years in age that were exempt from further study due to a lack of historical association or integrity in accordance with the Section 106 PA (VIII.C.1) and the terms and conditions set forth in Attachment 4 of the Section 106 PA.

Of the 12 properties evaluated, one, the Colorado River Aqueduct (CRA [CA-RIV-6726H]), was determined to be eligible for listing on the NRHP and determined to be a historical resource for the purposes of CEQA. This property is discussed further below and in Chapter 4 (Volume 2). Another, the CBJ Dairy (P-33-15752), is ineligible for the NRHP, but was determined by the Department to be a historical resource for the purposes of CEQA. It is also discussed further in Chapter 4. The other 10 resources were determined ineligible for listing on the NRHP (see the SHPO Concurrence letter at the end of Chapter 5 [Volume 2]). Table 3.1-60 (page 3-255) categorizes the results of these evaluations.

The CRA, owned and operated by the Metropolitan Water District of Southern California (MWD), brings water from the Colorado River on the eastern border of California to the Los Angeles area through a series of canals, covered conduits, tunnels, and siphons. Portions of the first and second barrels of the Casa Loma Siphon and the Casa Loma Canal are the only elements of the CRA system that are within the APE. The part of the CRA (CA-RIV-6726H) that passes through the APE was evaluated and found eligible for the NRHP as a contributing element to the entire CRA system, if that property is ever be found eligible in its entirety. The Casa Loma siphons and canal are important contributing elements of the historic property as a whole under Criterion A (as a driving and enabling force for the economic development of Southern California) and under Criterion C (as a marvel of civil engineering), where the period of significance is 1923 to 1960 (HRER, March 2010). The CRA has also been documented for the Historic American Engineering Record (Gruen 1998). It has been informally recommended as eligible for the NRHP on several occasions (Dice 2001, Horne 1999, Neves 2000), but those recommendations were not reviewed by the SHPO, and no SHPO concurrence on its eligibility was issued.

Table 3.1-60 Summary of Built Environment Significance

Site Number	Name	Address/Location	Community	OHP Status Code	NRHP Eligible	Criterion
CA-RIV-6726H	Colorado River Aqueduct	Winchester, CA USGS 7.5' Quad (T4S-R2W, T4S-R1W)	San Jacinto, CA	3S	Yes	A, C
CA-RIV-8195H	Second San Diego Aqueduct Canal	Lakeview, CA USGS 7.5' Quad (T4S-R1W, T4S-R2W, T5S-R2W) – Winchester, CA USGS 7.5' Quad (T5S-R1W, T5S-R2W)	San Jacinto, CA	6Z	No	—
CA-RIV-8196H	San Jacinto Valley Railway	Winchester, CA USGS 7.5' Quad (T5S-R2W)	San Jacinto, CA	6Z	No	—
P-33-15740	Vanderlinden Property	Highway 74	Hemet, CA	6Z	No	—
P-33-15741	Reflection Lake Recreational Vehicle Resort	Cottonwood Avenue	San Jacinto, CA	6Z	No	—
P-33-15744	Shannon Drive Property	California Avenue	Winchester, CA	6Z	No	—
P-33-15747	Haddock Street Property	Haddock Street	Winchester, CA	6Z	No	—
P-33-15748	Ramona Boulevard Property	Ramona Boulevard	San Jacinto, CA	6Z	No	—
P-33-15749	Braswell Property	Warren Road	San Jacinto, CA	6Z	No	—
P-33-15750	Bidondo Property	California Avenue	Hemet, CA	6Z	No	—
P-33-15751	Wilhelm Ranch	Highway 74	Hemet, CA	6Z	No	—
P-33-15752	CBJ Dairy	Ramona Expressway	San Jacinto, CA	3CS	No	---

Source: Final Historical Resources Evaluation Report, March 2010

Note: OHP = California State Office of Historic Preservation

Archaeological Sites

The archaeological survey, conducted between March 2005 and February 2007, inspected 100 percent of the APE intensively, in 15-m (45-ft) transect intervals, and resulted in the identification of 11 previously recorded sites (two of which were combined to form one larger site) and 21 sites that were discovered during the investigations conducted for the Project. Because two previously recorded sites were merged into one site, the total count of archaeological sites within and immediately adjacent to the APE is now 31. Of these, 22 are prehistoric archaeological sites, 6 are historical archaeological sites, and 3 are multicomponent archaeological sites containing both prehistoric and historical resources.

One site (CA-RIV-6907/H) is presumed eligible for the NRHP under Criterion D and would be protected in place as an Environmentally Sensitive Area (ESA), and one site (CA-RIV-5786) was previously determined eligible for the NRHP, but its components are no longer extant and will be reevaluated because it has lost integrity since it was first determined to be eligible. All of the remaining sites (listed in Table 3.1-61 [page 3-256]) are unevaluated and, depending on their proximity to the Preferred Alternative that is identified, will be evaluated prior to the Final

EIR/EIS. Summaries of site significance, integrity, data potential, and NRHP eligibility status for each of the 31 sites are provided in the following sections.

Prehistoric

Of the 22 prehistoric sites documented, seven sites (CA-RIV-5790, -7885, -7887, -7888, -7891, -7893, and -8160) consist of resource procurement/processing locations containing one or more bedrock outcrops with milling features and no artifacts (Table 3.1-61 [page 3-256]). Fourteen additional prehistoric sites (CA-RIV-5461, -5462, -5791, -5830, -7907, -7908, -8140, -8141, -8142, -8143, -8146, -8147, -8148, and -8169) consist of resource procurement/processing locations containing one or more bedrock outcrops with milling features and few artifacts. Extended Phase I (XPI) testing was conducted at 13 of the sites (CA-RIV-5461, -5462, -5791, -5830, -7907, -7908, -8140, -8141, -8142, -8143, -8146, -8147, -8148) to determine whether intact subsurface archaeological deposits were present in the Project APE. Similar subsurface testing had been conducted already at site CA-RIV-8169 for a proposed housing development (Smith 1991).

As a result of the XPI study (documented in the Extended Phase I Report of February 2009), no potentially significant deposits were recovered from subsurface contexts at 10 of the 13 prehistoric sites. In addition, no significant subsurface deposits were encountered at CA-RIV-8141 and CA-RIV-8142 within or adjacent to the APE. Additional studies (e.g., evaluation), however, were recommended at CA-RIV-5462 because the Project could impact potentially significant deposits.

As noted above, the participating Native American groups and individuals have provided comments during meetings and in comment letters stating the importance of assessing bedrock milling features within a broader context. Also, the SHPO, in their review of evaluations of bedrock milling sites for an adjacent project, has requested an evaluation of existing data to determine if there is sufficient information to determine if a Native American cultural/historic properties district may exist and if so, would the resources in question, contribute to its significance. As such, sites containing bedrock milling features will be evaluated as potential contributors to a historic "thematic" district. A regional context for this site type will be developed in consultation with the Native American groups and individuals and the SHPO.

Table 3.1-61 Summary of Archaeological Site Evaluations

Trinomial (CA-RIV-)	Site Type	Build Alternative (Design Option)	Integrity	Data Potential	NRHP Eligible[a]
1418H	Rock retaining wall	1a, 2a	Moderately impaired	Historical settlement	No
5461	3 outcrops, 9 slicks, one milling slab	1a, 1b (1b1), 2a, 2b, (2b1)	Moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 1a, 1b (1b1), 2a, 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.

Table 3.1-61 Summary of Archaeological Site Evaluations

Trinomial (CA-RIV-)	Site Type	Build Alternative (Design Option)	Integrity	Data Potential	NRHP Eligible[a]
5462	9 outcrops with 18 slicks	1a, 1b (1b1), 2a, 2b, (2b1)	Moderately impaired	Prehistoric subsistence; technology	Section 106 Evaluation if 1a, 1b (1b1), 2a, 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
5786	Prehistoric burial and associated accoutrements. Data recovery undertaken (1995); impacts were mitigated	1a, 2a	Severely impaired	Prehistoric settlement, chronology, mortuary practices	Section 106 Evaluation if 1a, 2a identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
5790	2 outcrops with 2 slicks	1a, 2a	Moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 1a, 2a identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
5791	5 outcrops/exposures with 9 slicks	1a, 2a	Retained	Prehistoric subsistence	Section 106 Evaluation if 1a, 2a identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
5829/H	Paved road and several refuse deposits; 3 bedrock outcrops/exposures with 5 milling slicks	1a, 2a	Moderately impaired	Prehistoric subsistence, historical development of transportation systems	Section 106 Evaluation if 1a, 2a identified as Preferred Alternative. Prehistoric component may be evaluated as contributor to a historic district.
5830	2 outcrops with 2 slicks	1a, 2a	Moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 1a, 2a identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
6907/H	26 outcrops with 50 milling slicks, complex lithic scatter; rock wall, granite quarrying, 2 bottle fragments	1a, 2a	Moderately impaired	Prehistoric settlement and subsistence; historical settlement, economic patterns	Per Section 106 PA, Stipulation VIII.C.3, site considered eligible for purposes of undertaking and protected by establishment of Environmentally Sensitive Area
7885	1 outcrop with 1 slick	1a, 1b, (1b1)	Minimally impaired	Prehistoric subsistence	Section 106 Evaluation if 1a, 1b, (1b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
7887	1 outcrop with 1 slick	1a, 1b, (1b1)	Impaired	Prehistoric subsistence	Section 106 Evaluation if 1a, 1b, (1b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.

Table 3.1-61 Summary of Archaeological Site Evaluations

Trinomial (CA-RIV-)	Site Type	Build Alternative (Design Option)	Integrity	Data Potential	NRHP Eligible[a]
7888	4 outcrops with 5 slicks	2a, 2b, (2b1)	Retained	Prehistoric subsistence	Section 106 Evaluation if 2a, 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
7891	2 outcrops with 3 slicks	2a, 2b, (2b1)	Minimally to moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 2a, 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
7893	2 outcrops with 2 slicks	1a, 1b, (1b1)	Minimally impaired	Prehistoric subsistence	Section 106 Evaluation if 1a, 1b, (1b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
7894/H	2 outcrops with 2 slicks; historical refuse scatters	2a, 2b, (2b1)	Retained (prehistoric component); moderately impaired (historical component)	Prehistoric subsistence; historical settlement, chronology	Section 106 Evaluation if 2a, 2b, (2b1) identified as Preferred Alternative. Prehistoric component may be evaluated as contributor to a historic district.
7907	8 outcrops with 13 slicks	1a, 2a	Moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 1a, 2a identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
7908	6 outcrops with 8 slicks	1a, 2a	Retained	Prehistoric subsistence	Section 106 Evaluation if 1a, 2a identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
7909H	Oiled road surface, concrete rubble, landscaping	1a, 1b, (1b1), 2a, 2b, (2b1)	Impaired	Historical settlement	Section 106 Evaluation if 1a, 1b, (1b1), 2a, 2b, (2b1) identified as Preferred Alternative.
8140	2 outcrops with 4 slicks	1b, 2b, (2b1)	Moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 1b, 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
8141	6 outcrops with 6 slicks	1b, 2b, (2b1)	Moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 1b, 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.

Table 3.1-61 Summary of Archaeological Site Evaluations

Trinomial (CA-RIV-)	Site Type	Build Alternative (Design Option)	Integrity	Data Potential	NRHP Eligible[a]
8142	2 outcrops and 1 granite exposure with 5 slicks	1b, 2b, (2b1)	Moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 1b, 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
8143	3 outcrops with 4 slicks	1b, 2b, (2b1)	Minimally to moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 1b, 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
8146	2 outcrops with 3 slicks	1a, 2a	Retained	Prehistoric subsistence	Section 106 Evaluation if 1a, 2a identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
8147	1 outcrop with 2 slicks	1b, (1b1), 2b, (2b1)	Moderately impaired	Prehistoric subsistence	Section 106 Evaluation if 1b, (1b1), 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
8148	1 outcrop with 15 slicks	1b, (1b1), 2b, (2b1)	Retained	Prehistoric subsistence	Section 106 Evaluation if 1b, (1b1), 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.
8156H	Refuse scatter	1a, 2b, (2b1)	Moderately impaired	Historical settlement, chronology	Section 106 Evaluation if 1a, 2b, (2b1) identified as Preferred Alternative.
8157H	Potential remnants of 1901 structure, rock alignments, landscaping	1a, 2a	Impaired	Historical settlement	Section 106 Evaluation if 1a, 2a identified as Preferred Alternative.
8158H	Structural remains, concrete stand pipe, landscaping associated with post-1943/53 farmstead	1a, 1b, (1b1) 2a, 2b, (2b1)	Impaired	Historical technology, economic patterns	No
8160	1 outcrop with 3 slicks	1b, (1b1), 2b, (2b1)	Minimally impaired	Prehistoric subsistence	Section 106 Evaluation if 1b, (1b1), 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.

Table 3.1-61 Summary of Archaeological Site Evaluations

Trinomial (CA-RIV-)	Site Type	Build Alternative (Design Option)	Integrity	Data Potential	NRHP Eligible[a]
8162/H	Refuse scatter (Prehistoric component was identified during testing and will be reported in the Supplemental HPSR.)	1a, 1b, (1b1), 2a, 2b (2b1)	Impaired	Historical settlement	Section 106 Evaluation if 1a, 1b, (1b1), 2a, 2b (2b1) identified as Preferred Alternative.
8169	10 outcrops with 31 slicks	1a, 1b, (1b1), 2a, 2b, (2b1)	Impaired	Prehistoric subsistence	Section 106 Evaluation if 1a, 1b, (1b1), 2a, 2b, (2b1) identified as Preferred Alternative. Site may be evaluated as contributor to a historic district.

Source: Final Archaeological Survey Report, March 2008

[a]The SHPO has requested an evaluation of existing data to determine if there is sufficient information to determine if a Native American cultural/historic properties district may exist and if so, would the resources in question, contribute to its significance. As such, sites containing bedrock milling features will be evaluated as potential contributors to a historic "thematic" district.

The last prehistoric site documented, CA-RIV-5786 (a burial feature), was determined eligible for the NRHP at the time of discovery (McDougall 1995). However, this feature was entirely removed by recovery excavations in 1995 during construction of Domenigoni Parkway. The human remains were repatriated to four bands from two tribes, who were collectively identified by the Native American Heritage Commission as the Most Likely Descendant (MLD). These MLDs were the Soboba Band of Luiseño Indians, the Pechanga Band of Luiseño Indians, the Santa Rosa Band of Cahuilla Indians, and the Cahuilla Band of Mission Indians.

XPI studies at only one site, CA-RIV-5462, identified the potential for substantial subsurface archaeological deposits extending into the APE. Therefore, Phase II testing will be required within the APE to evaluate the subsurface data potential of this site. The data potential and NRHP eligibility of CA-RIV-5462, as well as all prehistoric sites within the Preferred Alternative, will be assessed in a regional context, with further Native American consultation, prior to circulation of the Final EIR/EIS.

Historical

Of the six historical archaeological sites documented, two sites were evaluated without excavation and found Not Eligible for the NRHP. CA-RIV-1418H (a rock retaining wall) and CA-RIV-8158H (structural remains, a concrete standpipe, and landscaping) retain modest site integrity. Recordation and archival research have already recovered the limited data potential for these sites (Criterion D), and no connection could be made to any events of historical merit (Criterion A), important historical persons (Criterion B), or significant cultural movements, craftsmanship, or masters (Criterion C). SHPO concurred with these findings on August 2, 2010.

Phase I recordation and archival research may not have fully realized the data potential of sites CA-RIV-7909H (landscaping and road/late nineteenth- to mid-twentieth-century farmstead), CA-RIV-8156H (historical refuse scatter), CA-RIV-8157H (potential remains of historical farmstead), and CA-RIV-8162/H (historical refuse scatter). All four site areas have moderate potential to contain subsurface deposits associated with the historic contexts established through archival research. More information is required to evaluate their eligibility for the

NRHP. As appropriate, Phase II testing and evaluation will be conducted within the APE to evaluate data potential and assess potential effects of the Project on these sites after the Preferred Alternative is identified and prior to circulation of the Final EIR/EIS. Deferring destructive subsurface testing until identification of the Preferred Alternative will avoid unnecessary site disturbance. This testing will be conducted only on the sites that would be affected by the Preferred Alternative. One of these sites, CA-RIV-8162/H, was tested to evaluate the significance of the resource. During this testing, a prehistoric component was identified in addition to the historical components. The results of this testing will be presented in a Supplemental HPSR. For the purposes of this Draft EIR/EIS, it will be presented as a historical resource until the study is completed.

Multicomponent

Three archaeological sites (CA-RIV-5829/H, -6907/H, and -7894/H) contain both prehistoric and historical components. Additional information is needed to evaluate the prehistoric components of these resource procurement/processing sites. Recordation and archival research during the archaeological survey appear to have realized the full data potential of the historical (refuse scatter) components at CA-RIV-7894/H and -5829/H. Prior to circulation of the Final EIR/EIS, these two sites will be evaluated for the NRHP. The historical components are not considered to have research values that would contribute to the NRHP eligibility of the sites.

The final multicomponent site, CA-RIV-6907/H, would not be impacted and would be protected by designation of an ESA, which would be fenced and monitored. This is a multicomponent archaeological site with bedrock milling features, a complex lithic scatter containing both ground and flaked stone artifacts, a rock wall, evidence of historical rock quarrying, and historical refuse. These components of the site are well outside the Project Impact Area (PIA). Per Stipulation VIII.C.3 of the Section 106 PA, the site is presumed eligible for the NRHP for the purposes of this Project and will be protected by designation and enforcement of an ESA.

As previously noted, one of the historical sites, CA-RIV-8162/H, was tested and determined to have both prehistoric and historic components and is now considered a multicomponent site. The results of this testing will be presented in a Supplemental HPSR. For the purposes of this Draft EIR/EIS, it will be presented as a historical resource until the study is completed.

Potential for Buried Archaeological Resources

The geomorphic setting of the Project suggests that there is potential for discovery of buried archaeological sites in portions of the Project APE. The highest potential is in the northern half of the APE in the San Jacinto Valley and along the Salt Creek drainage, and western Domenigoni Valley in the southern half of the APE. Potential for encountering buried archaeological sites would apply equally to all Build alternatives.

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

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the county coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, who will then notify the most likely descendent (MLD). At this time, the person who discovered the remains will contact the Department so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

3.1.8.3 Environmental Consequences

As mentioned in the regulatory setting (page 3-249) and discussed in the Affected Environment section (page 3-251), historic sites on or eligible for the NRHP and archaeological sites on or eligible for the NRHP and which warrant preservation in place as determined by the Department and the official(s) with jurisdiction require evaluation to determine if a use of a Section 4(f) resource is anticipated. As part of the project development for this project, it was determined by the Department and RCTC that the required archaeological excavations and associated cultural landscape/historic district analysis to further document the potential impacts will be completed between the Draft and Final EIR/EIS after the identification of the Preferred Alternative, in order to reduce the amount of disruption and impact to potentially sensitive sites.

After completion of the technical study, the Department and RCTC will circulate the revised Cultural Resources section and Appendix B of this Draft EIR/EIS in order to meet our commitments of public comments and disclosure on the potential impacts to Section 4(f) resources if applicable (i.e., that the resource triggers the requirements of Section 4(f)). The appropriate sections of the Final EIR/EIS will be revised accordingly based on our findings and coordination with SHPO.

Permanent Impacts

The direct Project impacts would occur within the PIA for all Build alternatives, design options, and impact areas identified for utility relocation areas, connections to Hemet Channel outside the Project ROW, and traffic detours. All direct permanent and temporary impacts, including construction activities and staging, would occur within the PIA. The APE also includes the area in which indirect impacts (such as visual intrusion, noise, etc.) of the Project could affect cultural resources.

Although a number of design features and construction activities would be required for Project completion, only some of those would have the potential to impact archaeological sites directly. The design features that would have the most potential to impact cultural resources directly are those where clearing, grading, and excavation would be required for the construction of roadway segments, bridges, and hydrology facilities. Ground disturbance would vary based on the type and location of the design feature. Depth of disturbance for Project features and locations is discussed in more detail in HPSR Exhibit 2, ASR, and Exhibit 3, HRER. A comprehensive table of construction activities and their potential for ground disturbance or visual intrusion is also provided in the HPSR.

In summary, 43 cultural resources were identified within the APE. Of these, 14 resources (including all 12 built environment resources and 2 historical archaeological sites) were evaluated, resulting in a determination of NRHP eligibility only for the CRA (CA-RIV-6726H). An additional multicomponent archaeological site (CA-RIV-6907/H) was not formally evaluated, but would be presumed eligible and protected in place by the establishment of an ESA. These evaluations received concurrence by SHPO on August 2, 2010 (see the end of Chapter 5 [Volume 2]). In accordance with the Section 106 phasing plan for the Project, the remaining 28 archaeological sites, including CA-RIV-5786 (prehistoric burial), will be evaluated following identification of a Preferred Alternative. SHPO concurrence on eligibility determinations for these resources, as well as a Finding of Effect for the Project, will be sought at that time and prior to preparation of the Final EIR/EIS. If there is a finding of adverse effect, the Department would consult with SHPO to resolve the adverse effect and complete a Memorandum of Agreement, which would commit to the mitigation measures that will be implemented.

The status of NHPA Section 106 Effect determinations on Historic Properties is as follows:

The portion of the Colorado River Aqueduct (CA-RIV-6726H) that passes through the APE was evaluated and found eligible for the NRHP as a contributing element to the entire CRA system, if that property is ever found eligible. Although the Project is not expected to have an adverse effect on the property, that determination would be made during the finding of effect stage of the Project following identification of a Preferred Alternative and completion of all evaluations. All of the Build alternatives and design options would cross it, so all of them would have potential to affect this historic property.

In 1995, SHPO concurred that the burial site (CA-RIV-5786) was eligible for the NRHP. Because CA-RIV-5786 has lost integrity since it was first determined to be eligible, it will be reevaluated and included as part of the Project if Build Alternative 1a or 1b is identified as the Preferred Alternative; therefore, the effect finding for this property is deferred.

CA-RIV-6907/H is presumed to be eligible for NRHP listing under Criterion D and will be protected in place and avoided through the establishment of an ESA and monitoring during construction. This historic property would be located within Build Alternatives 1a and 2a. However, because the ESA would protect the site from all effects, none of the Build alternatives would have an effect on this resource, resulting in a finding of no adverse effect with standard conditions – ESA for the property.

Note that the CBJ Dairy is not eligible for the NRHP and is therefore not a historic property. However, it is considered a historical resource for the purposes of CEQA and is discussed in Chapter 4 (Volume 2).

No Build Alternative

There would be no permanent impacts to archaeological resources and/or built environment resources within the Project area as a result of the No Build Alternative because there would be no earth-moving or ground-disturbing activities.

All Build Alternatives and Design Options

All Build alternatives and design options would cross the CRA. In all, there are four possible crossings. Build Alternatives 1a and 2a would cross CRA Casa Loma Siphon Barrel 1 and the Casa Loma Canal. Build Alternatives 1b and 2b (and their respective design options, which would not differ from the base conditions in this location) would cross CRA Casa Loma Siphon Barrels 1 and 2 and the Casa Loma Canal. After the Preferred Alternative has been identified and as part of ROW acquisition efforts for the Project, the Department would obtain a permanent easement from MWD for access, operation, and maintenance at locations where the Project would cross CRA Casa Loma Siphon Barrels 1 and 2 and the Casa Loma Canal.

The Project crossings of the CRA and Casa Loma Canal have been coordinated with MWD to ensure that the crossing designs will avoid impacts and protect the ability of MWD to operate and maintain its facilities during Project construction and operation. The crossings of the Casa Loma Canal would be on bridges, and crossings of the CRA siphons would be on embankment over the facility. The crossings over the siphons would require excavation and placement of a concrete slab about 0.9 m (3 ft) above the facility to protect its structural integrity. Following MWD design requirements, the roadway would never come into direct contact with CRA facilities, nor would it put weight or pressure on these facilities that would adversely affect their structural integrity. Compliance with MWD design requirements would ensure that no alteration of facilities or interruption in service would occur as a result of building and operating the Project.

CA-RIV-6907/H (multicomponent site consisting of 26 outcrops with 50 milling slicks, a lithic scatter, a dry-laid rock wall, granite quarrying activities, and bottle fragments) would be protected and is presumed to be a historic property. An ESA, which would be fenced and monitored, would be established to protect the site to the north of the PIA. This ESA would be employed for Build Alternatives 1a and 2a.

Build Alternative 1a

This Build alternative has the potential to affect one known historic property. The Colorado River Aqueduct (CA-RIV-6726H) is eligible for the NRHP. Portions of the CRA are within areas proposed for the construction of bridges, local street improvement, and traffic detours. As currently proposed, the depth of disturbance for construction of bridges/retaining walls would exceed 3 m (10 ft), but local street improvements should not exceed 1.2 m (4 ft) (Table 3.1-62 [page 3-265]). Casa Loma Siphon Barrel 1, which is completely underground, traverses the northern end of the APE, but would not be directly affected by construction of Build Alternative 1a. To the south, the Casa Loma Canal would be crossed by Build Alternative 1a north of Cottonwood Avenue and east of Warren Road. The roadway would cross the Casa Loma Canal east of its junction with the San Diego Canal.

Construction over the canal would result in only a minimal impact to the setting of this historic property. There would be no removal of distinctive materials or alteration of features, and the canal would continue in operation. There would be no change in the space or spatial relationship between the features that characterize the significance of the property.

This alternative would impact one archaeological site that is presumed to be NRHP eligible, CA-RIV-6907/H, as described in All Build Alternatives and Design Options (page 3-263).

In addition, this Build alternative would contain 17 archaeological sites that require further evaluation. Thirteen of these are prehistoric bedrock milling sites that may be evaluated as contributors to a historic district. The evaluation of the historic significance of archaeological sites requires the gathering of additional information through some type of ground disturbing activity. Since ground disturbing activities destroy some of the value of the archaeological property, those activities have been postponed until after public circulation of this Draft EIR/EIS. If this Build alternative is identified as the Preferred Alternative, all 17 archaeological sites will be formally evaluated. If any are found to be eligible for the NRHP and/or the CRHR, Build Alternative 1a could adversely impact them.

Build Alternative 1b and Design Option 1b1

This Build alternative has the potential to affect one known historic property, the Colorado River Aqueduct (CA-RIV-6726H), as described in Build Alternative 1a. However, the CRA Casa Loma Siphon Barrel 2 and the Casa Loma Canal would be crossed in two places by Build Alternative 1b, at Sanderson Avenue and farther west at a location north of Cottonwood Avenue and east of Warren Road. At Sanderson Avenue, the roadway would be near ground level as it crosses the junction of Casa Loma Siphon Barrel 2 and the Casa Loma Canal. At the other crossing, the roadway would cross the Casa Loma Canal east of its junction with the San Diego Canal. Design Option 1b1 would not differ from the base condition in this area, so it would have the same effects on this historic property as Build Alternative 1b.

In addition, this Build alternative would contain 14 archaeological sites that require further evaluation. Thirteen of these are prehistoric bedrock milling sites that may be evaluated as contributors to a historic district. The evaluation of the historic significance of archaeological sites requires the gathering of additional information through some type of ground disturbing activity. Since ground disturbing activities destroy some of the value of the archaeological property, those activities have been postponed until after public circulation of this Draft EIR/EIS. If this Build alternative is identified as the Preferred Alternative, all 14 archaeological sites will be formally evaluated. If any are found to be eligible for the NRHP and/or the CRHR, Build Alternative 1b and Design Option 1b1 could adversely impact them.

Table 3.1-62 Summary of Potential Project-Related Impacts to Known Historic Properties

Trinomial	Build Alternative (Design Option)	Roadway Segment	Project Design Feature	Potential Impacts and Depth of Disturbance	Comments
CA-RIV-6726H (Colorado River Aqueduct)	1a, 1b (1b1), 2a, 2b (2b1)	L, M	Bridges Local street improvement Traffic detour over the Casa Loma Siphon	Bridges and retaining walls (>3m [10ft]) Local street improvements (0-1.2m [0-4ft]) Clearing and grubbing (1.2 m [4 ft])	The four proposed Project crossings of the CRA are not expected to have a substantial effect on this resource.
CA-RIV-6907/H	1a, 2a	A	Roadway segment	Roadway subexcavation (0-0.9 m [0-3 ft])	No prehistoric or historical features are within the PIA. The portion of the site in the PIA was previously destroyed during construction for the Domenigoni Parkway. An ESA would be established and a fence erected to protect intact portions of the site.

Source: Final Historical Resources Evaluation Report, March 2010

Build Alternative 2a

This alternative has the potential to affect one known historic property, the Colorado River Aqueduct (CA-RIV-6726H), as described in Build Alternative 1a (page 3-264).

This alternative would impact one archaeological site that is presumed to be NRHP eligible, CA-RIV-6907/H, as described in Build Alternatives (page 3-263).

In addition, this Build alternative would contain 16 archaeological sites that require further evaluation. Thirteen of these are prehistoric bedrock milling sites that may be evaluated as contributors to a historic district. The evaluation of the historic significance of archaeological sites requires the gathering of additional information through some type of ground disturbing activity. Since ground disturbing activities destroy some of the value of the archaeological property, those activities have been postponed until after public circulation of this Draft EIR/EIS. If this Build alternative is identified as the Preferred Alternative, all 16 archaeological sites will be formally evaluated. If any are found to be eligible for the NRHP and/or the CRHR, Build Alternative 2a could adversely impact them.

Build Alternative 2b and Design Option 2b1

This alternative has the potential to affect one known historic property, the Colorado River Aqueduct (CA-RIV-6726H), as described in Build Alternative 1b (page 3-265). Design Option 2b1 would not differ from the base condition in this area, so it would have the same effects on this historic property as Build Alternative 2b.

In addition, this Build alternative would contain 15 archaeological sites that require further evaluation. Thirteen of these are prehistoric bedrock milling sites that may be evaluated as contributors to a historic district. The evaluation of the historic significance of archaeological sites requires the gathering of additional information through some type of ground disturbing activity. Since ground disturbing activities destroy some of the value of the archaeological property, those activities have been postponed until after public circulation of this Draft EIR/EIS. If this Build alternative is identified as the Preferred Alternative, all 15 archaeological sites will be formally evaluated. If any are found to be eligible for the NRHP and/or the CRHR, Build Alternative 2b and Design Option 2b1 could adversely impact them.

Temporary Impacts

No Build Alternative

There would be no temporary impacts on historic properties within the Project area as a result of the No Build Alternative because there would be no earth-moving or ground-disturbing activities.

All Build Alternatives and Design Options

No temporary impacts to historic properties would occur. Because all potential impacts to historic properties would be caused by earth-moving or ground-disturbing activities, all impacts would be permanent.

3.1.8.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and mitigation measures will be included in the Environmental Commitment Record (ECR) (Appendix E [Volume 2]):

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

CR-2 **Discovery of Human Remains.** If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the county coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, who will then notify the most likely descendent (MLD). At this time, the person who discovered the remains will contact the Department so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

CR-3 **Establishment of ESA for CA-RIV-6907/H.** An Environmentally Sensitive Area (ESA) will be established for CA-RIV-6907/H, which will be fenced and monitored. The ESA will consist of areas within and near the limits of construction where access is prohibited or limited for the preservation of the archaeological site. No work shall be conducted within the ESA. All designated ESAs and fencing limits will be shown on final design plans and appropriate fencing requirements included in the PS&E. Fencing will consist of high-visibility fencing material and will be 4 feet high. The archaeological monitor who meets the Secretary of Interior Professional Standards for prehistoric and historical archaeology (i.e., meets Caltrans PQS qualifications) shall monitor the placement of the ESA fencing, inspect the fencing periodically throughout the construction period, order replacement of fencing (if needed), and monitor removal of fencing at the end of construction.

CR-4 **Additional Avoidance, Minimization, and/or Mitigation Measures.** Because the Section 106 studies for the Project have been deferred, there has not been a formal determination of effects from the State Historical Preservation Officer (SHPO) for the undertaking as a whole. Cultural resources that have been identified for further evaluation will be addressed after the Draft EIR/EIS has been circulated, comments have been received from the public, and a Preferred Alternative has been identified, but prior to the Final EIR/EIS. The evaluation and findings will be reported and circulated in a Supplemental HPSR. Depending on SHPO's concurrence with the findings of the evaluations, additional Section 106 consultation (e.g., Finding of Effect, resolution of adverse effects resulting in a Memorandum of Agreement [MOA]) may be required for historic properties on the Preferred Alternative. Additional avoidance, minimization, and/or mitigation measures for the Project, if required pursuant to a MOA, will be included in the Final EIR/EIS to address any adverse effects to historic properties. Any additional compliance with Section 4(f) will also be completed.

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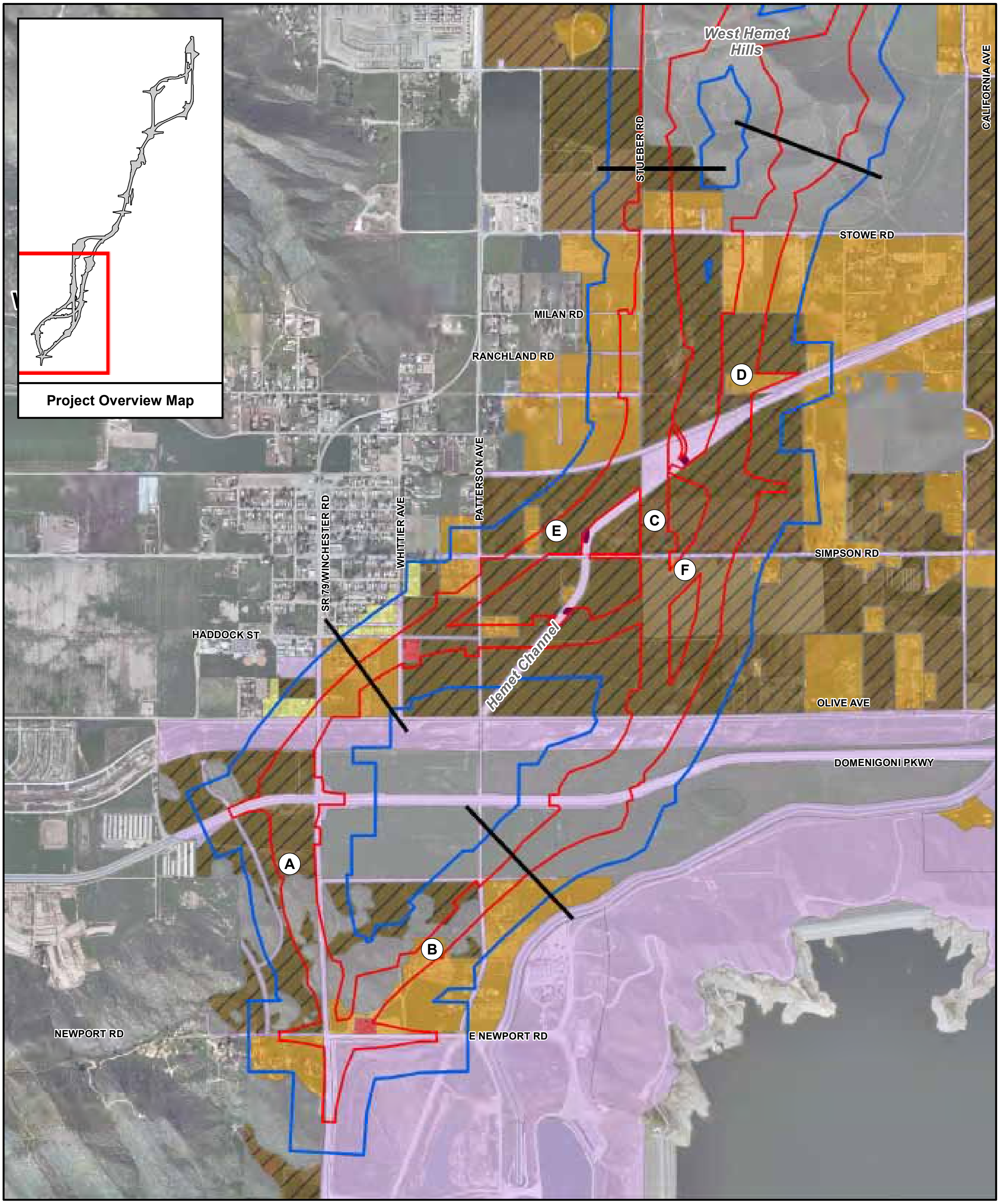

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Existing Land Use

- Agricultural
- Commercial/Industrial
- Parks and Designated Open Space
- Residential
- Rural Residential
- Services/Facilities
- Undeveloped

- City of Hemet[CR]
- City of San Jacinto[CR]

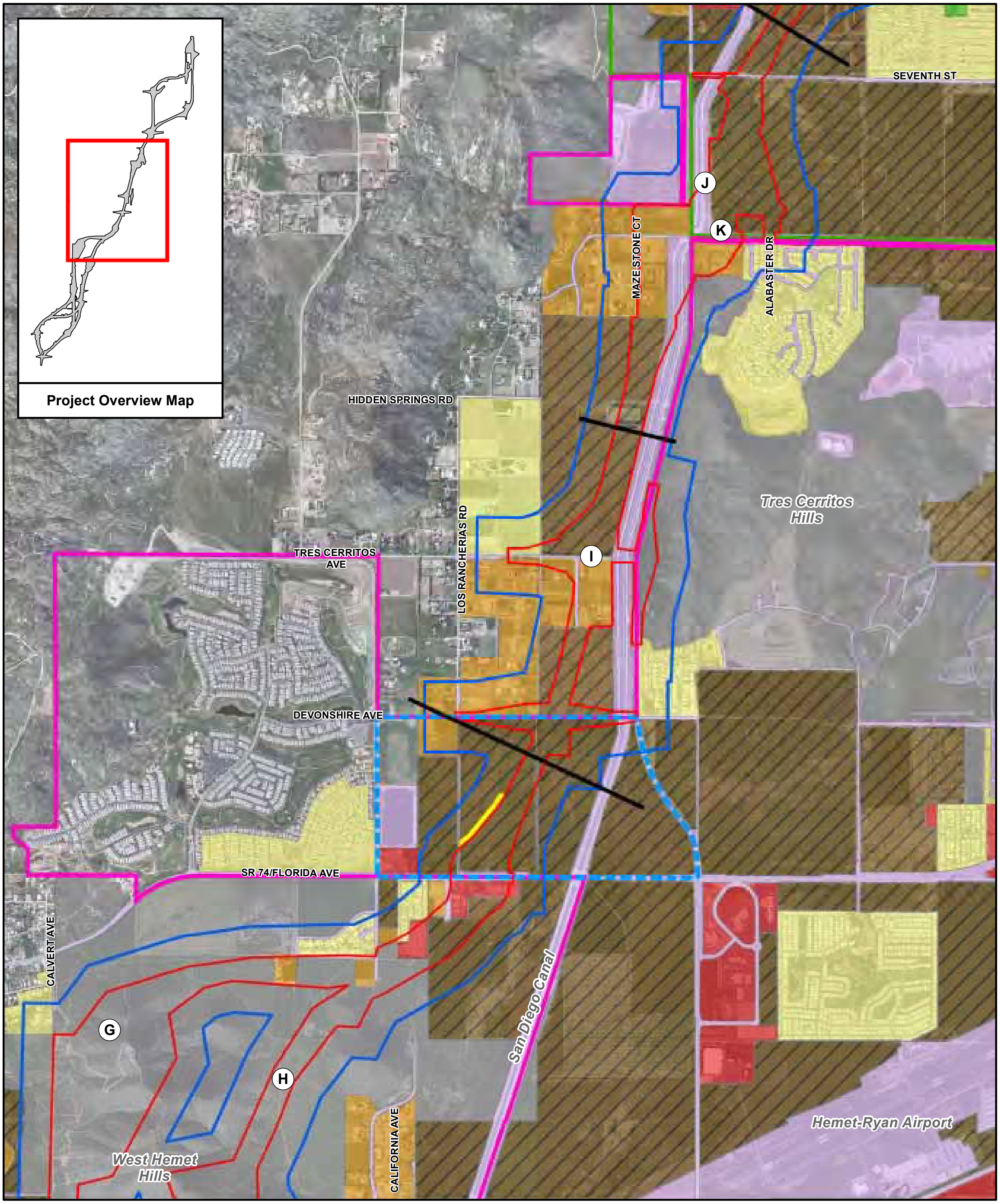
0 2,400 Feet

0 500 Meters

1:28,800

Source: CR - County of Riverside

Figure 3.1-1a
Existing Land Use
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Existing Land Use

- Agricultural
- Commercial/Industrial
- Parks and Designated Open Space
- Residential
- Rural Residential
- Services/Facilities
- Undeveloped

- City of Hemet[CR]
- City of San Jacinto[CR]

0 2,400 Feet

0 500 Meters

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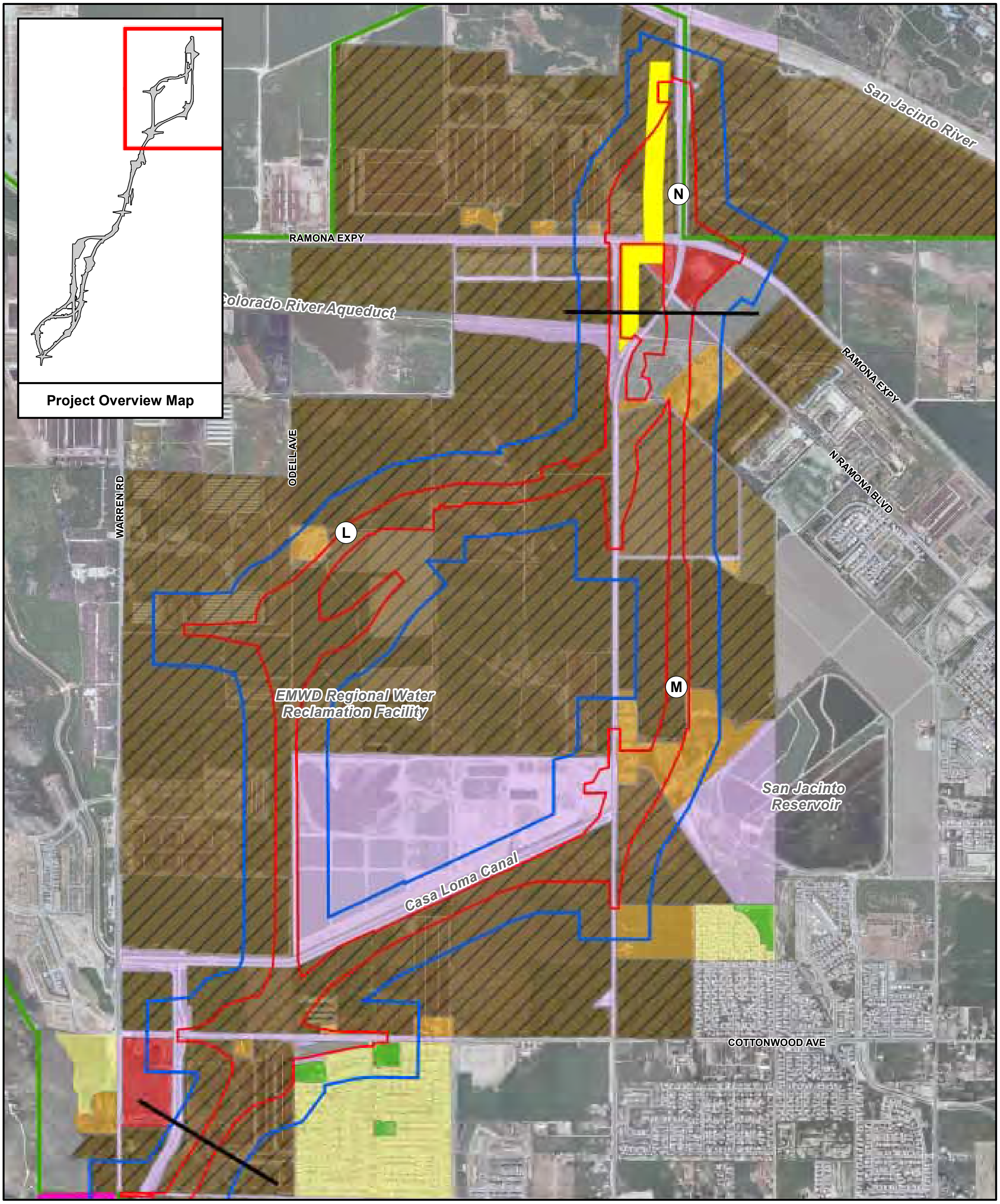
Source: CR - County of Riverside

Figure 3.1-1b
Existing Land Use

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Existing Land Use

- Agricultural
- Commercial/Industrial
- Parks and Designated Open Space
- Residential
- Rural Residential
- Services/Facilities
- Undeveloped

- City of Hemet[CR]
- City of San Jacinto[CR]

0 2,400 Feet

0 500 Meters

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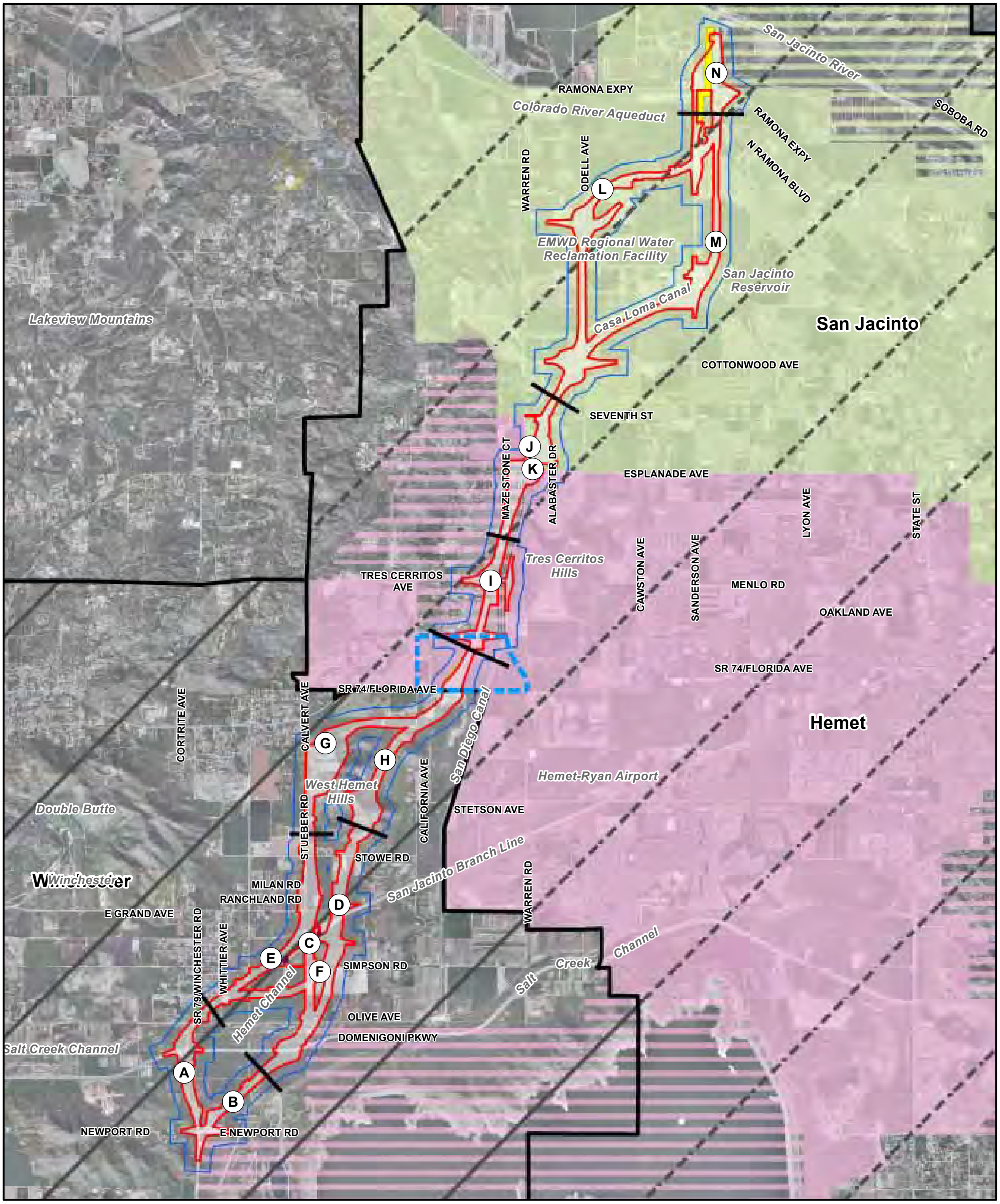
Source: CR - County of Riverside

Figure 3.1-1c
Existing Land Use

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- City of Hemet[CR]
- Hemet Sphere of Influence[CR]
- City of San Jacinto[CR]
- San Jacinto Sphere of Influence[CR]

Riverside County[CR]

- Harvest Valley/Winchester Area Plan
- San Jacinto Valley Area Plan

0 — 7,000 Feet

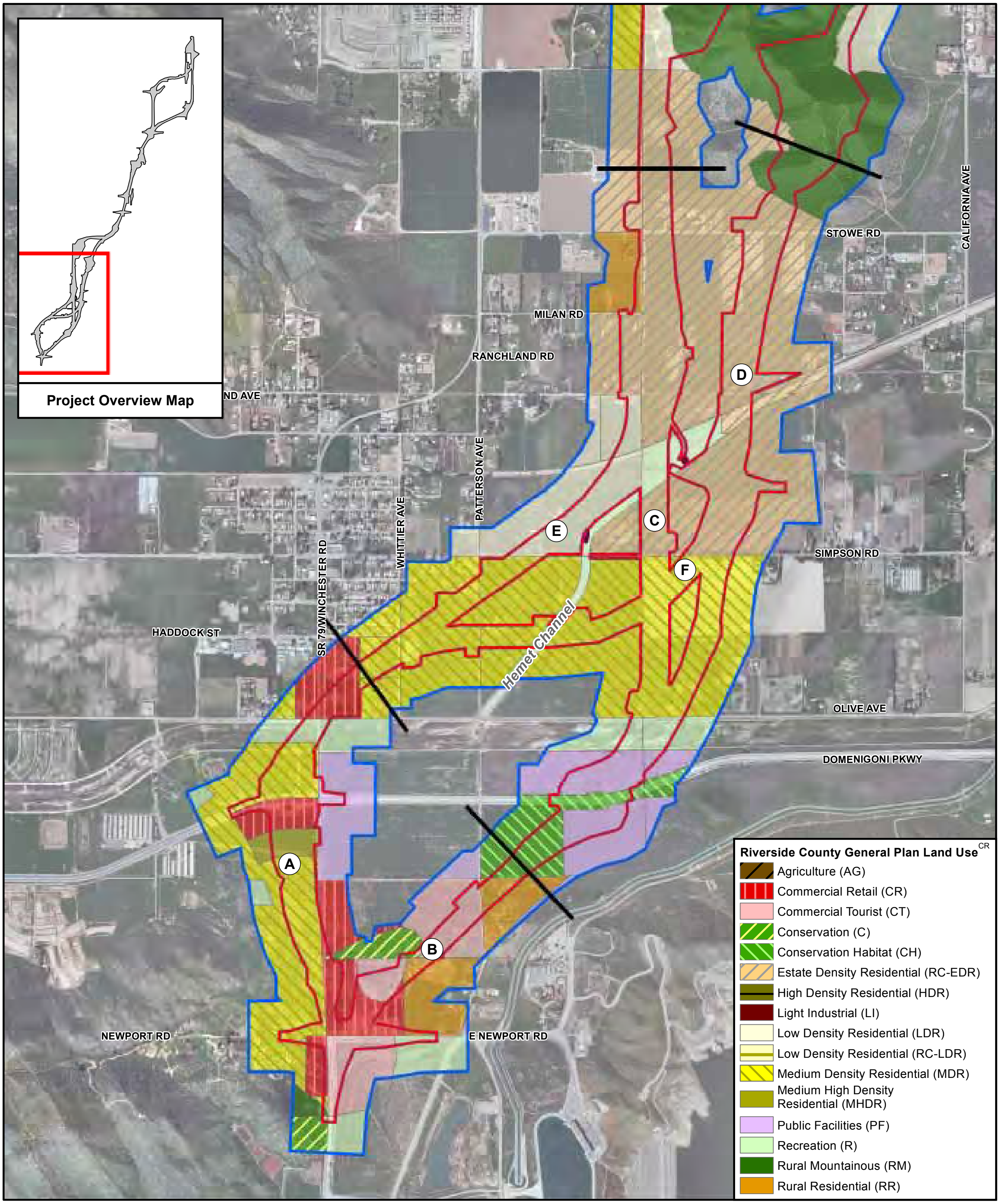
0 — 1,500 Meters

1:84,000

Source: CR - County of Riverside

Figure 3.1-2
Jurisdictional Boundaries and Planning Areas

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

0 2,400 Feet

0 500 Meters

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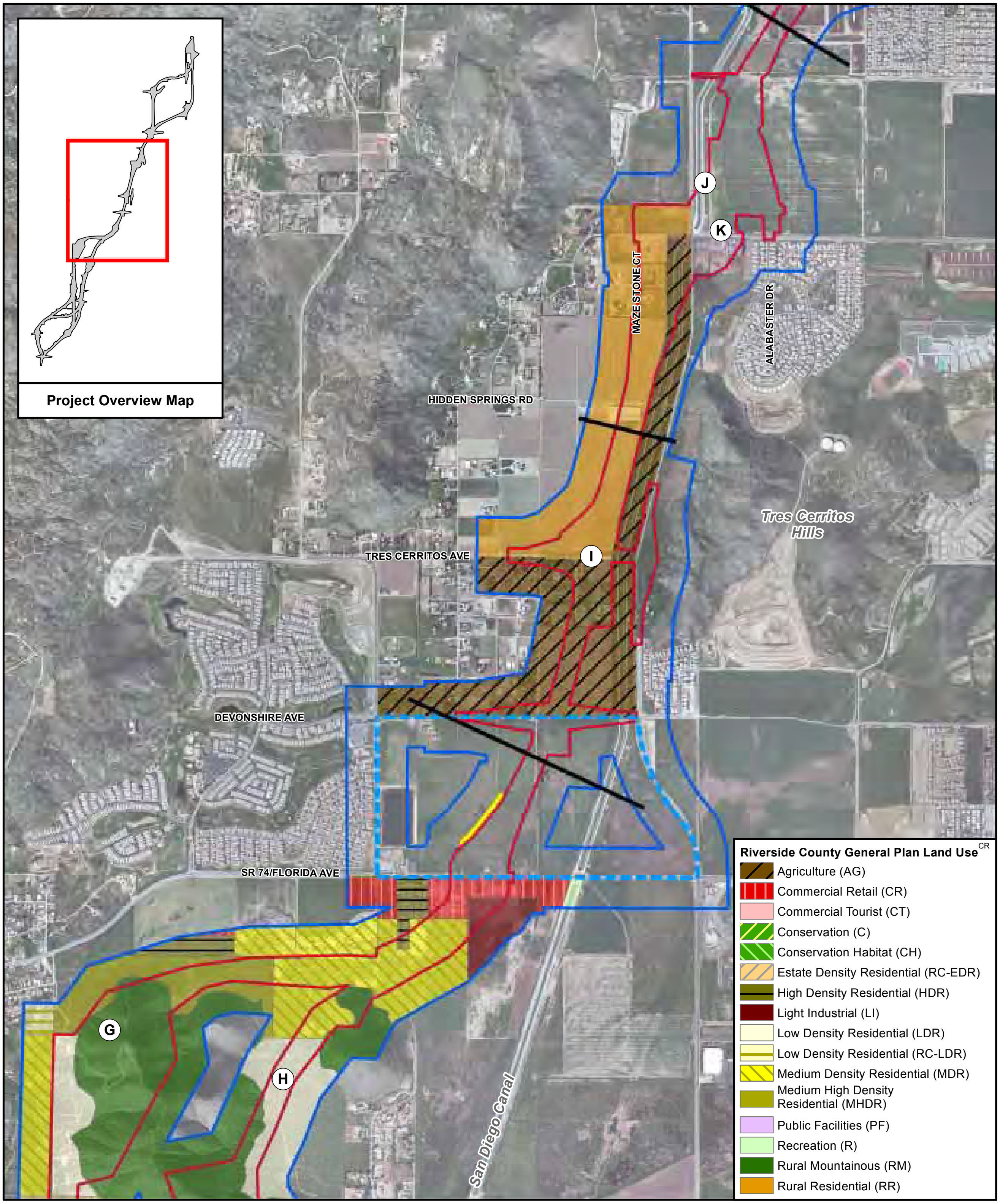
Figure 3.1-3a
Riverside County Planned Land Use

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project

Source: CR - County of Riverside



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

0 2,400 Feet

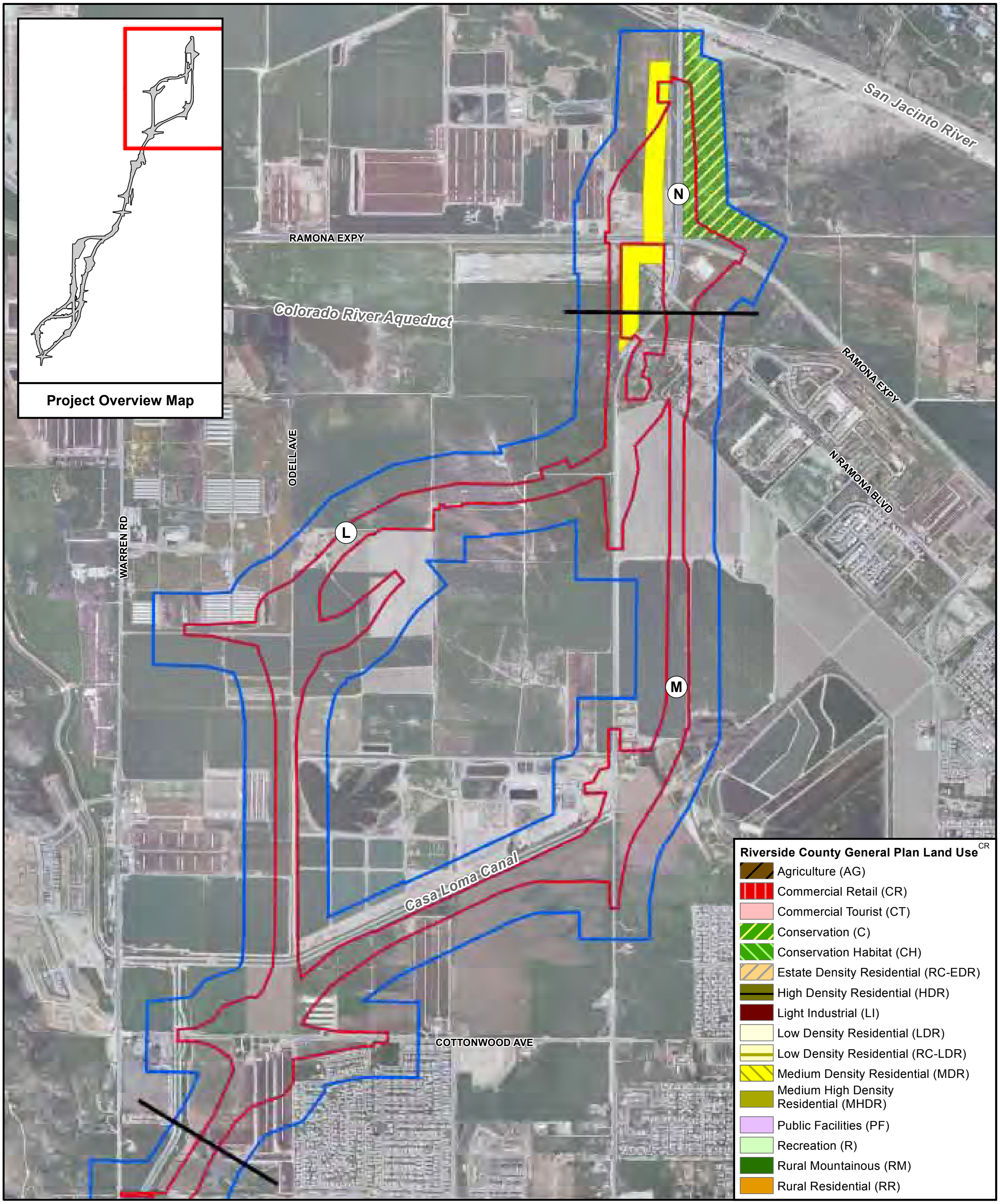
0 500 Meters

1:28,800

Figure 3.1-3b
Riverside County Planned Land Use

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Source: CR - County of Riverside



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

0 — 2,400 Feet

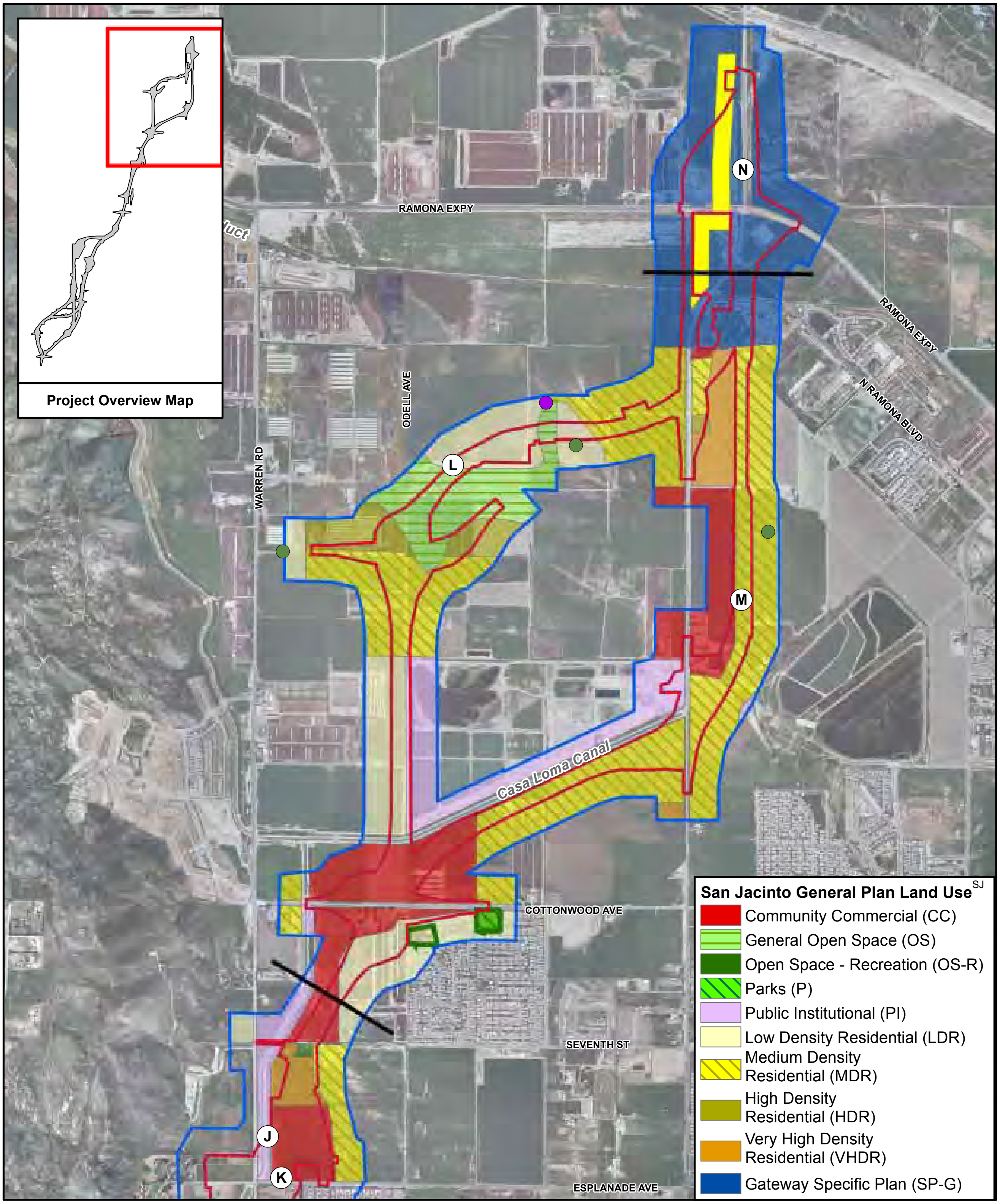
0 — 500 Meters

1:28,800

Source: CR - County of Riverside

Figure 3.1-3c
Riverside County Planned Land Use

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area
- San Jacinto Proposed Park[SJ]
- San Jacinto Proposed School[SJ]
- Existing San Jacinto Park[SJ]

0 2,750 Feet

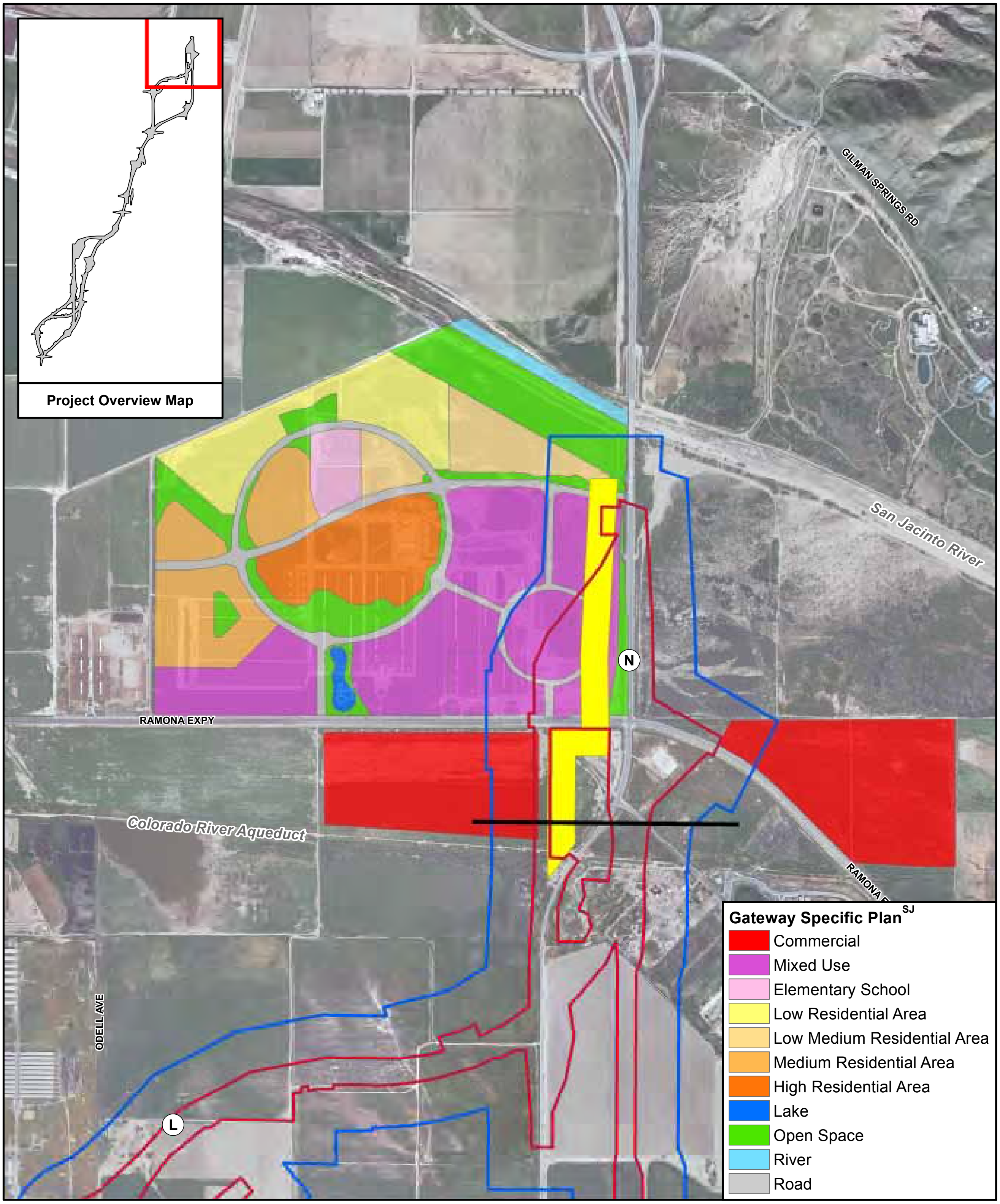
0 700 Meters

1:33,000

Source: SJ - City of San Jacinto

Figure 3.1-4a
City of San Jacinto
Planned Land Use

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area

Source: SJ - City of San Jacinto

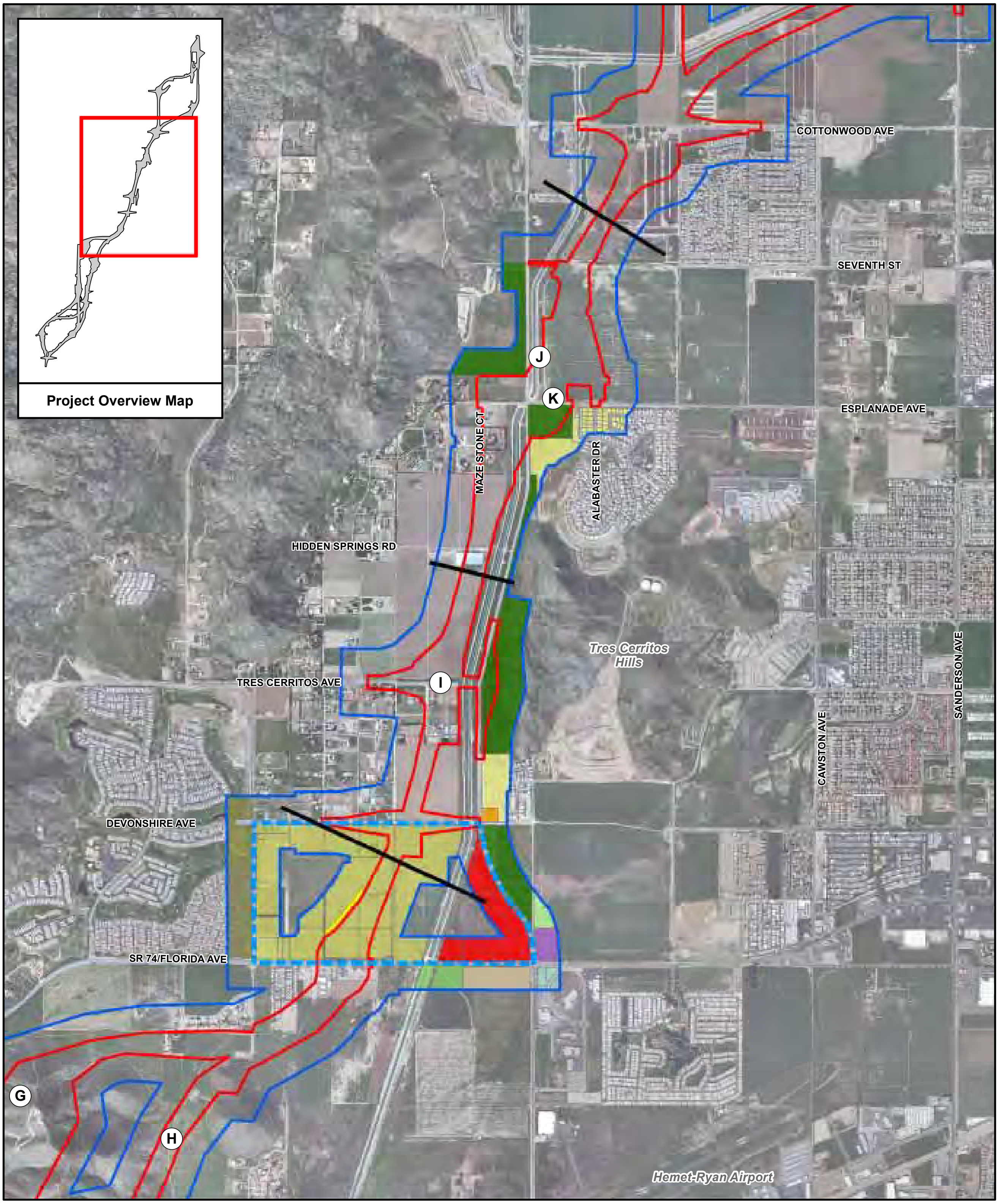
0 1,750 Feet

0 400 Meters

1:21,000

Figure 3.1-4b
City of San Jacinto
Gateway Specific Plan

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

Roadway Segment Match Line

Long-Term Traffic Detour

Project Impact Area

Land Use Study Area

Utility Relocation Area

Hemet Zoning - Agriculture[HT]

General Commercial (C-2)

Heavy Agricultural - 10 Acre Min. (A-10)

Heavy Agricultural - 5 Acre Min. (A-5)

Heavy Agricultural with Co Compliance (A-2 C-10)

Heavy Manufacturing (M-2)

Multiple Family Residential (R-3)

Single Family Residential (R-1)

Specific Plan (SP 87-28)

Specific Plan (SP 88-01)

Specific Plan (SP 88-13)

Specific Plan (SP 89-19)

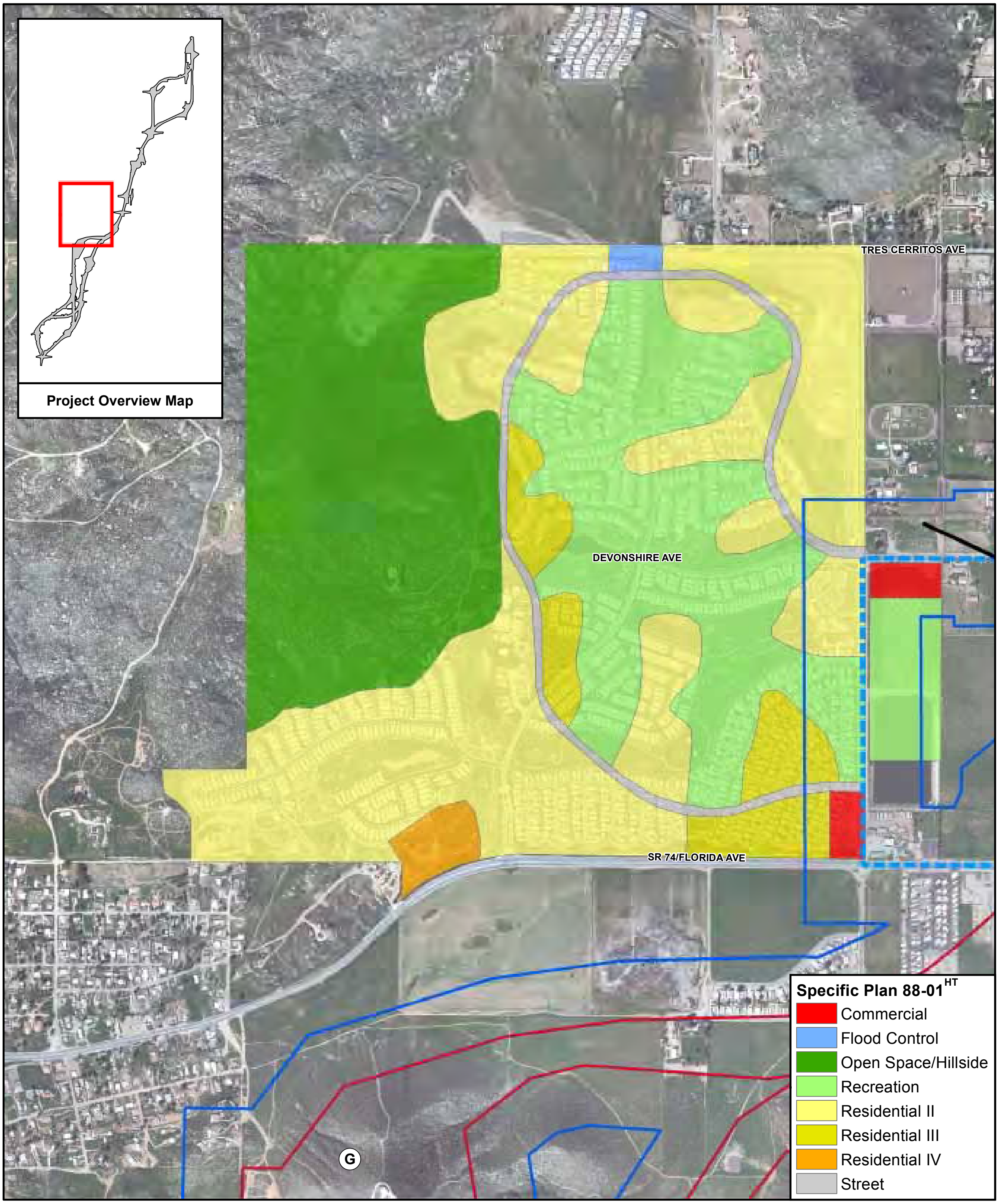
0 2,750 Feet

0 700 Meters

1:33,000

Source: HT - City of Hemet

Figure 3.1-5a
City of Hemet Zoning
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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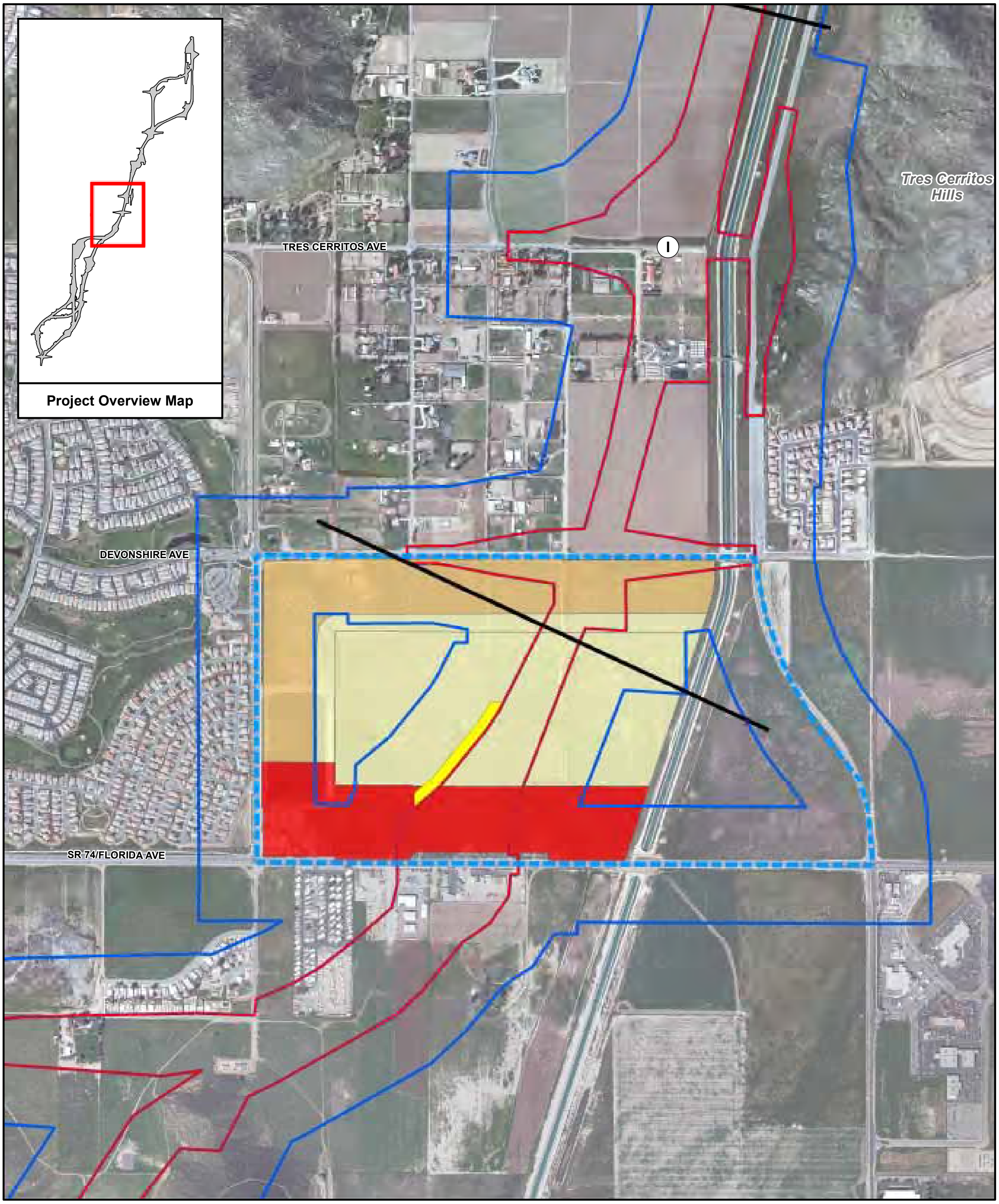
LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area

0 1,250 Feet
0 300 Meters
1:15,000

Source: HT - City of Hemet

Figure 3.1-5b
City of Hemet
Specific Plan 88-01
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area

Specific Plan 88-01[HT]

- Agriculture
- Commercial
- Residential

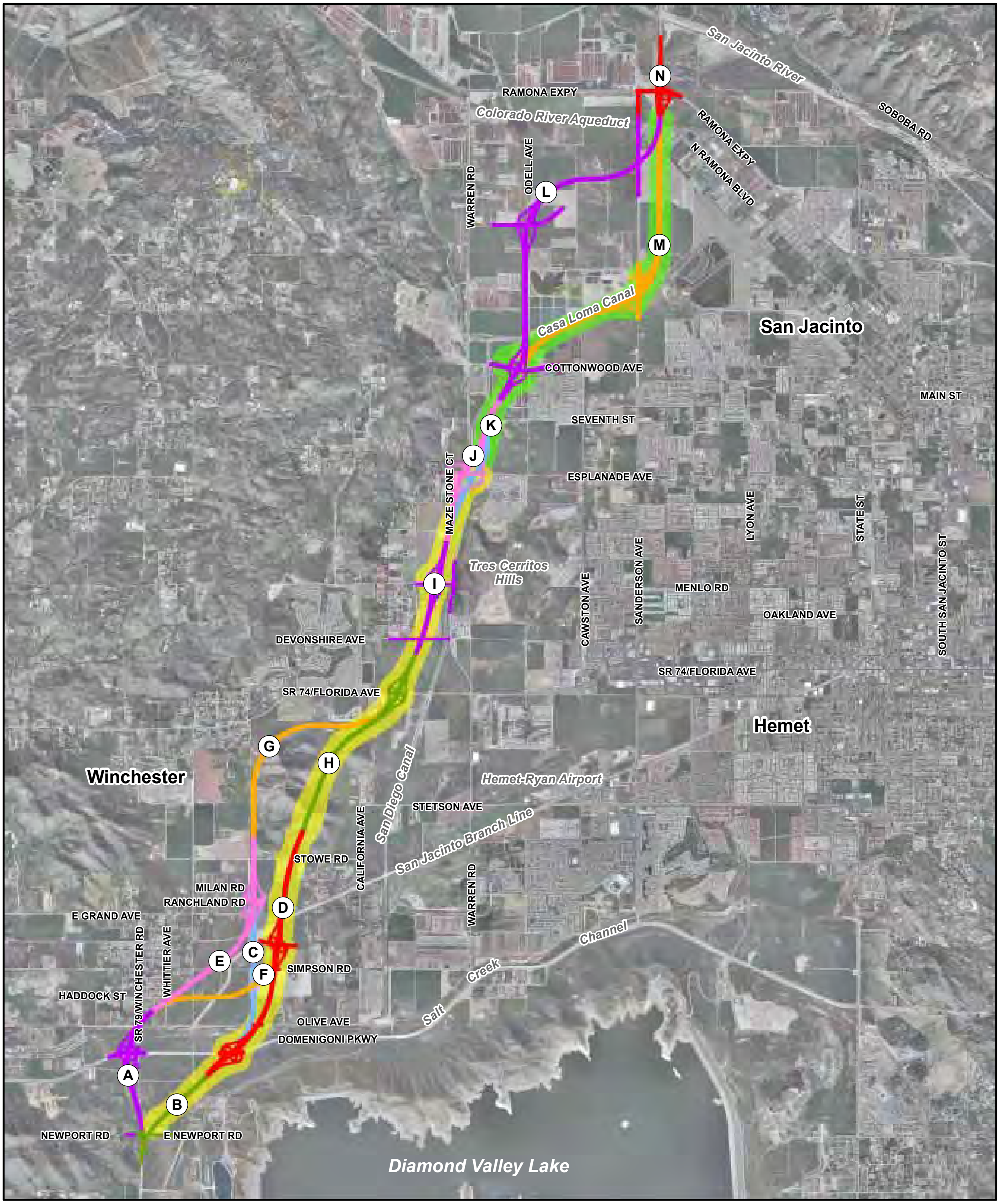
0 1,250 Feet

0 300 Meters

1:15,000

Source: HT - City of Hemet

Figure 3.1-5c
City of Hemet
Specific Plan 88-13
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

City of Hemet - Locally Preferred Alternative

City of San Jacinto - Locally Preferred Alternative

0 7,000 Feet

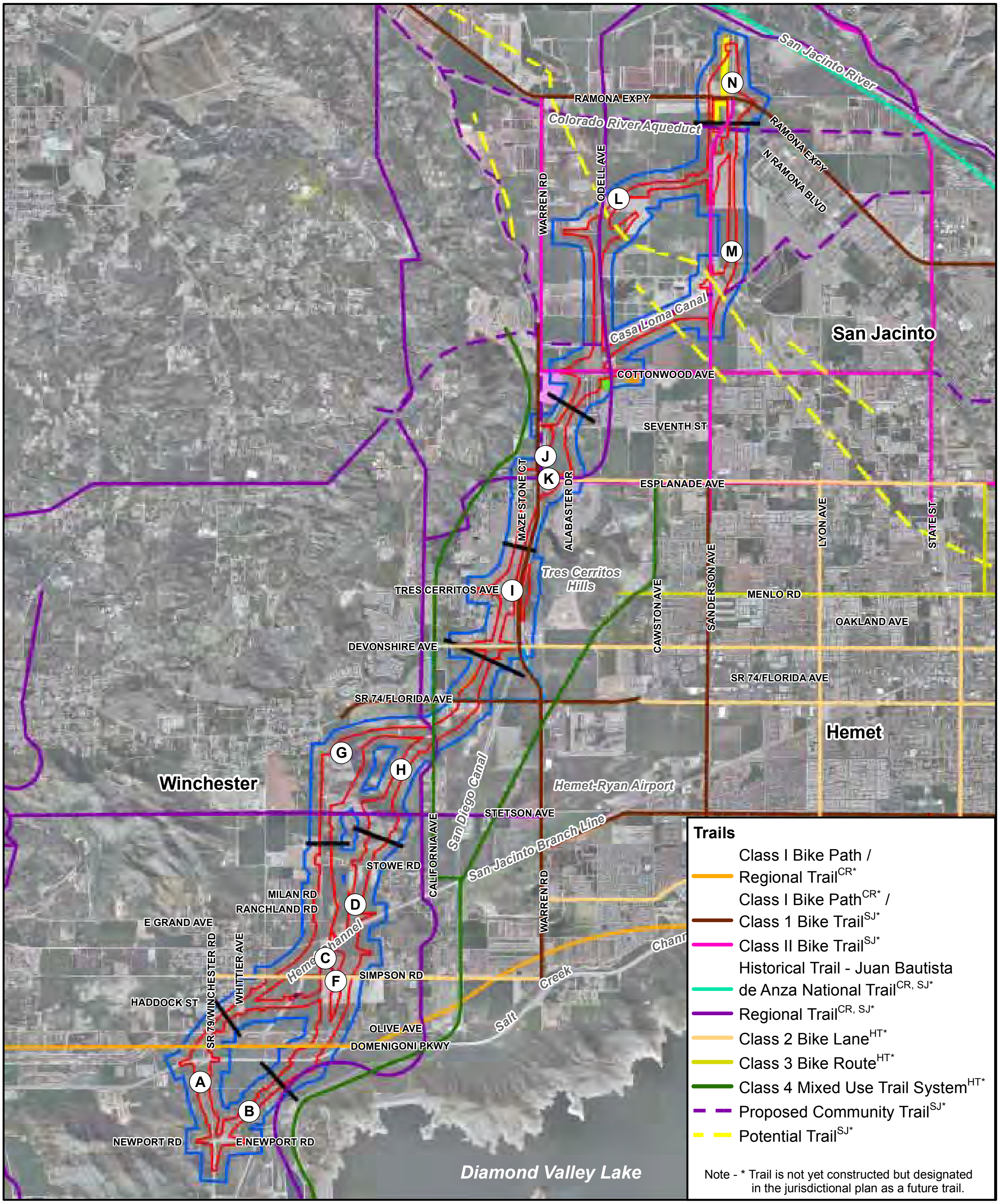
0 1,500 Meters

1:84,000

Note: This figure depicts the proposed roadway alignment by roadway segment.
The roadway segments are shown in multiple colors to differentiate them from each other.

Figure 3.1-6
Locally Preferred Alternatives in Hemet and San Jacinto and Project Roadway Segments

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Land Use Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Ambassador Street Sports Field
- Reflection Lake
- Tamarisk Park

0 7,000 Feet

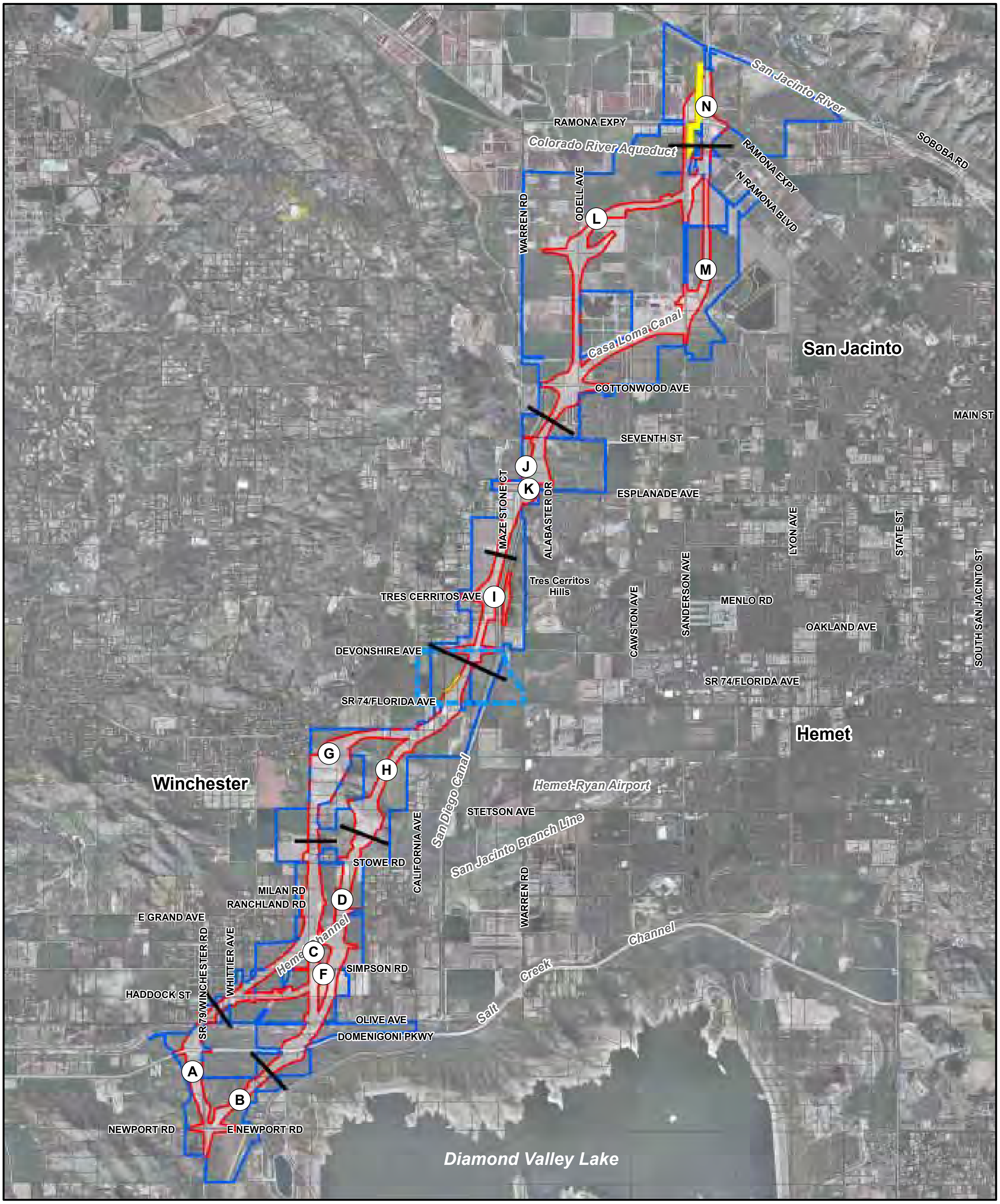
0 1,500 Meters

1:84,000

Figure 3.1-7
Regional Trails, Bike Paths, and Recreational Areas

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project

Sources: CR - County of Riverside GP 2003; HT - City of Hemet GP 1992; SJ - City of San Jacinto GP 2006



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- County Assessor's Parcel[CR, 2]

Source: CR - County of Riverside

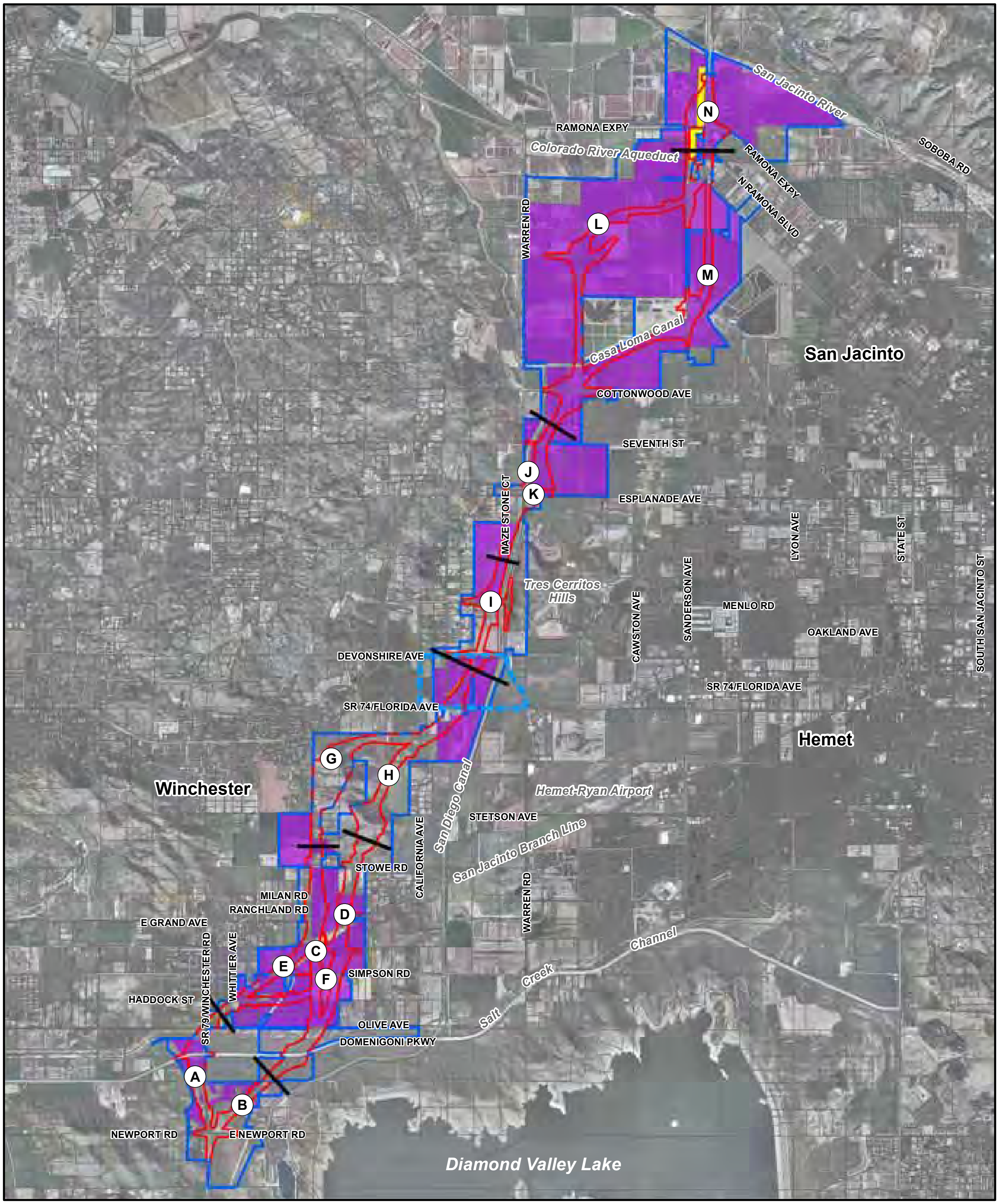
0 7,250 Feet

0 1,500 Meters

1:84,000

Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.
Note[2]: Riverside County assessor parcels dated October 2006.

Figure 3.1-8
Agricultural Study Area
Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Planned Farmland Conversion to Non-Agricultural Use
- County Assessor's Parcel[CR, 2]

0 7,250 Feet

0 1,500 Meters

1:87,000

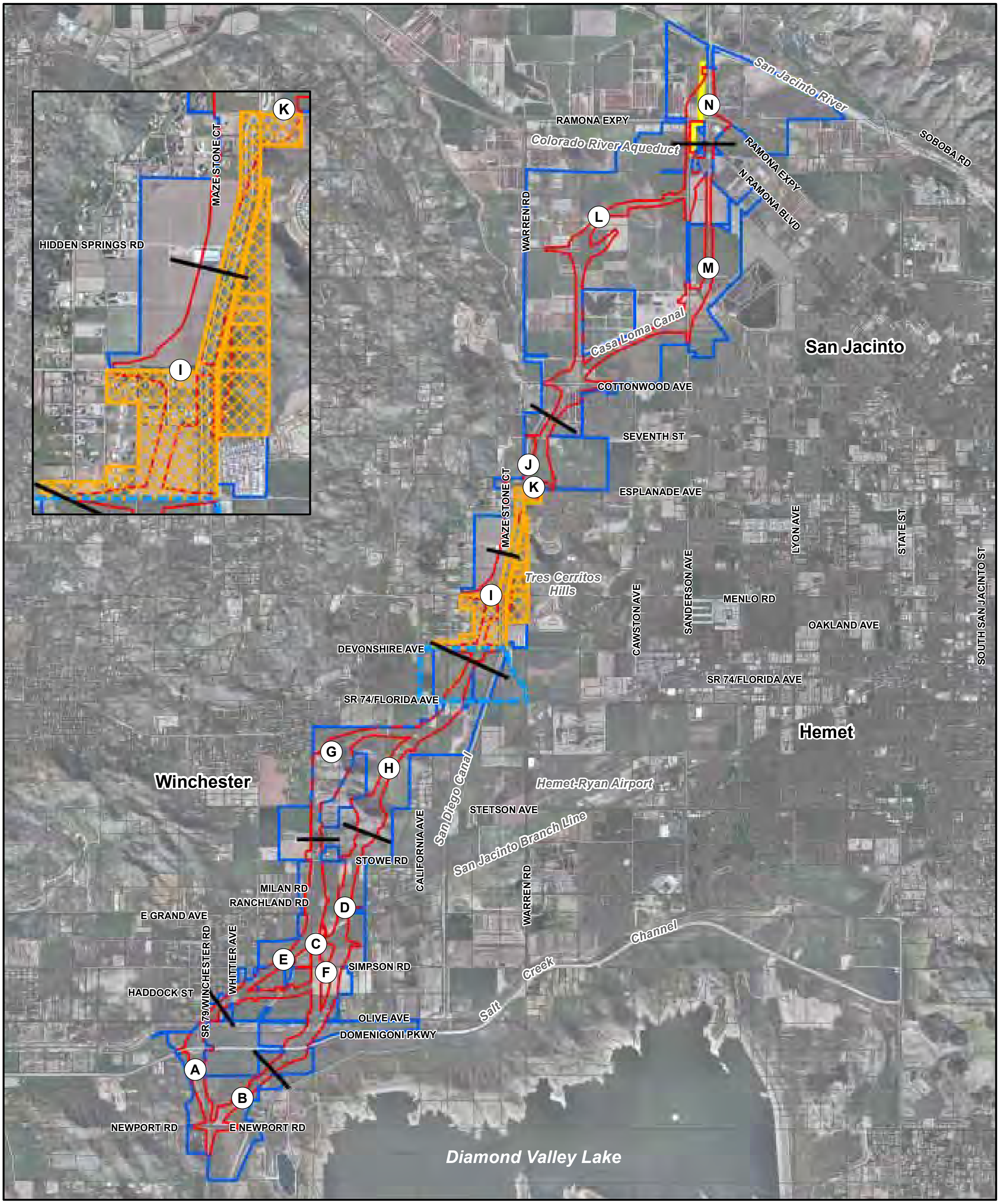
Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.

Note[2]: Riverside County assessor parcels dated October 2006.

Source: CR - County of Riverside

Figure 3.1-9
Planned Farmland Conversion to Nonagricultural Use

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- County Assessor's Parcel[CR, 2]
- Zoned Farmland[CR, HT]

0 7,250 Feet

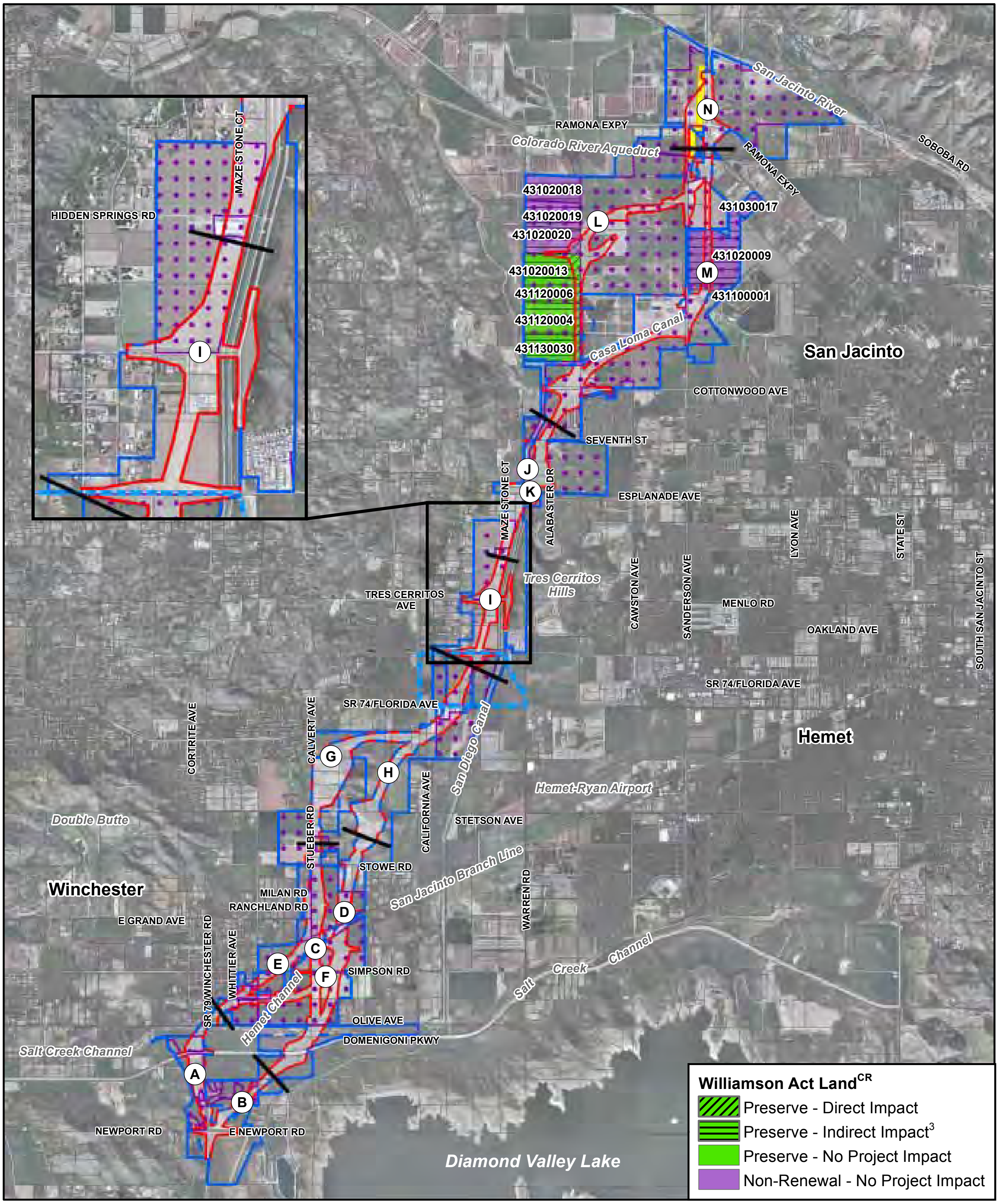
0 1,500 Meters

1:87,000

Sources: CR - County of Riverside; HT - City of Hemet

Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.
Note[2]: Riverside County assessor parcels dated October 2006.

Figure 3.1-10
Zoned Farmland
Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- County Assessor's Parcel[CR, 2]
- Planned Farmland Conversion

0 — 7,250 Feet

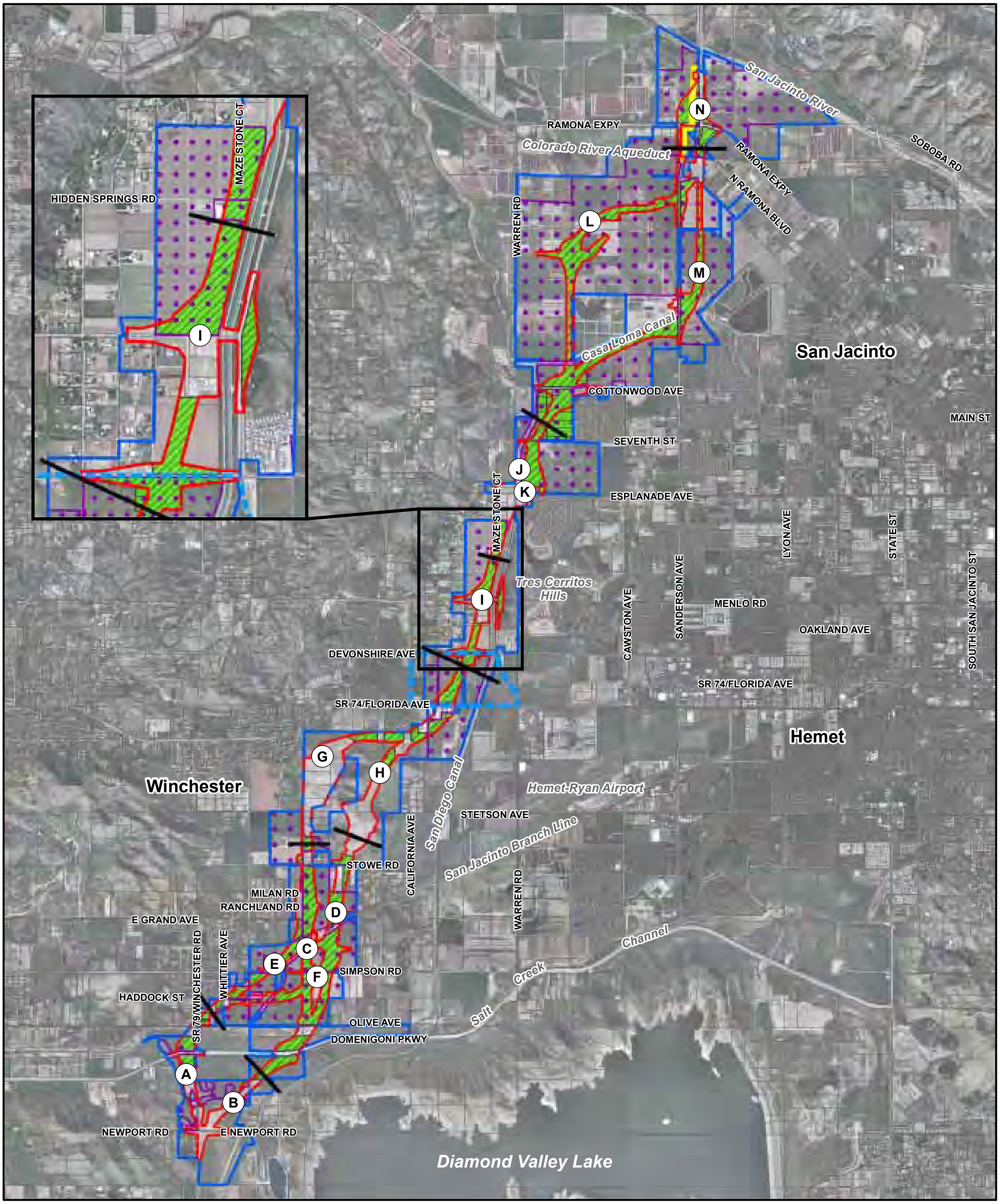
0 — 1,500 Meters

1:87,000

Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.
Note[2]: Riverside County assessor parcels dated October 2006.
Note[3]: Indirect Impacts to Williamson Act Land occur in areas of Zoned Farmlands.

Source: CR - County of Riverside

Figure 3.1-11
Project Impacts to Williamson Act Land
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- County Assessor's Parcel[CR, 2]
- Planned Farmland Conversion
- Existing Farmland - Direct Impact
- Existing Farmland - Indirect Impact

0 7,250 Feet

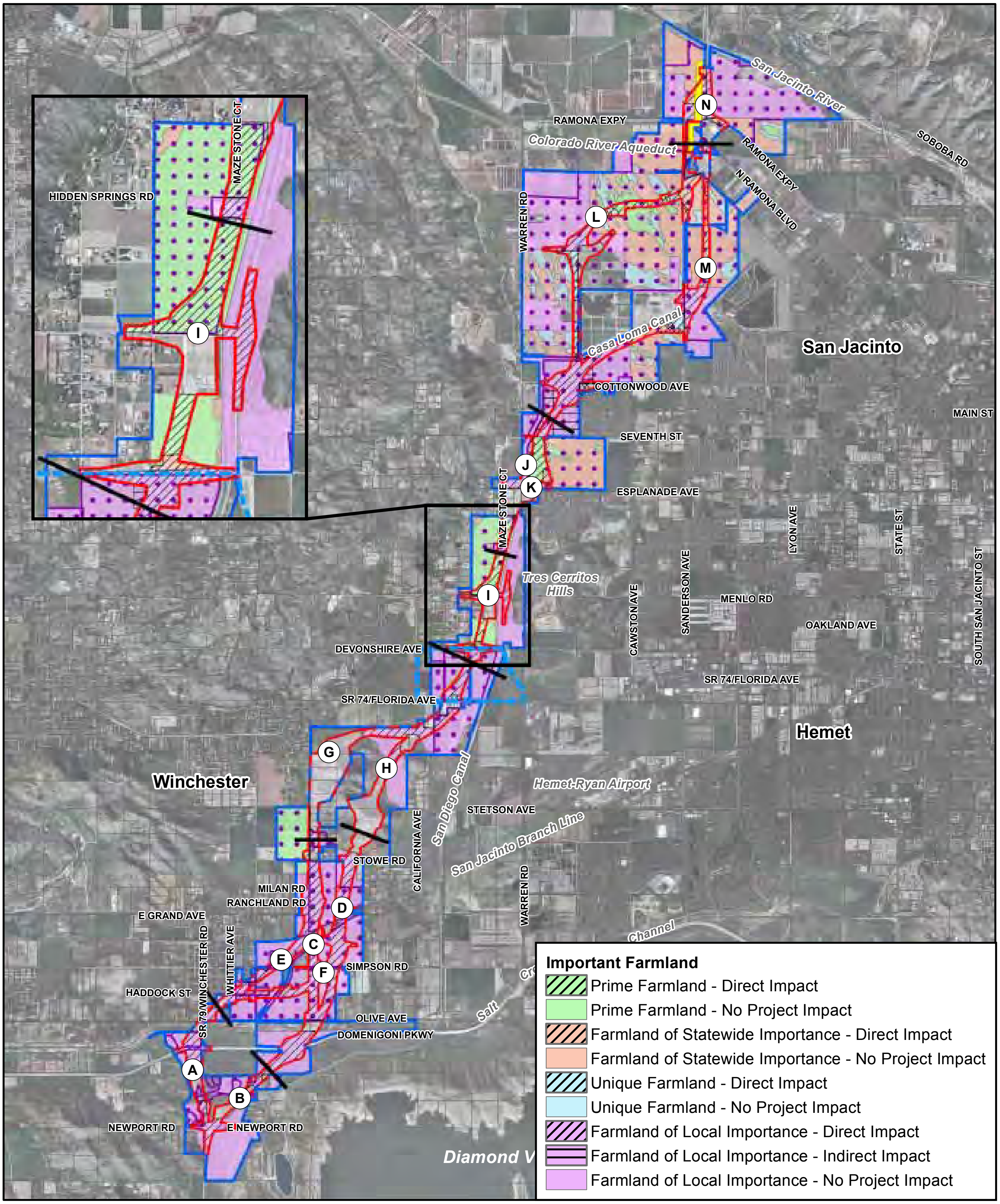
0 1,500 Meters

1:87,000

Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.
Note[2]: Riverside County assessor parcels dated October 2006.

Source: CR - County of Riverside

Figure 3.1-12
Project Impacts to Existing Farmland
Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- County Assessor's Parcel[CR, 2]
- Planned Farmland Conversion

0 7,250 Feet

0 1,500 Meters

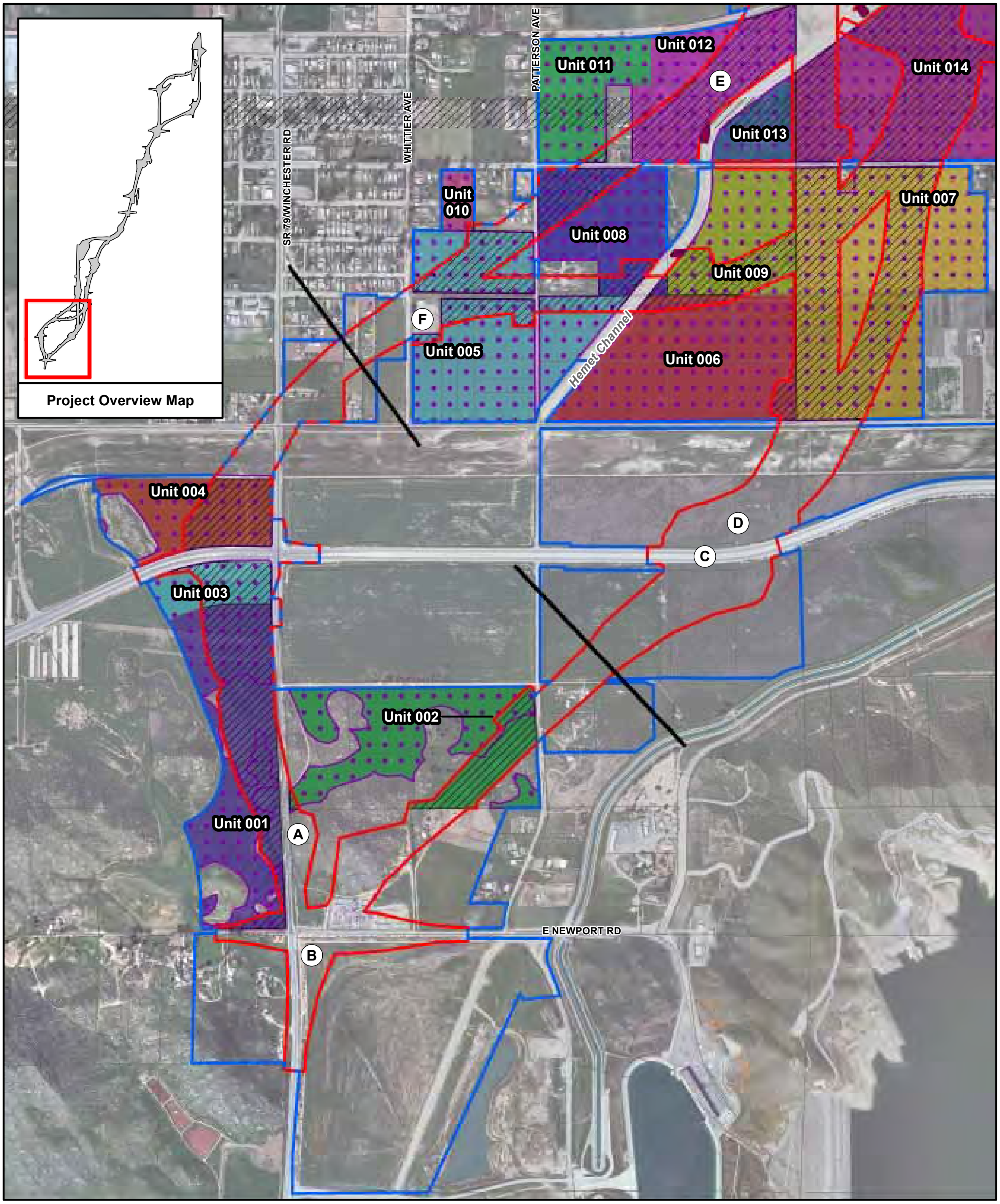
1:87,000

Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.
Note[2]: Riverside County assessor parcels dated October 2006.

Source: CR - County of Riverside

Figure 3.1-13
Project Impacts to Important Farmland

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Planned Farmland Conversion
- County Assessor's Parcel[CR, 2]

Farm Units[3]

- Direct Impact
- Indirect Impact

0 — 1,500 Feet

0 — 300 Meters

1:18,000

Source: CR - County of Riverside

Note: The farm units are each indentified with a different color. A farm unit consists of one or more contiguous parcels that contain farmlands with the same owner or owners. Farm units were designated to complete the NRCS Form CPA-106.

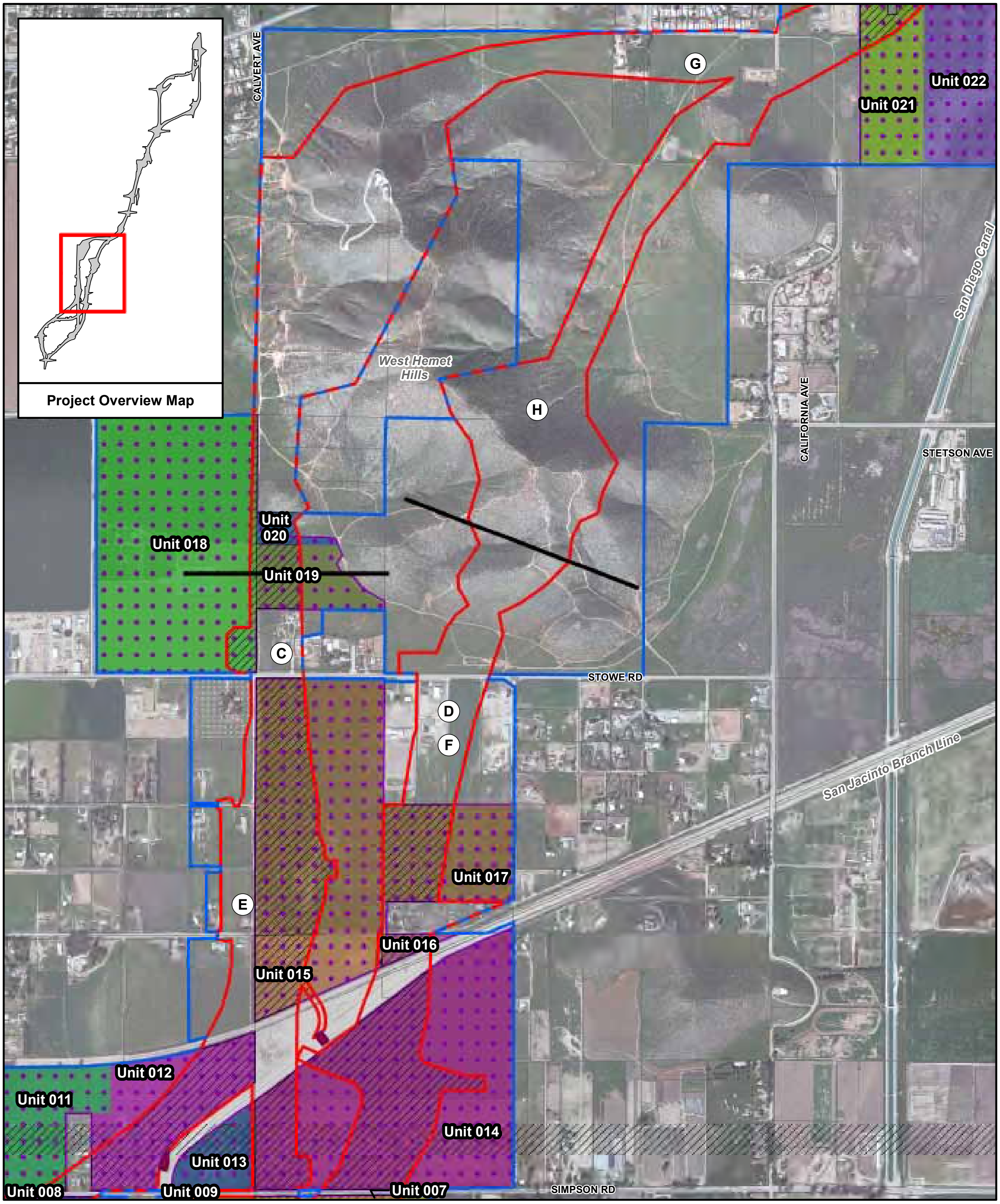
Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.

Note[2]: Riverside County assessor parcels dated October 2006.

Note[3]: Only agricultural lands are color-coded, but all existing land use types within the farm unit are included as part of the calculation of impacts to farm units.

Figure 3.1-14 Map 1 of 6
Project Impacts to Farm Units

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Planned Farmland Conversion

Farm Units[3]

- Direct Impact
- Indirect Impact
- County Assessor's Parcel[CR, 2]

0 1,500 Feet

0 300 Meters

1:18,000

Source: CR - County of Riverside

Note: The farm units are each indentified with a different color. A farm unit consists of one or more contiguous parcels that contain farmlands with the same owner or owners. Farm units were designated to complete the NRCS Form CPA-106.

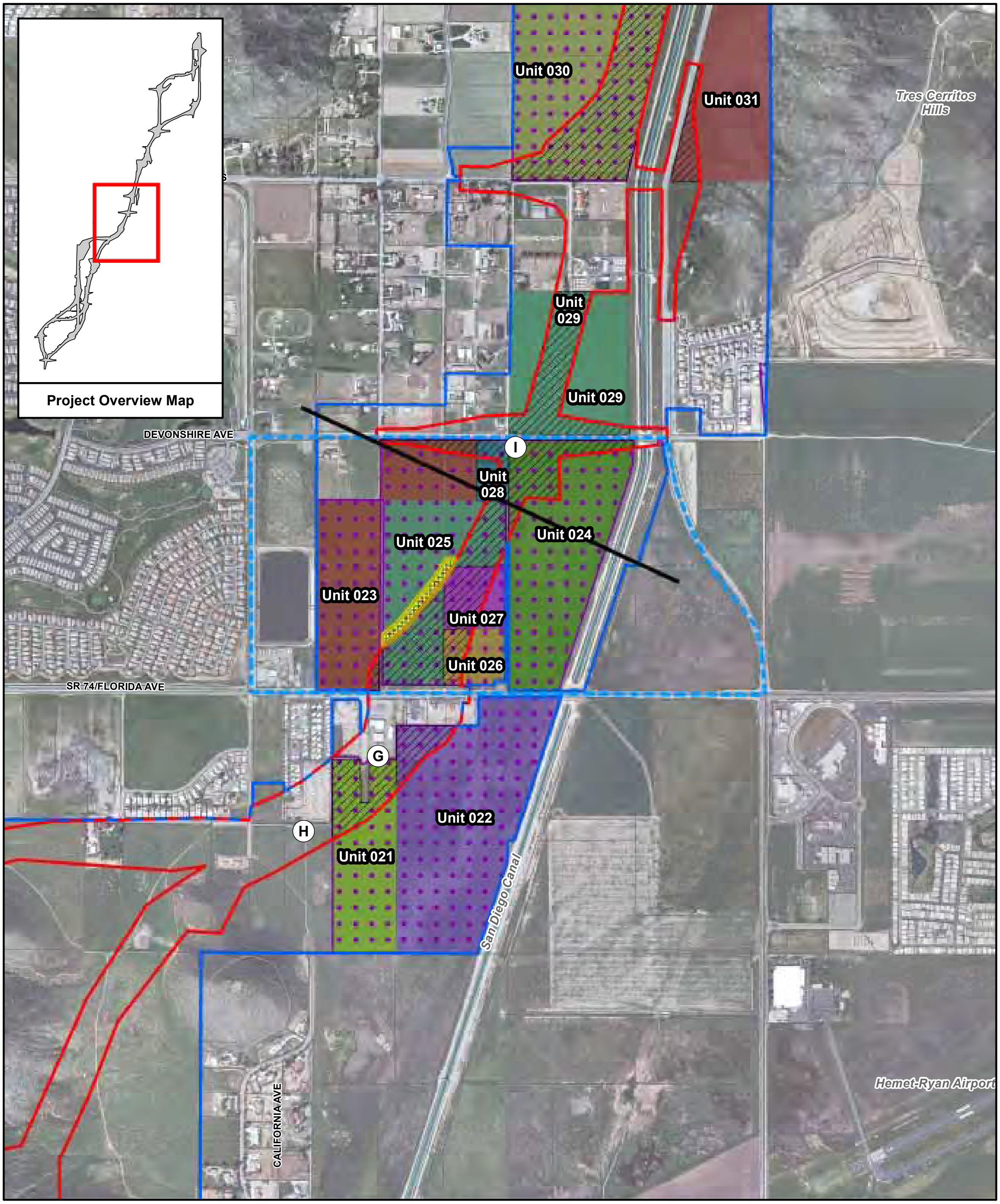
Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.

Note[2]: Riverside County assessor parcels dated October 2006.

Note[3]: Only agricultural lands are color-coded, but all existing land use types within the farm unit are included as part of the calculation of impacts to farm units.

Figure 3.1-14 Map 2 of 6
Project Impacts to Farm Units

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Planned Farmland Conversion

Farm Units[3]

- Direct Impact
- Indirect Impact
- County Assessor's Parcel[CR, 2]

0 — 1,500 Feet

0 — 300 Meters

1:18,000

Source: CR - County of Riverside

Note: The farm units are each indentified with a different color. A farm unit consists of one or more contiguous parcels that contain farmlands with the same owner or owners. Farm units were designated to complete the NRCS Form CPA-106.

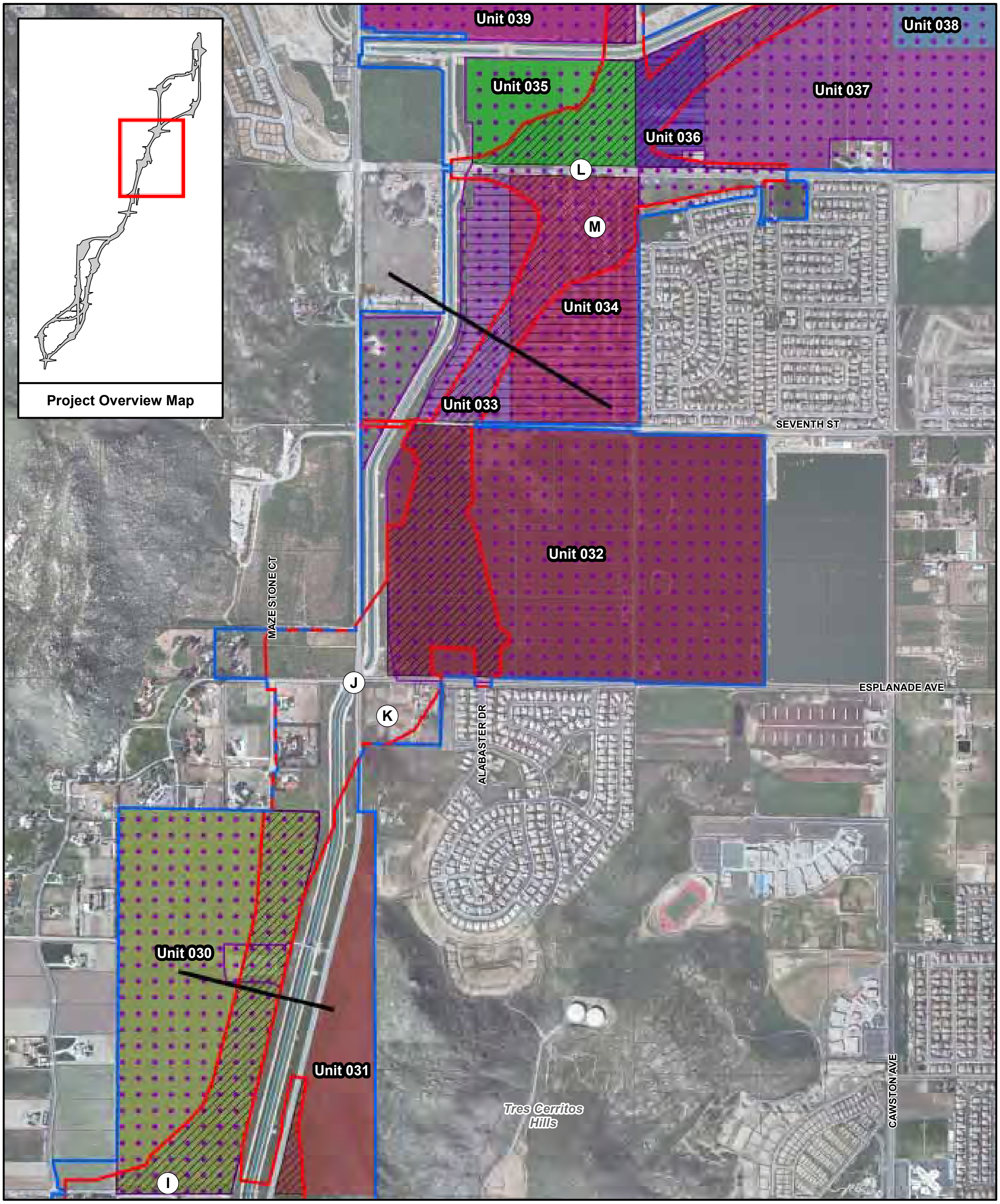
Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.

Note[2]: Riverside County assessor parcels dated October 2006.

Note[3]: Only agricultural lands are color-coded, but all existing land use types within the farm unit are included as part of the calculation of impacts to farm units.

Figure 3.1-14 Map 3 of 6
Project Impacts to Farm Units

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Planned Farmland Conversion
- County Assessor's Parcel[CR, 2]

Farm Units[3]

- Direct Impact
- Indirect Impact

Source: CR - County of Riverside

Note: The farm units are each indentified with a different color. A farm unit consists of one or more contiguous parcels that contain farmlands with the same owner or owners. Farm units were designated to complete the NRCS Form CPA-106.

Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.

Note[2]: Riverside County assessor parcels dated October 2006.

Note[3]: Only agricultural lands are color-coded, but all existing land use types within the farm unit are included as part of the calculation of impacts to farm units.

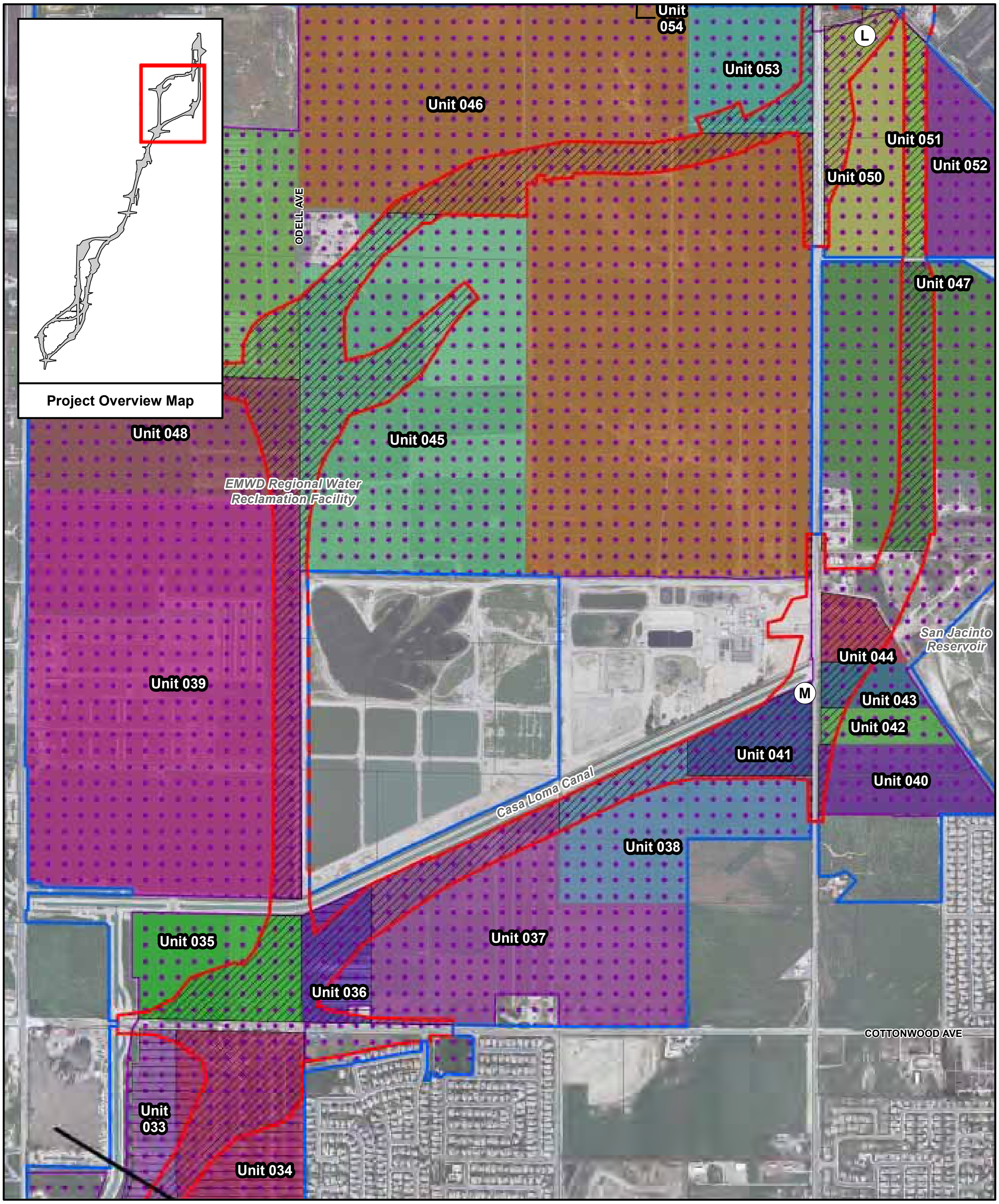
0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.1-14 Map 4 of 6
Project Impacts to Farm Units

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Planned Farmland Conversion
- County Assessor's Parcel[CR, 2]

Farm Units[3]

- Direct Impact
- Indirect Impact

Source: CR - County of Riverside

Note: The farm units are each indentified with a different color. A farm unit consists of one or more contiguous parcels that contain farmlands with the same owner or owners. Farm units were designated to complete the NRCS Form CPA-106.

Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.

Note[2]: Riverside County assessor parcels dated October 2006.

Note[3]: Only agricultural lands are color-coded, but all existing land use types within the farm unit are included as part of the calculation of impacts to farm units.

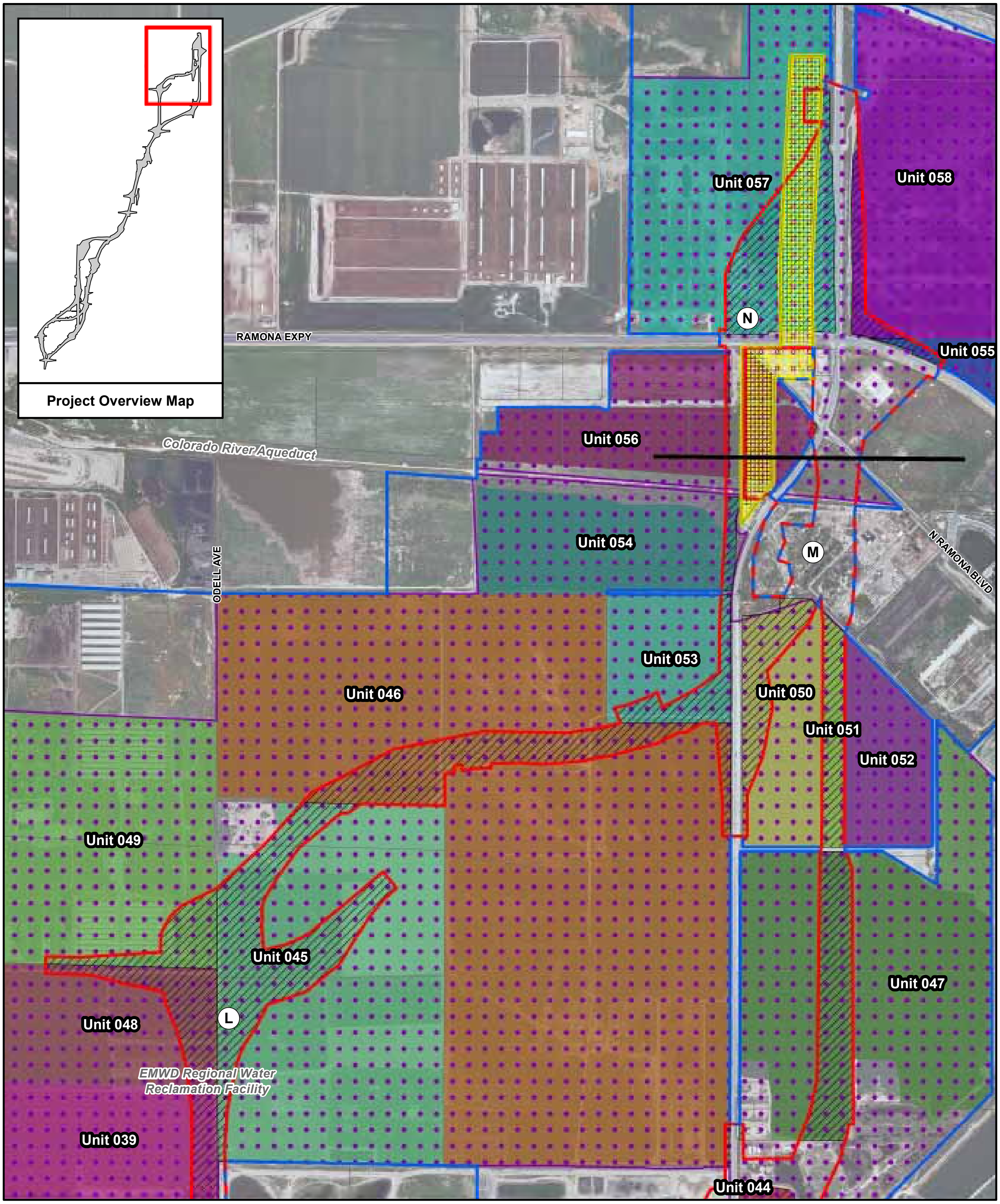
0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.1-14 Map 5 of 6 Project Impacts to Farm Units

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Planned Farmland Conversion
- County Assessor's Parcel[CR, 2]

Farm Units[3]

- Direct Impact
- Indirect Impact

Source: CR - County of Riverside

Note: The farm units are each indentified with a different color. A farm unit consists of one or more contiguous parcels that contain farmlands with the same owner or owners. Farm units were designated to complete the NRCS Form CPA-106.

Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.

Note[2]: Riverside County assessor parcels dated October 2006.

Note[3]: Only agricultural lands are color-coded, but all existing land use types within the farm unit are included as part of the calculation of impacts to farm units.

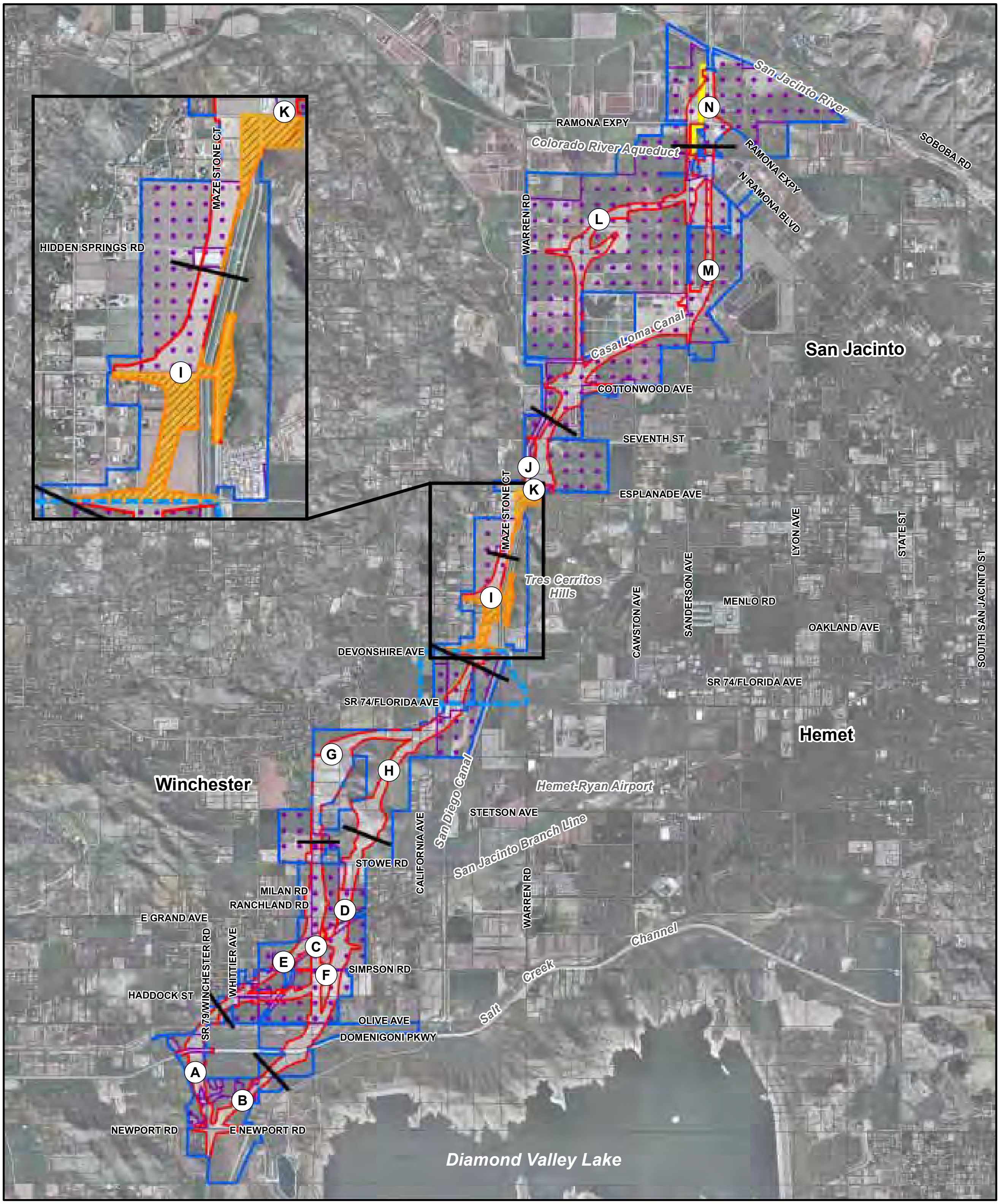
0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.1-14 Map 6 of 6
Project Impacts to Farm Units

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Agricultural Study Area
- Combined Project Impact Area and Agricultural Study Area[1]
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- County Assessor's Parcel[CR, 2]
- Zoned Agricultural Land - Direct Impact[CR, HT, 3]
- Planned Farmland Conversion

Sources: CR - County of Riverside; HT - City of Hemet

0 7,250 Feet

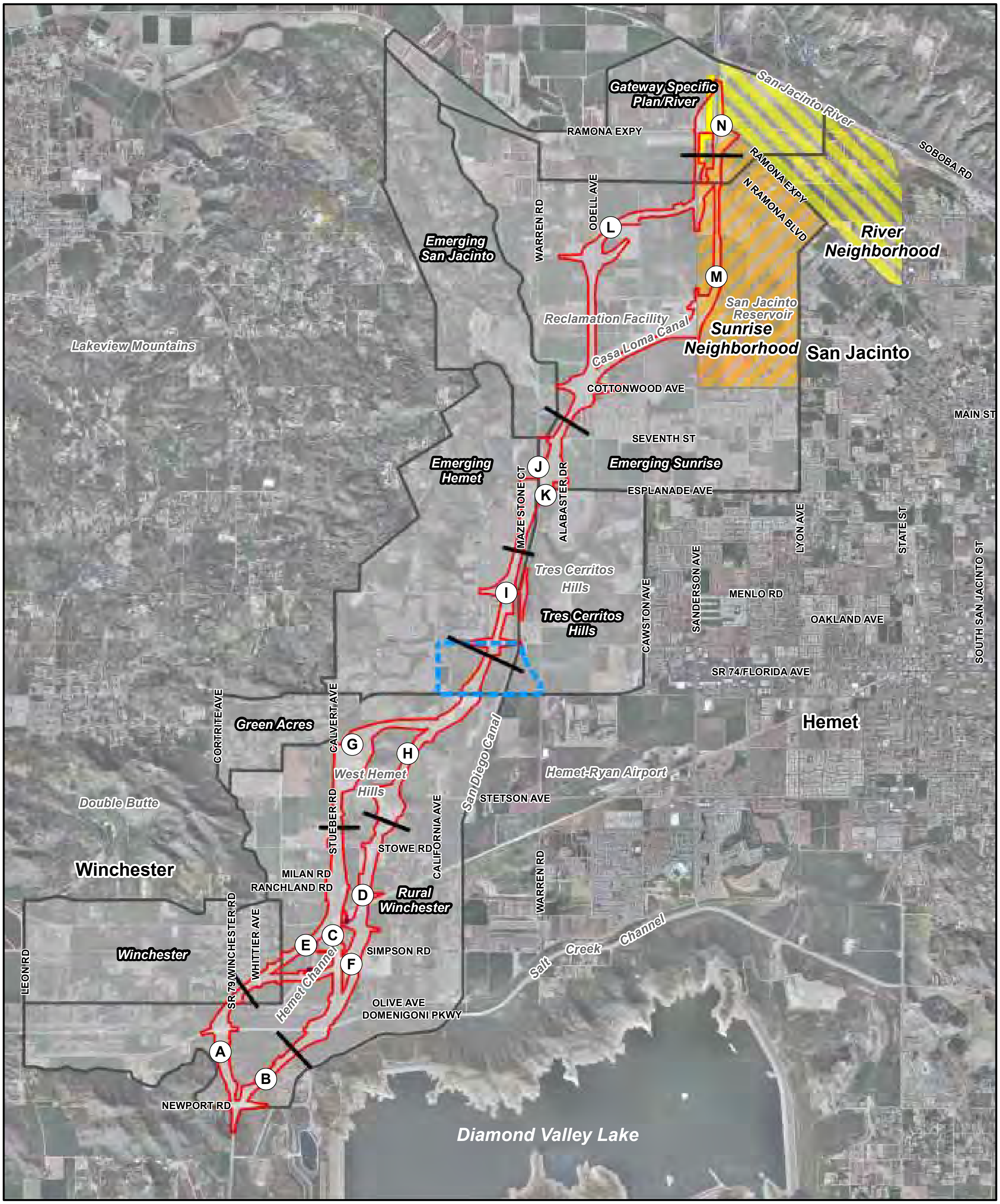
0 1,500 Meters

1:87,000

Note[1]: Red and blue dashed line represents locations where the Project ROW and Agricultural Study Area are the same.
Note[2]: Riverside County assessor parcels dated October 2006.
Note[3]: Agricultural land is the Riverside County and the City of Hemet designation for farmland.

Figure 3.1-15
Project Impacts to Zoned Farmland

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\CIA_CCC_A.MXD CIA_CCC_A.PDF 01/16/2012

LEGEND

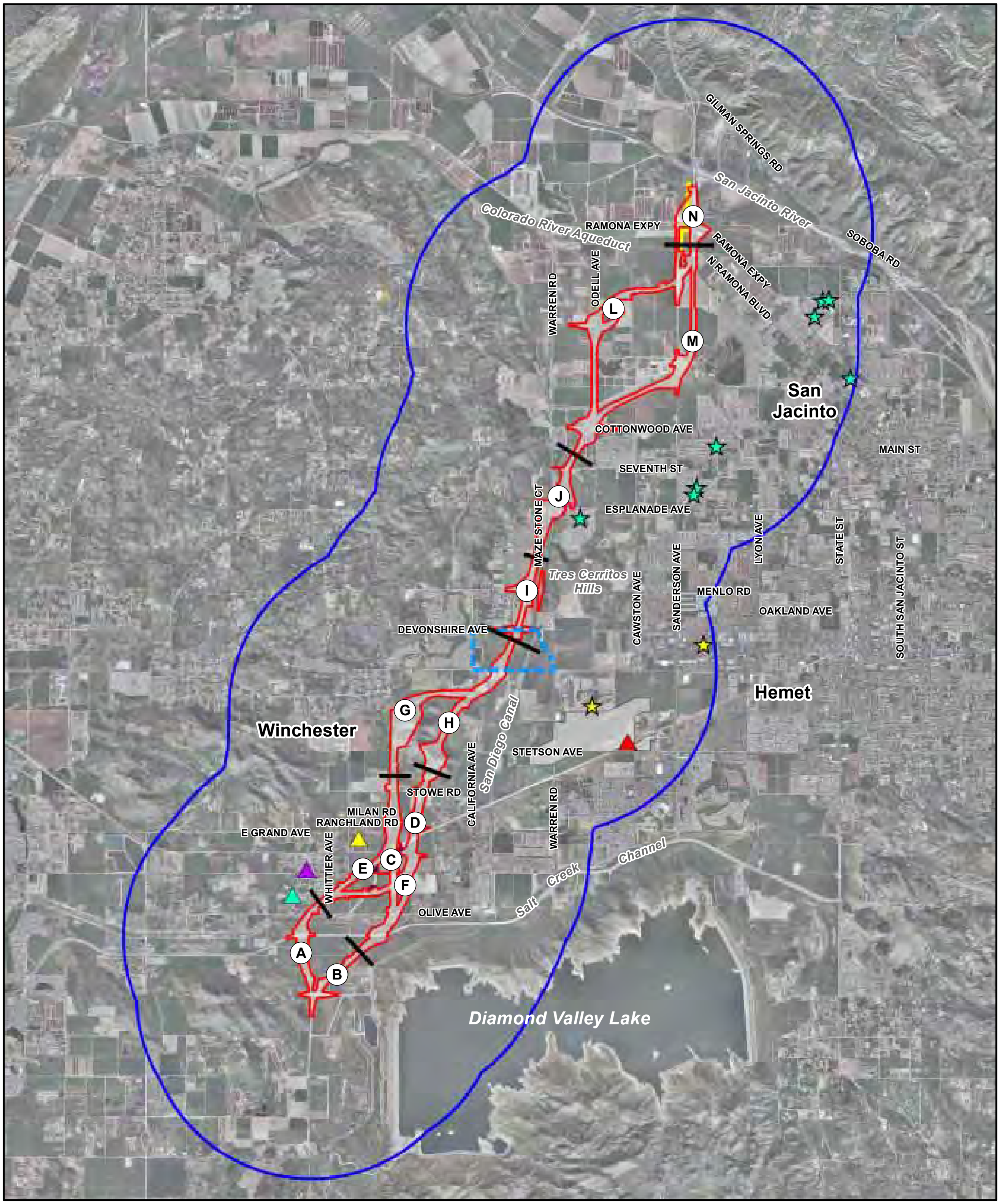
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Community
- River Neighborhood
- Sunrise Neighborhood

0 7,500 Feet

0 1,500 Meters

1:90,000

Figure 3.1-16
Community Boundaries
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_CCAPSF_A.MXD UTIL_CCAPSF_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Services Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Hemet-Ryan Airport

Public Service Facilities

- Francis Domenigoni Community Center
- Patterson House/ Winchester Museum
- Ryan Field Museum
- Winchester Post Office

Community Care Facilities

- Daycare Center
- Retirement/Assisted Living Center

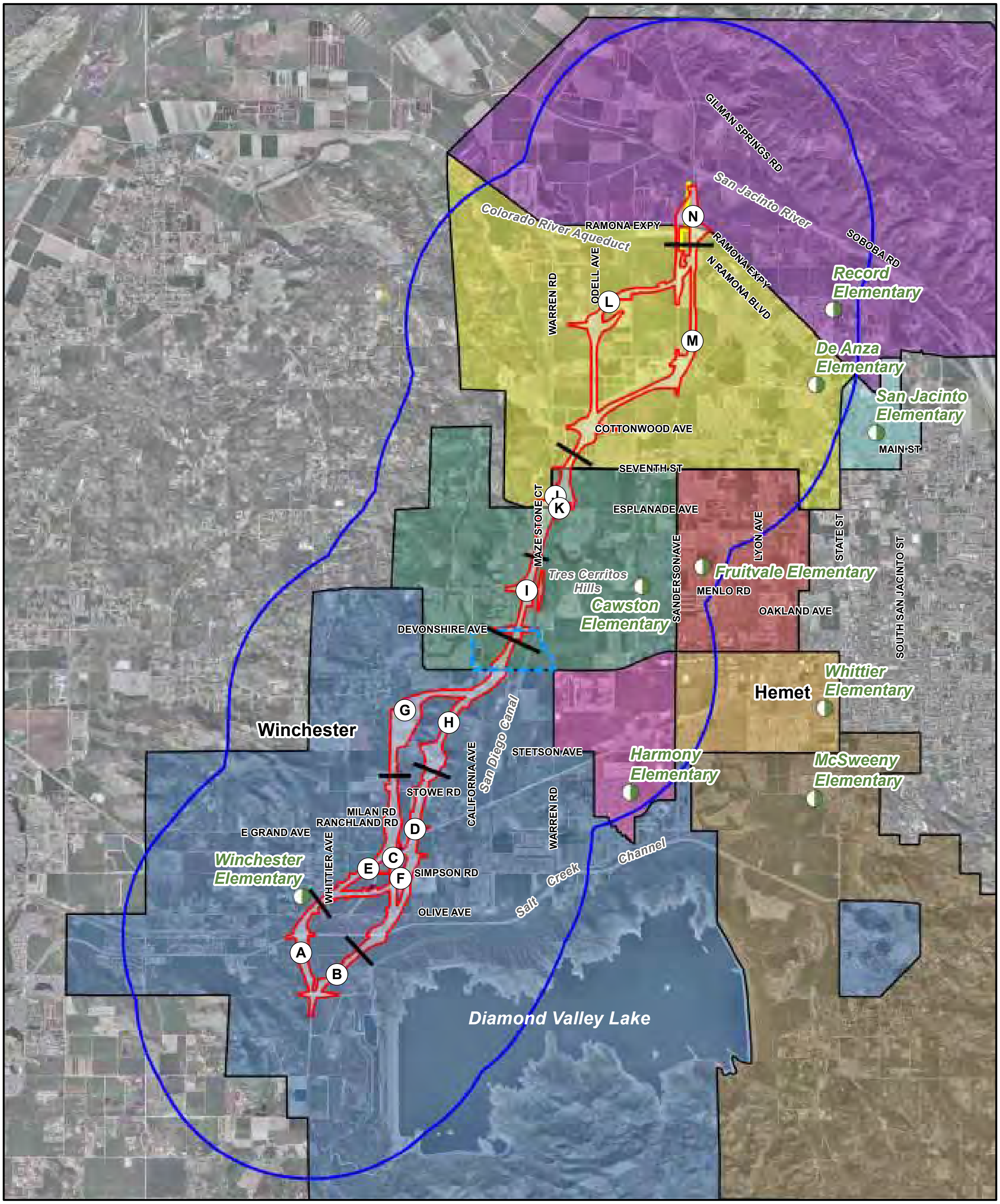
0 9,500 Feet

0 2,000 Meters

1:84,000

Figure 3.1-17
Community Care and Public Service Facilities

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_SCHOOL_ES_LABELS_A.MXD UTIL_SCHOOL_ES_LABELS_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Services Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Elementary School

Hemet Unified School District Attendance Areas[HD]

- Cawston
- Fruitvale
- Harmony
- McSweeny
- Whittier
- Winchester

San Jacinto Unified School District Attendance Areas[SD]

- DeAnza
- San Jacinto
- Record

0 9,500 Feet

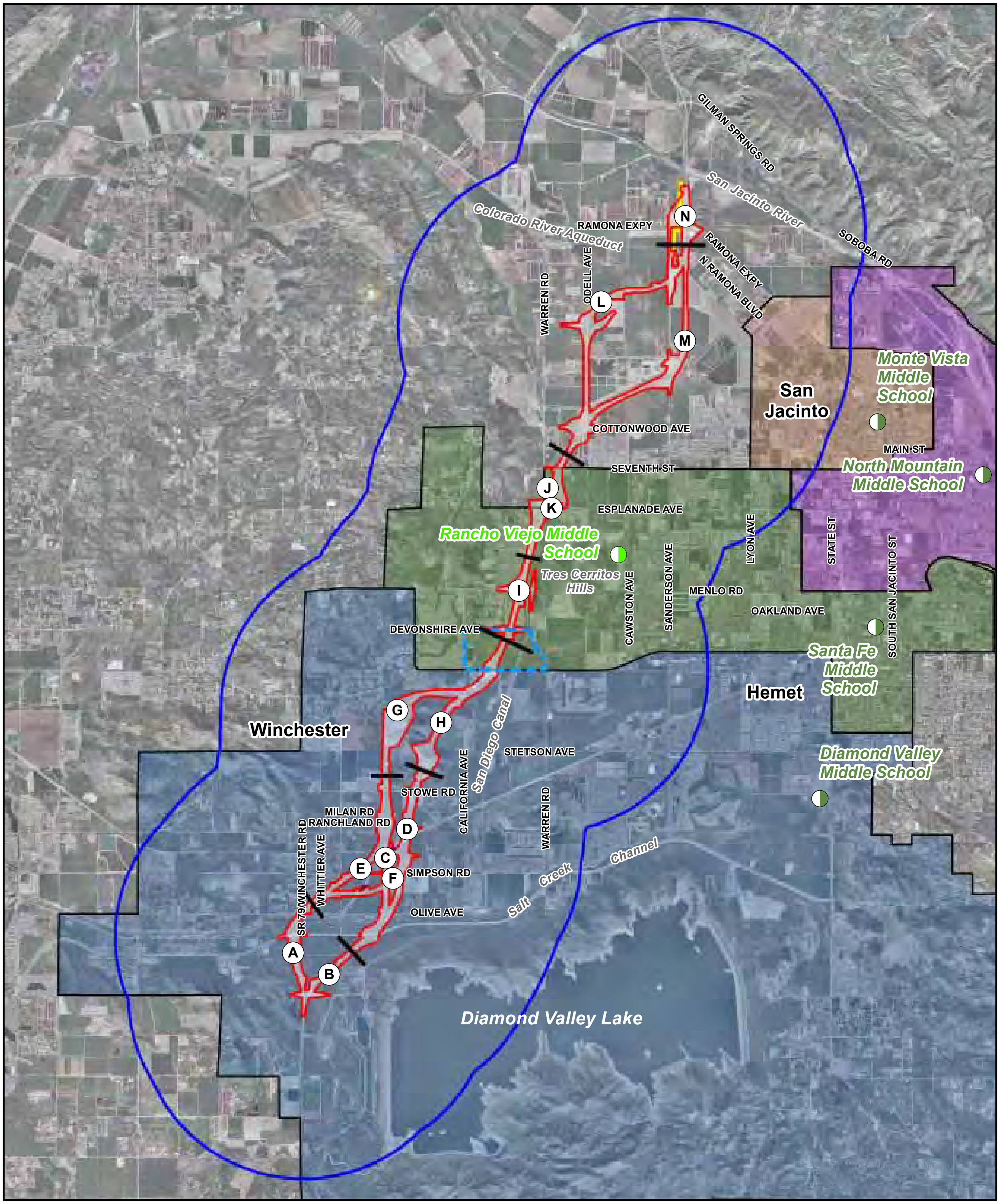
0 2,000 Meters

1:84,000

Sources: HD - Hemet Unified School District; SD - San Jacinto Unified School District

Figure 3.1-18
Elementary Schools and Attendance Areas

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_SCHOOL_MS_LABELS_A.MXD UTIL_SCHOOL_MS_LABELS_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Services Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Middle School
- Proposed Middle School

Hemet Unified School District Attendance Areas[HD]

- Diamond Valley
- Santa Fe

San Jacinto Unified School District Attendance Areas[SD]

- Monte Vista
- North Mountain

0 9,500 Feet

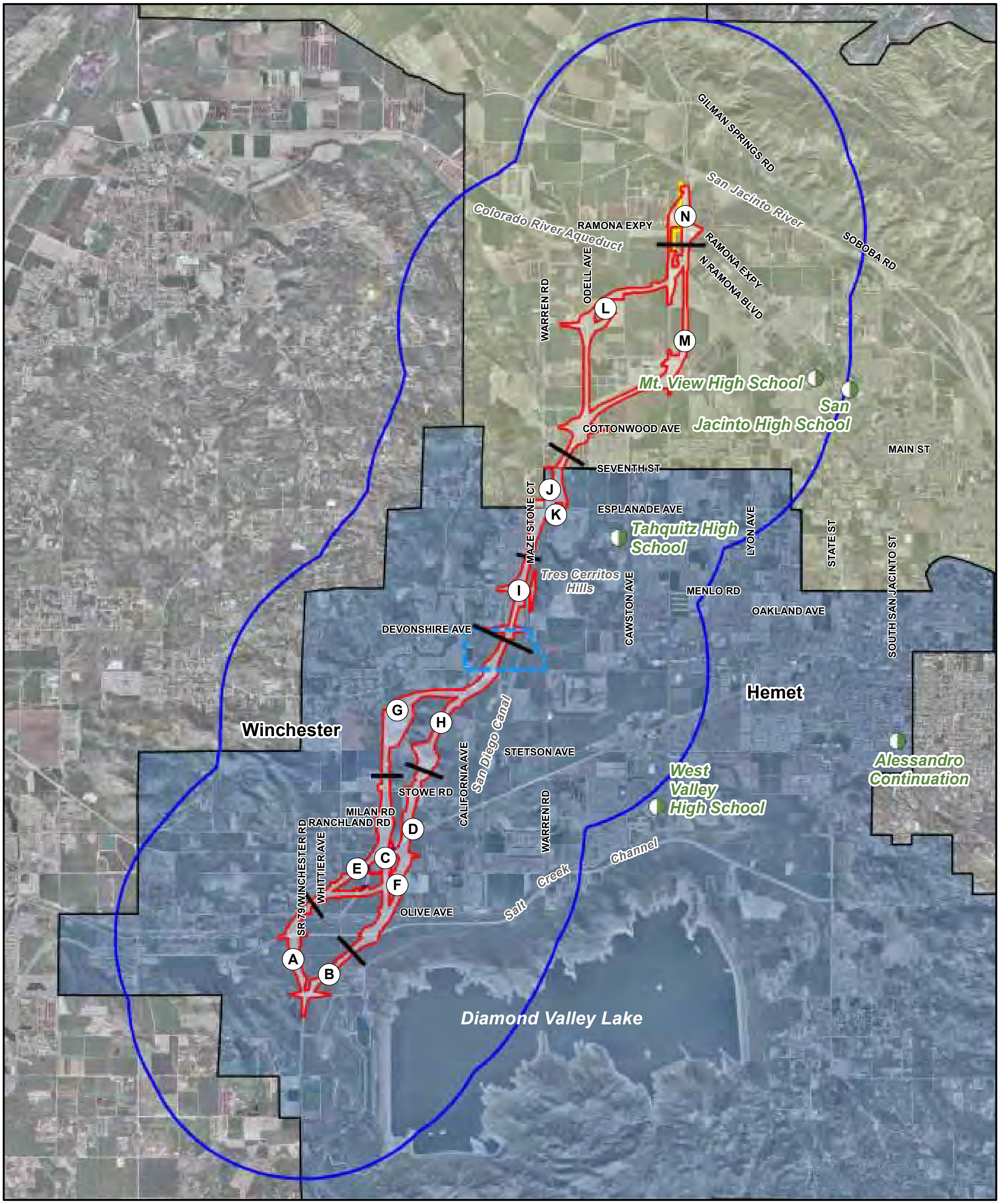
0 2,000 Meters

1:84,000

Sources: HD - Hemet Unified School District; SD - San Jacinto Unified School District

Figure 3.1-19
Middle Schools and Attendance Areas

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_SCHOOL_HS_LABELS_A.MXD UTIL_SCHOOL_HS_LABELS_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Services Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- High School
- Hemet Unified School District Attendance Area[HD, 1]
- San Jacinto Unified School District Attendance Area[SD, 2]

0 9,500 Feet

0 2,000 Meters

1:84,000

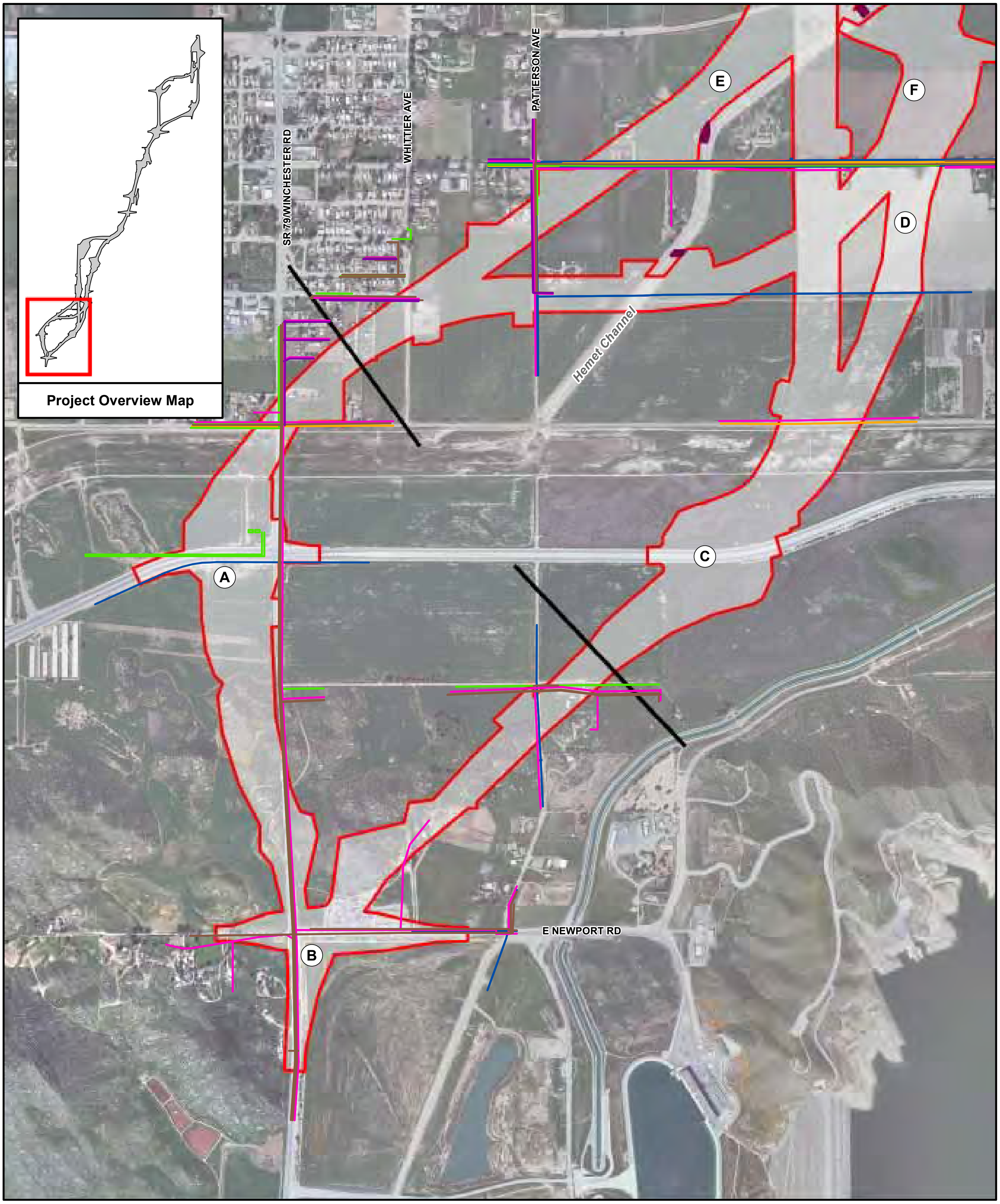
Sources: HD - Hemet Unified School District; SD - San Jacinto Unified School District

Note: 1 - The attendance area for Alessandro Continuation and West Valley high schools is the entire HUSD.

2 - The attendance area for Mountain View and San Jacinto high schools is the entire SJUSD.

Figure 3.1-20
High Schools and Attendance Areas

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_UTIL_6PLTS_A.MXD UTIL_UTIL_6PLTS_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Cell Phone Tower
- Cell Phone Tower Access Road
- Communication Towers Site

Utilities[ER]

- Cable Television
- Electricity
- Natural Gas
- Sewer
- Telephone
- Water

0 1,500 Feet

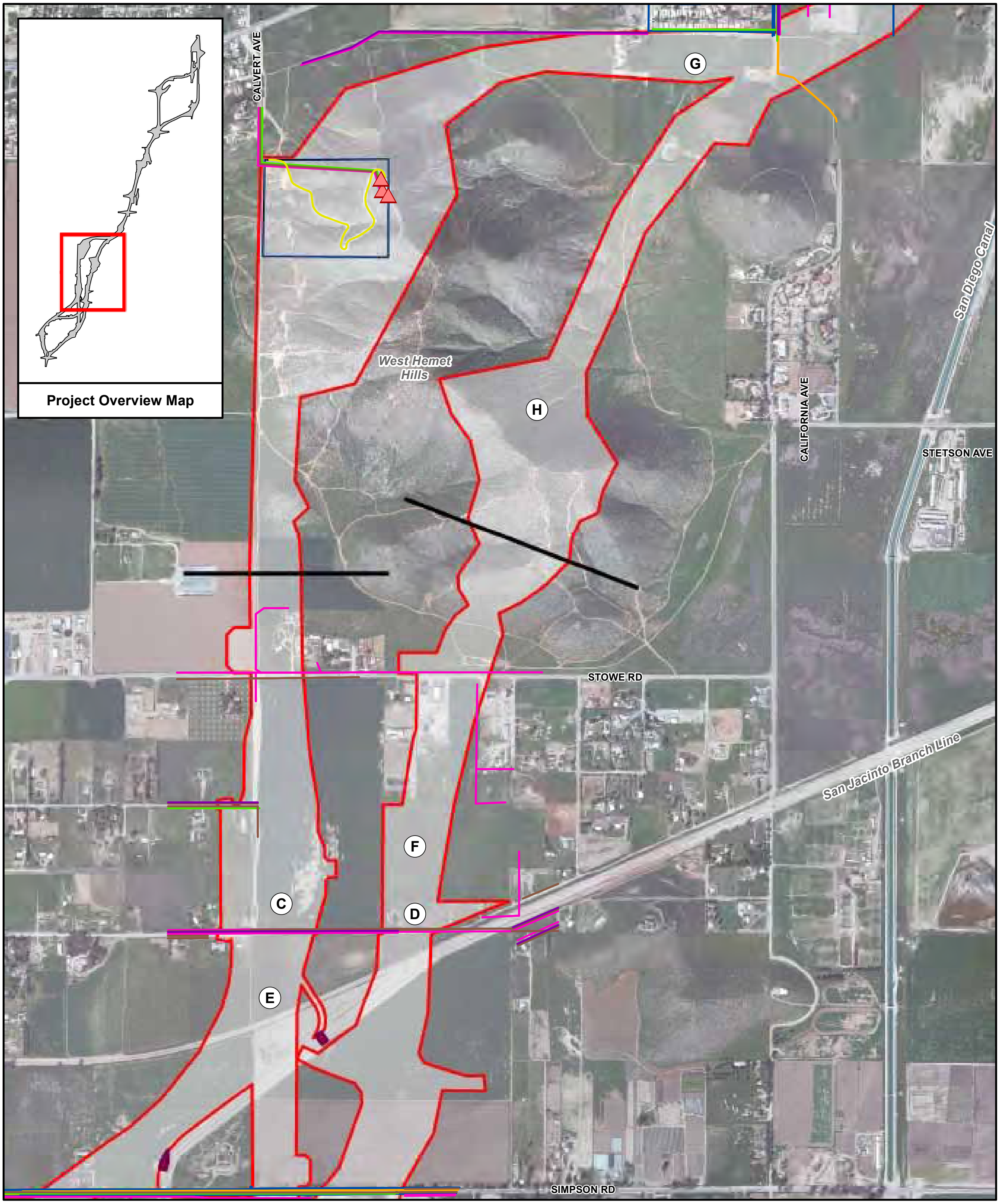
0 300 Meters

1:18,000

Source: ER - Engineering Resources

Figure 3.1-21a
Utilities that Intersect the Project

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Cell Phone Tower
- Cell Phone Tower Access Road
- Communication Towers Site

Utilities[ER]

- Cable Television
- Electricity
- Natural Gas
- Sewer
- Telephone
- Water

0 1,500 Feet

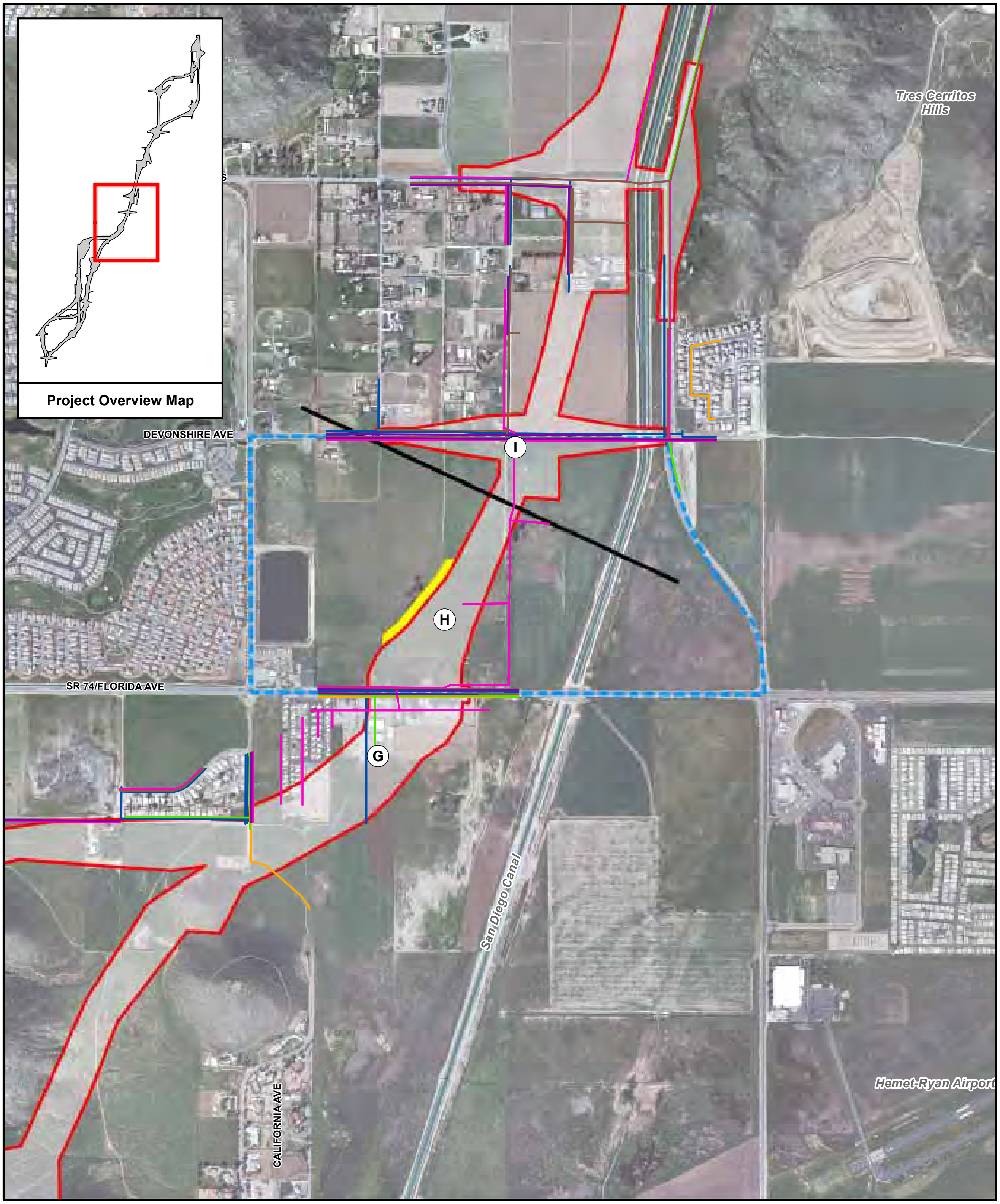
0 300 Meters

1:18,000

Source: ER - Engineering Resources

Figure 3.1-21b
Utilities that Intersect the Project

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_UTIL_6PLTS_A.MXD UTIL_UTIL_6PLTS_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Cell Phone Tower
- Cell Phone Tower Access Road
- Communication Towers Site

Utilities[ER]

- Cable Television
- Electricity
- Natural Gas
- Sewer
- Telephone
- Water

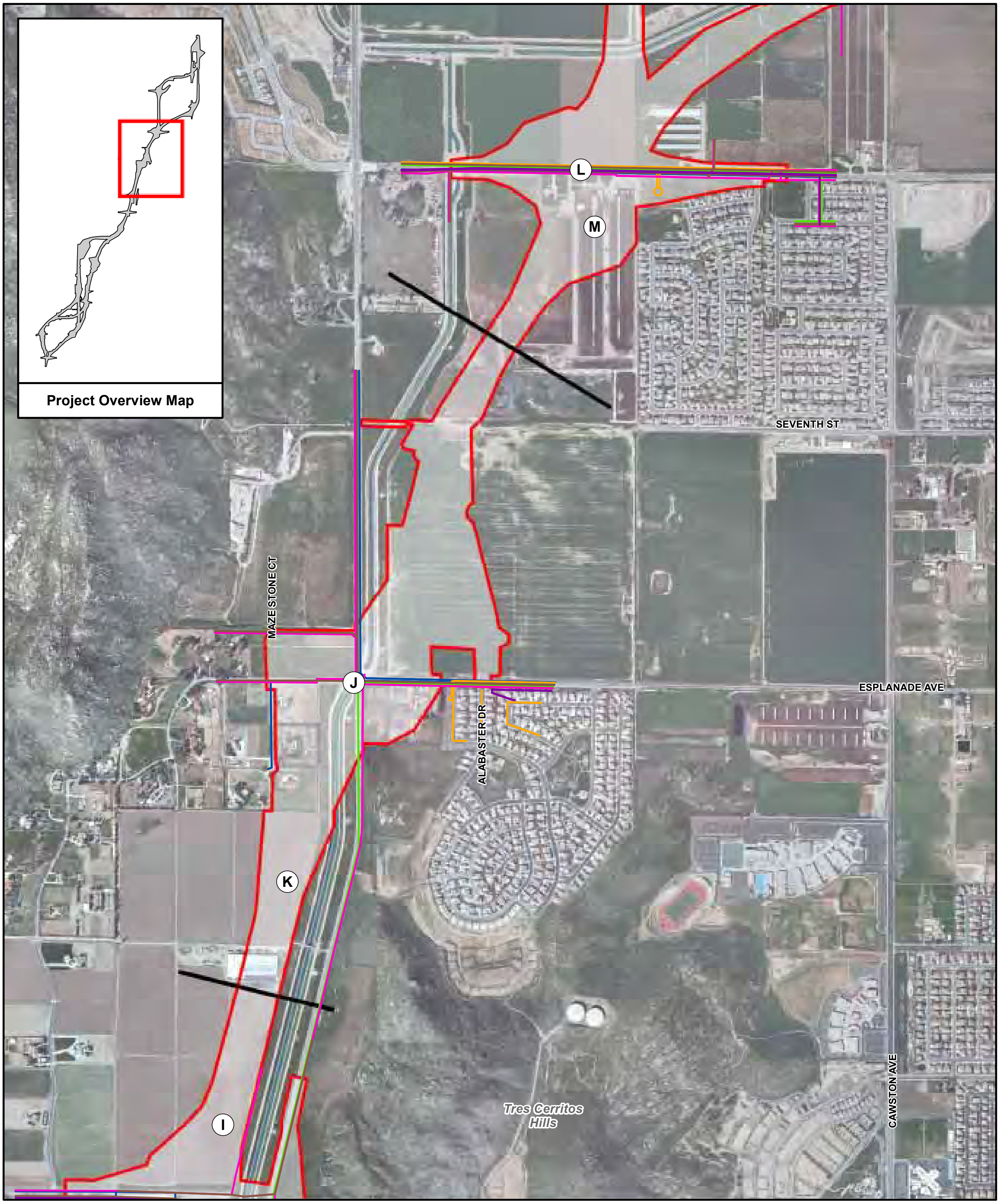
0 1,500 Feet

0 300 Meters

1:18,000

Source: ER - Engineering Resources

Figure 3.1-21c
Utilities that Intersect the Project
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_UTIL_6PLTS_A.MXD UTIL_UTIL_6PLTS_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Cell Phone Tower
- Cell Phone Tower Access Road
- Communication Towers Site

Utilities[ER]

- Cable Television
- Electricity
- Natural Gas
- Sewer
- Telephone
- Water

0 1,500 Feet

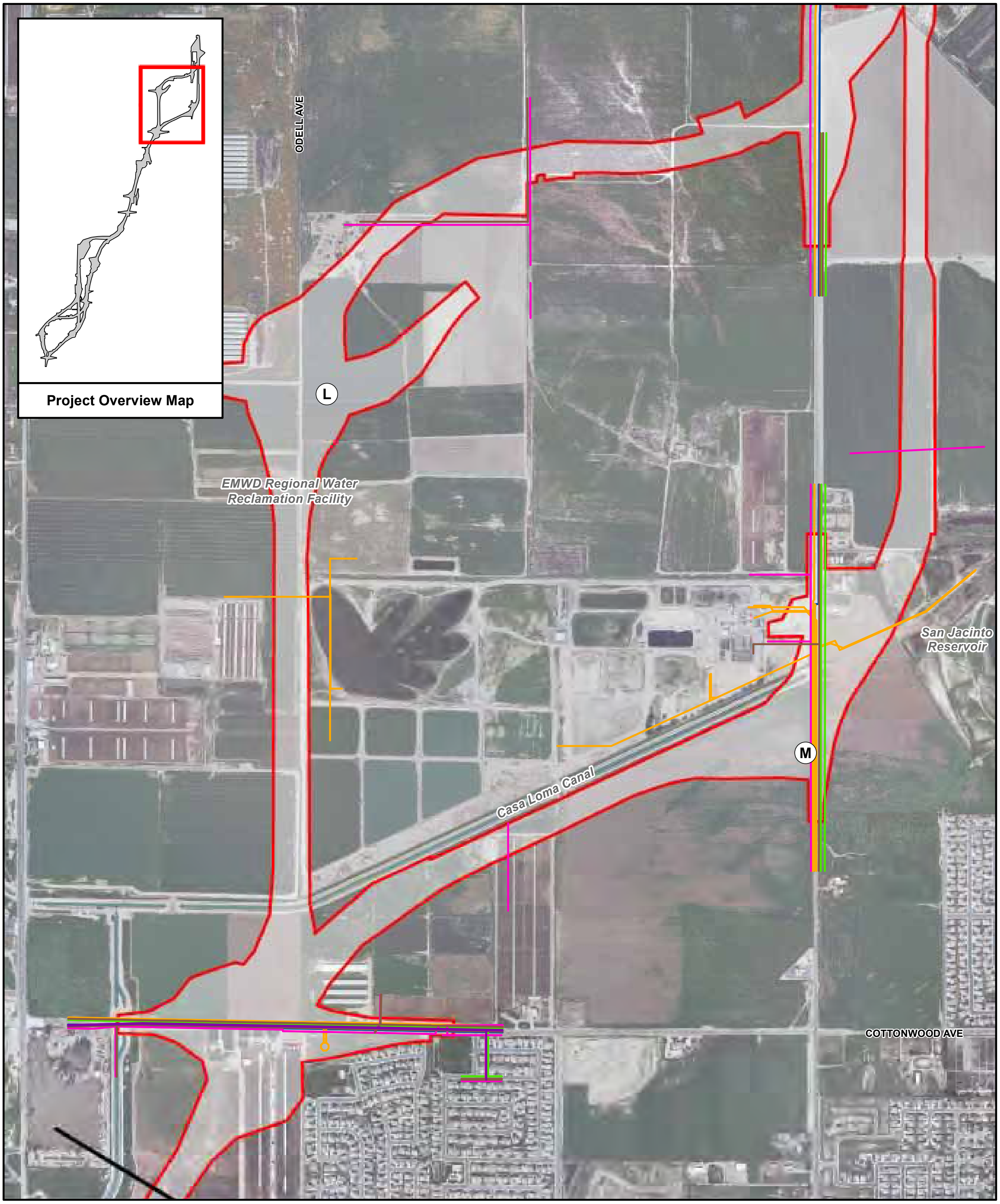
0 300 Meters

1:18,000

Source: ER - Engineering Resources

Figure 3.1-21d
Utilities that Intersect the Project

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_UTIL_6PLTS_A.MXD UTIL_UTIL_6PLTS_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Cell Phone Tower
- Cell Phone Tower Access Road
- Communication Towers Site

Utilities[ER]

- Cable Television
- Electricity
- Natural Gas
- Sewer
- Telephone
- Water

0 1,500 Feet

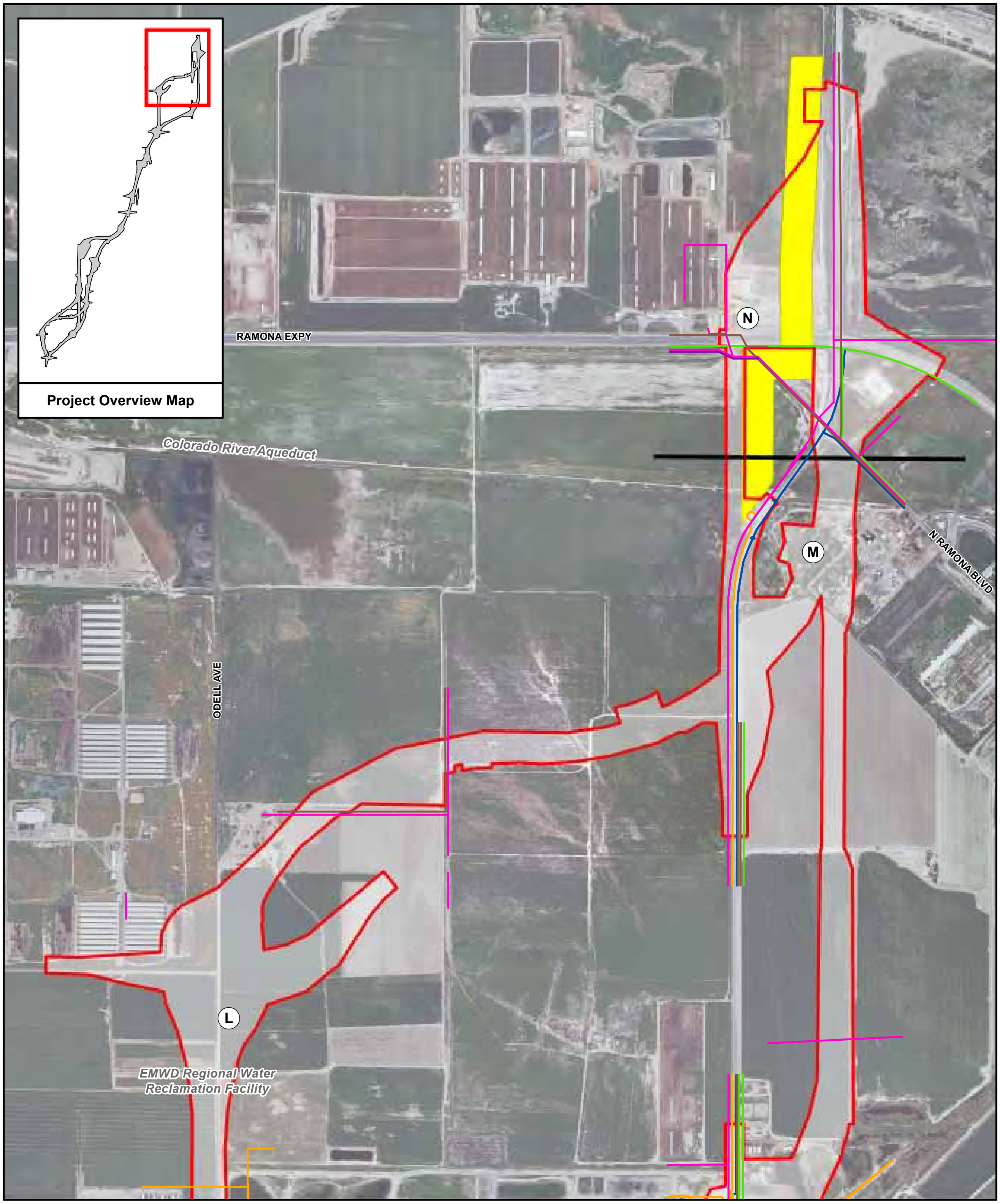
0 300 Meters

1:18,000

Source: ER - Engineering Resources

Figure 3.1-21e
Utilities that Intersect the Project

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_UTIL_6PLTS_A.MXD UTIL_UTIL_6PLTS_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Cell Phone Tower
- Cell Phone Tower Access Road
- Communication Towers Site

Utilities[ER]

- Cable Television
- Electricity
- Natural Gas
- Sewer
- Telephone
- Water

0 — 1,500 Feet

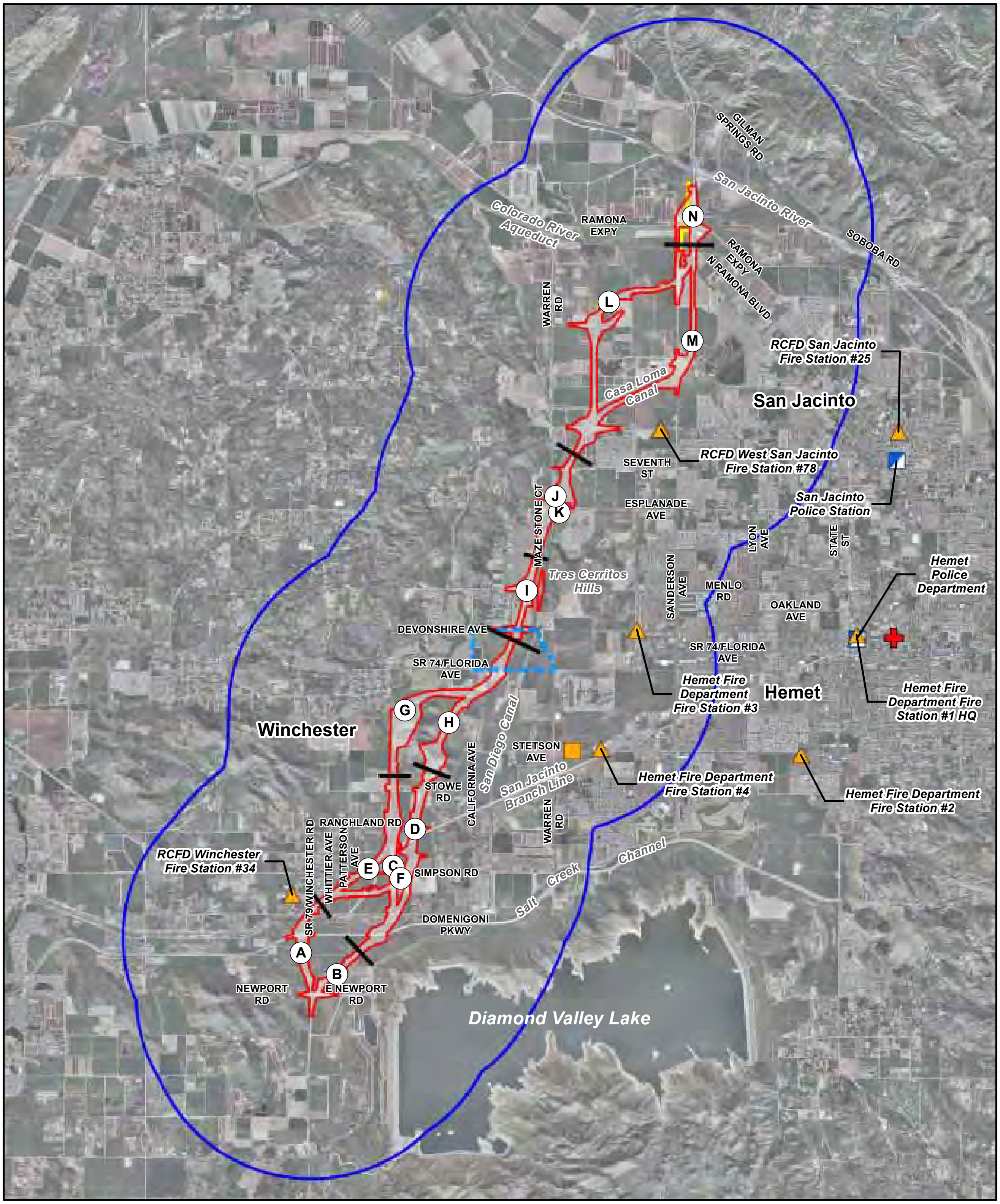
0 — 300 Meters

1:18,000

Source: ER - Engineering Resources

Figure 3.1-21f
Utilities that Intersect the Project

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\UTIL_ES_A.MXD UTIL_ES_A.PDF 01/16/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Services Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Emergency Service Facilities

- Ryan Air Attack Base
- Fire Station
- Police Department
- Hemet Valley Medical Center

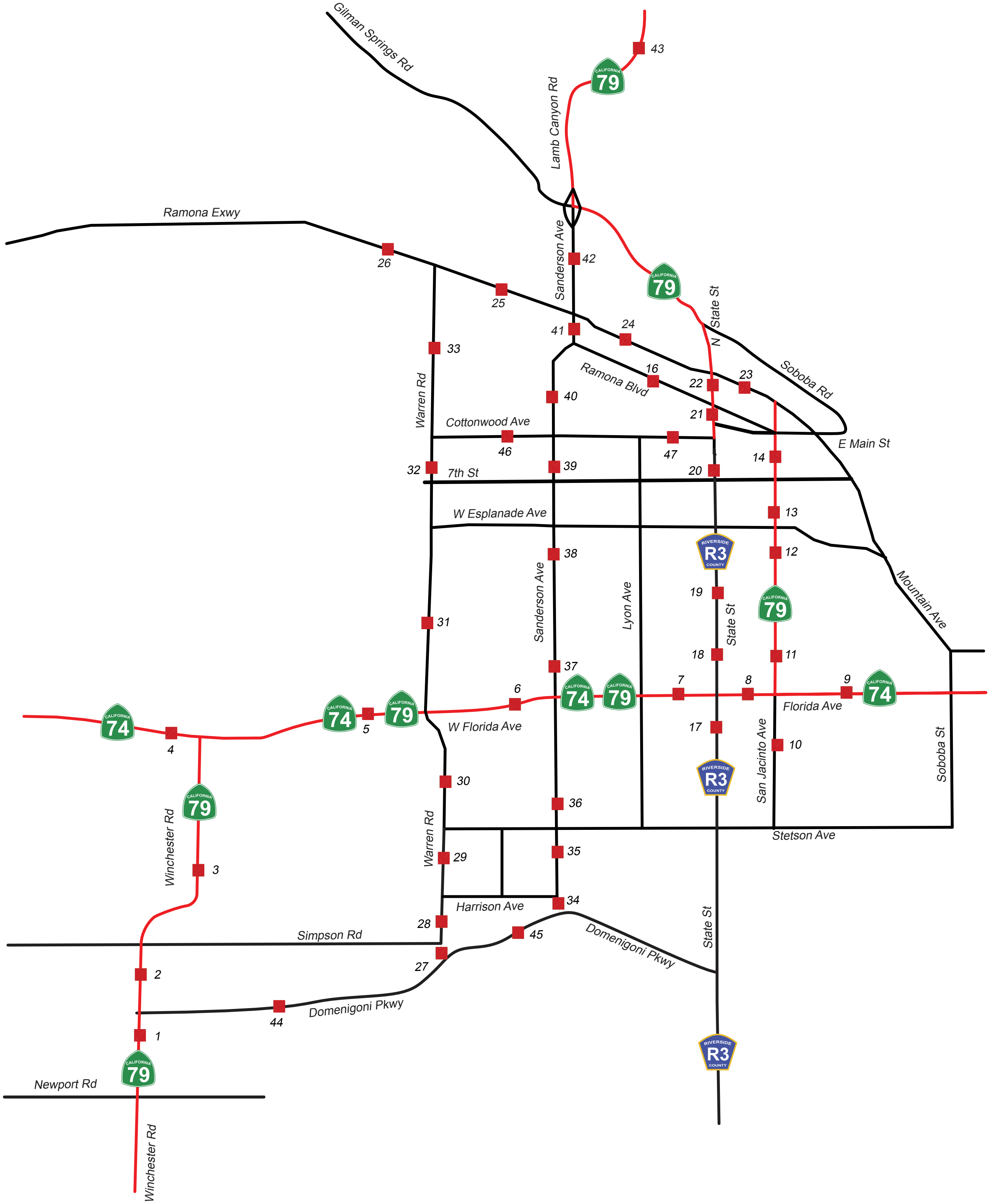
0 9,500 Feet

0 2,000 Meters

1:114,000

Figure 3.1-22
Emergency Service Facilities

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

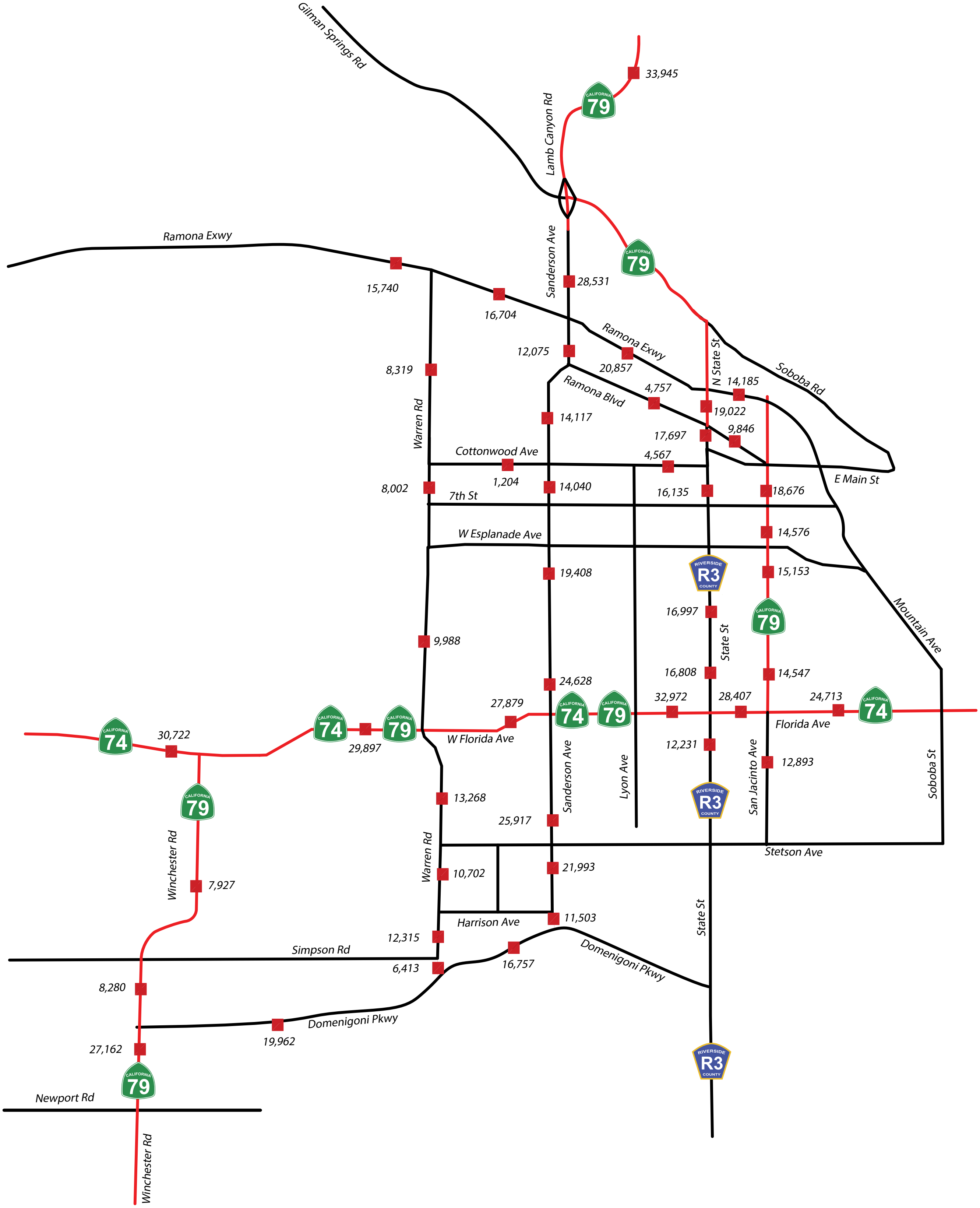
■ ## ROADWAY COUNT LOCATION AND REFERENCE NUMBER

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-23
Roadway Count Locations

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

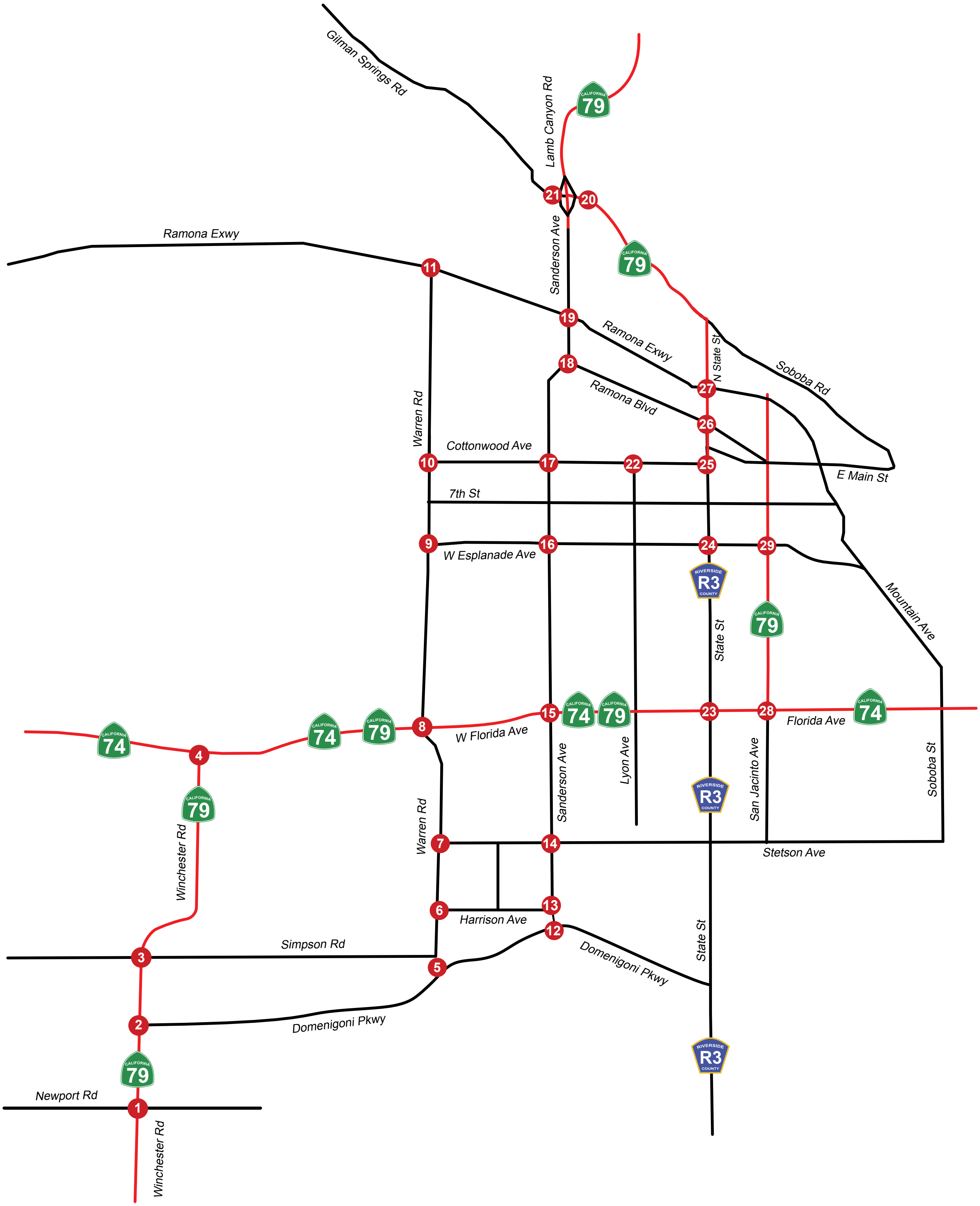
AVERAGE DAILY TRAFFIC
##,###

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-24
Existing Average Daily Traffic Volumes

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



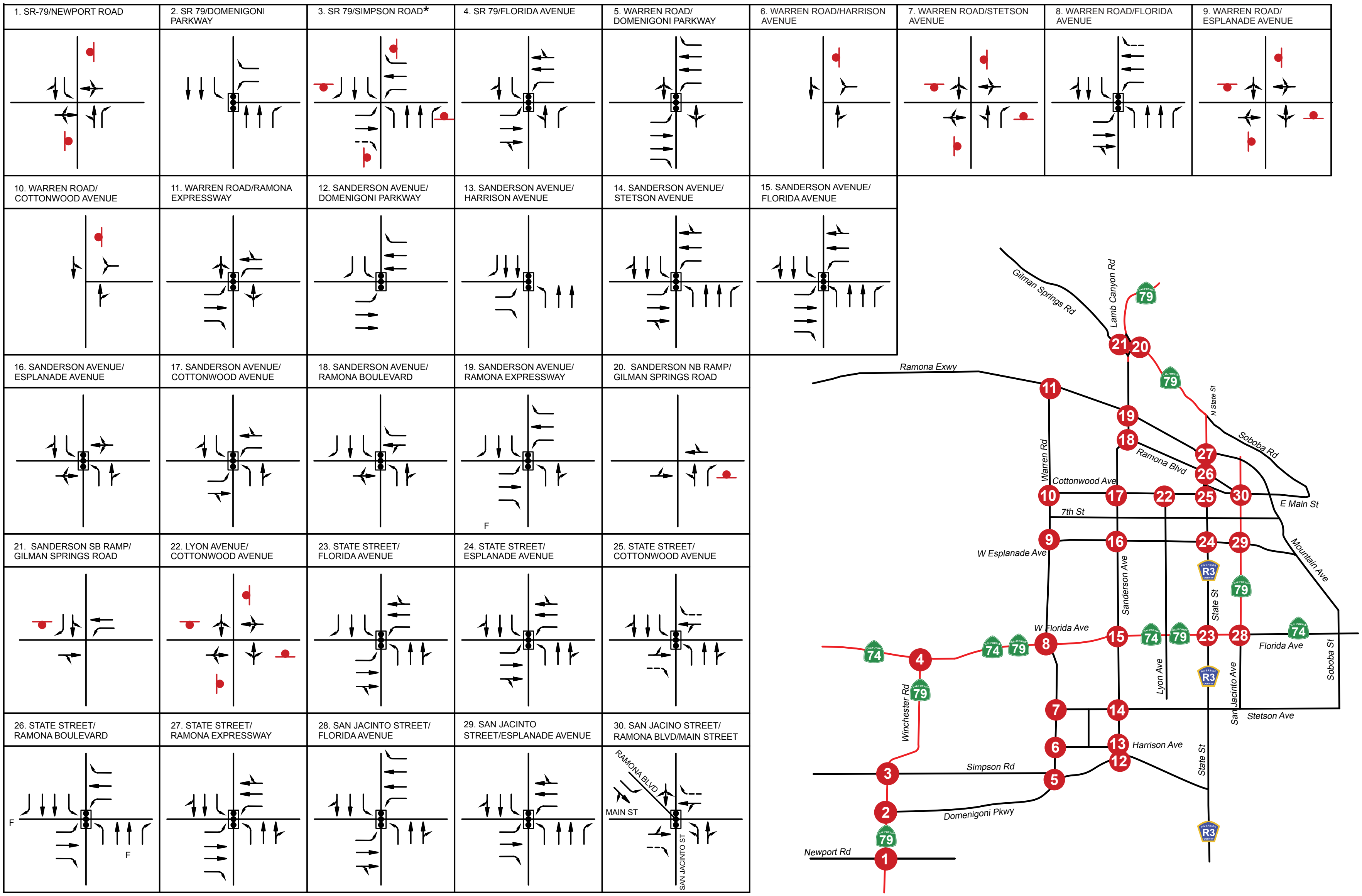
LEGEND:

1 INTERSECTION LOCATION AND REFERENCE NUMBER

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-25
Locations of Study Intersections
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



*This intersection was signalized subsequent to the traffic analysis that was conducted in 2005 and updated in 2006 and 2009.

LEGEND:

= SIGNALIZED

= STOP CONTROLLED

= Sufficient width exists for right-turning vehicles to bypass the through/ right-turn lane

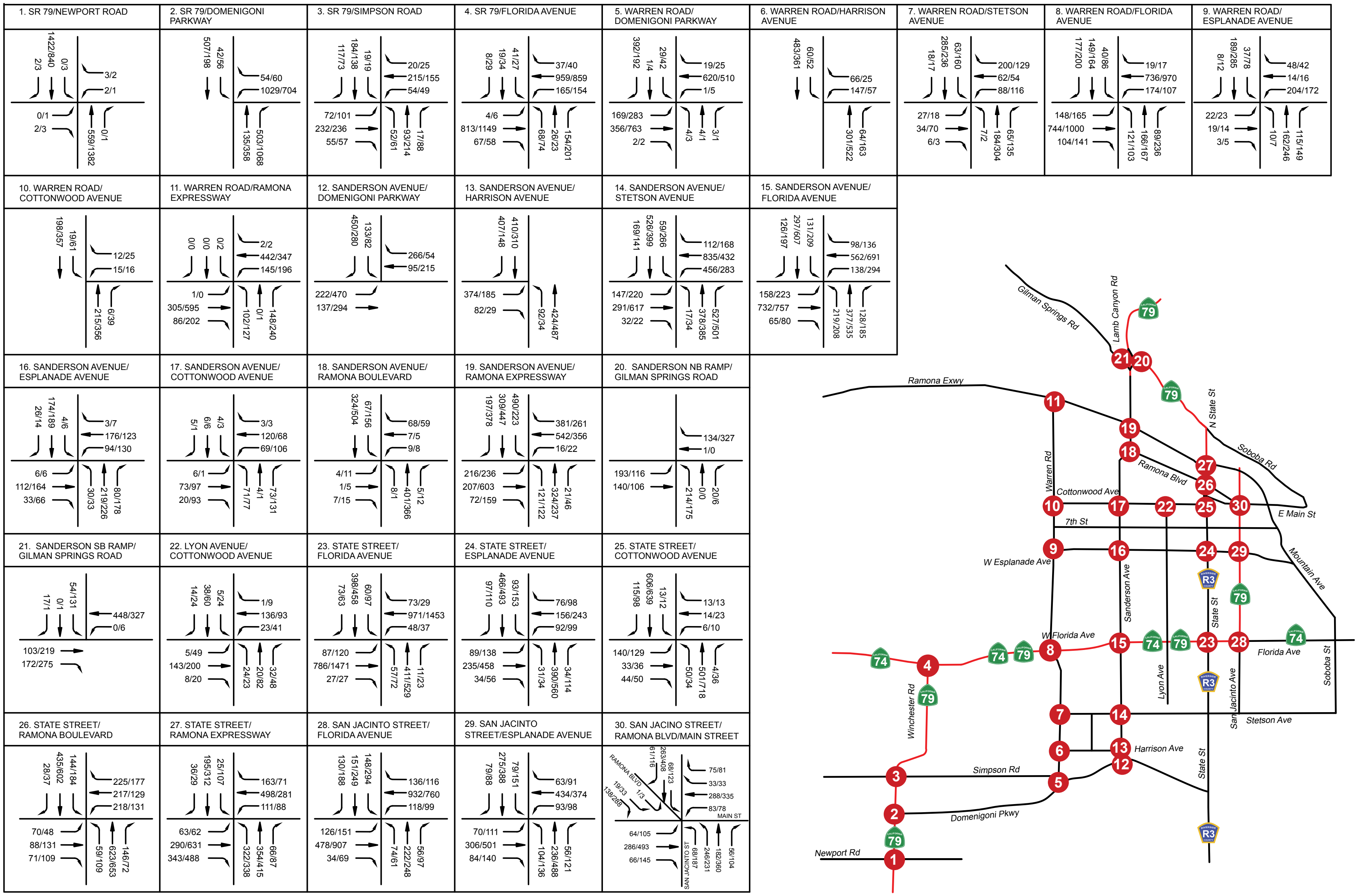
F = Free Right

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-26
Existing Traffic Control and Lane Configurations

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

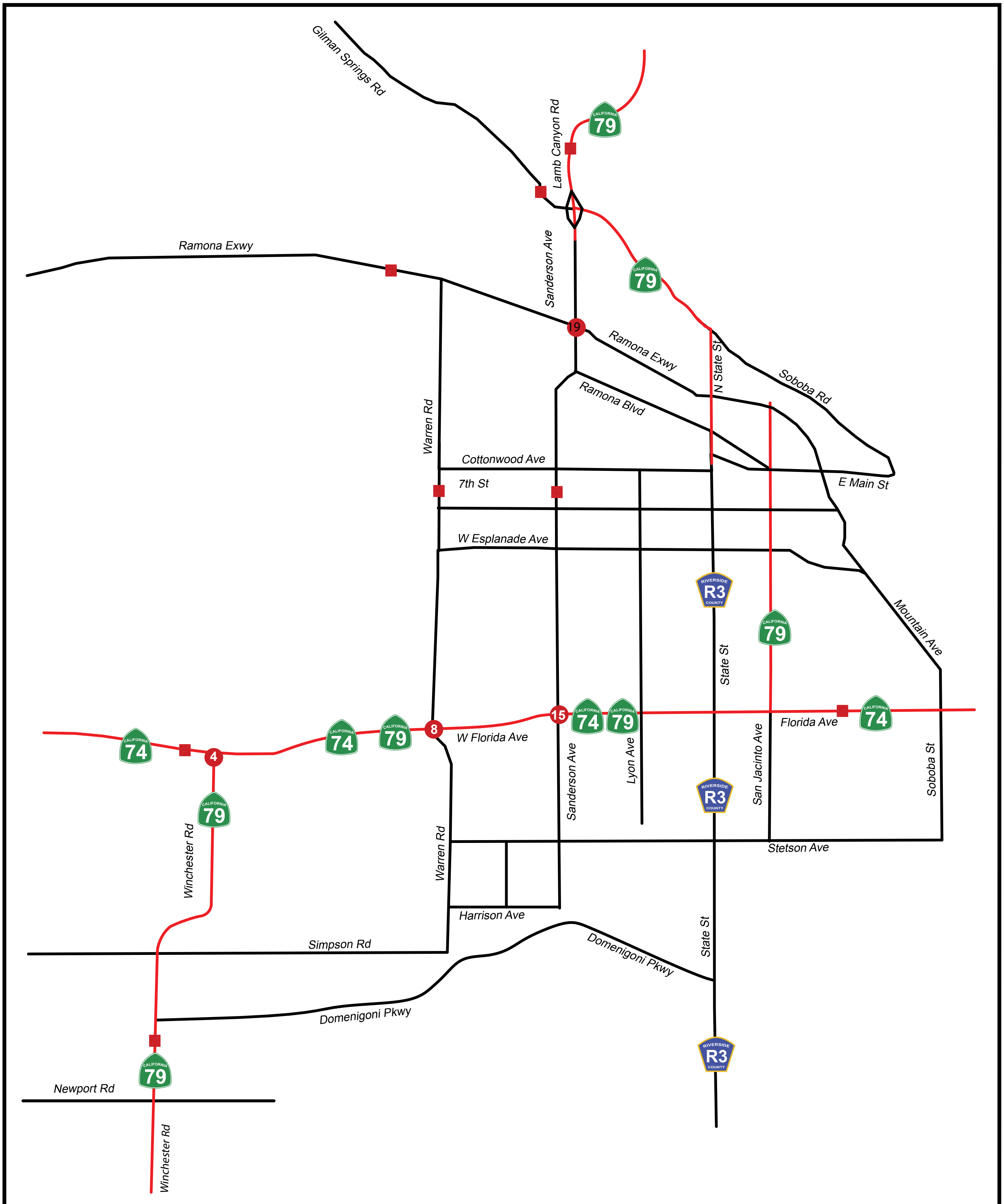
xx/yy = Morning/Evening peak hour turning movement volumes

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-27
Existing AM/PM Peak Hour Traffic Volumes

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

1 INTERSECTIONS

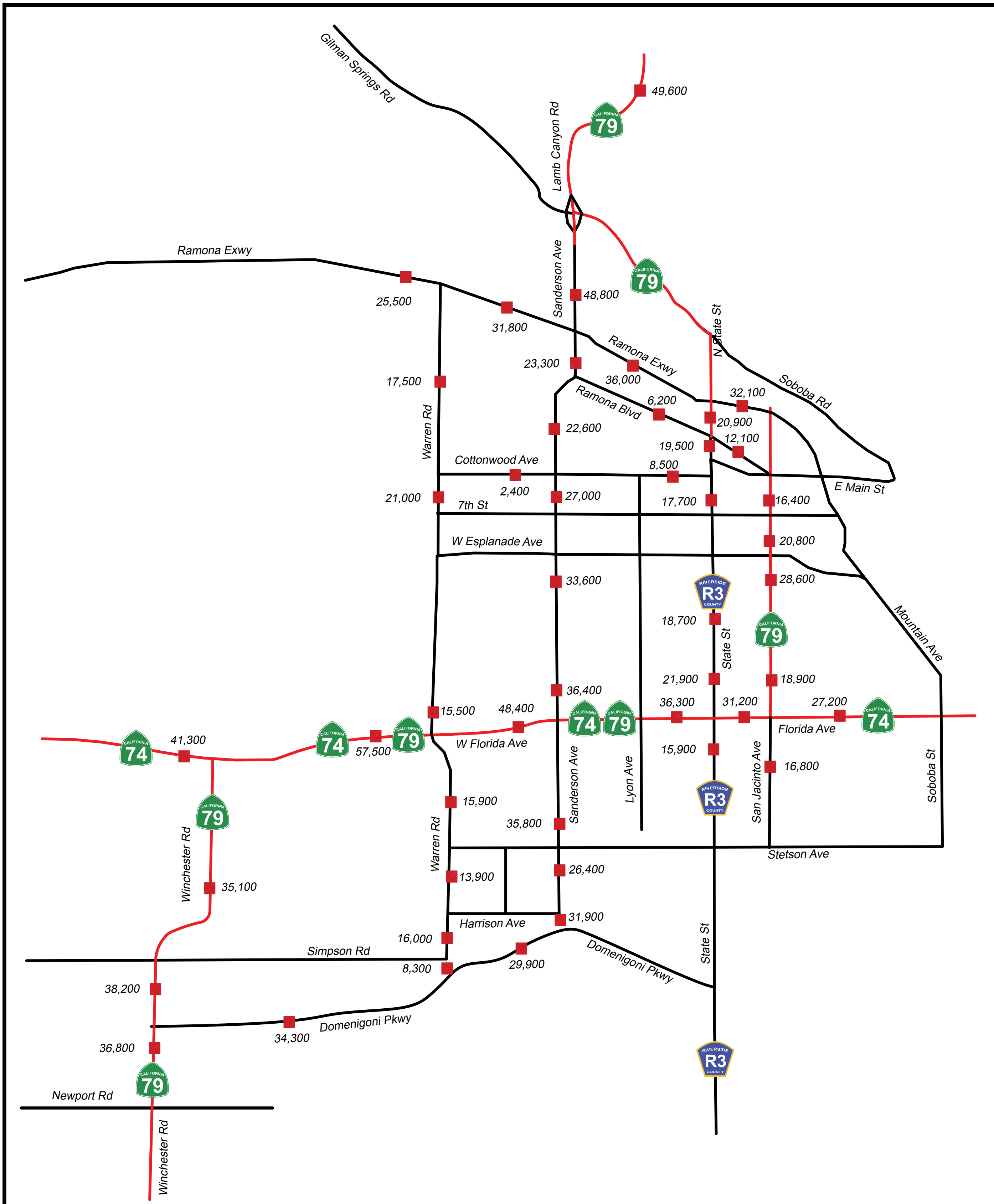
■ ROADWAYS

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-28
Locations of Vehicle Classification Counts

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

AVERAGE DAILY TRAFFIC

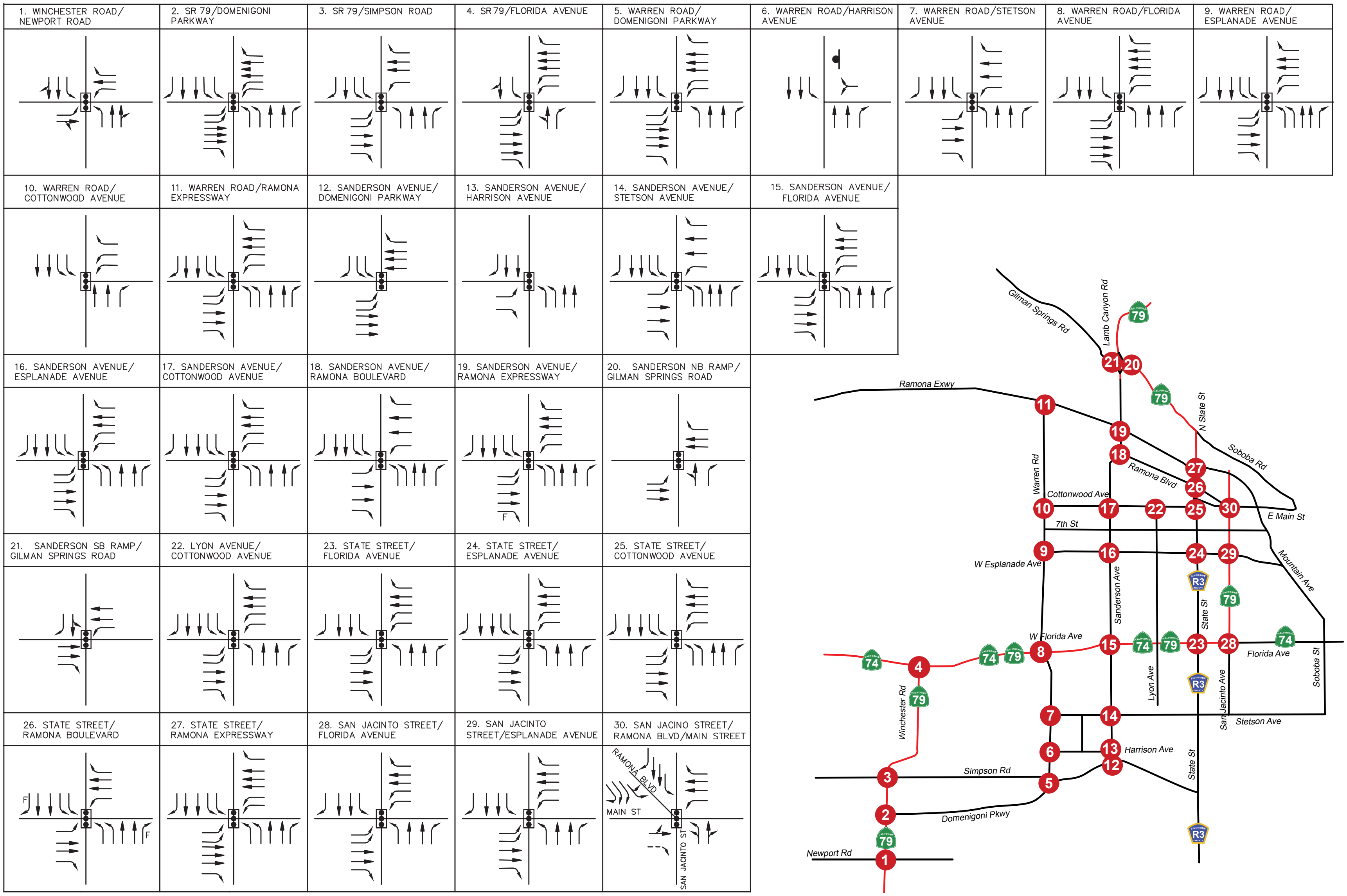
xx,xxx

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-29
2035 No Build Average Daily Traffic Volumes

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

= SIGNALIZED

= STOP CONTROLLED

= Sufficient width exists for right-turning vehicles to bypass the through/ right-turn lane

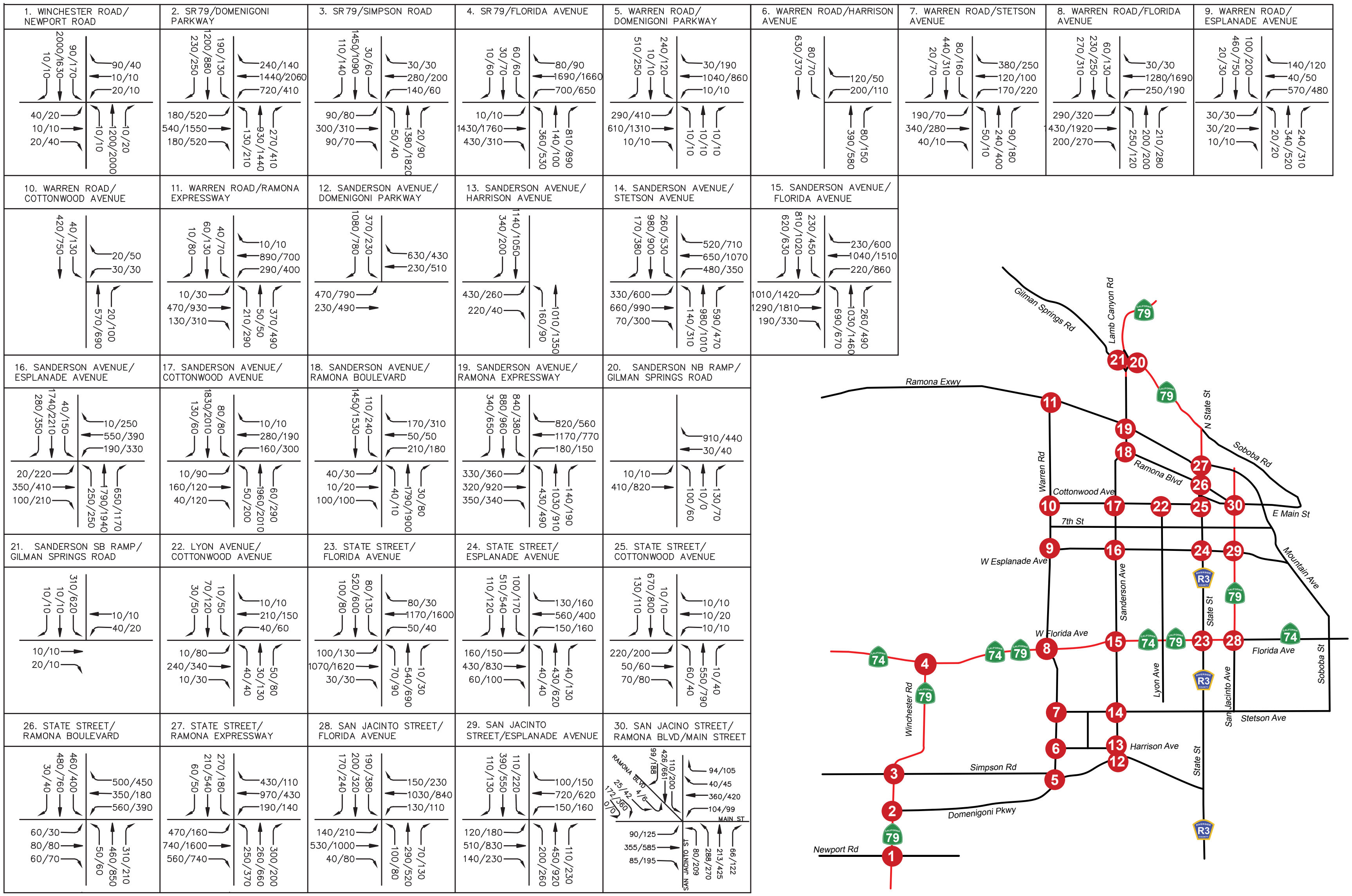
F = Free Right

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-30
2035 No Build Future Lane Configurations and Traffic Control

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

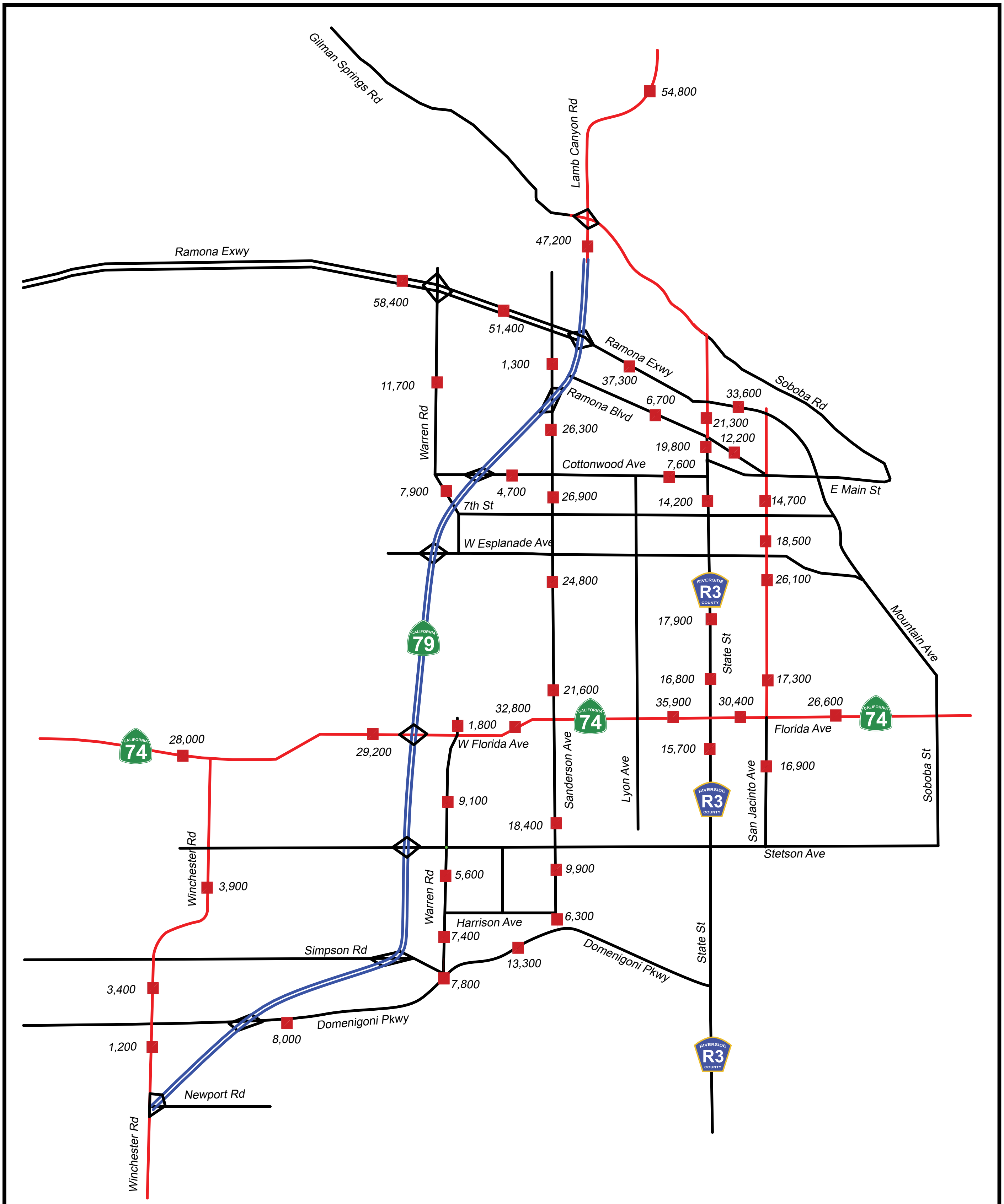
xx/yy = Morning/Evening peak hour turning movement volumes

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-31
2035 No Build AM/PM Peak Hour Turning Movement Volumes

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

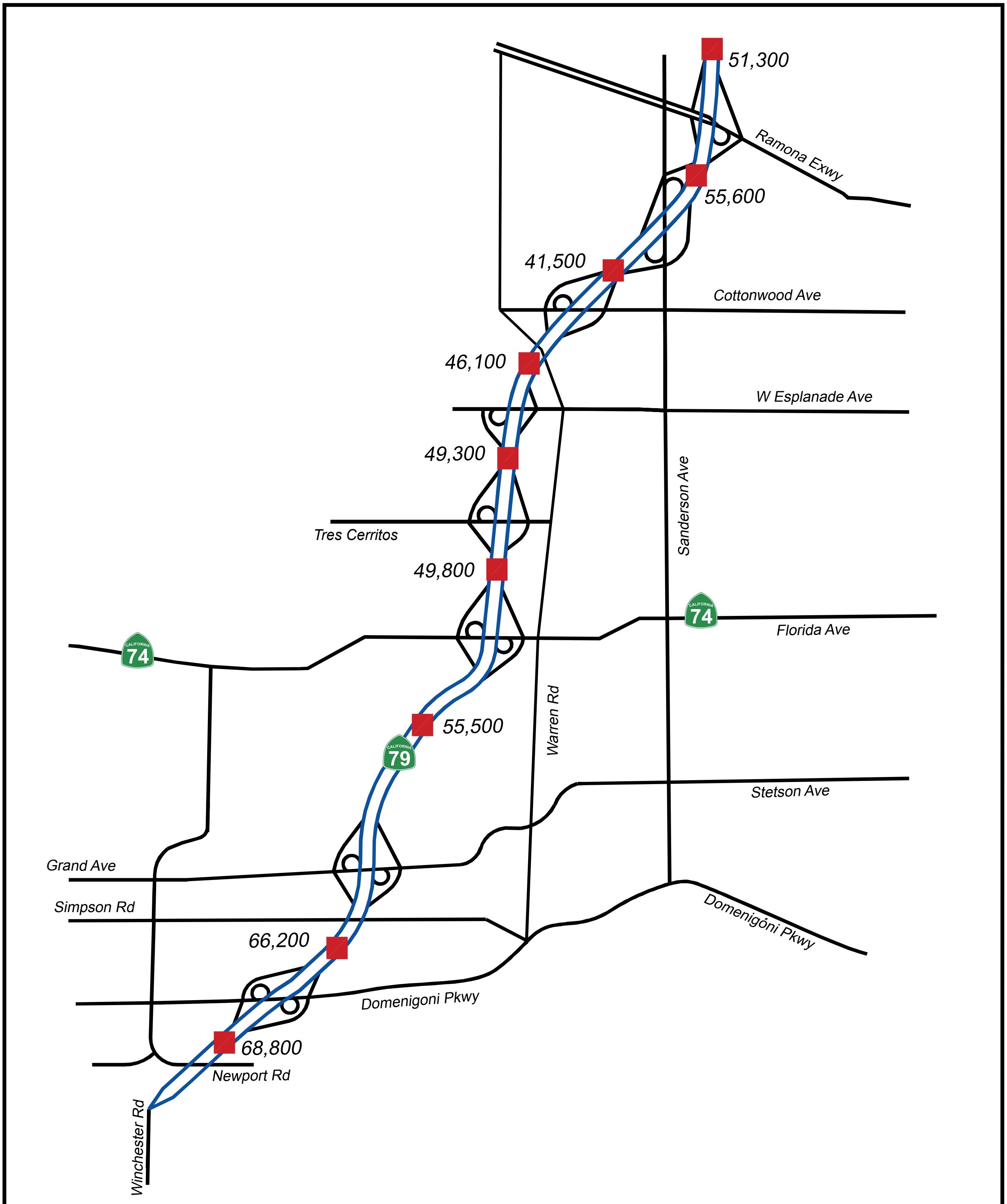
AVERAGE DAILY TRAFFIC
xx,xxx

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-32
2035 Build Average Daily Traffic Volumes

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



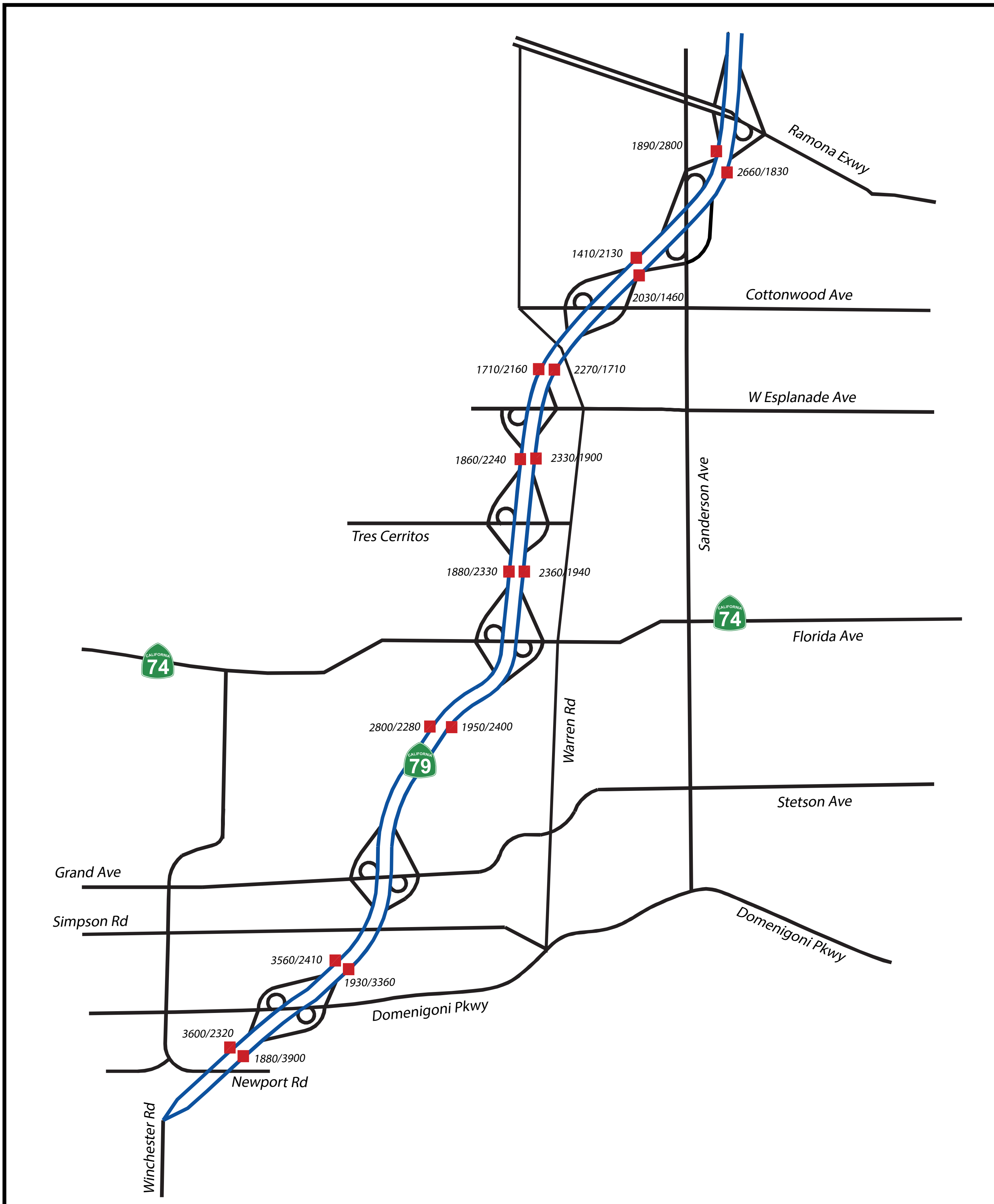
LEGEND:

AVERAGE DAILY TRAFFIC
xx,xxx

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-33
SR 79 Realignment
2035 Average Daily Traffic Volumes
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



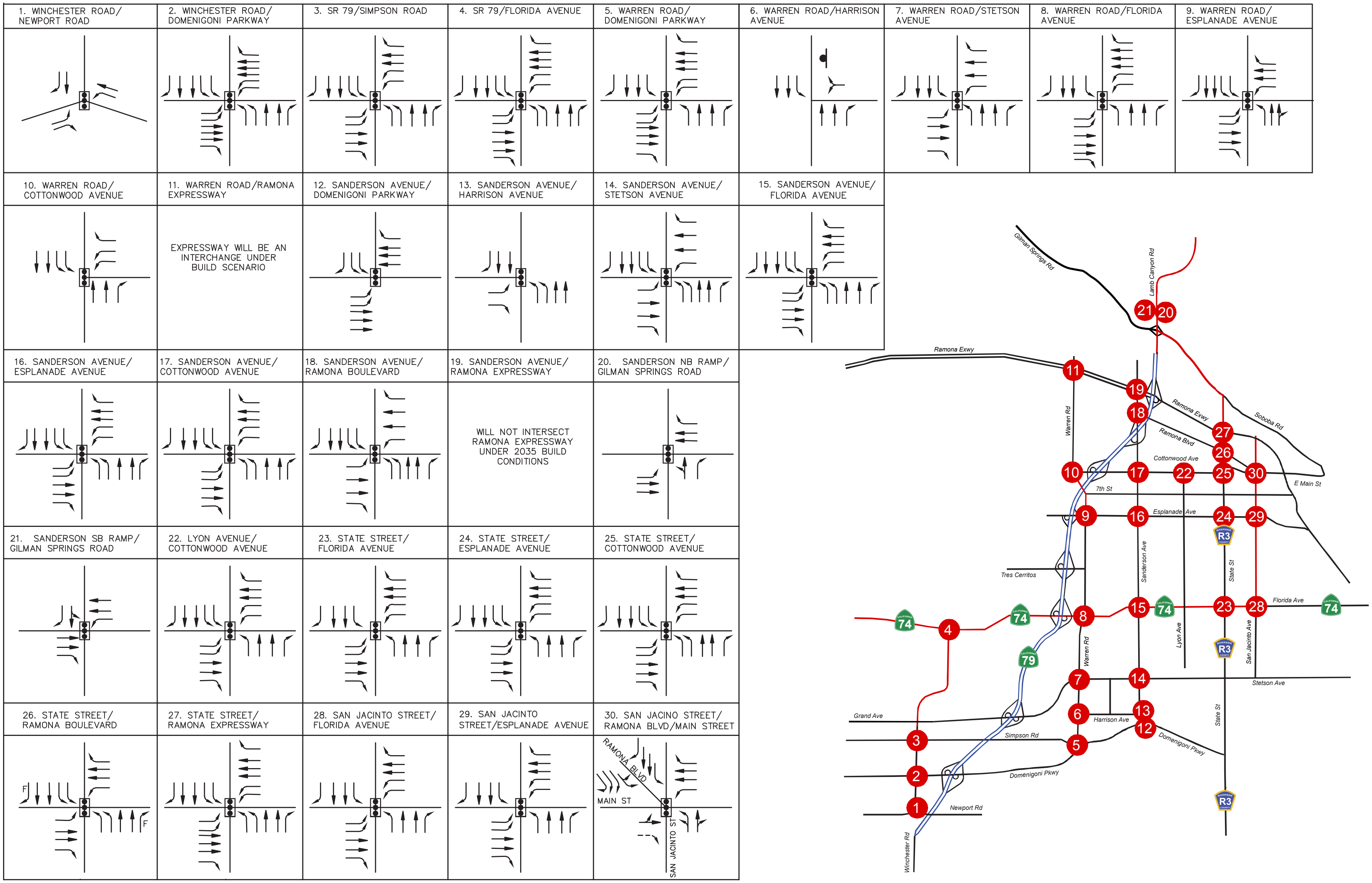
LEGEND:

xx/yy = MORNING/EVENING PEAK HOUR MAINLINE VOLUMES

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-34
SR 79 Realignment Mainline
2035 Peak Hour Volumes

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

= SIGNALIZED

= STOP CONTROLLED

= Sufficient width exists for right-turning vehicles to bypass the through/ right-turn lane

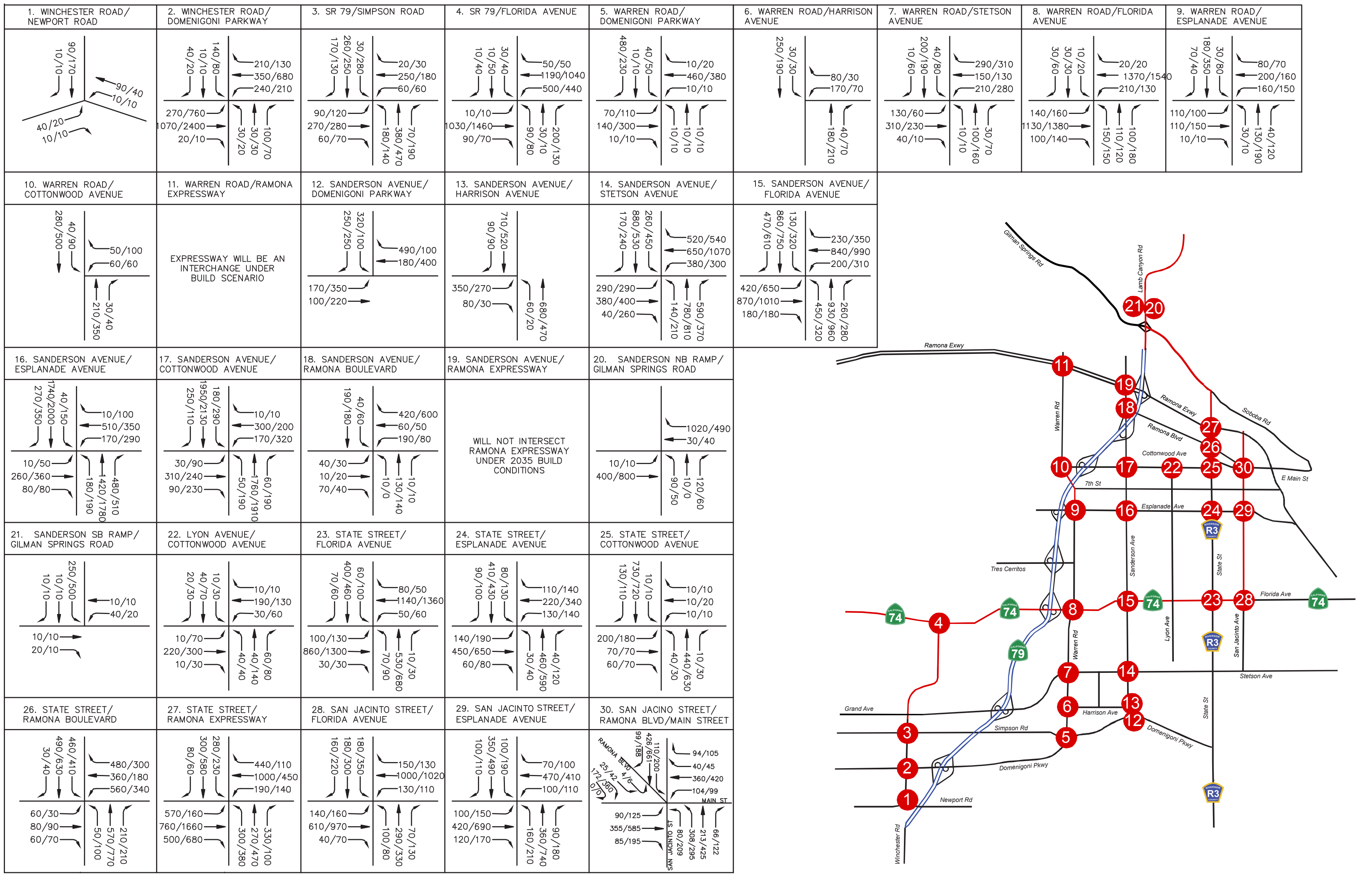
F = Free Right

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-35
2035 Build Future Lane Configurations and Traffic Control

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

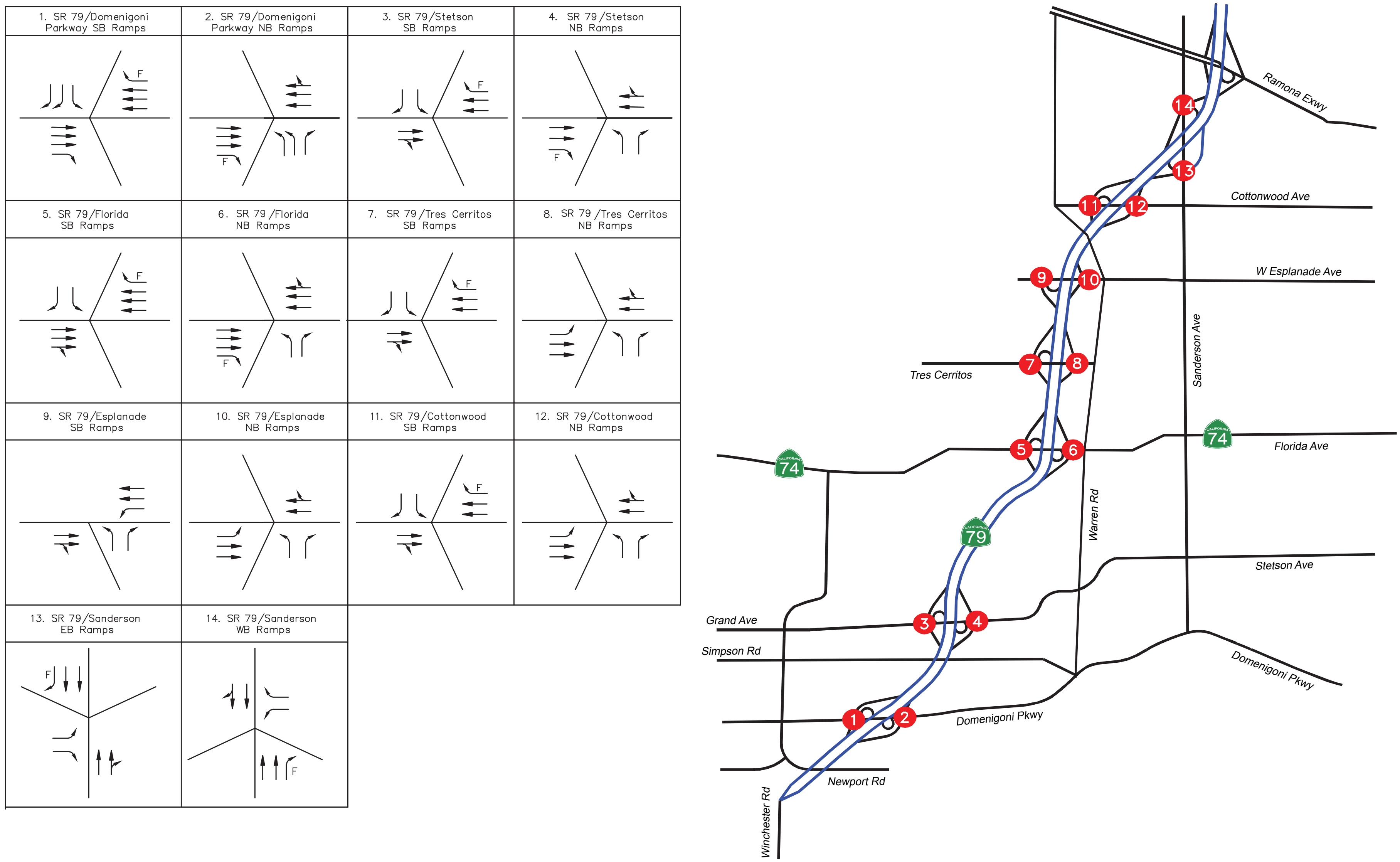
xx/yy = MORNING/EVENING PEAK HOUR TURNING MOVEMENT VOLUMES

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-36
2035 Build AM/PM Peak Hour Turning Movement Volumes

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

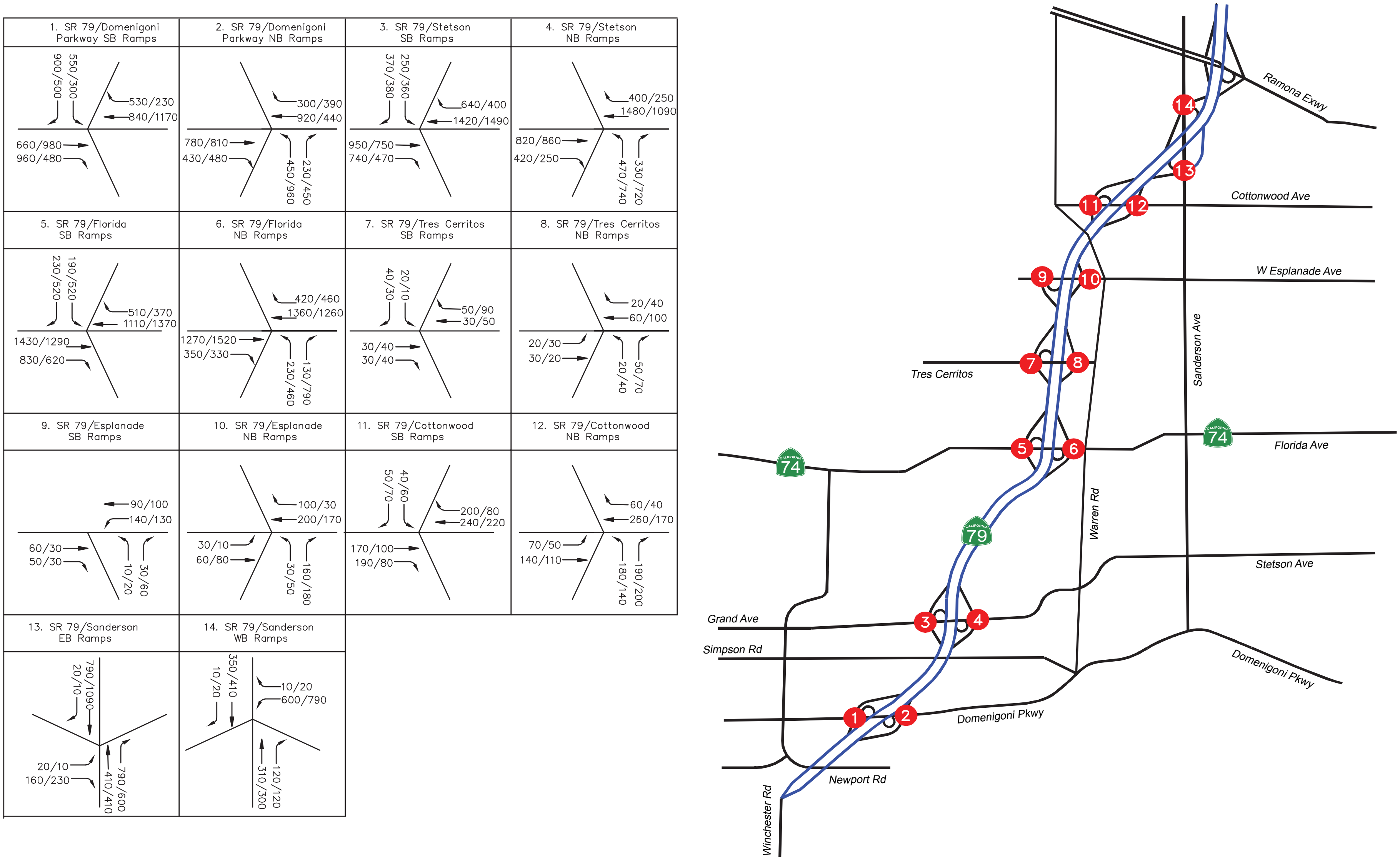
F = Free Right

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-37
SR 79 Lane Assumptions for Freeway/Arterial Interchange Analysis

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



LEGEND:

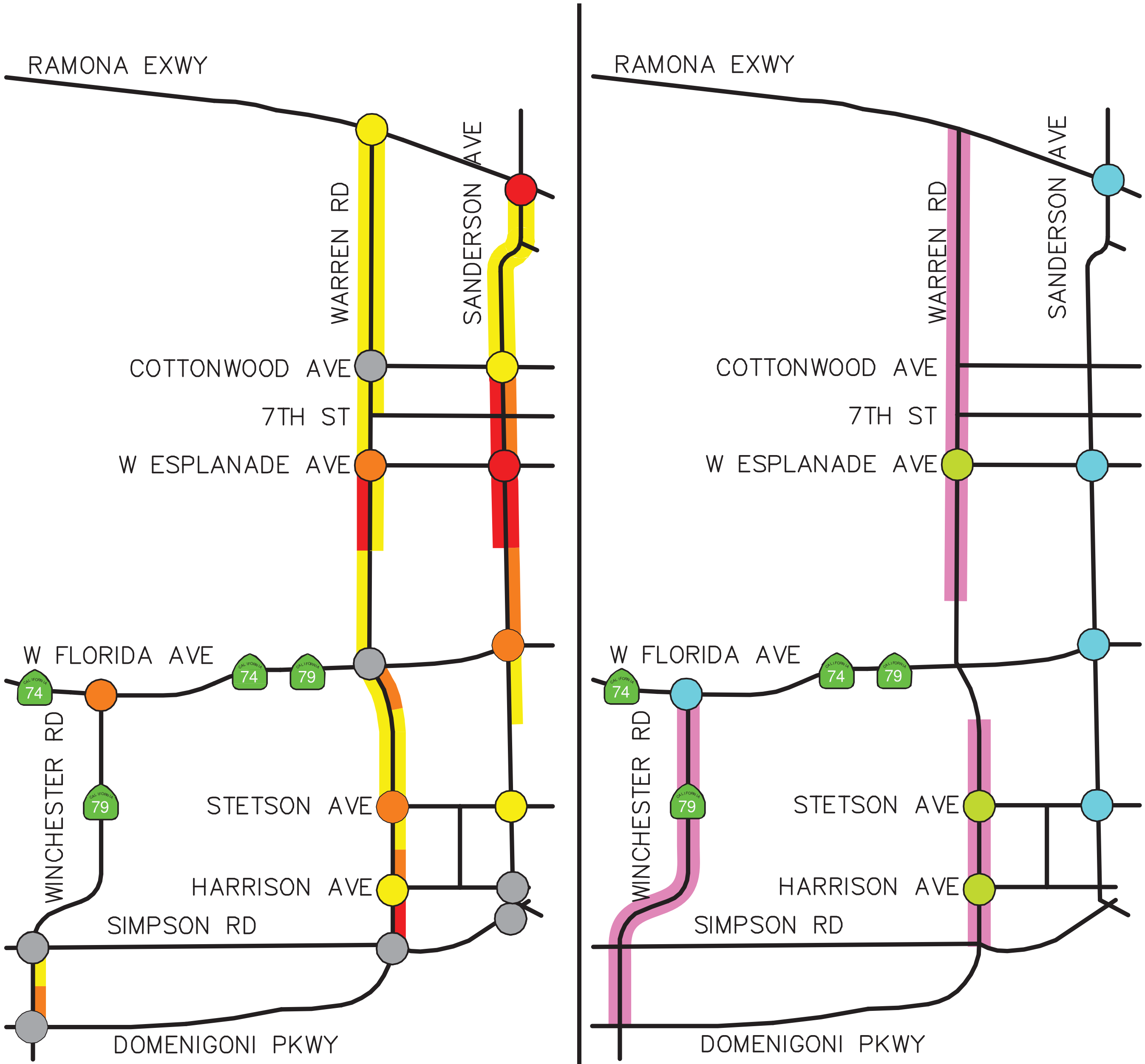
xx/yy = MORNING/EVENING PEAK HOUR TURNING MOVEMENT VOLUMES

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-38
SR 79 Realignment AM/PM Peak Hour Turning Movement Volumes

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



YEAR 2013 LOS WITHOUT IMPROVEMENTS

RECOMMENDED 2013 IMPROVEMENTS

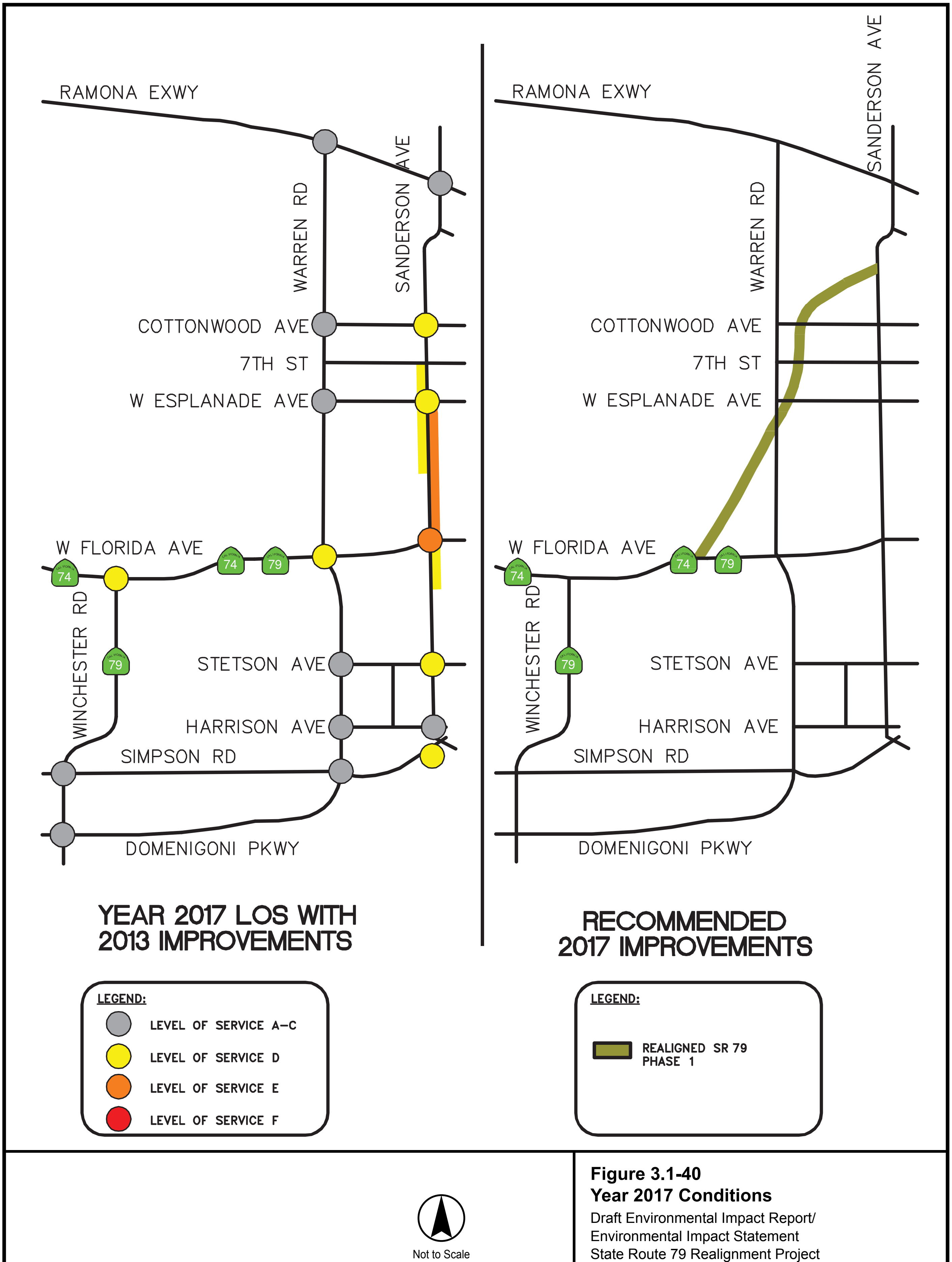
LEGEND:
- LEVEL OF SERVICE A–C
- LEVEL OF SERVICE D
- LEVEL OF SERVICE E
- LEVEL OF SERVICE F

LEGEND:
- SIGNALIZE INTERSECTION
- ENHANCED INTERSECTION CAPACITY
- ADD 2 LANES

Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

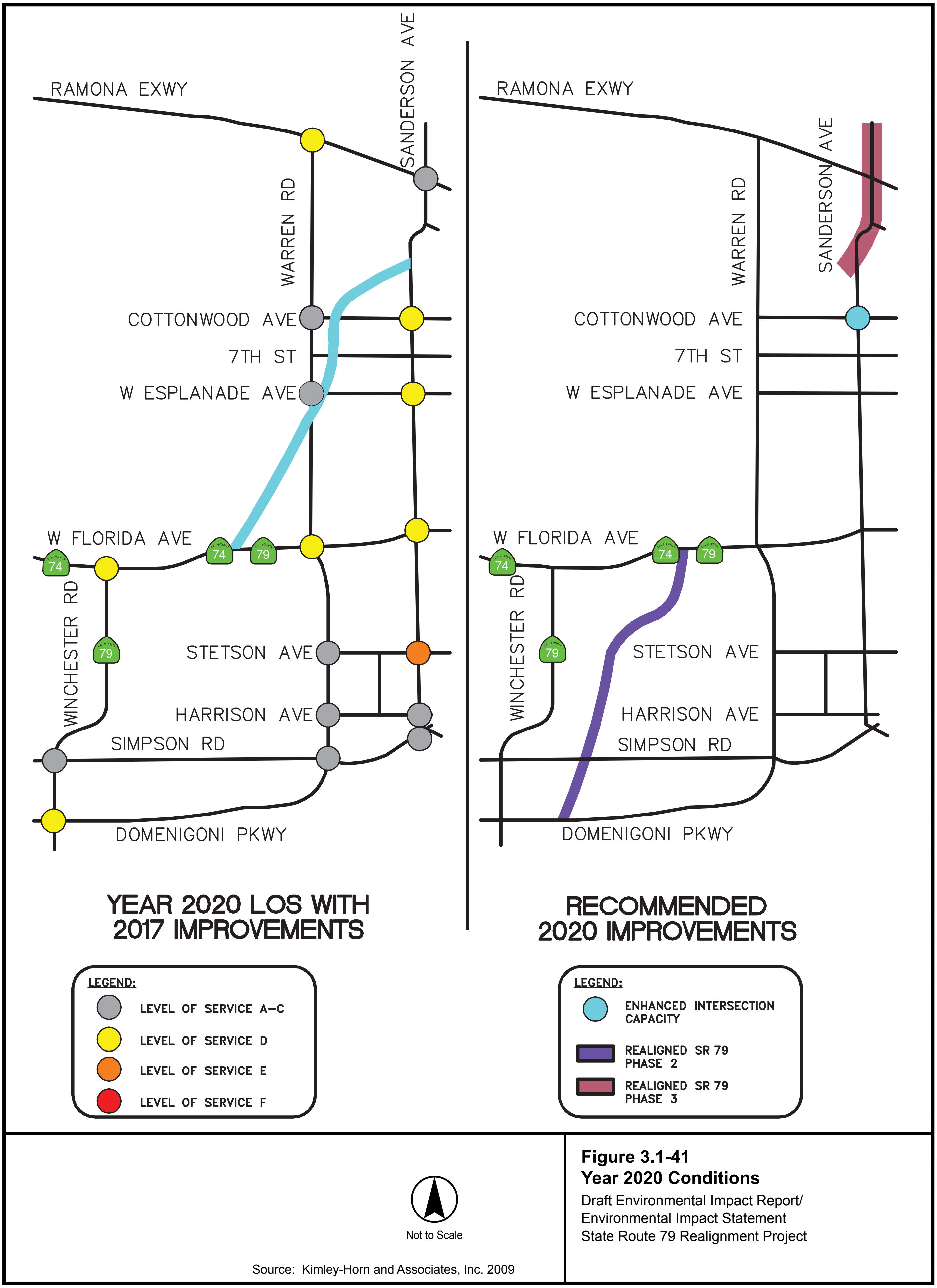
Figure 3.1-39
Year 2013 Conditions
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-40
Year 2017 Conditions

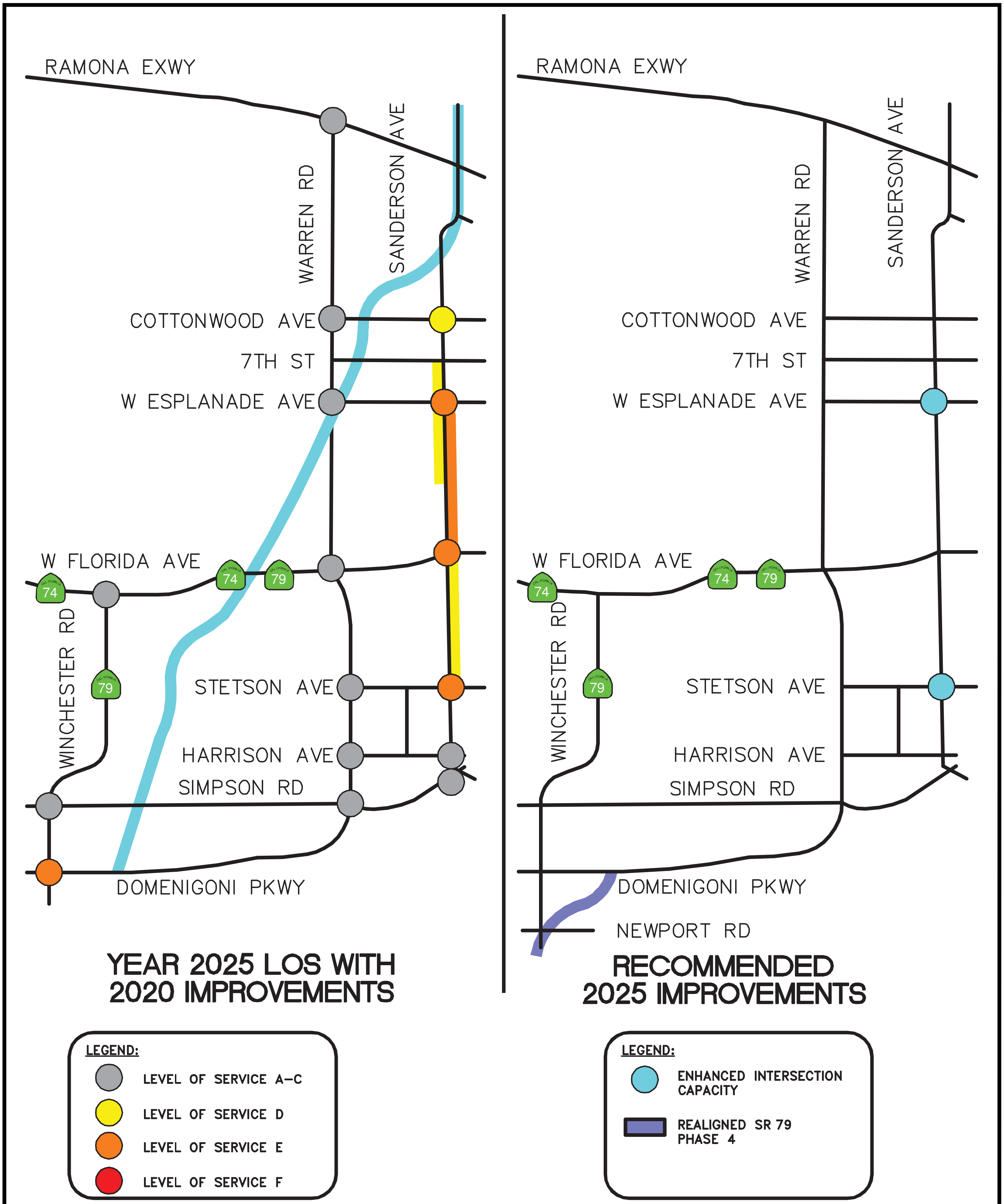
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-41
Year 2020 Conditions

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

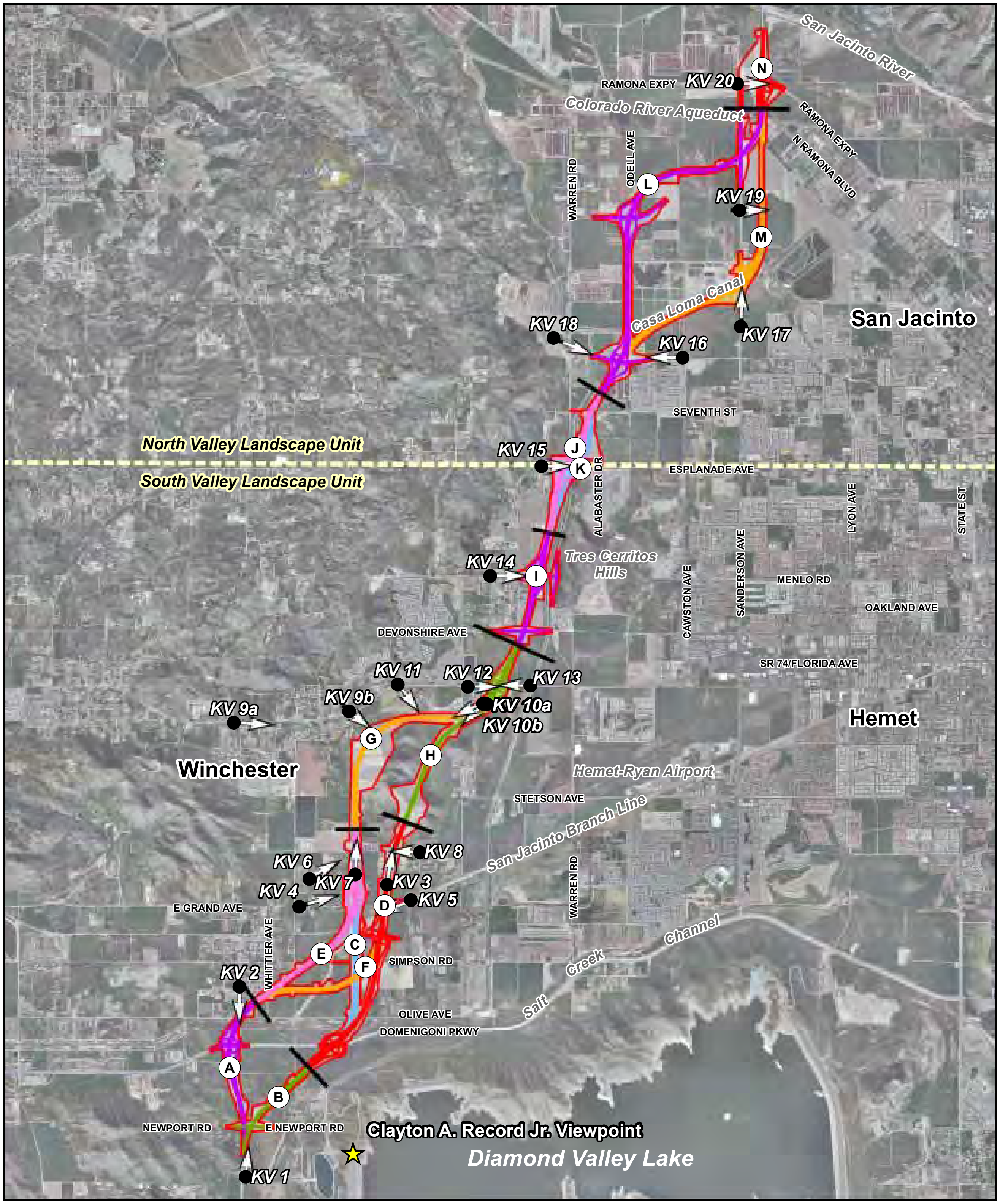


Not to Scale

Source: Kimley-Horn and Associates, Inc. 2009

Figure 3.1-42
Year 2025 Conditions

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Project Impact Area
- Photo Location
- Photo Direction
- Landscape Unit
- Clayton A. Record Jr. Viewpoint[MW]

0 7,000 Feet

0 1,500 Meters

1:84,000

Figure 3.1-43
Locations of Key Viewpoints

Draft Environmental Impact Report/
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Source: MW - MWD

A. Key View 1 – Existing view looking north from SR 79 at Construction Road near Diamond Valley Lake

B. Key View 1 – Simulated view of proposed Segment A looking north from SR 79 at Construction Road near Diamond Valley Lake shows proposed East Newport Road overcrossing. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-44
Key View 1 – Existing View and Simulation of Segment A
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A. Key View 1 – Existing view looking north from SR 79 at Construction Road near Diamond Valley Lake

B. Key View 1 – Simulated view of proposed Segment B looking north from SR 79 at Construction Road near Diamond Valley Lake shows proposed East Newport Road overcrossing. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-45
Key View 1 – Existing View and Simulation of Segment B
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A. Key View 2 – Existing view looking south from the community of Winchester on Winchester Road at Finch Street

B. Key View 2 – Simulated view of proposed Segment A looking south from the community of Winchester shows proposed overcrossing of Winchester Road at Olive Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-46
Key View 2 – Existing View and Simulation of Segment A

A. Key View 3 – Existing view looking northeast toward West Hemet Hills and Stowe Road from field just north of railroad

B. Key View 3 – Simulated view of proposed Segment H looking northeast toward West Hemet Hills and Stowe Road from field just north of railroad. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Figure 3.1-47
Key View 3 – Existing View and Simulation of Segment H
Draft Environmental Impact Report/
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Source: Final Visual Impact Assessment, June 2009

A. Key View 4 – Existing view looking northeast toward West Hemet Hills from Grand Avenue near Patterson Avenue

B. Key View 4 – Simulated view of proposed Segment H looking northeast toward West Hemet Hills from Grand Avenue near Patterson Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-48
Key View 4 – Existing View and Simulation of Segment H
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A. Key View 4 – Existing view looking northeast toward West Hemet Hills from Grand Avenue near Patterson Avenue

B. Key View 4 – Simulated view of proposed Segment G looking northeast toward West Hemet Hills from Grand Avenue near Patterson Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-49
Key View 4 – Existing View and Simulation of Segment G
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A. Key View 5 – Existing view looking southwest along San Jacinto Branch Line from a point west of California Avenue

B. Key View 5 – Simulated view of proposed overcrossing of San Jacinto Branch Line. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Figure 3.1-50
Key View 5 – Existing View and Simulation of Segment D
Draft Environmental Impact Report/
Environmental Impact Statement
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Source: Final Visual Impact Assessment, June 2009

A. Key View 6 – Existing view looking northeast toward West Hemet Hills from Milan Road near Patterson Avenue

B. Key View 6 – Simulated view of proposed Segment H looking northeast toward West Hemet Hills from Milan Road near Patterson Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-51
Key View 6 – Existing View and Simulation of Segment H
Draft Environmental Impact Report/
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A. Key View 6 – Existing view looking northeast toward West Hemet Hills from Milan Road near Patterson Avenue

B. Key View 6 – Simulated view of proposed Segment G looking northeast toward West Hemet Hills from Milan Road near Patterson Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-52
Key View 6 – Existing View and Simulation of Segment G
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A. Key View 7 – Existing view looking north toward West Hemet Hills from a point south of Stowe Road

B. Key View 7 – Simulated view along proposed Segment G looking north toward the Stowe Road overcrossing and the West Hemet Hills. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Figure 3.1-53
Key View 7 – Existing View and Simulation of Segment G
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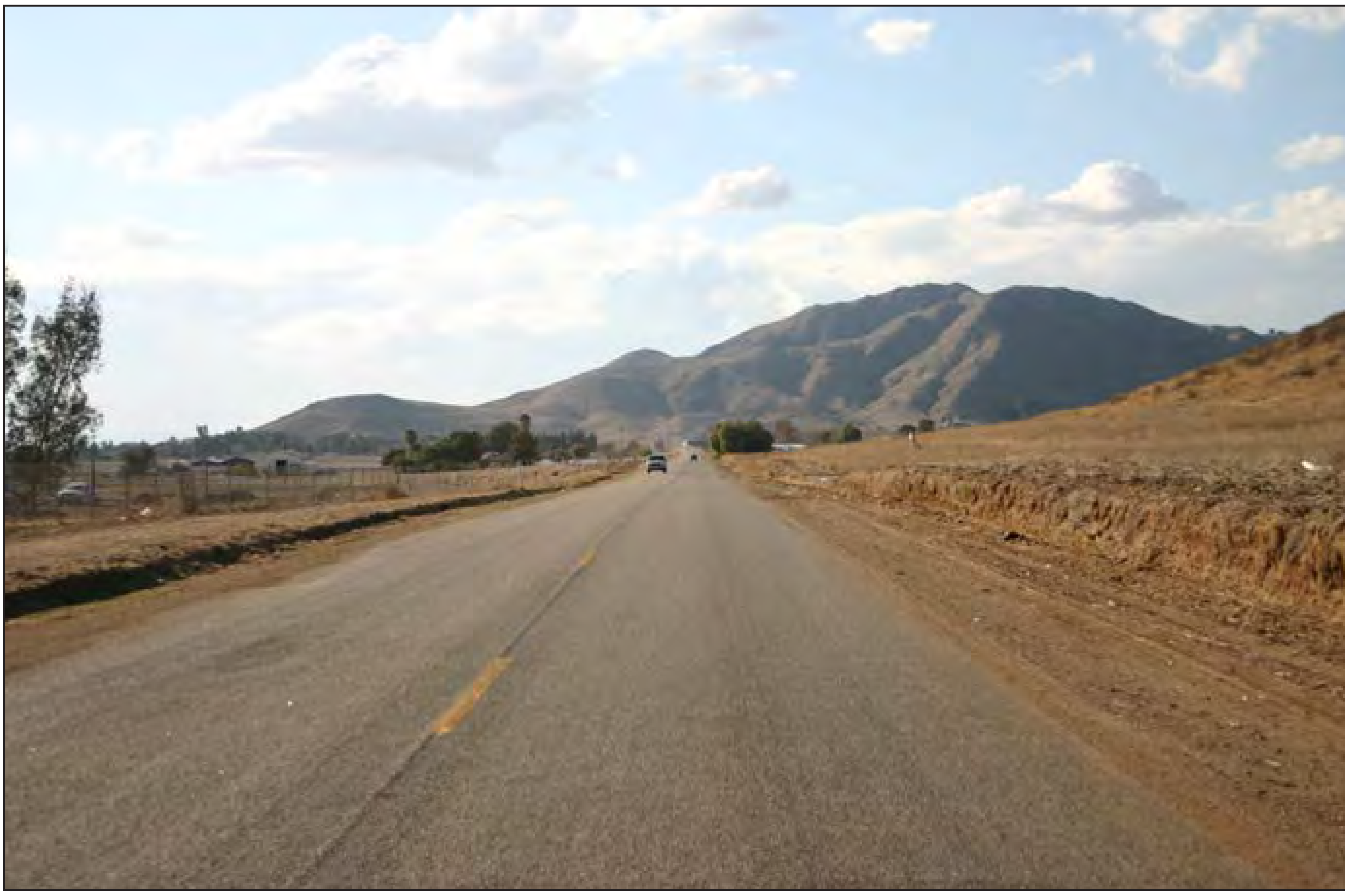
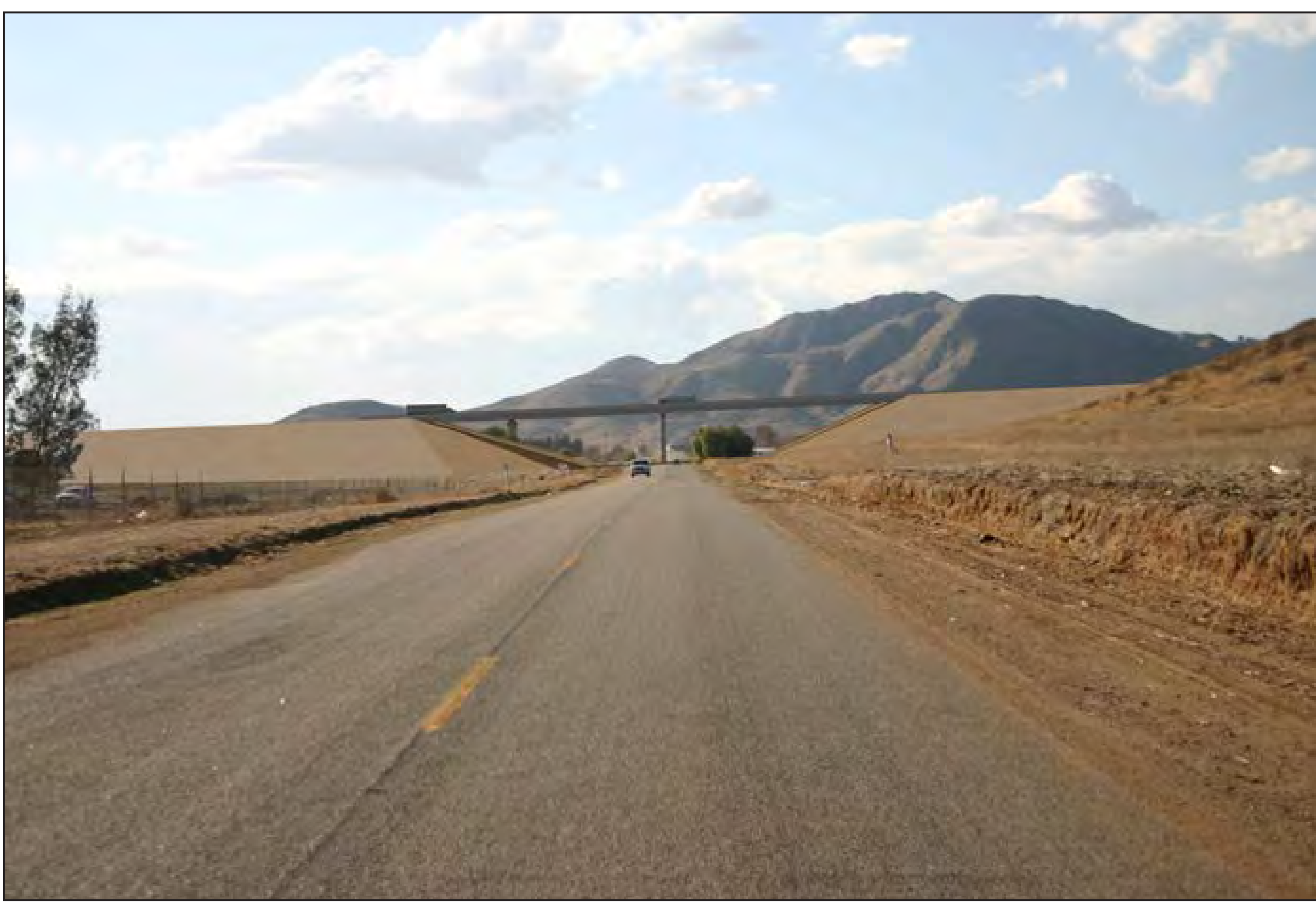
Source: Final Visual Impact Assessment, June 2009



A. Key View 8 – Existing view looking west toward Double Butte from Stowe Road near California Avenue



B. Key View 8 – Simulated view of proposed Segment H looking west toward Double Butte from Stowe Road near California Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-54
Key View 8 – Existing View and Simulation of Segment H
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A. Key View 8 – Existing view looking west toward Double Butte from Stowe Road near California Avenue

B. Key View 8 – Simulated view of proposed Segment G looking west toward Double Butte from Stowe Road near California Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-55
Key View 8 – Existing View and Simulation of Segment G
Draft Environmental Impact Report/
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A. Key View 9a – Existing view looking east toward the West Hemet Hills from SR 74 at Parasol Road

B. Key View 9a – Simulated view of proposed Segment G looking east toward the West Hemet Hills from SR 74 at Parasol Road. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-56
Key View 9a – Existing View and Simulation of Segment G
Draft Environmental Impact Report/
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A. Key View 9b – Existing view looking southeast toward West Hemet Hills from Florida Avenue and Calvert Avenue

B. Key View 9b – Simulated view of proposed Segment G looking southeast toward West Hemet Hills from Florida Avenue and Calvert Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-57
Key View 9b – Existing View and Simulation of Segment G

A. Key View 10a – Existing view looking southwest toward the West Hemet Hills from a point south of Florida Avenue and east of California Avenue

B. Key View 10a – Simulated view of proposed Segment G looking southwest toward the West Hemet Hills from a point south of Florida Avenue and east of California Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-58
Key View 10a – Existing View and Simulation of Segment G
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A. Key View 10b – Existing view looking southwest toward the West Hemet Hills from a point south of Florida Avenue and east of California Avenue

B. Key View 10b – Simulated view of proposed Segment H looking southwest toward the West Hemet Hills from a point south of Florida Avenue and east of California Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-59
Key View 10b – Existing View and Simulation of Segment H
Draft Environmental Impact Report/
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A. Key View 11 – Existing view looking south toward the West Hemet Hills from Florida Avenue at Corso Bellagio

B. Key View 11– Simulated view of proposed Segment G looking south toward the West Hemet Hills from Florida Avenue at Corso Bellagio. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-60
Key View 11 – Existing View and Simulation of Segment G
Draft Environmental Impact Report/
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State Route 79 Realignment Project

A. Key View 11 – Existing view looking south toward the West Hemet Hills from Florida Avenue at Corso Bellagio

B. Key View 11 – Simulated view of proposed Segment H looking south toward the West Hemet Hills from Florida Avenue at Corso Bellagio. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-61
Key View 11 – Existing View and Simulation of Segment H
Draft Environmental Impact Report/
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A. Key View 12 – Existing view looking east toward Hemet from Florida Avenue at California Avenue

B. Key View 12 – Simulated view of proposed Segment G or H looking east toward Hemet from Florida Avenue at California Avenue (common to all Build alternatives). Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-62
Key View 12 – Existing View and Simulation of Segment G or H
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

A. Key View 13 – Existing view looking west toward Green Acres from Florida Avenue at San Diego Canal

B. Key View 13 – Simulated view of proposed Segment H looking west toward Green Acres from Florida Avenue at San Diego Canal. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-63
Key View 13 – Existing View and Simulation of Segment H
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

A. Key View 13 – Existing view looking west toward Green Acres from Florida Avenue at San Diego Canal

B. Key View 13 – Simulated view of proposed Segment G looking west toward Green Acres from Florida Avenue at San Diego Canal. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-64
Key View 13 – Existing View and Simulation of Segment G
Draft Environmental Impact Report/
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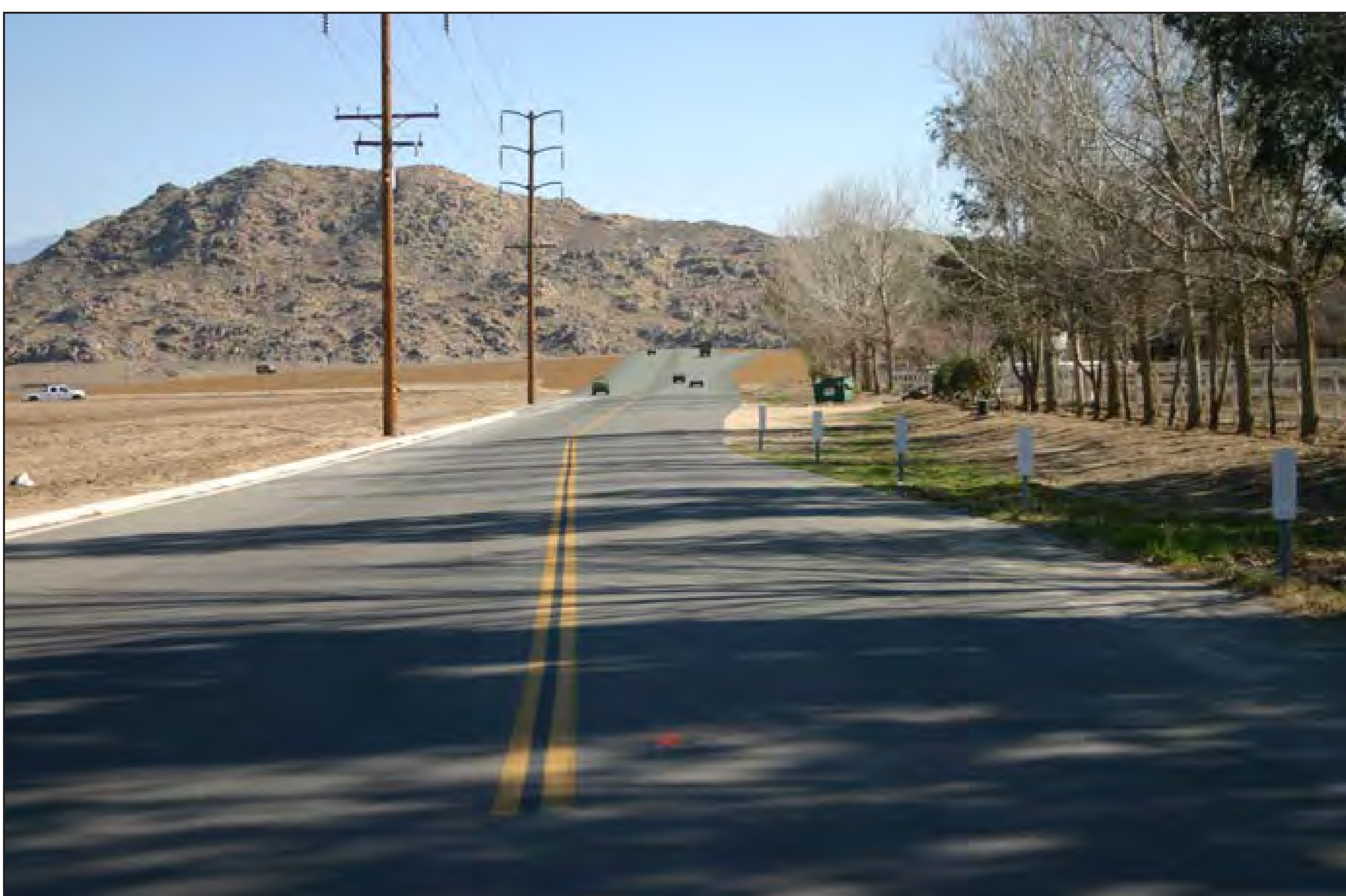
A. Key View 14 – Existing view looking east toward Tres Cerritos Hills from Tres Cerritos Avenue at Los Rancherias Road



B. Key View 14 – Simulated view of proposed Segment I looking east toward Tres Cerritos Hills from Tres Cerritos Avenue at Los Rancherias Road. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-65
Key View 14 – Existing View and Simulation of Segment I
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A. Key View 15 – Existing view looking east from Esplanade Avenue near Trailwood Road

B. Key View 15 – Simulated view of proposed Segment J looking east from Esplanade Avenue near Trailwood Road. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-66
Key View 15 – Existing View and Simulation of Segment J
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A. Key View 15 – Existing view looking east from Esplanade Avenue near Trailwood Road

B. Key View 15 – Simulated view of proposed Segment K looking east from Esplanade Avenue near Trailwood Road. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Figure 3.1-67
Key View 15 – Existing View and Simulation of Segment K
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Source: Final Visual Impact Assessment, June 2009

A. Key View 16 – Existing view looking west from Cottonwood Avenue near Cawston Avenue

B. Key View 16 – Simulated view of proposed Segment L or M looking west from Cottonwood Avenue near Cawston Avenue (common to all Build alternatives). Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-68
Key View 16 – Existing View and Simulation of Segment L or M
Draft Environmental Impact Report/
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A. Key View 17 – Existing view looking north from Sanderson Avenue north of Cottonwood Avenue

B. Key View 17 – Simulated view of proposed Segment M looking north from Sanderson Avenue north of Cottonwood Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Figure 3.1-69
Key View 17 – Existing View and Simulation of Segment M

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Source: Final Visual Impact Assessment, June 2009

A. Key View 18 – Existing view looking east from the Cove residential development

B. Key View 18 – Simulated view of proposed Segment L or M looking east from the Cove residential development (common to all Build alternatives). Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-70
Key View 18 – Existing View and Simulation of Segment L or M
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A. Key View 19 – Existing view looking east from Sanderson Avenue between Cottonwood Avenue and Ramona Expressway

B. Key View 19 – Simulated view of proposed Segment M looking east from Sanderson Avenue between Cottonwood Avenue and Ramona Expressway. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-71
Key View 19 – Existing View and Simulation of Segment M
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A. Key View 20 – Existing view looking east from Ramona Expressway near Sanderson Avenue

B. Key View 20 – Simulated view of proposed Segment N looking east from Ramona Expressway near Sanderson Avenue. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Final Visual Impact Assessment, June 2009

Figure 3.1-72
Key View 20 – Existing View and Simulation of Segment N
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

A. Key View 2 – Simulation of Segment A looking south from Winchester Road at Finch Street

B. Key View 2 – Simulation of Segment A and Noise Barriers 1A-E1 and 1A-SCH shows proposed overcrossing of Domenigoni Parkway. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Technical Report Addendum Memorandum, Final Visual Impact Assessment, June 2010

Figure 3.1-73
Key View 2 – Simulation of Segment A and Noise Barriers 1A-E1 and 1A-SCH
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A. Key View 10a – Existing view looking southwest toward the West Hemet Hills from a point south of Florida Avenue and east of California Avenue

B. Key View 10a – Simulated view of proposed Segment G with Noise Barrier 1A-G1 and Design Option 1b1. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Technical Report Addendum Memorandum, Final Visual Impact Assessment, June 2010

Figure 3.1-74
Key View 10a – Simulation of Segment G and Noise Barrier 1A-G1 with Design Options 1b1 or 2b1

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A. Key View 11 – Existing view looking south toward the West Hemet Hills from Florida Avenue at Corso Bellagio

B. Key View 11– Simulated view of proposed Segment G with Noise Barrier 1A-G1 and Design Option 1b1 looking south toward the West Hemet Hills from Florida Avenue at Corso Bellagio. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Technical Report Addendum Memorandum, Final Visual Impact Assessment, June 2010

Figure 3.1-75
Key View 11 – Simulation of Segment G and Noise Barrier 1A-G1 with Design Option 1b1
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A. Key View 17 – Simulation of Segment M looking north from Sanderson Avenue north of Cottonwood Avenue

B. Key View 17 – Simulation of Segment M and Noise Barrier 1B-M4. Immediate post-construction conditions are simulated with no mitigation measures incorporated.

Source: Technical Report Addendum Memorandum, Final Visual Impact Assessment, June 2010

Figure 3.1-76
Key View 17 – Simulation of Segment M and Noise Barrier 1B-M4

3.2 Physical Environment

3.2.1 Hydrology and Floodplain

3.2.1.1 Regulatory Setting

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

In order to comply, the following must be analyzed:

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

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

3.2.1.2 Affected Environment

The discussion and analysis of hydrology and floodplains is based on the environmental review and conclusions presented in the Final Floodplain Evaluation Report of May 2008, which includes the four Location Hydraulics Studies prepared for the Project in the Appendix, and the Technical Report Addendum Memorandum, Final Floodplain Evaluation Report, of June 2010.

State and Local Requirements

The requirements of EO 11988 are implemented on a state or local level. When a floodplain encroachment is anticipated, the Department or local agency prepares a location hydraulic study. If an increase in the base floodplain elevation is anticipated, a hydraulic computer model must be run to determine the amount of increase. This amount of increase is used to determine the floodplain encroachment impacts. When the location hydraulic study concludes that a proposed action may result in a significant encroachment or incompatible floodplain development, or if the impacts of the project on the floodplain are unclear, then a floodplain evaluation report is prepared. "Significant encroachment" as defined in 23 CFR 650.105 is "…a highway encroachment and any direct support of likely base floodplain development that would involve one or more of the following construction- or flood-related impacts:

- A significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community's only evacuation route
- A significant risk (to life or property)
- A significant adverse impact on natural and beneficial floodplain values"

Study Methods and Procedures

Technical analysis of the floodplains in the Project study area included conducting hydraulic calculations for 100-year storms in accordance with Riverside County Flood Control and Water Conservation District criteria. Drainage patterns and capacities were evaluated for the runoff of a 100-year storm in relation to each of the roadway segments to determine floodplain impacts. Hydraulic calculations were performed using the United States Army Corps of Engineers (USACE) Hydraulic Engineering Centers River Analysis System (HEC-RAS) program (USACE 2008[6]) for the existing and proposed conditions. The results from the HEC-RAS models were used to evaluate the impact of the Build alternatives and design options on the 100-year floodplain.

General Discussion

Four floodplains in the Project study area have the potential to be affected by the Build alternatives:

(1) San Jacinto River

(2) Sanderson Avenue

(3) Hemet Channel

(4) Salt Creek Channel

These four floodplains are shown in Figure 3.2-1. The floodplains are mapped on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) for Riverside County, California. The area of floodplain present along each Build alternative, including the design options, is presented in Table 3.2-1 (page 3-271).

San Jacinto River

The San Jacinto River originates in the San Jacinto Mountains, approximately 48.7 km (30.4 mi) east-southeast of the Project, and flows west just north of the study area. The San Jacinto River watershed extends to the southeast from the San Jacinto Mountains. The total drainage area is approximately 1,792 km^2 (692 mi^2) at the Railroad Canyon Dam, excluding approximately 47 km^2 (18 mi^2) regulated by the Lake Perris and Pigeon Pass Dams. The mountainous portion of the drainage area lies principally on the southwestern slope of the San Jacinto Mountains, while the valley portion includes the San Jacinto Valley and Perris Valley. Part of the watershed is in the northern portion of the Project study area.

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[6]Complete references for all citations are in Chapter 8.

Table 3.2-1 Floodplain Areas Present along the Project Alternatives

Affected Environment	Project Alternative				
	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]
		Roadway Segments A, E, G, I, J, L, and N Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, K, M, and N Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours	Roadway Segments A, F, H, I, K, L, and N Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, D, H, I, J, M, and N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours
Affected Roadway Segments	N/A	A, E, L, and N	C, M, and N	A, F, L, and N	D, M, and N
Affected Floodplain Area (hectares [acres])	N/A	82.3 ha (203.4 ac)	92.9 ha (229.6 ac)	104.8 ha (259.0 ac)	99.0 ha (244.6 ac)

Source: Final Floodplain Evaluation Report, May 2008, and Technical Report Addendum Memorandum, Final Floodplain Evaluation Report, June 2010

Note: N/A = Not Applicable

[a]Information is presented first for the base condition followed by design options. If there is no variation between the base condition and design options, the information is given only once.

The climate in the San Jacinto River watershed varies from semi-arid to humid, according to elevation. The lower valley areas of the watershed are hot and dry during the summer months, with average maximum temperatures of about 100 degrees Fahrenheit (°F), and have more moderate temperatures in the winter, with average maximum temperatures of 64°F. This contrasts with the mountainous upper watershed, where temperatures are moderate during the summer months, averaging in the 60s°F, and low in the winter, averaging in the 30s°F. The mean seasonal precipitation ranges from 25.4 to 33 centimeters (cm) (10 to 13 inches) in the valley portion of the watershed to about 89 cm (35 inches) at San Jacinto Peak. The San Jacinto River floodplain is present in the study area for all Build alternatives and design options (specifically, Roadway Segments L, M, and N), as shown in Figure 3.2-2.

Sanderson Avenue

Uncontrolled storm flows that originate in the central and northern portions of the city of San Jacinto and the northwestern portion of the city of Hemet combine near the San Jacinto Reservoir and flow north along Sanderson Avenue toward the San Jacinto River. Near the intersection with the Colorado River Aqueduct, the flow mixes with that from the floodplain of the San Jacinto River and moves out of the study area to the northwest.

Flow patterns in the watershed are heavily influenced by existing streets. Because of a lack of flood control facilities, major streets and thoroughfares become the primary system of storm water conveyance. Therefore, storm flows generated south of Seventh Street are conveyed to the west along major transportation corridors such as Eaton, Fruitvale, Commonwealth, and Esplanade Avenues.

In general, this area is bounded by Sanderson Avenue on the west and the existing floodplain from the San Jacinto River on the north. Within this area, current land uses differ depending on location, changing from rural to urban from northwest to southeast through the watershed. The climate in the area is characterized by summers with average maximum temperatures of about 100 °F and moderate winters with average maximum temperatures of 64°F. Mean annual precipitation for the basin is about 33 cm (13 inches) per year. Protracted storms four or more days long that occur from December to March usually result in flood-producing rainfall. The Sanderson Avenue floodplain is present in the study area of all four Build alternatives (specifically, Roadway Segments L, M, and N), as shown in Figure 3.2-3.

Hemet Channel

The Hemet Channel is tributary to Salt Creek, which drains about 337 km^2 (130 mi^2) within Riverside County. The headwaters of the Salt Creek Basin originate at the 1,370-m (4,495-ft) elevation on the northwestern slope of Red Mountain about 16 km (9.94 mi) southeast of Hemet. This remote highland part of the basin presents a northwest exposure to moisture from the Pacific Ocean.

The Hemet Channel originates on the north side of Salt Creek, near Patterson Avenue. The channel runs in a northeasterly direction across open fields and along the railroad right-of-way to its terminus in central Hemet, near the intersection of Florida Avenue and State Street. The channel has been constructed to its ultimate capacity from Florida Avenue to Cawston Avenue as a concrete-lined, trapezoidal channel with varying cross-sections. As exhibited by the extensive limits of flooding, the channel downstream from Cawston Avenue to Salt Creek lacks the capacity to adequately convey 100-year storm flows. This part of the channel has an earthen trapezoidal section of varying width and depth with a clean sandy bottom. It is free of vegetation.

The Hemet area portion of the Salt Creek basin occupies about 83 km^2 (32 mi^2). The average slope of the watershed is about 1 percent, from east to west. In general, elevations in the watershed range between 456 m and 506 m (1,496 ft and 1,660 ft).

The basin has an average annual rainfall of about 33 cm (13 inches). About 22.8 cm (9 inches), or 70 percent, of the total rainfall occurs from December through March. The climate in the area is characterized by hot summers with average maximum temperatures of about 100°F and moderate winters with average maximum temperatures of 64°F. The Hemet Channel floodplain is present in the study area of all Build alternatives including the design options (specifically, Roadway Segments C, D, E, and F), as shown in Figure 3.2-4.

Salt Creek Channel

Salt Creek, which drains about 337 km^2 (130 m^2) within Riverside County, is tributary to the San Jacinto River. The headwaters of the Salt Creek Basin originate at an elevation of 1,370 m (4,495 ft) above sea level on the northwestern slope of Red Mountain, which is located about 16 km (9.94 mi) southeast of Hemet. This remote highland part of the basin is exposed to moisture from the Pacific Ocean to the northwest. The section of Salt Creek Channel under investigation flows through the study area from east to west. The floodplain in this area is contained within the limits of the improved channel.

The climate in the area is characterized by hot summers with average maximum temperatures of about 100°F and moderate winters with average maximum temperatures of 64°F. Mean annual precipitation for the basin is about 33 cm (13 inches). Runoff flows from the brush-covered mountainous areas of the watershed to the alluvial valley floor. The Salt Creek Channel floodplain is present in the study area of all four Build alternatives (specifically, Roadway Segments A, C, and D), as shown in Figure 3.2-5.

3.2.1.3 Environmental Consequences

Permanent Impacts

Local, state, and federal water resources and floodplain management agencies are to be consulted when a proposed action would encroach on a 100-year base floodplain. Coordination also may occur to obtain current information on development and proposed actions in the affected watersheds.

Coordination with FEMA is required when floodplain studies indicate that any of the following conditions pertain.

- A proposed encroachment on a regulatory floodway (base flood elevation increase) would require an amendment to the floodway map.
- A proposed encroachment on a floodplain where a detailed study has been performed, but no floodway designated, and the maximum 0.305-m (1.0-ft) increase in the base flood elevation would be exceeded.
- A local community is expected to enter into the regulatory program within a reasonable period, and detailed floodplain studies are underway.

- A local community is participating in the emergency program, and base flood elevation in the vicinity of insurable buildings is increased by more than 0.3 m (1.0 ft).

No Build Alternative

Because the No Build Alternative would not involve any action by the Project, a discussion of this alternative is not required. Although the existing alignment of SR 79 does pass through all four floodplains, the No Build Alternative would not cause any additional impact to those floodplains.

Build Alternative 1a

Build Alternative 1a is formed by the combination of Roadway Segments A, E, G, I, J, L, and N. Roadway Segments A, E, L, and N would encroach upon all four floodplains. For Roadway Segment A, a bridge is proposed to span the Salt Creek Channel. The bridge would be a transverse crossing of the existing 100-year floodplain baseline, and no longitudinal encroachment would occur. The 100-year water surface elevation (WSE), also referred to as the base flood elevation, would increase 0.07 m (0.23 ft) from the existing 100-year water surface elevation baseline. The change in WSE between each Build alternative and the existing condition baseline is important because it indicates differences in the floodplain condition before and after the Project. As shown in Figure 3.2-6, which outlines the proposed Salt Creek Channel floodplain compared to the existing Salt Creek Channel floodplain, there would be no effect on the floodplain area because the water would be contained within the channel.

Roadway Segment E would not cross the Hemet Channel and, therefore, would have minimal impact on the floodplain. As shown in Figure 3.2-7, which outlines, for this alternative, the proposed Hemet Channel floodplain compared to the existing Hemet Channel floodplain, drainage facilities are proposed to convey flow under the alignment to Hemet Channel. For this Build alternative, the WSE increase from the existing condition baseline would be 0.05 m (0.16 ft), and the floodplain area would decrease by 23.4 ha (57.8 ac) due to the roadway area no longer being in the floodplain.

Roadway Segments L and N would encroach longitudinally upon both the Sanderson Avenue and San Jacinto River floodplains. Figures 3.2-8 and 3.2-9 outline, for this alternative, the proposed Sanderson Avenue and San Jacinto River floodplains compared to the existing Sanderson Avenue and San Jacinto River floodplains. To minimize impacts on the Sanderson Avenue floodplain, drainage facilities are proposed to convey the 100-year flow to the San Jacinto River. Two bridge alternatives have been proposed due to the two different alignments being planned as part of the Mid County Parkway (MCP) project. Both bridge conditions would be able to convey the 100-year overbank flows, pending the approval of a final MCP alignment. On the Sanderson Avenue floodplain, there would be no change in WSE compared to the existing condition baseline, and the floodplain area would decrease by 12.9 ha (31.9 ac) due to the roadway area not being in the floodplain. If the proposed master plan facilities are constructed, the total decrease in floodplain area would be 600.0 ha (1,483.64 ac). If they are not constructed, the floodplain area would decrease compared to the existing condition baseline as stated above. On the San Jacinto River floodplain, the WSE increase compared to the existing condition baseline would be 0.26 m

(0.85 ft), and the floodplain area would decrease by 19.4 ha (47.9 ac) due to the roadway area no longer being in the floodplain.

The maximum WSE increase compared to the existing condition baseline from Build Alternative 1a would be 0.26 m (0.85 ft) on the San Jacinto River floodplain. This is below the threshold set by FEMA guidelines, which limit the WSE increase to 0.305 m (1.0 ft). As discussed above, the proposed encroachment into the Salt Creek, Hemet Channel, Sanderson Avenue, and San Jacinto River floodplains associated with the construction of Build Alternative 1a would be minimized by the selection and design of the required hydraulic structures. Under these conditions, the encroachment would not introduce significant risks or adversely impact the floodplain value. Therefore, Build Alternative 1a would not represent a significant encroachment upon the floodplain.

Build Alternative 1b and Design Option 1b1

Build Alternative 1b and Design Option 1b1 are formed by the combination of Roadway Segments B, C, G, I, K, M, and N. The impacts associated with Design Option 1b1 would be the same as those presented for Build Alternative 1b. Roadway Segments C, M, and N would encroach upon all four floodplains. Roadway Segment C would encroach upon the Salt Creek Channel and Hemet Channel floodplains. For the Salt Creek Channel floodplain, a bridge is proposed to span the Salt Creek Channel. The bridge would be a transverse crossing of the 100-year floodplain, and no longitudinal encroachment would occur (see Figure 3.2-6). The WSE increase compared to the existing condition baseline would be 0.10 m (0.33 ft). There would be no effect on the floodplain area because the water would be contained within the channel.

For the Hemet Channel floodplain, Roadway Segment C would split and longitudinally encroach into the existing floodplain. As shown in Figure 3.2-10, which outlines, for this alternative, the proposed Hemet Channel floodplain compared to the existing Hemet Channel floodplain, a bridge, which is part of this Build alternative, is proposed to convey flow from the east side of the roadway segment to the west side of the segment. Flow that is not conveyed through the bridge would be conveyed south to the Salt Creek Channel through a trapezoidal channel. The WSE increase compared to the existing condition baseline would be 0.14 m (0.46 ft), and the floodplain area would decrease by 14.8 ha (36.6 ac) due to the roadway area no longer being in the floodplain.

Roadway Segments M and N would encroach upon both the Sanderson Avenue and San Jacinto River floodplains. Figures 3.2-11 and 3.2-12 outline, for this alternative, the proposed Sanderson Avenue and San Jacinto River floodplains analyzed as part of this Build alternative compared to the existing Sanderson Avenue and San Jacinto River floodplains. To minimize impacts on the Sanderson Avenue floodplain, drainage facilities are proposed to convey the 100-year flow to the San Jacinto River. Two bridge alternatives have been proposed due to the two different alignments being planned as part of the MCP project. Both bridge conditions would be able to convey the 100-year overbank flows, pending the approval of a final MCP alignment. On the Sanderson Avenue floodplain, there would be no change in WSE compared to the existing condition baseline, and the floodplain area would decrease by 29.3 ac (72.4 ac) due to the roadway no longer being in the floodplain. If the master plan facilities downstream are constructed, the total decrease in floodplain area would be 666.8 ha (1,647.7 ac). If they are not constructed, the floodplain area would decrease compared to the existing condition baseline as stated above. On the San Jacinto River floodplain, the WSE increase compared to the existing condition baseline would be 0.26 m (0.85 ft), and the floodplain area would decrease by 19.4 ha (47.9 ac) due to the roadway area no longer being in the floodplain.

The maximum WSE increase compared to the existing condition baseline from Build Alternative 1b would be 0.26 m (0.85 ft) on the San Jacinto River floodplain. This is below the threshold set by FEMA guidelines, which limit the WSE increase to 0.305 m (1.0 ft). As discussed above, the proposed encroachment into the Salt Creek, Hemet Channel, Sanderson Avenue, and San Jacinto floodplains associated with the construction of Build Alternative 1b would be minimized by the selection and design of the required hydraulic structures. Under these conditions, the encroachment would not introduce significant risks or adversely impact the floodplain value. Therefore, Build Alternative 1b does not represent a significant encroachment upon the floodplain.

Build Alternative 2a

Build Alternative 2a is formed by the combination of Roadway Segments A, F, H, I, K, L, and N. Segments A, F, L, and N would encroach upon all four floodplains. For Roadway Segment A, a bridge is proposed to span the Salt Creek Channel. The bridge is a transverse crossing of the 100-year floodplain, and no longitudinal encroachment would occur (see Figure 3.2-6). The WSE increase compared to the existing condition baseline would be 0.07 m (0.23 ft). There would be no effect on the floodplain area because the water would be contained within the channel.

Roadway Segment F would cross the Hemet Channel twice, and the construction of two bridges and a portion of the ultimate Hemet Channel is proposed, as shown in Figure 3.2-13, which outlines, for this alternative, the proposed Hemet Channel floodplain compared to the existing Hemet Channel floodplain. The WSE increase compared to the existing condition baseline would be 0.24 m (0.79 ft), and the floodplain area would decrease by 30.6 ha (75.6 ac) due to the roadway area no longer being in the floodplain.

Roadway Segments L and N would longitudinally encroach upon both the Sanderson Avenue and San Jacinto River floodplains (see Figure 3.2-8 and Figure 3.2-9). To minimize impacts on the Sanderson Avenue floodplain, drainage facilities are proposed to convey the 100-year flow to the San Jacinto River. Two bridge alternatives have been proposed due to the two different alignments being planned as part of the MCP project. Both bridge conditions would be able to convey the 100-year overbank flows, pending the approval of a final MCP alignment. On the Sanderson Avenue floodplain, there would be no change in WSE compared to the existing condition baseline, and the floodplain area would decrease by 12.9 ha (31.9 ac) due to the roadway no longer being in the floodplain. If the master plan facilities downstream are constructed, the floodplain area would decrease a total of 607.6 ha (1,501.4 ac). If they are not constructed, the floodplain area would decrease compared to the existing condition baseline as stated above. On the San Jacinto River floodplain, the WSE increase compared to the existing condition baseline would be 0.26 m (0.85 ft), and the floodplain area would decrease by 19.4 ha (47.9 ac) due to the roadway area no longer being in the floodplain.

The maximum WSE increase from Build Alternative 2a compared to the existing condition baseline would be 0.26 m (0.85 ft) on the San Jacinto River floodplain. This is below the threshold set by FEMA guidelines, which limit the WSE increase to 0.305 m (1.0 ft). As discussed above, the proposed encroachment into the Salt Creek, Hemet Channel, Sanderson Avenue, and San Jacinto floodplains associated with the construction of Build Alternative 2a would be minimized by the selection and design of the required hydraulic structures. Under these conditions, the encroachment would not introduce significant risks or adversely impact the floodplain value. Therefore, Build Alternative 2a would not represent a significant encroachment upon the floodplain.

Build Alternative 2b and Design Option 2b1

Build Alternative 2b and Design Option 2b1 are formed by the combination of Roadway Segments B, D, H, I, J, M, and N. The impacts associated with Design Option 2b1 would be the same as those presented for Build Alternative 2b. Roadway Segments D, M, and N would encroach upon all four floodplains. Roadway Segment D would encroach upon the Salt Creek Channel and Hemet Channel floodplains. For the Salt Creek Channel floodplain, a bridge is proposed to span the Salt Creek Channel. The bridge would be a transverse crossing of the 100-year floodplain, and no longitudinal encroachment would occur (see Figure 3.2-6). The WSE increase compared to the existing condition baseline would be 0.18 m (0.59 ft). There would be no effect on the floodplain area because the water would be contained within the channel.

For the Hemet Channel floodplain, Roadway Segment D would be aligned in such a manner that the proposed alignment would split and longitudinally encroach into the existing floodplain. Therefore, a bridge is proposed to convey flow from the east side of the segment to the west side of the segment. Flow that is not conveyed through the bridge would be conveyed south to the Salt Creek Channel through a trapezoidal channel. See Figure 3.2-14, which outlines, for this alternative, the proposed Hemet Channel floodplain compared to the existing Hemet Channel floodplain. The maximum WSE increase compared to the existing condition baseline would be 0.30 m (0.98 ft), and the floodplain area would decrease by 8.1 ha (20.0 ac) due to the roadway area no longer being in the floodplain.

Roadway Segments M and N would longitudinally encroach upon the Sanderson Avenue and San Jacinto River floodplains (see Figure 3.2-11 and Figure 3.2-12). To minimize impacts on the Sanderson Avenue floodplain, drainage facilities are proposed to convey the 100-year flow to the San Jacinto River. Two bridge alternatives have been proposed due to the two different alignments being planned as part of the MCP project. Both bridge conditions would be able to convey the 100-year overbank flows to be implemented pending the approval of a final MCP alignment. On the Sanderson Avenue floodplain, there would be no change in WSE, and the floodplain area would decrease by 29.3 ac (72.4 ac) due to the roadway no longer being in the floodplain. If the master plan facilities downstream are constructed the floodplain area would decrease a total of 660.1 ha (1,631.1 ac). If they are not constructed, the floodplain area would decrease compared to the existing condition baseline as stated above. On the San Jacinto River floodplain, the WSE increase compared to the existing condition baseline would be 0.26 m (0.85 ft), and the floodplain area would decrease by 19.4 ha (47.9 ac) due to the roadway area no longer being in the floodplain.

The maximum WSE increase compared to the existing condition baseline from Build Alternative 2b would be 0.30 m (0.98 ft) on the Hemet Channel floodplain. This is below the threshold set by FEMA guidelines, which limit the WSE increase to 0.305 m (1.0 ft). As discussed above, the proposed encroachment into the Salt Creek, Hemet Channel, Sanderson Avenue, and San Jacinto floodplains associated with the construction of Build

Alternative 2b would be minimized by the selection and design of the required hydraulic structures. Under these conditions, the encroachment would not introduce significant risks or adversely impact the floodplain value. Therefore, Build Alternative 2b does not represent a significant encroachment upon the floodplain.

Summary of Potential Permanent Impacts

A summary of the potential permanent impacts for the No Build Alternative and the Build alternatives (including design options) is provided in Table 3.2-2.

Table 3.2-2 Floodplain Permanent Impacts by Build Alternative within Project Study Area

Alternative	Roadway Segments	Floodplain	Maximum Change in WSE (meters)	Change in Area (hectares)
No Build	Not Applicable	Not Applicable	Not Applicable	Not Applicable
1a	A, E, G, I, J, L, N	Salt Creek	0.07	0
		Hemet Channel	0.05	-23.4[c]
		Sanderson Avenue	0	-12.9[c] or -600.4[a]
		San Jacinto River	0.26	-19.4
1b (including Design Option 1b1)[b]	B, C, G, I, K, M, N	Salt Creek	0.10	0
		Hemet Channel	0.14	-14.8[c]
		Sanderson Avenue	0	-666.8[a]
		San Jacinto River	0.26	-19.4[c]
2a	A, F, H, I, K, L, N	Salt Creek	0.07	0
		Hemet Channel	0.24	-30.6
		Sanderson Avenue	0	-12.9[c] or -607.6[a]
		San Jacinto River	0.26	-19.4
2b (including Design Option 2b1)[b]	B, D, H, I, J, M, N	Salt Creek	0.18	0
		Hemet Channel	0.29 OR 0.30	-8.1[c]
		Sanderson Avenue	0	-29.3[c] or -660.1[a]
		San Jacinto River	0.26	-19.4[c]

Source: Final Floodplain Evaluation Report, May 2008

[a]If master plan facilities are constructed, the floodplain would be reduced in this Build alternative by this amount.

[b]Information is presented first for the base condition, followed by design options. If there is no variation between the base condition and design options, the information is given only once.

[c]The floodplain area would decrease because the roadway area would no longer be in the floodplain.

Temporary Impacts

Temporary impacts would be associated with the construction of the Project. During construction, the floodplains would be maintained, and channel improvements would be made prior to the construction of embankments, as necessary. The overall impervious groundcover would be similar to the existing conditions during construction. Temporary impacts related to construction activities would be minimized through the implementation of normal construction precautions and any additional measures developed during permit processing. Therefore, the temporary impacts during construction would have a negligible effect on the local floodplains.

Risk Assessment

Each Build alternative and design option would require structural and drainage improvements to provide flood protection for the roadway and ensure that increases in WSEs are kept below the threshold set by FEMA guidelines, which limit the WSE increase to 0.305 m (1.0 ft). A detailed discussion of these drainage facilities is provided in the Final Floodplain Evaluation Report of May 2008. After the drainage facilities are constructed, a major storm event would not be likely to cause substantial damage to the highway embankment or roadway improvements. Therefore, the Project would be considered a low risk.

Discussion of Floodplain Development

The Project has been closely coordinated with the local jurisdictions. The Project would generally support development in the study area that has been previously determined to be compatible and consistent with the development plans and policies of Riverside County and the Cities of Hemet and San Jacinto (County 2003, Hemet 1992, San Jacinto 2006).

The Riverside County General Plan designates an alignment for a future "expressway" in the Project area. Therefore, the Project would be generally consistent with County intent for a limited-access expressway in this area (County 2003). The City of Hemet, through its Resolution No. 4216, identified the portion of Build Alternatives 2a and 2b in Hemet jurisdiction as its Locally Preferred Alternative (Hemet 2008). The San Jacinto General Plan identifies the portion of Build Alternative 1b in City jurisdiction as its Locally Preferred Alternative (San Jacinto 2006).

Therefore, the Project would compatible with planned land uses and floodplain values in the study area. As such, the proposed Project would not introduce incompatible floodplain development.

Impacts on Natural and Beneficial Floodplain Values

The beneficial uses for surface waters in the Project study area are defined in the Santa Ana River Basin Water Quality Control Plan (CRWQCB 2008). Two surface waters have beneficial uses, Salt Creek and the San Jacinto River Basin, Reach 5. Reach 5 is located on the north-south midsection line, T4S/R1W-S8, to the confluence with Poppet Creek. Groundwater sub-basins and their respective beneficial uses also are designated in the Project study area. Because groundwater sub-basins would not be affected by the Project, their beneficial uses will not be discussed. The beneficial uses for Salt Creek and the San Jacinto River Basin, Reach 5, are shown in Table 3.2-3 (page 3-280).

Table 3.2-3 Beneficial Uses in Surface Waters in the Project Study Area

Inland Surface Streams	MUN	AGR	IND	PROC	GWR	NAV	POW	REC1	REC2	COMM	WARM	LWRM	COLD	BIOL	WILD	RARE	SPWN	MAR	SHEL	EST	Primary	Secondary
San Jacinto River Basin: Reach 5	+	I			I			I	I		I				I						802.21	
Salt Creek	+							I	I		I				I						802.12	

Source: Santa Ana River Basin Water Quality Control Plan (2008)

Note:

MUN = municipal and domestic supply
AGR = agricultural supply
IND = industrial service supply
PROC = industrial process supply
GWR = groundwater recharge
NAV = navigation
POW = hydropower generation
REC1 = water contact recreation
REC2 = non-contact water recreation
COMM = commercial and sport fishing
WARM = warm freshwater habitat
LWRM = limited warm freshwater habitat
COLD = cold freshwater habitat
BIOL = preservation of biological habitats of special significance
WILD = wildlife habitat
RARE = rare, threatened, or endangered species
SPWN = spawning, reproduction, and development
MAR = marine habitat
SHEL = shellfish harvesting
EST = estuarine habitat
X = Present or Potential Beneficial Use
I = Intermittent Beneficial Use
\+ = Excepted from MUN

As noted in Table 3.2-3, both Salt Creek and the San Jacinto River Basin, Reach 5, have intermittent beneficial uses. Because both of these drainages typically convey water in response to local rainfall, their beneficial uses would be limited to that function only. Both bodies of water also have been specifically excepted from the municipal and domestic water supply (MUN) designation in accordance with the criteria specified in the “Sources of Drinking Water Policy” (SWRCB 1998).

Impacts to beneficial uses were evaluated for the construction and operation of the Project. Intermittent beneficial uses for Salt Creek Channel are categorized as water-contact and non-water-contact recreation, cold freshwater habitat, and wildlife habitat. The Project would construct bridge abutments and piers in Salt Creek Channel. The existing earthen channel would be maintained. Roadway Segment A (Build Alternatives 1a and 2a), Roadway Segment C (Build Alternative 1b and Design Option 1b1), and Roadway Segment D (Build Alternative 2b and Design Option 2b1) would cross the Salt Creek Channel. Because the roadway would be elevated over Salt Creek Channel on a structure, the Project is not expected to have a significant impact on beneficial uses in the channel.

Storm flow to Salt Creek Channel is also distributed from Hemet Channel. The Hemet Channel floodplain also would be impacted by the Project. Roadway Segments C, D, E, and F would all be located in the Hemet Channel floodplain, but impacts to the floodplain would be minimal from all Build alternatives. Impacts would occur within the direct footprint of the Project or would be limited to slight impacts to the floodplain perimeter. Hemet Channel itself would be directly impacted only where realigned SR 79 crosses it. The earthen parts of all other areas of the channel would remain unchanged. However, additional impacts to Hemet Channel would occur during construction of culverts and erosion control devices for the connections to Hemet Channel located outside the Project ROW.

Most of the basin for both Salt Creek and Hemet Channel would remain intact, and intermittent water would still flow to these drainages. Because of this, beneficial uses would be maintained for the basin. Additionally, measures would be implemented to address impacts to cold freshwater habitat and wildlife for Salt Creek Channel and Hemet Channel. These measures would assist in maintaining the beneficial uses for Salt Creek. Specific avoidance, minimization and mitigation measures for wetlands/waters and wildlife are discussed in Section 3.3.2.4 (Volume 2, page 3-516). Although all Build alternatives and both design options would have impacts to Salt Creek Channel and Hemet Channel, those impacts are not expected to have a significant effect on natural and beneficial uses.

The San Jacinto River Basin, Reach 5, has intermittent beneficial uses for agriculture, groundwater, water-contact and non-water-contact recreation, cold freshwater habitat, and wildlife habitat. Project construction would not occur in the San Jacinto River, but south of the river in the 100-year floodplain.

Impacts to the floodplain would be minimal from all Build alternatives and both design options and would occur within the direct footprint of the Project or would be limited to slight impacts to the floodplain perimeter. Bridges and culverts would be constructed to maintain existing flows. Additional Project features constructed in the 100-year floodplain (Utility Relocation Area 2) would not cause impacts because those features are not expected to alter the existing floodplain. Most of the basin would remain intact, and intermittent water would still flow to the San Jacinto River. Because of this, beneficial uses would be maintained for the basin. Additionally, measures would be implemented to address impacts to cold freshwater habitat and wildlife. These measures would assist in maintaining beneficial uses for the basin. Specific avoidance, minimization, and mitigation measures for wetlands/waters and wildlife are discussed in Section 3.3.2.4 (Volume 2, page 3-516). Although all Build alternatives would have impacts to the San Jacinto River basin, those impacts are not expected to have a significant effect on natural and beneficial uses.

Restoration and Preservation of Floodplain Values

Routine measures to minimize impacts and preserve natural and beneficial floodplain values would be included as part of the Project. These measures would comply with USACE standards for not restricting seasonal channel flow capacity and would include the following:

- Seasonal restrictions on work within the San Jacinto River, Sanderson Avenue floodplain, Hemet Channel, and Salt Creek Channel to avoid interference with peak-flow periods
- Enclosing construction activities within the minimum area necessary by fencing the limits of temporary disturbance
- Implementing best management practices, including erosion-control measures, to minimize construction impacts
- Restoring and revegetating all areas of temporary disturbance, subject to approval by USACE and California Department of Fish and Game (CDFG), upon completion of all construction activities

The Project design would minimize or avoid construction within jurisdictional areas. Hydraulic structures associated with the Preferred Alternative would be designed and constructed in a manner that minimizes permanent impacts in the floodplain. Mitigation for impacts to wetlands and other floodplain values would help to minimize the impact to the water-resource beneficial floodplain values mentioned above. This type of mitigation would be determined during the permitting process.

Alternatives to Encroachment

As stated in Section 3.2.1.2 (page 3-269), "Significant encroachment" as defined in 23 CFR 650.105 is "…a highway encroachment and any direct support of likely base floodplain development that would involve one or more of the following construction- or flood-related impacts:

- Significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community's only evacuation route
- Significant risk (to life or property)
- Significant adverse impact on natural and beneficial floodplain values"

"Longitudinal Encroachment" is defined by the Department as "…an encroachment that is parallel to the direction of flow."

Each Build alternative and design option under consideration could encroach on a floodplain. The proposed encroachment associated with any of the Build alternatives or design options would be minimized by the selection, design, and construction of appropriate hydraulic structures and drainage facilities. The evaluation of longitudinal and significant encroachment for each floodplain is discussed below.

Evaluation of Significant Encroachment

Salt Creek Channel Floodplain

Because of the east-west alignment of the Salt Creek Channel and the north-south alignment of the Build alternatives and design options, it is not possible to select an alternative that would not encroach into the floodplain. The proposed encroachment associated with the construction of any of the Build alternatives or design options would be minimized by the proper selection and design of the appropriate hydraulic structures. With these conditions, the proposed encroachment would not introduce significant risks or adversely impact the floodplain value. Therefore, the Project would not be a significant encroachment.

Hemet Channel Floodplain

Because of the east-west alignment of the Hemet Channel and the north-south alignment of the Build alternatives and design options, it is not possible to select an alternative that would not encroach into the floodplain. The proposed encroachment associated with the construction of any of the Build alternatives or design options would be minimized by the proper selection and design of appropriate hydraulic structures. With these conditions, the proposed encroachment would not introduce significant risk or adversely impact the floodplain value. Therefore, the Project would not be a significant encroachment.

Sanderson Avenue Floodplain

Each roadway segment under consideration between Cottonwood Avenue and the Ramona Expressway would have some level of encroachment onto the existing floodplain along Sanderson Avenue downstream of the San Jacinto Reservoir. The proposed encroachment associated with any of the Build alternatives or design options would be minimized by the selection, design, and construction of appropriate hydraulic structures. With these conditions, the proposed encroachment would not introduce significant risk or adversely impact the floodplain value. Therefore, the Project would not be a significant encroachment.

San Jacinto River Floodplain

Each Build alternative and design option would have some degree of encroachment onto the San Jacinto River floodplain. The proposed encroachment associated with Roadway Segments L, M, and N would not introduce significant risk or adversely impact the floodplain values. Therefore, the Project would not be a significant encroachment.

Evaluation of Longitudinal Encroachment

Salt Creek Channel Floodplain

The alignment of the Salt Creek Channel is mostly east-west. All of the Build alternatives, including the design options, would cross perpendicular to the channel. Therefore, none of the Build alternatives or design options would have a longitudinal encroachment onto the Salt Creek Channel floodplain.

Hemet Channel Floodplain

During the initial development of this Project, several alternatives were considered to avoid or minimize the impact on the floodplain. The only Build alternative that would not have a longitudinal encroachment onto the Hemet Channel floodplain is Build Alternative 1a. If another of the Build alternatives or design options is identified as the Preferred Alternative, appropriate facilities will be constructed to minimize the impact on the floodplain.

Sanderson Avenue Floodplain

During the initial development of this Project, it was determined that the Sanderson Avenue floodplain was so wide that any Build alternative or design option would create a longitudinal encroachment. Because complete avoidance was not possible, the Build alternatives and design options were designed to be constructed to minimize the impact on the floodplain.

San Jacinto River Floodplain

During the initial development of this Project, it was determined that the San Jacinto River floodplain was so wide that any Build alternative or design option would create a longitudinal encroachment. Because complete avoidance was not possible, the Build alternatives and design options were designed to be constructed to minimize the impact on the floodplain.

3.2.1.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures are proposed to prevent significant adverse impacts to the floodplains and document any changes made to the floodplains by the Project.

HYDRA-1 **Construct Drainage and Flood Control Facilities.** Construct Drainage and Flood Control Facilities in accordance with Department and FEMA guidelines to convey the onsite and offsite flows along and through SR 79.

HYDRA-2 **Complete a Letter of Map Revision.** The Design Engineer shall complete a Conditional Letter of Map Revision (CLOMR) after the design has been finalized and shall complete a Letter of Map Revision (LOMR) after construction is finished.

3.2.2 Water Quality and Storm Water Runoff

3.2.2.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.), from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

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

USACE issues two types of 404 permits: Standard and General permits. There are two types of General permits, Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (U.S. EPA) Section 404(b)(1) Guidelines (U.S. EPA Code of Federal Regulations [CFR] 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences. According to Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements (see 33 CFR 320.4).

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

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

- **National Pollution Discharge Elimination System (NPDES) Program**

  Municipal Separate Storm Sewer Systems (MS4)

  Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). The U.S. EPA defines an MS4 as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. The SWRCB has identified the Department as an owner/operator of an MS4 pursuant to federal regulations. The Department's MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

  The Department's MS4 Permit, under revision at the time of this update, contains three basic requirements:

  1. The Department must comply with the requirements of the Construction General Permit (see below);
  2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
  3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

  To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

  Construction General Permit

Construction General Permit (Order No. 2009-0009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

Local Agency Construction Activity Permitting

The local MS4 NPDES permit for the Santa Ana River Watershed within Riverside County is Order No R8-2002-0011 (NPDES No. CAS 618033). The Riverside County Flood Control and Water Conservation District is identified as the Principal Permittee, with the County of Riverside and the incorporated cities of Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, and San Jacinto identified as the co-permittees. This permit regulates the discharge of pollutants in urban runoff from anthropogenic (generated from non-human activities) sources under the control of the permittees.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

3.2.2.2 Affected Environment

The discussion and analysis of water quality and storm water runoff is based on the environmental review and conclusions presented in the Final Water Quality Assessment Report of May 2008 and the Technical Report Addendum Memorandum, Final Water Quality Assessment Report of June 2010.

Study Methods and Procedures

Water quality will be discussed and analyzed at two levels: individual roadway segments and unique design features and the complete Project. For the roadway segment analysis, Project features within the Project Impact Area (PIA) are addressed collectively within each roadway segment, and features outside the PIA are addressed individually by unique design feature. For the complete Project analysis, the No Build and Build alternatives are addressed.

General Water Resources Setting

Basin Location

The Project study area is located in two regional watershed basins, the Santa Ana River Basin (RWQCB Region 8) and the San Diego Basin (RWQCB Region 9).

Santa Ana River Basin

Most of the Project study area is in the Santa Ana River Basin, as shown in Figure 3.2-15. This basin covers 7,552 km^2 (2,800 mi^2) and contains 740 km (460 mi) of streams, 86 km^2 (33 mi^2) of lakes, and 39 km (24 mi) of coastline. The basin is drained by the Santa Ana River, which is the largest stream system in Southern California. The system begins in the San Bernardino Mountains and flows more than 160 km (100 mi) southwest to the Pacific Ocean at Huntington Beach. The widely varying terrain includes parts of San Bernardino, Riverside, and Orange counties. Because of the semi-arid climate, the Santa Ana River and many of its tributaries often contain little or no flow in summer months but can have high runoff volumes in the winter and spring. Several wastewater treatment plants discharge into the river and supplement the natural flows. Twenty-nine groundwater basins collect recharge water from the river as it flows toward the sea.

San Diego Basin

The San Diego Basin is about 10,100 km^2 (3,900 mi^2) in surface area. The western boundary consists of the Pacific Ocean coastline, which extends approximately 137 km (85 mi) north from the border between the United States and Mexico. The northern boundary is formed by the hydrologic divide starting near Laguna Beach, extending inland through El Toro and easterly along the ridge of the Elsinore Mountains into the Cleveland National Forest. The eastern boundary of the basin is formed by the Laguna Mountains and other lesser-known mountains located in the Cleveland National Forest. The southern boundary is formed by the border between the United States and Mexico.

Regional Hydrology

The Project would be located primarily in the San Jacinto Valley Watershed within the Santa Ana hydrologic region (RWQCB Region 8). The San Jacinto Valley Watershed region is a group of connected inland basins and open coastal basins drained by the San Jacinto River through Canyon Lake to Lake Elsinore. The San Jacinto Valley Watershed comprises the following major bodies of water: Lake Hemet, San Jacinto River, Salt Creek, Canyon Lake, and Lake Elsinore. The total drainage area of the watershed is approximately 2,025 km^2 (782 mi^2). The San Jacinto River has been dammed to form Canyon Lake, which then drains to Lake Elsinore. More than 90 percent of the watershed 1,903 km^2 (735 mi^2) drains into Canyon Lake. Lake Elsinore is normally a sink (no outflow of water), and, because of high evaporation rates, the lake has gone dry several times in the last hundred years. Only rarely have significant rains caused the lake to overflow to Temescal Creek and the Santa Ana River.

A short portion of the Project (less than 1 km [0.7 mi]) near Diamond Valley Lake in unincorporated Riverside County would extend south into the San Diego hydrologic region (RWQCB Region 9) and the Santa Margarita River Watershed. This portion of the Project area is drained by Warm Springs Creek, which drains to Murrieta Creek. At Temecula Canyon, Murrieta Creek joins the Santa Margarita River, which ultimately discharges into the Pacific Ocean.

Both watersheds are divided into several sub-watersheds. The watersheds and sub-watersheds that encompass the Project are listed below and depicted in Figure 3.2-16.

- San Jacinto Valley Watershed
  - San Jacinto Hydrologic Area (HA)
    - Gilman Hot Springs Sub-Watershed
  - Perris Hydrologic Area
    - Hemet Sub-Watershed
    - Winchester Sub-Watershed
- Santa Margarita Watershed
  - Murrieta Hydrologic Area
    - Domenigoni Sub-Watershed

Local Hydrology

Precipitation and Climate

The Project is located in the Southern California inland valley semi-arid climate, which is characterized by hot summers and dry winters. Summer temperatures generally average 79.8 degrees Fahrenheit (^{o}F), and winters average 52.3^{o}F. Average annual precipitation in the Project area is 28.4 centimeters (cm) (11.2 inches), based on long-term records from three rain-gauging stations located in Lakeview, Moreno Valley, and Winchester (EMWD 2004). Most precipitation in the San Jacinto River Watershed occurs between November and March, usually as rain but with some snow at higher elevations. Heavy winter and early spring rains can cause flooding, particularly in wet years. Low and very low (or nonexistent) flows typically follow in the dry summer season. Infrequent summer thunderstorms, however, have been known to produce short-duration rainfall of more than 2 inches per hour (Hemet 1984). These storms can cause torrential floods in local streams.

Surface Streams

The San Jacinto River is the predominant watercourse in the vicinity of the Project area in the Santa Ana region. Two forks converge to form the San Jacinto River. The South Fork headwaters are in the San Bernardino National Forest in the San Jacinto Mountains at Lake Hemet, at about 1,311 m (4,300 ft) above sea level (elevation). The North Fork originates as hillside runoff in the San Jacinto State Wilderness area of the San Jacinto Mountains, at about 1,587 m (7,200 ft) elevation.

The San Jacinto River discharges into Canyon Lake at about 567 m (1,400 ft) elevation. Most of the Project alternatives would ultimately affect surface waters that drain into San Jacinto River, Canyon Lake, and Lake Elsinore. Other surface waters in the study area include Hemet Channel, which flows into Salt Creek. Salt Creek then drains to Canyon Lake and Lake Elsinore. Drainage and water supply infrastructure in the study area is shown in Figure 3.2-17.

Within the San Diego region, in the Santa Margarita Watershed, Warm Springs Creek begins as an ephemeral creek in the Domenigoni Valley southwest of Hemet at about 567 m (1,400 ft) elevation. Approximately 1 km (0.6 mi) of Roadway Segments A and B would be in the San Diego region, with storm water runoff draining ultimately to Warm Springs Creek. This creek discharges to Murrieta Creek in Temecula Valley at about 413 m (1,020 ft) elevation. Murrieta Creek then joins the Santa Margarita River, which ultimately discharges into the Pacific Ocean north of Oceanside near Marine Corps Base, Camp Pendleton. Warm Springs Creek near Murrieta extends 89 km (55.4 mi), with a monitoring meter located at United States Geological Survey (USGS) Station No. 11042800.

Wetlands

The USGS, Eastern Municipal Water District (EMWD), and other agencies constructed the Multipurpose Wetlands Research and Demonstration Project at the Hemet/San Jacinto Regional Water Reclamation Facility (RWRF) in the city of San Jacinto. The objective of multipurpose wetlands is to integrate wastewater treatment functions with wildlife habitat creation. The Hemet/San Jacinto RWRF has a design capacity of 10 million gallons per day (mgd) and currently produces approximately 7.5 mgd of secondary-treated effluent. Approximately 1 mgd of the treated effluent is directed into the wetlands.

The constructed wetlands were completed in 1994 and comprise a 10.5-ha (26-ac) marsh-pond-marsh system that integrates wildlife habitat values with tertiary treatment. This wetland system also serves as a full-scale laboratory for studying long-term operation and maintenance, effluent treatment, and habitat development. There are no beneficial uses or water quality objectives specified for this constructed wetland facility.

Groundwater

The San Diego (Region 9) Basin Plan uses a different approach than that of the Santa Ana River (Region 8) Basin Plan for groundwater designation. The San Diego Basin is divided into 11 major hydrologic units, which are further subdivided into hydrologic areas and hydrologic sub-areas. The designation for Region 9 is the same for groundwater and surface waters, unlike the Region 8 Basin Plan, which identifies separate zones based on groundwater only. More than 90 percent of the Project area is in Region 8, with only a small portion in Region 9.

Most of the Project would be located in the San Jacinto Groundwater Basin, which underlies the San Jacinto, Perris, Moreno, and Menifee valleys in western Riverside County. This basin is bounded by the San Jacinto Mountains in the east, the San Timoteo Badlands in the northeast, the Box Mountains in the north, the Santa Rosa Hills and Bell Mountain in the south, and unnamed hills in the west (EMWD 2000b).

Groundwater in the Hemet and San Jacinto region is a critical supply source for municipal and agricultural needs. The EMWD serves numerous wholesale water subagencies in the region, including Nuevo Water Company, Elsinore Valley Municipal Water District, Rancho California Water District, and Lake Hemet Municipal Water District. The EMWD operates most of the municipal wells in the area and has designated the groundwater in the Hemet and San Jacinto area as "high quality" (EMWD 2000b).

The Project would intersect the following San Jacinto Groundwater Basin groundwater management zones, as identified in the RWQCB Region 8 Basin Plan.

- San Jacinto – Upper Pressure
- Lakeview/Hemet – North
- Hemet – South
- Perris – South

Less than 1.6 km (1 mi) of the Project study area crosses the RWQCB boundary from Region 8 (Santa Ana) into Region 9 (San Diego). As stated earlier, the Region 9 Basin Plan uses a different approach than the Region 8 Basin Plan when referring to groundwater (and surface waters). The study area intersects the Domenigoni Hydrologic Sub Area (HSA) within the Murrieta Hydrologic Area of Region 9. Important groundwater sources within this region are the Pauba and Temecula Aquifers, which are approximately 16 km (10 mi) downstream of the Project study area. Groundwater management zones that would be intersected by the Project are shown in Figure 3.2-18.

The most significant issues pertaining to groundwater in the area are water quality and the potential for overdraft (EMWD 2000a). There are significant differences in water quality among the groundwater sub-basins. In 2003, groundwater total dissolved solids (TDS) levels ranged from 16,300 mg/L to 220 mg/L within the EMWD jurisdiction, with 1,000 mg/L exceeded in many parts of the basin (EMWD 2004). The most significant water quality issue is the migration of poor quality water from the Perris South Sub-basins into the Lakeview Sub-basin. Major constituents in the groundwater include combinations of sodium (Na), calcium, chloride (Cl), and bicarbonate.

A detailed review of the current state of groundwater in the San Jacinto Basin is provided in *California's Groundwater, Bulletin 118* (CDWR 2004).

Flooding

Significant portions of the northern (near the San Jacinto River) and southern (near Salt Creek) parts of the Project study area are in the 100-year floodplain (FEMA 1988, 1990, 1996, 1997). The canals in the area are sufficiently protected and are not in the 100-year floodplain. A discussion of flooding is included in Hydrology and Floodplain, Section 3.2.1 (page 3-269).

Municipal Supply

Sources of municipal water include imported water (through the Metropolitan Water District of Southern California [MWD]), locally produced groundwater, recycled water from the five wastewater reclamation facilities in the region, and increasingly, from desalination. Water is provided by the EMWD through numerous member agencies. Approximately 57 percent of the potable water distributed by the EMWD is from MWD, which provides both Colorado River and State Project water. Some of this water is used for groundwater recharge and seasonal storage. The remaining 43 percent of potable water comes from the other sources mentioned above.

Aquatic Environment

The biological resources in the Project study area include habitats common to the valleys in the San Jacinto River watershed, such as vernal pools, alkali playas, riparian plant communities, Riversidian sage scrub, annual grasslands, and agriculture. The vernal pool branchiopod surveys were conducted in all suitable branchiopod habitat areas within grasslands, grazed fields, tire ruts, active agriculture, excavated/man-made areas, and linear roadside or agricultural drainages. The types of pool habitats observed within the Project study area are described below.

Vernal Pool Complexes

Vernal pool complexes are located in the central and southern portion of the Project study area. These vernal pool complexes are in areas of alkali playa and grasslands and contain several vernal pool plant species, including goldfields (*Lasthenia* sp.), little mousetail (*Myosurus minimus*), and woolly marbles (*Psilocarphus brevissimus*). Vernal pool complexes are also located in the Stoney Mountain Preserve, the MWD 16.2 ha (40 ac) mitigation site east of California Avenue and north of Stetson Avenue, the northwest corner of Stowe Road and California Avenue, and within and west of the Hemet-Ryan Airport.

Grazed Agricultural Fields

Many of the farmlands and pastures in the Project study area contain pools that are routinely grazed by cattle, sheep, or horses. These pools are shallow, short lived, and have varying degrees of disturbance from grazing. Several pools that are not grazed are mowed seasonally.

Tire Ruts

Pools in tire ruts are located on dirt roads or adjacent to railroad tracks. These pools are continually modified by vehicles and often contain trash or other debris from adjacent residential use. They are typically deep, long lasting, and have no vegetation.

Active Agricultural Fields

Pools in active agricultural fields are located primarily in the northern and southern portions of the Project study area, where farming is extensive. These pools are continually modified by routine disking and usually have no vegetation except for seasonally planted crops.

Excavated/Man-Made Depressions

Some pools in the Project study area have been created by construction or agricultural activities. These are often old borrow sites or bulldozer scrapes that fill during storms and remain ponded for several months. Many have gradually become semipermanent wetlands that may collect pollutants and have become unsuitable habitat for many vernal pool branchiopods. They are located primarily in the eastern and central portions of the Project study area.

Linear Roadside or Agricultural Drainages

Linear roadside or agricultural drainages, or drainage ditches, are often used to divert rainwater from a site to prevent ponding. These drainages flow for a short period during heavy rainfall, but some of them pond water for several weeks or sometimes months. They are routinely affected by roadway activities or agricultural practices, and the soils may accumulate a variety of pollutants. This can create unsuitable habitat for many vernal pool branchiopods. Several roadside and agricultural drainages are present throughout the Project study area.

Soil

Soils in the Project study area are within the physiographic section known as the Southern California Coastal Plain. This physiographic section is made up of soils in intermediate valleys or in intermountain valleys at a low elevation. Most of the areas consist of deep alluvial fills that extend from the uplands that surround the valleys. Elevations range from 152 m (500 ft) to 1,067 m (3,500 ft). The Southern California Coastal Plain is traversed by several large fault zones that have contributed to the separation of valley soils and upland soils. It contains eight soil associations, seven of which would be encountered in the Project area. With one exception, all of the soil associations identified in the Project area are well drained; however, the exception would affect only a single roadway segment. The soil associations are described in more detail in Section 3.2.3.2 (page 3-314).

The Riverside County Flood Control and Water Conservation District defines soil types in the Project area using the following Hydrologic Soil Group (HSG) categories:

- Group A: low runoff potential and high infiltration rates
- Group B: moderate infiltration rates

- Group C: low infiltration rates
- Group D: very low infiltration rates and high runoff potential

Most of the soils in the Project area are characterized as HSG classifications B and C, indicating moderate to low infiltration rates. The HSG classifications for the Project area are depicted in Figure 3.2-19.

Geology

The core of the San Bernardino Mountains is granite, an igneous rock that formed below the earth's crust and broke through ancient sedimentary formations of sandstone, shale, and limestone when the mountains were formed. Granite is exposed in many areas from the uplift and subsequent erosion that has removed the overlying strata. The canyon bottoms are filled with alluvial stream deposits, and as these streams exit the mountains, they form alluvial fans.

Seismic activity has defined and created the Santa Ana River watershed. The San Andreas Fault zone is the dominant structural feature and runs in a southeast-northwest direction at the base of the San Bernardino Mountains. The San Gabriel and San Bernardino Mountains have been uplifted by movement along this fault. Other significant nearby fault structures include the San Jacinto Fault zone and the Elsinore Fault zone. Motion from the San Andreas and San Jacinto zones is responsible for the formation of the San Jacinto Mountains (SAWPA 2005).

Erosion Potential

Most of the bedrock in the San Jacinto River Watershed is characterized as metasedimentary (layers of sediment that have been changed into rock by chemical reaction and pressure beneath the surface). From the San Jacinto River to existing SR 79, active valley deposits and young alluvial fan, channel, and valley sediments are deposited above the bedrock. Sediment is generated by the erosion of steep mountain slopes and streambeds, particularly after the destabilizing effects of fires that can occur in this area. Most soils from the San Bernardino Mountains are of granitic origin and are generally coarse textured and extremely well drained. Because the mountains are geologically young and the slopes are often steep, soils are often shallow and highly erodible.

Possible Pollutants Affecting Water Quality

Roadway surfaces can contribute to pollution of water resources through the collection and subsequent washoff of sediment, oil, grease, lubricants, paint, and other pollutants. The extent of such pollution depends, in part, on the volume of traffic, the time since the last storm, and the amount of pavement.

Existing Surface Water Resources Environment

Surface Water Resources

Surface waters within and around the Project study area are surface drainage (storm water runoff from roadways and other land uses) and storage and conveyance facilities for potable water (Diamond Valley Lake and the canals). The Project has the potential to affect the quality of storm water runoff, but a much lower likelihood of affecting water quality in the canals. There is virtually no potential for impact to Diamond Valley Lake.

Existing Surface Water Quality and Sensitivity

Receiving Water Bodies

The Project is located within four Hydrologic Sub Areas: 802.21, 802.15, 802.13, and 902.35. The watersheds and sub-watersheds that encompass the Project are depicted in Figure 3.2-16. Runoff from the Project area would drain into three distinct waterways. In the Santa Ana Region, a drainage dividing boundary is located south of Esplanade Avenue. North of the drainage boundary, runoff would tend to flow north to San Jacinto River, which would be located about 300 m (984.25 ft) away from the Project. The San Jacinto River flows west and, as stated previously, has been dammed to form Canyon Lake, which drains to Lake Elsinore. South of the drainage boundary, runoff tends to flow south to Hemet Channel and into Salt Creek. Both flow patterns eventually drain to Canyon Lake and Lake Elsinore. At the southern end of the Project, within the San Diego region, approximately 1,200 m (3,937 ft) of roadway would drain south to Warm Springs Creek. This creek discharges to Murrieta Creek in Temecula Valley. Murrieta Creek then joins with Temecula Creek to form the Santa Margarita River, which ultimately discharges into the Pacific Ocean north of Oceanside near Marine Corps Base Camp Pendleton.

Impaired Waters

The CWA Section 303(d) impaired waters list of 2010 for California (including the Santa Ana region) was approved by USEPA on November 12, 2010. In the Santa Ana region, Canyon Lake and Lake Elsinore are identified as impaired waters.

Canyon Lake is identified on the 2010 Section 303(d) list for the following.

- Nutrients
- Pathogens

Lake Elsinore is identified on the 2010 Section 303(d) list for the following.

- Nutrients
- Organic Enrichment/Low Dissolved Oxygen
- Polychlorinated biphenyls (PCBs)
- Sediment Toxicity
- Unknown Toxicity

Less than 1.6 km (1 mi) of the proposed Project roadway would contribute to the San Diego Basin. In the San Diego region, Warm Springs Creek and Murrieta Creek are identified as impaired waters.

Warm Springs Creek is identified on the 2010 Section 303(d) list for the following.

- Chlorpyrifos
- E. Coli
- Fecal Coliform
- Iron
- Manganese

- Phosphorus
- Total Nitrogen as N

Murrieta Creek is identified on the 2010 Section 303(d) list for the following.

- Chlorpyrifos
- Copper
- Iron
- Manganese
- Nitrogen
- Phosphorus
- Toxicity

Surface Water Quality

Water quality objectives are established in water quality control plans to ensure the reasonable protection of beneficial uses of water. The surface water quality objectives from the Region 8 Basin Plan for bodies of water that could be affected by the Project are summarized in Table 3.2-4 (page 3-297). There are no water quality objectives in the Region 9 Basin Plan for Warm Springs Creek.

Existing Groundwater Resources Environment

Study Area and Recharge Areas

In the Santa Ana Basin, the Project would affect the cities of Hemet and San Jacinto, which are located in the San Jacinto River Watershed. Less than 1.6 km (1 mi) of the Project would affect the part of unincorporated Riverside County that is in the Santa Margarita River Watershed in the San Diego Basin. Hemet, San Jacinto, and unincorporated Riverside County have historically received much of their water from groundwater supplies. In 2003, groundwater production by EMWD peaked at 2,500 acre feet (AF) in August and reached a low of approximately 530 AF in February.

Groundwater recharge occurs primarily through the San Jacinto River and its tributaries. Other recharge sources include percolation of rainfall on the valley floor and recharge ponds in the Hemet/San Jacinto area operated by EMWD. Both State Project water and recycled water are used for recharge (CDWR 2004).

The Santa Margarita River Watershed Management Plan (SMRWMP 2005) states that connections between surface water quality and specific sources of constituents of concern are not well understood. However, contaminant levels in certain areas of the watershed have been higher than the water quality standards set by the San Diego Regional Water Quality Control Board, and some of these exceedances can be reasonably attributed to urban and agricultural development. Additionally, San Diego and Riverside counties have had different monitoring programs that make intra- and inter- watershed comparisons difficult and inconclusive.

In the Project area, approximate depth to groundwater is 90 m (300 ft) in the Hemet/San Jacinto area (EMWD 2005) and as little as 20 m (60 ft) near Diamond Valley Lake, based on 2005 groundwater elevation contours, as shown in Figure 3.2-18.

Table 3.2-4 Surface Water Quality Objectives

	Water Quality Objectives (mg/L)						
	Total Dissolved Solids (TDS)	**Hardness**	**Sodium (Na)**	**Chloride (Cl)**	**Total Inorganic Nitrogen (TIN)**	**Sulfate (SO_4)**	**Chemical Oxygen Demand (COD)**
Inland Surface Streams							
SAN JACINTO RIVER BASIN							
San Jacinto River							
Reach 1 – Lake Elsinore to Canyon Lake	450	260	50	65	3	60	15
Reach 2 – Canyon Lake (see below)							
Reach 3 – Canyon Lake to Nuevo Road	820	400	–	250	6	–	15
Reach 4 – Nuevo Road to North-South Mid-Section Line, T4S/R1W-S8	500	220	75	125	5	65	–
Reach 5 – North-South Mid-Section Line, T4S/R1W-28, to Confluence with Poppet Creek	300	140	30	25	3	40	12
Reach 6 – Poppet Creek to Cranston Bridge	250	130	25	20	1	30	12
Reach 7 – Cranston Bridge to Lake Hemet	150	100	10	15	1	20	5
Salt Creek Numeric objectives have not been determined; refer the narrative objectives in Region 8 Basin Plan.							
Lakes and Reservoirs							
SAN JACINTO RIVER BASIN							
Canyon Lake (Railroad Canyon Reservoir)*	700	325	100	90	8	290	–
Elsinore, Lake[a]	2000	–	–	–	1.5	–	–

Source: Santa Ana Region Water Quality Control Board, *Water Quality Control Plan* (Region 8 Basin Plan), 2008

[a]Lake volume and quality are highly variable.

Local Area Springs

No local springs were identified.

Existing Water Quality and Sensitivity

Quality objectives for groundwater are specified in the basin plans the same way they are for surface waters. In the Santa Ana region, the following four groundwater management zones are relevant.

- Hemet – South
- Lakeview – Hemet North
- San Jacinto – Upper
- Perris – South

In the San Diego region, groundwater relevant to the Project is located in the Murrieta Hydrologic Area. Data could not be obtained for the Murrieta Hydrologic Area in the Project vicinity.

The groundwater quality objectives from the Region 8 Basin Plan for the groundwater zones that could be affected by the Project are summarized Table 3.2-5.

Table 3.2-5 Groundwater Quality Objectives

	Water Quality Objectives (mg/L)					
	Total Dissolved Solids (TDS)	**Hardness**	**Sodium (Na)**	**Chloride (Cl)**	**Nitrate (NO_3-N)**	**Sulfate (SO_4)**
SAN JACINTO RIVER BASIN						
San Jacinto – Upper	350	145	50	35	5	40
Hemet – South	600	300	80	80	4	215
Lakeview – Hemet North	500	190	80	160	2	25
Perris South – South[a]	1,500	–	–	–	–	–

Source: Santa Ana Region Water Quality Control Board, *Water Quality Control Plan* (Region 8 Basin Plan), 2008

[a]Numeric objectives that have not been determined, indicated by "–"; refer to the narrative objectives in Region 8 Basin Plan.

Beneficial Uses

A beneficial use is one of the various ways that a water body can be used for the benefit of people and/or wildlife. There are 23 beneficial uses now defined statewide. Of these, 19 are recognized within the Santa Ana region, and 15 are recognized in the San Diego region. The Water Quality Control Plan for the Santa Ana Basin (CRWQCB 2008) identifies uses in the basin, water supplies, water quality objectives, and implementation measures. The present or potential beneficial uses defined in both the Santa Ana and San Diego Water Quality Control Plans are discussed below and may affect water quality. A beneficial use is generally associated with water quality objectives.

The applicable Beneficial Use designations are defined in Table 3.2-6.

Table 3.2-6 Beneficial Use Definitions

Beneficial Use Designation	Definition
MUN	Municipal and Domestic Supply waters are used for community, military, municipal, or individual water supply systems. These uses may include, but are not limited to, drinking water supply.
AGR	Agricultural Supply waters are used for farming, horticulture, or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
IND	Industrial Service Supply waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.
PROC	Industrial Process Supply waters are used for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, process water supply and all uses of water related to product manufacture or food preparation.
GWR	Groundwater Recharge waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality, or halting saltwater intrusion into freshwater aquifers.
REC1	Water Contact Recreation waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs.
REC2	Non-contact Water Recreation waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.
WARM	Warm Freshwater Habitat waters support warm water ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife (including invertebrates).
COLD	Cold Freshwater Habitat support cold water ecosystems that may include, but are not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife (including invertebrates).
BIOL	Preservation of Biological Habitats of Special Significance waters support designated areas or habitats, including, but not limited to, established refuges, parks, sanctuaries, ecological reserves or preserves, and Areas of Special Biological Significance where the preservation and enhancement of natural resources requires special protection.
WILD	Wildlife Habitat waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.
SPAWN	Spawning, Reproduction, and/or Early Developments support high-quality aquatic habitats suitable for reproduction and early development of fish. This beneficial use is only applicable for the protection of anadromous fish.
RARE	Rare, Threatened, or Endangered Species waters support habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened, or endangered.

Source: Water Quality Control Plans for Santa Ana River Basin and San Diego River Basin, 2008, Santa Ana RWQCB and 2007, San Diego RWQCB.

As stated earlier, the Santa Ana and San Diego Basin Plans differ in their approaches to the designation of groundwater. Santa Ana region groundwater is discussed in terms of groundwater management zones, whereas groundwater in the San Diego region is designated by Hydrologic Area (or basin) and Hydrologic Sub-Area. This difference in delineation methods does not affect analysis results in this report, however, because the boundary between the Santa Ana and San Diego regions is a natural dividing point for both groundwater and surface flows. Beneficial uses and water quality objectives are applied in an identical manner. Table 3.2-7 (page 3-300) lists the Project-related water bodies for which explicit beneficial uses have been established in the Santa Ana region for both surface and ground waters. Table 3.2-8 (page 3-300) lists the Project-related water bodies for which explicit beneficial uses have been established in the San Diego region for both surface and ground waters.

Table 3.2-7 Beneficial Uses – Santa Ana Region

Water Body	Water Body Type	Beneficial Use[b]										
		MUN	AGR	IND	PROC	GWR	REC1	REC2	WARM	BIOL	WILD	RARE
San Jacinto Wildlife Preserve	Inland Wetlands	+					X	X	X	X	X	X
San Jacinto River (reaches 3 through 5)	Inland Surface Stream	+	I			I	I	I	I		I	
Salt Creek	Inland Surface Stream	+					I	I	I		I	
Hemet Channel[a]	Inland Surface Stream	+					I	I	I		I	
San Jacinto – Upper	Groundwater Management Zone	X	X	X	X							
Hemet – South	Groundwater Management Zone	X	X	X	X							
Lakeview – Hemet North	Groundwater Management Zone	X	X									

Source: Water Quality Control Plan, Santa Ana River Basin, 2008, Santa Ana RWQCB, and Resolution R8-2004-0001 (2004)

[a]Not expressly mentioned in the Basin Plan - beneficial uses are inherited from Salt Creek.

[b]X = Established, I = Intermittent, P = Potential, + = Excepted from MUN by the Regional Board under the terms and conditions of State Board Resolution No. 88-63, *Sources of Drinking Water Policy*.

Table 3.2-8 Beneficial Uses – San Diego Region

Water Body	Water Body Type	Beneficial Use[a]												
		MUN	AGR	IND	PROC	GWR	REC1	REC2	WARM	COLD	BIOL	WILD	SPWN	RARE
Santa Margarita River	Inland Surface Stream	X	X	X			X	X	X	X		X	X	X
Murrieta Creek	Inland Surface Stream	X	X	X	X	X	P	X	X			X		
Warm Springs Creek	Inland Surface Stream	X	X	X	X		P	X	X			X		
Murrieta	Hydrologic Area	X	X	X	X									

Source: Water Quality Control Plan, San Diego Basin, 2007, San Diego RWQCB

[a]X = Established, P = Potential, + = Excepted from MUN by the Regional Board under the terms and conditions of State Board Resolution No. 88-63, *Sources of Drinking Water Policy*.

Existing Conditions

The existing alignment of SR 79 passes through areas zoned predominantly commercial and industrial in the cities of Hemet and San Jacinto and in the communities of Green Acres and Winchester. Outside these areas, zoning adjacent to existing SR 79 is predominantly residential. Runoff from the existing SR 79 alignment drains to adjacent watercourses primarily through unnamed drainage ditches and undefined surface drainage or infiltrates into the ground. The existing alignment of SR 79 does not utilize any treatment BMPs.

Existing Surface Water Resources Environment

The Project would be located in HSAs 802.13, 802.15, and 802.21 in the Santa Ana region (RWQCB Region 8) and HSA 902.35 in the San Diego region (RWQCB Region 9). Watercourses potentially affected by the Project include Warm Springs Creek, Salt Creek, Hemet Channel, and San Jacinto River.

Existing Groundwater Resources Environment

Study Area and Recharge Areas

The Project would traverse the Perris South, Hemet South, San Jacinto – Upper, and Lakeview/Hemet North groundwater management zones in RWQCB Region 8 and the Domenigoni HSA (902.35) in RWQCB Region 9.

Local Area Springs

No local area springs were identified.

Summary of Affected Environment

A summary of the affected environment for Project alternatives and design options is presented in Table 3.2-9.

Table 3.2-9 Water Quality
Summary of Affected Environment for Project Alternatives

Affected Environment	Project Alternatives
HSA	902.35, 802.13, 802.15, and 802.21
Groundwater Management Zone	Perris – South, Hemet – South, Lakeview/Hemet North, and San Jacinto – Upper Pressure
Surface Water Resources	Warm Springs Creek, Hemet Channel, Salt Creek, and San Jacinto River

Source: Final Water Quality Assessment Report, May 2008; Technical Report Addendum Memorandum, Final Floodplain Evaluation Report, June 2010

Note: The affected environment would be the same for the No Build Alternative, the Build alternatives, and the design options.

3.2.2.3 Environmental Consequences

Permanent Impacts

This section addresses direct and indirect permanent impacts associated with the Project. The areas identified for the PIA and unique design features would represent areas of direct permanent impacts. Some Project design features would be required only temporarily during construction. Treatment BMPs are proposed for the Project to reduce some of the permanent impacts. The treatment BMPs are shown in Figures 2.2-8a through n, 2.2-9, 2.2-10a and b, 2.2-11a and b, and 2.2-15 through 2.2-25 and discussed in Section 2.2.1.1 (page 2-6).

The Project would increase storm water runoff due primarily to the increase in impervious groundcover. The Project would traverse mostly agricultural and undeveloped/vacant land, with scattered residences and scattered commercial uses. The existing impervious surface in the PIA is composed of local streets, driveways, and roofs, which will be removed as part of the Project.

Although the Project has been designed to maintain existing drainage patterns whenever possible, localized runoff could concentrate in pipes or ditches and be discharged directly or indirectly into creeks. This change in runoff characteristics and volume could lead to streambank erosion and increased scour in unlined drainage ditches. The result could be an increase in sediment and turbidity in receiving waters. However, energy dissipaters are proposed as part of the Project to protect the beds and banks of receiving waters against scouring.

Impervious roadway surfaces can contribute to pollution of water resources through the collection and subsequent washoff of sediment, oil, grease, lubricants, paint, and other pollutants. Potential water quality impacts include increased concentrations of any of the following types of pollutants entering surface waters or groundwater: total suspended solids (TSS), nutrients (nitrogen/phosphorus), pesticides, metals, pathogens, trash, biochemical oxygen demand (BOD), and total dissolved solids (TDS).

TSS levels in receiving waters can increase when soil is eroded by storm water runoff that has a higher flow rate and volume than before. This increase can cause downstream siltation and a reduction in water quality. While suspended in surface water, soil particles can prevent sunlight from reaching aquatic plant and benthic (bottom-dwelling) communities and impair respiration and reproductive habitat for aquatic organisms, including fish. These effects would be proportionate to the increase in storm water runoff from impervious (paved) surfaces. Although the effects would depend on ground slope, soil erodibility, rainfall intensity (runoff flow rate and volume), and vegetative ground cover, the Project could contribute to an increase in TSS.

Chemical spills resulting from traffic accidents are possible and if uncontained would negatively affect water quality. The crossings and proximity of the Project to the Casa Loma Canal and San Diego Canal could result in runoff or spills entering the canals. Because the canals are protected against flooding in most locations by dikes, the most significant contamination risk to the canals would be where the Project crosses. However, at these crossings, storm water and other runoff from the Project roadway would be conveyed to pipes, which would direct flow away from the canals. Even so, accidents where the Project crosses the canals could pose a risk of contamination. Groundwater can also be affected by substantial spills resulting from traffic accidents, particularly large spills that could overwhelm typical treatment BMPs.

No Build Alternative

The quality and quantity of storm water runoff from the existing SR 79 alignment have not been adequately measured, so no baseline has been established. Although the No Build Alternative would not add any impervious surface area that could contribute to larger volumes of storm water runoff, traffic could increase on the existing alignment. The increase in traffic would increase the potential for typical vehicle-related pollutants to accumulate and wash off into existing drainages. There are no treatment BMPs associated with the No Build Alternative to treat these accumulated pollutants. The long-term result could be an increase in vehicle-related pollutants and degradation of water quality downstream from the existing alignment.

Build Alternative 1a

Build Alternative 1a would total about 95.7 ha (236.8 ac) of impervious surface in the Project area. It would have two drainage crossings, about 370 m (1,214 ft) of roadway, that pass over Salt Creek. Also, eight canal crossings totaling about 399 m (1,310 ft) would pass over San Diego Canal, Casa Loma Canal, and the Colorado River Aqueduct.

Build Alternative 1b

Build Alternative 1b would total about 91.5 ha (226.4 ac) of impervious surface in the Project area. It would have two drainage crossings, about 252 m (827 ft) of roadway, that pass over Salt Creek and Hemet Channel. Also, eight canal crossings totaling about 484 m (1,588 ft) would pass over San Diego Canal, Casa Loma Canal, and the Colorado River Aqueduct.

Design Option 1b1

The impacts associated with Design Option 1b1 would be the same as those presented for Build Alternative 1b, except that Design Option 1b1 would total about 92.7 ha (229.3 ac) of impervious surface in the Project area.

Build Alternative 2a

Build Alternative 2a would total about 94.2 ha (233.2 ac) of impervious surface in the Project area. It would have five drainage crossings, about 556 m (1,823 ft) of roadway, that pass over Salt Creek and Hemet Channel. Also, eight canal crossings totaling about 489 m (1,605 ft) would pass over San Diego Canal, Casa Loma Canal, and the Colorado River Aqueduct.

Build Alternative 2b

Build Alternative 2b would total about 90.6 ha (224.1 ac) of impervious surface in the Project area. It would have three drainage crossings, about 392 m (1,286 ft) of roadway, that pass over Salt Creek and Hemet Channel. Also, eight canal crossings totaling about 394 m (1,293 ft) would pass over San Diego Canal, Casa Loma Canal, and the Colorado River Aqueduct.

Design Option 2b1

The impacts associated with Design Option 2b1 would be the same as those presented for Build Alternative 2b, except that Design Option 2b1 would total about 91.8 ha (226.8 ac) of impervious surface in the Project area.

Temporary Impacts

This section addresses direct and indirect temporary impacts associated with the Project. Temporary impacts relate primarily to construction and immediately after construction, before soil stability and vegetative cover have reached optimum levels. Traffic detours would be required temporarily during construction.

Construction of any alternative would involve site grading, excavation, and modification to the landscape near the Project. This would expose unprotected soil to erosion by wind, rain, and runoff. During and after construction, exposed cut and fill slopes would erode until stabilized by vegetative or mechanical means. A combination of sheet and concentrated flows could erode and transport the soil, causing suspended fine-grain soil particles to enter San Jacinto River, Salt Creek (and Hemet Channel), and Warm Springs Creek. These suspended particles would increase turbidity, settle, and cause siltation downstream. Both of these effects can have adverse effects on aquatic habitats.

The following construction activities would be part of all of the Build alternatives and design options and could contribute to increases in sediment, turbidity, and floating materials to receiving waters:

- **Daily contractor activity** – Routine construction activities such as material delivery, storage, and usage, waste management, vehicle/equipment cleaning and operation, and use of a construction staging area could result in generation of dust, sediments, and debris.
- **Vegetation removal/trimming** – Removal or trimming of vegetation would be required for both construction and access. These activities could eliminate the ground cover that protects the topsoil. Exposed topsoil would be more susceptible to erosion.
- **Grading** – Grading would include removal of the natural and/or stabilizing cover (topsoil) and the creation of engineered slopes using fill material. Without temporary or permanent erosion-control measures, graded material would be highly susceptible to erosion.
- **Temporary roads** – Construction of temporary roads would require grading, vegetation removal, and changes to the topography and drainage characteristics of the watershed. These temporary roads would typically be made of native material and/or aggregate base rock. When used as temporary detours, they would also have a layer of asphalt concrete pavement.
- **Activities within the stream channels –** Construction of bridges and ramps would require a considerable presence in stream channels. These activities might require the construction of temporary access roads. It is assumed that work would proceed during the dry season, and that all watercourses (with the exception of the canals) would be dry. No cofferdams or other flow diversions would be required.
- **Dewatering** – Construction could require localized dewatering in areas where the depth to groundwater is shallow. Dewatering activities would be continuous but temporary for the duration of work in a particular area. Discharged groundwater might be high in turbidity.
- **Construction of temporary structures –** To support construction equipment, laborers, and construction forms, it might be necessary to erect falsework. Falsework is typically constructed of wood and metal connectors. Although most woodcutting would take place outside the stream corridors, some woodcutting would be necessary as the falsework is erected. This woodcutting could introduce sawdust to channels or surface waters. Disassembly of the falsework could cause small pieces of wood, nails, and metal cuttings to enter channels or canals.
- **Seeding and application of fertilizers and nutrients** – To prepare the ground for temporary or permanent cover and promote better growth, fertilizers and plant nutrients may be applied before and after planting. In

the early stages of the seeding process, surface runoff could wash some of the revegetation material, including fertilizers, nutrients, and seeds, into surface waters.

Fuel, oil, and other spills from construction equipment are potential sources of temporary pollutants. These pollutants can be carried offsite in the same manner as eroded soil and can soak into the ground, possibly affecting groundwater. The permeability associated with hydrologic soil groups (NRCS 2003) applies to undisturbed surface soils only. Because construction would involve excavation and compaction throughout the site, the hydrologic soil group is not an adequate approach to assessing infiltration-related temporary impacts. A substantial construction-related spill (for example, fuel, engine oil or coolant, hydraulic fluid) would be considered a significant water quality (and other) hazard, no matter what the soil condition.

Uncured concrete and grout can be significant pollutants if allowed to enter waterways. Concrete and chemical spills, if they occur above canals or drainage watercourses during construction (such as during bridge construction), could directly enter the water. Although the drainage channels are generally dry, the canals carry State Water Project water to the San Diego Aqueduct that is ultimately treated for use as potable water. Construction around and over the canals would require special attention to prevent any contamination or spills.

Trucks and construction equipment could contribute to water quality degradation if fill material or chemicals (for example, fuel, engine oil or coolant, hydraulic fluid) leak onto the roadways and are flushed to adjacent drainages by storm water.

No Build Alternative

Temporary impacts are typically associated with construction activities, and because it entails no construction, there would be no temporary impacts to water quality from the No Build Alternative.

Build Alternative 1a

Build Alternative 1a would involve about 370 m (1,214 ft) of drainage channel crossings at two sites and about 399 m (1,310 ft) of canal crossings at eight sites. There would be about 2,835 m (9,300 ft) of roadway construction adjacent to canals. The disturbed soil area (DSA) during construction would be 449.3 ha (1,109.9 ac).

Build Alternative 1b and Design Option 1b1

Build Alternative 1b (and Design Option 1b1) would involve about 252 m (827 ft) of drainage channel crossings at two sites and about 484 m (1,588 ft) of canal crossings at eight sites. There would be no construction immediately adjacent to drainage channels, but about 4,390 m (14,400 ft) adjacent to canals. The base condition DSA during construction would be 419.3 ha (1,036.3 ac). With the design option, the DSA would be 419.7 ha (1,037.1 ac).

Build Alternative 2a

Build Alternative 2a would involve about 556 m (1,823 ft) of drainage channel crossings at five sites and about 489 m (1,605 ft) of canal crossings at eight sites. This Build alternative would also have approximately 2,683 m (8,800 ft) of construction immediately adjacent to canals. The DSA during construction would be 425.1 ha (1,050.2 ac).

Build Alternative 2b and Design Option 2b1

Build Alternative 2b (and Design Option 2b1) would involve approximately 392 m (1,286 ft) of drainage channel crossings at three sites and approximately 394 m (1,293 ft) of canal crossings at eight sites. There would be about 4,543 m (14,900 ft) of construction adjacent to canals. The base condition DSA during construction would be 406.0 ha (1,003.4 ac). With the design option, the DSA would be 406.4 ha (1,004.2 ac).

Summary of Environmental Consequences

Potential permanent and temporary impacts for the Project alternatives are summarized in Table 3.2-10 (page 3-307).

Water Quality Modeling

A water quality model was developed to assess the water quality impacts for the Project. Based on volume and pollutant loading, the model was developed in a Microsoft Excel spreadsheet. The water quality modeling methodology is described in Appendix A of the Final Water Quality Assessment Report. The modeling approach used event mean concentrations (EMCs) for various pollutants that have been established by previous studies. These studies use runoff monitoring data from specific land uses to estimate EMCs. Water quality impacts were assessed within the PIA.

For pre-construction conditions, the existing land use areas in the PIA were delineated for each roadway segment. For post-construction (Project operation) conditions, the impervious (roadway) and pervious areas in the PIA were also determined. Impervious areas were assumed to have an EMC equivalent to the land use designated “Caltrans Highway.” Pervious areas were assumed to have an EMC equivalent to the land use designated “Undeveloped.” The model analyzed pre-construction conditions, post-construction conditions without treatment best management practices (BMPs), and post-construction conditions after the implementation of treatment BMPs.

Constituents that were modeled included total suspended solids, total phosphorus, nitrate, total copper, total lead, and total zinc. These constituents were selected because they are consistent with the Department’s Targeted Design Constituent (TDC) approach. A TDC is a pollutant that has been identified during Departmental runoff characterization studies to be discharging with a load or concentration that commonly exceeds allowable standards and is considered treatable by currently available Department-approved treatment BMPs. The TDC approach is the Department's statewide design guidance to address the “Primary Pollutants of Concern,” as listed in the Project Planning and Design Guide (PPDG).

The approach for selecting BMPs is based on procedures set forth in the Department’s PPDG. Infiltration devices are the preferred treatment BMP for the Project and, if fully implemented, would minimize water quality impacts to surface waters because there would be no discharge to surface waters for most storms. However, infiltration devices require appropriate soil and groundwater conditions, and full implementation would most likely be infeasible. Field testing will be conducted prior to final design to determine the appropriateness of infiltration devices.

Table 3.2-10 Water Quality
Summary of Potential Permanent and Temporary Impacts from the Project Alternatives

Impacts	Project Alternative				
	No Build Alternative	**Build Alternative 1a**	**Build Alternative 1b (including Design Option 1b1)** [a]	**Build Alternative 2a**	**Build Alternative 2b (including Design Option 2b1)** [a]
		Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours	Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours
Permanent					
Contributed Impervious Groundcover (hectares [acres])	N/A[c]	95.7 ha (236.8 ac)	91.5 ha (226.4 ac) OR 92.7 ha (229.3 ac)	94.2 ha (233.2 ac)	90.6 ha (224.1 ac) OR 91.8 ha (226.8 ac)
Drainage Watercourse Crossings[b]	N/A[c]	2	2	5	3
Water Supply Canal Crossings[b]	N/A[c]	8	8	8	8
Temporary					
Total DSA (hectares [acres])	0	449.3 ha (1,109.9 ac)	419.3 ha (1,036.3 ac) OR 419.7 ha (1,037.1 ac)	425.1 ha (1,050.2 ac)	406.0 ha (1,003.4 ac) OR 406.4 ha (1,004.2 ac)
Construction over Drainage Watercourses (meters [feet])	0	370 m (1,214 ft)	252 m (827 ft)	556 m (1,823 ft)	392 m (1,286 ft)
Construction over Canals (meters [feet])	0	399 m (1,310 ft)	484 m (1,588 ft)	489 m (1,605 ft)	394 m (1,293 ft)

Source: Final Water Quality Assessment Report, May 2008; Technical Report Addendum Memorandum, Final Water Quality Assessment Report, June 2010

[a]Information is presented first for the base condition followed by "OR," then the information for the design option. If there is no variation between the base condition and design option, the information is given only once.

[b]Crossings apply to main roadway and ramps.

[c]The No Build Alternative would represent the existing SR 79 alignment, and there would be no change in the existing condition.

To complete the model, other treatment BMPs were considered based on the TDC approach. Phosphorus is the priority TDC for the Project (see Final Water Quality Assessment Report). The treatment BMP strategy for phosphorus is to incorporate such infiltration devices as the preferred treatment BMP, followed by Austin sand filters. Detention devices would be the third alternative and would be considered when there is less hydraulic head available. Last, biofiltration swales would be considered for areas where infiltration devices, media filters, and detention devices are not feasible.

Treatment BMPs are designed to treat the water quality volume (WQV), which represents the volume of frequent storm events (design storm). The WQV is defined as the 85th percentile runoff capture ratio. Treatment BMPs are sized to accommodate the entire WQV from the contributing drainage area. The modeling predicts the pollutant loading and concentration of an average year based on rainfall of 11.4 inches per year. Flows in excess of the WQV design storm would be diverted around or through the treatment BMP. Based on the 85th percentile runoff capture ratio, the modeling for the post-Project condition with the implementation of treatment BMPs estimates that 85 percent of the total annual average flow would be treated, and 15 percent of the flow would pass without treatment.

For the WQV design storm, the water quality modeling for the treatment options estimates a treatment BMP breakdown of 45 percent of the flow treated by Austin sand filters, 45 percent of the flow treated by detention basins, and 10 percent of the flow treated by biofiltration swales. The water quality model represents a conservative approach to treatment. Implementation of infiltration devices would improve the water quality over that shown in the modeling results.

For TSS, total phosphorus, total copper, and total zinc, the post-construction condition would result in lower pollutant loading and concentration after implementation of treatment BMPs.

For nitrate and total lead, the pollutant loading and concentration are expected to increase slightly for the post-construction condition, even after the implementation of treatment BMPs. The nitrate loading and concentration would increase because the PIA is expected to consist of two land uses, Caltrans Highway and Undeveloped, which have the highest concentrations of nitrate, and treatment BMPs are not very effective at treating this pollutant. The nitrate (NO_3) concentration was predicted to be 1.03 mg/L, and the loading to be 843 to 915 pounds (lbs) per year, depending on the Build alternative. Of this, 0.24 mg/L of nitrate would be in the form of nitrogen (N).

For comparison, the water quality objective for nitrate in the Santa Ana Region Basin Plan (CRWQCB 2008) was identified as 45 mg/L. This value was established as the primary drinking water standard. The nitrate concentration predicted in the model is much less than the water quality objective. Also, the Lake Elsinore and Canyon Lake Nutrient TMDL has established a numeric target of 0.75 mg/L for total N. The nitrate concentration predicted by the model equates to 0.24 mg/L of nitrate as nitrogen (NO_3-N), which is less than the TMDL numeric target, but there may be other forms of nitrogen not accounted for in the modeling.

Another factor in assessing the water quality impact would be to compare the total drainage area of the San Jacinto watershed that drains to Canyon Lake and the total drainage area of the Project. Approximately 1,903.64 km^2

(735 mi^2) of the 1,903.65-km^2 (782-mi^2) San Jacinto River watershed drain to Canyon Lake. By comparison, the PIA would consist of 396.59 to 439.89 ha (980 to 1,087 ac) (or 3.89 to 4.40 km^2 [1.5 to 1.7 mi^2]), depending on the Build alternative. The Project would comprise, at most, 0.2 percent of the total drainage area of the San Jacinto River watershed that drains to Canyon Lake.

For groundwater, the Santa Ana Region Basin Plan has established water quality objectives for NO_3-N in the San Jacinto River Basin. As shown in Table 3.2-5 (page 3-298), the values range from 2 to 5 mg/L, which exceed the model-predicted post-construction concentration of 0.24 mg/L of NO_3-N.

Although the model predicts that the Project would increase the concentration of nitrate, the increase would not cause a significant water quality impact. The modeled concentrations of NO_3 and the conversion to NO_3-N are both less than established water quality objectives for both surface water and groundwater, and they are less than the numeric target set by the Lake Elsinore and Canyon Lake Nutrient TMDL. In addition, the Project would comprise a small fraction (0.2 percent) of the total drainage area of the San Jacinto River watershed that drains to Canyon Lake. Thus, the increase in nitrate concentration and loading would not have a significant water quality impact to either surface water or groundwater resources.

The model also predicts a higher pollutant loading and concentration of total lead for post-construction conditions. Even with treatment, the total lead loading and concentration would be higher than the existing condition. The total lead concentration was predicted to be 11 µg/L, and the loading to be 9 to 10 lbs per year, depending on the Build alternative. The increase is slight, with a concentration increase of 0.007 mg/L and a total pollutant loading increase of 6 lbs. Build Alternatives 1b and 2b would have the lowest predicted total lead loading.

For comparison, the site-specific objective (SSO) for dissolved lead in the Santa Ana Region Basin Plan was identified as 28 µg/L. The basin plan states that the toxicity testing performed as part of the Santa Ana River Use – Attainability Analysis (UAA) demonstrated that this level of dissolved lead (28 µg/L) is safe and nontoxic in Santa Ana River water. The basin plan further indicates that there is also evidence that levels as much as 100 percent higher than those shown do not result in chronic toxicity. Thus, it is reasonable to conclude that the increase in total lead concentration and loading from the Project would not have a significant water quality impact. Build Alternatives 1b and 2b would have the lowest total lead loading.

For groundwater, the Santa Ana Region Basin Plan has established a water quality objective for total lead of 0.05 mg/L. The total lead concentration predicted in the model is much less than the water quality objective.

Although the model predicts that the Project would increase the concentration of total lead, the increase would not cause a significant water quality impact. The modeled concentration of total lead is less than established objectives for both surface water and groundwater. In addition, the Project would comprise a small fraction (0.2 percent) of the total drainage area of the San Jacinto River watershed that drains to Canyon Lake. Thus, the increase in lead concentration and loading would not have a significant water quality impact to either surface water or groundwater resources.

In summary, the potentially higher concentrations of nitrate and total lead are still less than the water quality objectives established in the Basin Plan. All other modeled constituents have a concentration and loading less than the existing condition after implementation of treatment BMPs. Because of this, the beneficial uses would be maintained for the basin. Therefore, the Project would not have a significant impact on the beneficial uses identified in Table 3.2-7 (page 3-300) for the Santa Ana region, and Table 3.2-8 (page 3-300) for the San Diego region.

The unique features of the Project (including the utility relocation areas, connections to Hemet Channel outside the Project ROW, and traffic detours) were not modeled because they would have a negligible impact on pollutant loading.

3.2.2.4 Avoidance, Minimization, and/or Mitigation Measures

This section describes avoidance, minimization, and mitigation measures that would be implemented as part of the Project to reduce potential permanent and temporary impacts to water quality. Figures 2.2-8a-n, 2.2-9, 2.2-10a,b, 2.2-11a,b, and 2.2-15 through 2.2-25 show the locations of BMPs for the Build alternatives, which are discussed in Section 2.2.1.2 (page 2-18).

Measures to Reduce Impacts to Water Quality

The measures below can be applied alone or in combinations to address various potential water quality impacts. These measures would apply to all Build alternatives and both design options.

WQ-1 **Construction Best Management Practices in Compliance with Project Planning and Design Guide (PPDG), Storm Water Management Plan (SWMP), Storm Water Pollution Prevention Plan (SWPPP), and Standard Special Provisions (SSP).** The contractor will use a combination of BMPs that are acceptable and approved by the Department and that comply with the PPDG, SWMP, the Project-specific SWPPP, and any applicable Department SSPs to minimize impacts associated with runoff and polluted water.

Information about design, placement, and applicability of construction site BMPs can be found in the Construction Site BMP Manual and Section 4 of the PPDG. For fill slopes steeper than 4:1, an Erosion Control Plan prepared by or approved by a District Landscape Architect is required. The list of proposed construction site BMPs from the PPDG are summarized in Table 3.2-11.

Table 3.2-11 Proposed Construction Site BMPs

Category	BMP No.	BMP Name
Temporary Soil Stabilization BMPs	SS-1	Scheduling
	SS-2	Preservation of Existing Vegetation
	SS-3	Hydraulic Mulch
	SS-4	Hydroseeding
	SS-5	Soil Binders
	SS-6	Straw Mulch
	SS-7	Geotextiles, Plastic Covers, and Erosion Control Blankets
	SS-8	Wood Mulching
	SS-9	Earth Dikes/Drainage Swales and Ditches
	SS-10	Outlet Protection/Velocity Dissipation Devices
	SS-11	Slope Drains
	SS-12	Streambank Stabilization

Table 3.2-11 Proposed Construction Site BMPs

Category	BMP No.	BMP Name
Temporary Sediment Control BMPs	SC-1	Silt Fence
	SC-2	Desilting Basin
	SC-3	Sediment Trap
	SC-4	Check Dam
	SC-5	Fiber Rolls
	SC-6	Gravel Bag Berm
	SC-7	Street Sweeping and Vacuuming
	SC-8	Sand Bag Barrier
	SC-9	Straw Bale Barrier
	SC-10	Storm Drain Inlet Protection
Wind Erosion Control BMPs	WE-1	Wind Erosion Control
Tracking Control BMPs	TC-1	Stabilized Construction Entrance
	TC-2	Stabilized Construction Roadway
	TC-3	Entrance/Outlet Tire Wash
Non-Storm Water Control BMPs	NS-1	Water Conservation Practices
	NS-2	Dewatering Operations
	NS-3	Paving and Grinding Operations
	NS-4	Temporary Stream Crossing
	NS-5	Clear Water Diversion
	NS-6	Illicit Connection/Illegal Discharge Detection and Reporting
	NS-7	Potable Water/Irrigation
	NS-8	Vehicle and Equipment Cleaning
	NS-9	Vehicle and Equipment Fueling
	NS-10	Vehicle and Equipment Maintenance
	NS-11	Pile Driving Operations
	NS-12	Concrete Curing
	NS-13	Material and Equipment Use Over Water
	NS-14	Concrete Finishing
	NS-15	Structure Demolition/Removal Over or Adjacent to Water
Waste Management and Material Pollution Control BMPs	WM-1	Material Delivery and Storage
	WM-2	Material Use
	WM-3	Stockpile Management
	WM-4	Spill Prevention and Control
	WM-5	Solid Waste Management
	WM-6	Hazardous Waste Management
	WM-7	Contaminated Soil Management
	WM-8	Concrete Waste Management
	WM-9	Sanitary/Septic Waste Management
	WM-10	Liquid Waste Management

Source: Caltrans, *Storm Water Quality Handbooks: Project Planning and Design Guide,* May 2007b

WQ-2 **Revegetation.** Where vegetation is grubbed, cleared, or severely damaged or cut back, replacement vegetation will be provided, when feasible, in accordance with applicable standards and guidelines.

WQ-3 **Disturbed Slope Stabilization.** Following construction, disturbed areas will be stabilized through permanent revegetation or other means, per the guidelines of the PPDG. The Department will perform a detailed analysis of downstream channel stability during the design phase of the Project.

WQ-4 **Treatment BMPs.** The Project will incorporate treatment BMPs that have been approved for statewide use per the guidelines in the PPDG. The treatment BMPs listed in Table 3.2-12 are to be considered for projects discharging directly or indirectly to receiving waters. These BMPs have been approved for statewide use and are to be considered for significant reconstruction projects in urban Municipal Separate Storm Sewer System (MS4) areas. The PPDG provides design guidelines for the approved treatment BMPs. The treatment BMPs will clean runoff water and minimize pollutants from construction.

Table 3.2-12 Approved Treatment BMPs

Biofiltration Systems: Strips/Swales
Infiltration Devices: Basins/Trenches
Detention Devices
Traction Sand Traps
Dry Weather Flow Diversion
Gross Solids Removal Devices (GSRDs)
Media Filters: Austin/Delaware Sand Filters
Multi-Chamber Treatment Trains (MCTT)
Wet Basins

Source: Caltrans, Storm Water Quality Handbooks: Project Planning and Design Guide, May 2007b

WQ-5 **Dewatering Permit.** The Project may require localized dewatering in areas where groundwater is shallow. If dewatering is necessary, the Project will comply with the general de minimus permit that applies to general waste discharge requirements for discharges to surface waters in the Santa Ana region (NPDES CAG 998001).

Permanent Impacts

Potential risks to water quality from runoff would be the same for each Build alternative and design option. Treatment BMPs would also be implemented in the same way for all Build alternatives.

The Build alternatives and design options would require implementation of the following mitigation measures to address permanent impacts (see full descriptions on page 3-308).

- WQ-1: Construction BMPs in Compliance with Project Planning and Design Guide (PPDG), Storm Water Management Plan (SWMP), Storm Water Pollution Prevention Plan (SWPPP), and Standard Special Provisions (SSP)
- WQ-2: Revegetation
- WQ-3: Disturbed Slope Stabilization
- WQ-4: Treatment BMPs

Temporary Impacts

The Build alternatives and design options would require implementation of the following measure to address temporary impacts (see full description on page 3-308).

- WQ-1: Construction BMPs in Compliance with Project Planning and Design Guide (PPDG), Storm Water Management Plan (SWMP), Storm Water Pollution Prevention Plan (SWPPP), and Standard Special Provisions (SSP)
- WQ-5: Dewatering Permit

Summary of Avoidance, Minimization, and/or Mitigation Measures

The avoidance, minimization, and/or mitigation measures previously identified to reduce permanent and temporary impacts associated with the No Build Alternative and the Build alternatives (including design options) are summarized in Table 3.2-13.

Table 3.2-13 Water Quality
Summary of Potential Permanent and Temporary Mitigation Measures for Project Alternatives

Measure Number	Description of Measure	No Build Alternative	Build Alternatives and Design Options
Permanent Impacts			
WQ-1	Construction BMPs in Compliance with PPDG, SWMP, SWPPP, and SSP	N/A	X
WQ-2	Revegetation	N/A	X
WQ-3	Disturbed Slope Stabilization	N/A	X
WQ-4	Treatment BMPs	N/A	X
Temporary Impacts			
WQ-1	Construction BMPs in Compliance with PPDG, SWMP, SWPPP, and SSP	N/A	X
WQ-5	Dewatering Permit	N/A	X

Source: Final Water Quality Assessment Report, May 2008; Technical Report Addendum Memorandum, Final Water Quality Assessment Report, June 2010

Note: N/A = Not Applicable

Measures would be the same for all Build alternatives and design options.

3.2.3 Geology/Soils/Seismic/Topography

3.2.3.1 Regulatory Setting

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

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Department's Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects. Structures are designed using the Department's Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Department's Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

3.2.3.2 Affected Environment

As a part of Project development and scoping, a review of the geology, soils, seismic conditions, topography, and mineral resources specific to the Project area was analyzed and is discussed below.

Study Methods and Procedures

Potential impacts associated with geotechnical considerations have been identified from a review of available published and unpublished geotechnical literature that is germane to the Project. This literature includes the safety elements of the general plans for the County of Riverside and the Cities of Hemet and San Jacinto, aerial photographs, official earthquake fault zone maps, geologic and topographic maps and other publications by the California Geological Survey (CGS) and United States Geological Survey (USGS), and available geotechnical reports that pertain to the Project study area.

Existing Geology Environment

The study area for this geologic review involves the geology, soils, seismic potential, and topography of the proposed Project and the adjacent areas that it might affect. This section summarizes the geologic setting of the study area.

Regional Geology

The Project study area is situated in the southeastern portion of the Perris Plain, in the Peninsular Ranges Geomorphic Province (Norris 1990). The geomorphic province encompasses the southwestern corner of California between the Colorado Desert to the east, Gulf of California and Gulf of Mexico to the south, and the Transverse Ranges and the Los Angeles Basin to the north.

The Perris Plain is a broad, nearly flat erosional surface over crystalline bedrock, which protrudes from the plain as numerous hills, knobs of resistant rock that have survived the prolonged effects of wind and water. The Santa Ana River crosses the plain from northeast to southwest. The San Jacinto Mountains are to the east of the plain, and the Santa Ana Mountains are to the west and south.

The bedrock underlying the plain consists of Cretaceous and older basement rocks. The Cretaceous rocks are part of the Peninsular Ranges, or Southern California, Batholith, which is made up of a variety of plutonic rock, ranging from granite to gabbro. Older, prebatholithic basement rocks of Mesozoic age include undifferentiated metasedimentary rocks, graywacke, phyllite, and schist. These rocks are unconformably overlain by Cenozoic marine and nonmarine sedimentary strata. Most of the plain is covered by Late Pleistocene and Holocene alluvial deposits.

Regional geologic structure is dominated by a series of northwest-trending active faults and fault zones, such as the Elsinore Fault Zone (west), the San Jacinto Fault Zone (east), and the San Andreas Fault Zone (east). These large fault systems are located near or within the Peninsular Ranges Geomorphic Province. The predominant major tectonic activity associated with these and other faults in this region is right-lateral, strike-slip movement (Norris 1990).

Local Geology

The Project study area is in the Perris Block, which is in the northern part of the Peninsular Ranges Geomorphic Province. Generalized geologic maps of the southern half and northern half of the Project are presented in Figures 3.2-20 and 3.2-21). These and other geologic maps of the Project vicinity indicate that the study area is underlain primarily by Quaternary alluvium and Cretaceous granitic and gabbroic bedrock. The alluvium (sediment that was deposited by running water) ranges from relatively young alluvial and fluvial valley deposits to older alluvial fan and valley deposits. The younger alluvium generally consists of unconsolidated sand, silt, clay, and gravel of Holocene and Pleistocene age. The older alluvium, of late to middle Pleistocene age, consists of moderately to well-consolidated sandy alluvium that contains less silt and clay and is commonly dissected by erosion.

The older alluvium is mapped in the southern and central portions of the Project study area, at the base of the bedrock hills. The younger alluvium is mapped throughout most of the study area. Cretaceous granitic and gabbroic bedrock is mapped in the southern and central portions of the study area. See Section 3.2.4.2 (page 3-326) for more details about the strata in the Project study area.

Existing Soils Environment

A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. Soil associations for the Project area were determined in the Soil Survey for the Western Riverside Area conducted by the USDA Soil Conservation Service (USDA 1971). Soils in the northern portion of the study area are classified in the San Emigdio-Grangeville-Metz association and the Traver-Domino-Willows association, from north to south. In the southern portion of the Project area, soils are classified in the Hanford-Tujunga-Greenfield association, the Traver-Domino-Willows association, and the Cieneba-Rock Land-Fallbrook association, from north to south.

The San Emigdio-Grangeville-Metz association is characterized by poorly drained to somewhat excessively drained calcareous, loamy sand to loam on alluvial fans and floodplains. The Traver-Domino-Willows association contains moderately well-drained to poorly drained loamy sand to loam. The Hanford-Tujunga-Greenfield association is characterized by well-drained to excessively drained sand to sandy loam on alluvial fans and floodplains. The Cieneba-Rock Land-Fallbrook association consists of well-drained to excessively well-drained sandy loam and fine sandy loam on granitic rock.

Existing Seismic Environment

The Project study area is seismically active, as is most of Southern California. The numerous faults in Southern California include active, potentially active, and inactive faults. As defined by the California Geological Survey (CGS), faults are active if they have moved within Holocene time, or within the last 11,000 years. Note, however, that the Department has a more stringent criterion. A fault is considered active if it has ruptured within the past 700,000 years (late Quaternary to present). Potentially active faults are those that show evidence of movement during Quaternary time (the last 1.6 million years), but for which evidence of Holocene movement has not been established. Inactive faults have not moved in the last 1.6 million years.

The active San Jacinto Fault Zone crosses the northern portion of the Project study area (through proposed Roadway Segments L and M). The relationship of the San Jacinto Fault Zone to the Project study area is shown in Figure 3.2-22. The study area is also situated between two other major active fault zones, the Elsinore Fault Zone to the southwest and the San Andreas Fault Zone to the northeast. Numerous other active and potentially active faults and fault zones are in the general region. Table 3.2-14 lists nearby active and potentially active faults, the maximum moment magnitude (M_{max}), the fault type, the slip rate, and the approximate distance between the proposed Project and the nearest part of the fault.

Table 3.2-14 Major Regional Active and Potentially Active Faults

Fault	Maximum Moment Magnitude[a] (M_{MAX})	Fault Type[b]	Slip Rate (mm/yr)	Approximate Distance from Proposed Alignment (kilometers [miles])
San Jacinto – San Jacinto Valley	6.9	SS	12.0	0[c]
San Jacinto – Anza	7.2	SS	12.0	14.6 km (9.1 mi)
Elsinore – Temecula	6.8	SS	5.0	18.6 km (11.6 mi)
San Andreas – Southern	7.4	SS	24.0	21.5 km (13.4 mi)
Elsinore – Glen Ivy	6.8	SS	5.0	24.7 km (15.4 mi)
San Jacinto – San Bernardino	6.7	SS	12.0	28.5 km (17.8 mi)
Elsinore – Julian	7.1	SS	5.0	32.4 km (20.3 mi)
Pinto Mountain	7.2	SS	2.5	34.7 km (21.7 mi)
North Frontal Fault Zone (West)	7.2	DS	1.0	47.0 km (29.4 mi)
North Frontal Fault Zone (East)	6.7	DS	0.5	47.7 km (29.8 mi)
Chino-Central Avenue (Elsinore)	6.7	DS	1.0	48.6 km (30.4 mi)
Cleghorn	6.5	SS	3.0	51.6 km (32.3 mi)
Cucamonga	6.9	DS	5.0	54.5 km (34.1 mi)
Elsinore – Whittier	6.8	SS	2.5	55.6 km (34.8 mi)
San Jacinto – Coyote Creek	6.8	SS	4.0	57.9 km (36.2 mi)
Burnt Mountain	6.5	SS	0.6	58.8 km (36.8 mi)
Helendale – S. Lockhardt	7.3	SS	0.6	59.2 km (37.0 mi)
Newport – Inglewood (Offshore)	7.1	SS	1.5	62.1 km (38.8 mi)
Eureka Peak	6.4	SS	0.6	63.0 km (39.4 mi)
Landers	7.3	SS	0.6	64.4 km (40.3 mi)
Lenwood – Lockhardt – Old Woman Springs	7.5	SS	0.6	65.5 km (40.9 mi)

Table 3.2-14 Major Regional Active and Potentially Active Faults

Fault	Maximum Moment Magnitude[a] (M_{MAX})	Fault Type[b]	Slip Rate (mm/yr)	Approximate Distance from Proposed Alignment (kilometers [miles])
San Jose	6.4	DS	0.5	69.9 km (43.7 mi)
San Andreas – 1857 Rupture	7.4	SS	30.0	70.7 km (44.2 mi)

Note: DS = dip slip; SS = strike slip; mm/yr = millimeter(s) per year

[a]CGS 2002

[b]CGS 2002

[c]Fault located within Roadway Segments L and M along the northern portion of the proposed alignment

The CGS has designated Earthquake Fault Zones (formerly known as Alquist-Priolo Special Studies Zones) for the San Jacinto, Elsinore, and San Andreas faults. These faults, which are near the Project study area, have high rates of slip (displacement) and are accumulating strain energy that is likely to be released in earthquakes.

San Jacinto Fault Zone

The San Jacinto Fault Zone crosses the northern portion of the study area (Figure 3.2-22). This fault zone consists of a series of closely spaced faults that form the western margin of the San Jacinto Mountains. It extends 209 km (130 mi) from the Valecito Mountains near the border with Mexico north to the San Gabriel Mountains, where it merges with the San Andreas Fault Zone. An active splay of the San Jacinto Fault Zone, the Casa Loma Fault, would be crossed by Roadway Segments L and M. South of the study area, in the vicinity of the Santa Rosa Mountains, the San Jacinto Fault Zone splays into the Coyote Creek Fault, which caused a surface rupture during a magnitude 6.5 earthquake on April 9, 1968 (SCEC 2005). Displacement along the San Jacinto Fault Zone is predominately right-lateral strike slip, and the slip rate along the fault in the vicinity of the study area is estimated to be 12 millimeters per year (mm/year).

Elsinore Fault Zone

The Elsinore Fault Zone is located about 19 km (12 mi) southwest of the Project study area. It extends 180 km (112 mi) from its southeastern portion, the Laguna Salada Fault, north to where it splays into two segments, the Chino Fault and the Whittier Fault. The main trace of the Elsinore Fault Zone has had one event greater than magnitude 5.2. This is known as the Earthquake of 1910, which was a magnitude 6 earthquake near Temescal Valley that produced no known surface rupture and did little damage. However, the Elsinore Fault Zone is active and might be capable of generating a magnitude 6.8 earthquake that could be accompanied by surface rupture along one or more of its traces.

San Andreas Fault Zone

The closest part of the San Andreas Fault Zone is about 21 km (13 mi) northeast of the Project study area. This fault zone has long been recognized as the dominant seismotectonic feature in California. Two of California's three largest earthquakes, the 1906 San Francisco earthquake and the 1857 Fort Tejon earthquake, occurred along the San Andreas Fault. The fault is a right-lateral strike-slip fault that is capable of producing earthquakes of magnitude 8 and more. The part of the San Andreas Fault Zone closest to the Project study area is currently locked and is accumulating substantial amounts of strain from the movement of the Pacific and North American plates. The available geologic and seismicity data indicate that this strain will be released by infrequent major to great earthquakes (magnitude 7 to 8-plus events) rather than by more frequent, smaller magnitude earthquakes.

Ground Shaking

The seismic hazard most likely to impact the study area is ground shaking that could accompany an earthquake. Ground shaking is responsible for most of the damage caused by earthquakes. The amount of ground shaking at a given location depends on many factors, including the size and type of earthquake, distance from the earthquake, and the soil and bedrock conditions. The size and type of construction also affects how a particular structure performs during ground shaking.

Instrumental recordings, primarily of bedrock acceleration, measure ground shaking in a horizontal and vertical direction. These recordings form the basis for structure design per the Uniform Building Code (UBC). Based on a review of the 2007 Caltrans Deterministic PGA Map, the peak ground acceleration (PGA) in the study area could range from 0.3 *g* to 0.5 *g*[7] (Figure 3.2-23). The Department also requires a probabilistic assessment of seismic risk. Probabilistic peak ground accelerations can be more than those shown on the Department's Deterministic PGA Map. Site-specific probabilistic assessments will be conducted during preliminary and final design.

Liquefaction

During an earthquake, liquefaction can happen when loosely packed, waterlogged sediments at or near the ground surface lose their strength in response to strong ground shaking. Ground shaking of sufficient duration can result in the loss of grain-to-grain contact, causing the soil to behave like a fluid for short periods. Structures built on soil that is susceptible to liquefaction can be subject to extreme horizontal and vertical movement. To be susceptible to liquefaction, a soil would typically be cohesionless, with a grain-size distribution of a specified range (generally sand and silt), loose to medium density, below the groundwater table, and subjected to a sufficient magnitude and duration of ground shaking.

A liquefaction study map has been developed for the Project (Figure 3.2-24). Most of the study area is considered moderately to highly susceptible to liquefaction. Areas considered very highly susceptible to liquefaction are near the northern and southern ends of the study area.

Existing Topography Environment

Most of the Project would traverse relatively flat terrain that ranges from about 445 m (1,460 ft) above mean sea level (msl) in the southern part of the study area to about 457.2 m (1,500 ft) msl in the northern part. Hills composed of granitic bedrock several hundred feet high would be west of Roadway Segments A and B. The middle part of Roadway Segment G, the northern part of Segment D, and the southern part of Segment H would

[7]the standard acceleration due to Earth's gravity, equivalent to g-force

rise above the valley floor to about 518, 549, and 610 m (1,700, 1,800, and 2,000 ft) msl, respectively, where the terrain is underlain by granitic bedrock. The relatively steep Lakeview Mountains would be to the east and west of Roadway Segment G and to the west of Segments I, J, and K. The Lakeview Mountains would reach 610 m (2,000 ft) or more above msl near the Project.

Existing Mineral Resources Environment

Riverside County has extensive deposits of clay, limestone, iron, sand, and aggregates. Mineral deposits in the county are important to many industries, including construction, transportation, and chemical processing. Mineral production includes sand, gravel, stone, clay, decomposed granite, gypsum, iron ore, and others. Currently, most mineral resource extraction in western Riverside County takes place in unincorporated areas (RCIP 2003). The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) designates approximately 19,700 acres of land as Mineral Resource Zone[8] 2 (MRZ-2), which indicates that the zone has significant mineral deposits. The largest MRZ-2 area in western Riverside County is in Temescal Canyon between the cities of Lake Elsinore and Corona. Currently, no areas designated MRZ-2 are in the Project study area. The closest MRZ-2 area is about 8 km (5 mi) northwest of the northern end of the Project study area (RCIP 2003).

3.2.3.3 Environmental Consequences

Permanent Impacts

The following discussion concerns the potential permanent geologic impacts specific to the Project alternatives. This section includes a summary impacts table to facilitate comparison (Table 3.2-15 [page 3-320]).

No Build Alternative

Because the No Build Alternative does not involve any action by the Project, a discussion of effects related to the No Build Alternative is not required.

All Build Alternatives and Design Options

Potential permanent geologic impacts for all of the Build alternatives and both design options include the following.

- Surface fault rupture hazard
- Seismic ground shaking
- Liquefaction
- Compressible/collapsible soils
- Expansive soils
- Slope stability

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[8]MRZ categories are used by the State Geologist in classifying the state’s lands. MRZs range from MRZ-1 (no significant mineral deposits) to MRZ-4 (lack of knowledge).

All of the Build alternatives would cross an active splay of the San Jacinto Fault Zone, the Casa Loma Fault (Figure 3.2-22) (note that the design options would be the same configuration as their respective Build alternatives in this area). The Casa Loma Fault has been designated as an Earthquake Fault Zone by the CGS. Accordingly, surface fault rupture would be a potential impact for all of the Build alternatives. Ground shaking from an earthquake could have an impact on all of the Build alternatives and design options. Peak horizontal bedrock acceleration, based on the Maximum Credible Earthquake standard, would range from approximately 0.4 *g* in the southern parts of the Project to 0.6 *g* in the vicinity of the San Jacinto Fault Zone (Figure 3.2-23). These numbers will be confirmed and updated as necessary in the probabilistic assessment that will take place during preliminary and final design. The susceptibility for liquefaction with all of the Build alternatives and design options would range from low to very high in the southern portion, moderate to high in the central portion, and moderate to very high in the northern portion.

The Project would be underlain by alluvial deposits that are potentially compressible and might include layers of collapsible soil. Accordingly, compressible/collapsible soils would be considered a potential impact. Expansive soils could also be present in the alluvial deposits and weathered Cretaceous rock. Parts of the Build alternatives and design options would cross or would be adjacent to hills composed of crystalline bedrock. These hills could be subject to rock fall, rock slides, and rock-slope failures. If excavations into these hills are made, or if significant slopes are planned as part of the roadway, then slope-stability analyses, which would include evaluating for rock-slope failures, will be considered during final design and construction.

Summary of Potential Permanent Impacts for Project Alternatives

A summary of the potential permanent geologic impacts associated with the No Build Alternative and the Build alternatives and design options is presented in Table 3.2-15.

Table 3.2-15 Summary of Potential Permanent Impacts Associated with the Project Alternatives

Alternative	Surface Fault Rupture	Ground Shaking[a]	Liquefaction Susceptibility	Compressible/ Collapsible Soils	Expansive Soils	Slope Stability
No Build						
1a	●	0.3 *g* to 0.5 *g*	Low to Very High	●	●	●
1b (including Design Option 1b1)[b]	●	0.3 *g* to 0.4 *g*	Low to Very High	●	●	●
2a	●	0.3 *g* to 0.5 *g*	Low to Very High	●	●	●
2b (including Design Option 2b1)[b]	●	0.3 *g* to 0.5 *g*	Low to Very High	●	●	●

Source: Results of preliminary geology study, October 2008

Note: ● = Potential impact

[a]Preliminary Peak Ground Acceleration is based on the 2007 Caltrans Deterministic PGA Map; probabilistic PGA may be higher than noted. Site-specific seismic assessments would be required during preliminary and final design.

[b]Information is presented first for the base condition followed by the design option. If there is no variation between the base condition and design options, the information is given only once.

Temporary Impacts

The following discussion concerns the potential temporary geologic impacts associated with the Project alternatives. This section also includes a summary impacts table to facilitate comparison.

No Build Alternative

Because the No Build Alternative would not involve any action by the Project, a discussion of the No Build Alternative is not required.

All Build Alternatives and Design Options

Potential temporary impacts associated with all of the Build alternatives and design options could include groundwater encountered during construction and difficult excavation in some types of bedrock.

Portions of the Project could be underlain by shallow groundwater (i.e., less than 9.1 m [30 ft] deep). Depending on the depth of the excavation, groundwater could be encountered during installation of deep foundations for bridges or other proposed structures. Even relatively shallow excavations for preparation of subgrade, installation and rerouting of underground utilities, foundations, and drilled piers could also extend below groundwater levels. Construction dewatering may be needed to facilitate construction of structures below groundwater levels.

In the southern part of the Project, the roadway would be underlain by granitic and gabbroic bedrock. This bedrock material would be visible on the surface as knobs of resistant crystalline rock that form the adjacent hills. Depending on the depth, moderate to difficult excavation could be encountered in these materials. Excavations in the upper weathered portions of the bedrock should generally be feasible, but deeper, unweathered portions of the bedrock could require blasting or other difficult excavation techniques, such as breakers.

The central and northern parts of the Project would be underlain predominately by Quaternary alluvium. Excavations into the alluvial deposits should be feasible without the need for blasting or difficult excavation techniques.

Summary of Potential Temporary Impacts for All Project Alternatives

A summary of the potential temporary impacts for the No Build Alternative and the Project alternatives is presented in Table 3.2-16.

Table 3.2-16 Summary of Potential Temporary Impacts for All Project Alternatives

Alternative	Groundwater	Moderate to Difficult Excavation
No Build		
1a	●	●
1b (including Design Option 1b1)[a]	●	●
2a	●	●
2b (including Design Option 2b1)[a]	●	●

Source: Results of preliminary geology study, October 2008
Note: ● = Potential impact
[a]There is no variation between the base condition and design options, so the information is given only once.

3.2.3.4 Avoidance, Minimization, and/or Mitigation Measures

Measures to avoid, minimize, or mitigate the potential permanent and temporary geologic impacts associated with the Build alternatives and design options are listed below.

GEO-1 **Surface Fault Rupture**. To further evaluate the fault-rupture hazard along the Project alignment, a subsurface evaluation will be performed. The subsurface evaluation will include the excavation and detailed logging of exploratory trenches, test pits, and/or borings, geophysical studies such as high-resolution seismic reflection, seismic refraction, ground penetrating radar, gravity and/or magnetic profiling, or other applicable methods. The evaluation will be performed prior to final design and construction so that if a fault-rupture hazard exists, foundations for grade separations or other structures can be designed for the anticipated displacement or located away from the fault trace.

GEO-2 **Ground Shaking**. Minimization of the potential impacts of seismic ground shaking will be achieved through Project design, construction, and maintenance. During the final design phase, site-specific geotechnical evaluations will be performed to obtain detailed subsurface soil and geologic data, including a probabilistic assessment of the ground motion expected at the site. Structural elements will then be designed to resist or accommodate site-specific ground motion. All designs will conform to the current Caltrans Bridge Design Specifications and American Association of State Highway and Transportation Officials (AASHTO) seismic design standards.

GEO-3 **Liquefaction**. Site-specific geotechnical evaluations will be performed during the design phase of the Project to assess the liquefaction and dynamic settlement potential of the onsite soils. Foundations for structures will be designed for liquefaction by supporting the piles in dense soil or bedrock below the liquefaction zone or by other appropriate methods to be determined during the site-specific evaluation. Additional measures for liquefaction may include densification by installing stone columns, vibroflotation, or deep dynamic compaction. To reduce vibration impacts to existing facilities during ground improvement, other methods, such as compaction grouting or deep-soil mixing cells, will be used.

GEO-4 **Compressible/Collapsible Soils**. During the design phase of the Project, a site-specific geotechnical evaluation will be performed to determine the presence of compressible/collapsible soils. The settlement potential of the soils will be evaluated where structures or fills are proposed and at existing facilities that could be impacted by the settlement. If the settlement potential exceeds acceptable tolerances for a structure (based on the California Amendments to the AASHTO [load-and-resistance factor design] LRFD Bridge Design Specifications – Fourth Edition [Department 2011]), then remedial measures will be incorporated into design and construction. Possible measures include surcharging, overexcavation and recompaction, compaction grouting, allowing for a settlement period during or after construction, and specialized foundation design. The method chosen will be determined during final design and as construction progresses.

GEO-5 **Expansive Soils.** Site-specific investigations will be conducted during the design phase of the Project to determine whether expansive soils are present. If expansive soil conditions are found and are considered detrimental to proposed improvements, measures such as overexcavation and replacement with non-expansive soil, chemical treatment (e.g., lime or cement), moisture control, and/or specific structural design for expansive soil conditions will be developed during design of the Project. Indirect impacts of expansive soils on existing facilities will also be considered. Measures could include limiting construction dewatering or redirecting storm water flows to reduce risk of significant seasonal soil moisture changes.

GEO-6 **Slope Stability**. Site-specific geotechnical evaluations will be performed during the design phase of the Project to assess the potential for rock-slope failures. Measures to minimize rock-slope failures will include excavating potentially unstable material to create a flatter, more stable slope configuration, constructing buttress and/or stabilization fills, installing rock bolts on the face of the slope, installing protective wire mesh on the slope face, or constructing debris impact walls at the toe of the slope to contain rock-fall debris. The method will be determined during final design and during construction.

GEO-7 **Groundwater**. Due to potentially shallow groundwater levels, wet or saturated soil could be encountered in excavations during construction. Excavations that extend below the water table might need to be dewatered. If dewatering is not adequately controlled by the contractor, it could induce consolidation of the soils under an excavation, which can cause differential settlement of nearby existing structures and improvements. The amount of consolidation due to dewatering can depend on many factors, including the areal extent and depth of dewatering, soil type, soil density, and the methods used by the dewatering contractor.

Water generated during dewatering will require assessments to determine proper disposal. This disposal will be coordinated with the Regional Water Quality Board and will comply with other jurisdictional requirements. This may include pretreatment in Baker tanks and disposal into the local sanitary sewer system or minimal pretreatment and disposal into temporary holding ponds or onto the surrounding ground. Final disposition of dewatering water will be determined during final design and during construction.

To reduce the potential for damage resulting from dewatering or excavation operations, the ground surface and structures around the excavation will be monitored for movement. If monitoring instruments detect ground movement that exceeds a predetermined value (based on the California Amendments to the AASHTO LRFD Bridge Design Specifications – Fourth Edition [Department 2011]), construction will stop and the contractor's methods will be reviewed. Appropriate changes will be made, if necessary.

Typical monitoring methods include installing devices around the outside of the excavation to monitor settlement or placing devices on nearby structures to monitor performance of the structures.

Excavations for the underground structures will need to be performed with care to reduce the potential for lateral deflection of excavation sidewalls and/or shoring, which could also cause differential movement of structures located near the excavation. Inclinometers can be installed along the sides of an excavation to monitor lateral deflection of the sidewalls during excavation.

GEO-8 **Excavation Characteristics**. Parts of the Project would be underlain by crystalline bedrock. Deeper, unweathered portions of the bedrock may require blasting or other difficult excavation techniques such as breakers. Blasting or breakers, if required, will produce temporary noise and dust hazards, which will be appropriately monitored during construction. Measures for construction-noise abatement will include appropriate personal protective equipment and procedures (e.g., adequate ear protection, establishing a safe distance from a blasting location). Possible dust control measures include appropriate personal protective equipment and procedures (e.g., respiratory equipment, covers for truck trailers that haul excavated materials, wetting dry or dusty excavations and material). Measures for noise and ejected media will include barriers such as vertical shields and mats overlying the working surface. The final measures will be determined during construction.

Measures for avoiding, minimizing, or mitigating the potential permanent and temporary impacts associated with the Build alternatives and design options are summarized in Table 3.2-17 (page 3-325).

Table 3.2-17 Summary of Measures for Build Alternatives and Design Options

Alternative	Mitigation Measure							
	Permanent						Temporary	
	GEO-1 Surface Fault Rupture	GEO-2 Ground Shaking	GEO-3 Liquefaction	GEO-4 Compressible/ Collapsible Soils	GEO-5 Expansive Soils	GEO-6 Slope Stability	GEO-7 Groundwater	GEO-8 Excavation Characteristics
1a (including Design Option 1b1)[a]	●	●	●	●	●	●	●	●
1b	●	●	●	●	●	●	●	●
2a	●	●	●	●	●	●	●	●
2b (including Design Option 2b1)[a]	●	●	●	●	●	●	●	●

Source: Results of preliminary geology study, October 2008

Note: ● = Measure applies to at least a part of the Build alternative or design option (see text for discussions of the measures).

[a]There would be no variation between the base condition and design options at the level of detail required for this document.

3.2.4 Paleontology

3.2.4.1 Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals.

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

16 United States Code (USC) 431-433 prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land.

23 United States Code (USC) 305 authorizes funds be appropriated and used for archeological and paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 above.

16 United States Code (USC) Section 470aaa prohibits the excavation, removal or damage of any paleontological resources located on federal land.

23 Code of Federal Regulations (CFR) 1.9(a) states that the use of federal funds must be in conformity with federal and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

3.2.4.2 Affected Environment

The discussion and analysis of paleontological resources is based on the environmental review and conclusions presented in the Final Paleontological Identification and Paleontological Evaluation Report (PIR/PER) of January 2008 and the Technical Report Addendum Memorandum for Paleontological Resources of June 2010. The following summarizes the geologic formations that may indicate the presence of paleontological resources in the Project area.

A paleontological resource is a locality that could contain vertebrate, invertebrate, or plant fossils. These localities are distinguished by fossil location, fossil-bearing geologic formation, or a formation with the potential to bear fossils. Paleontological resources are considered a fragile and nonrenewable scientific record of the history of life on earth and so represent an important part of mankind's natural heritage.

Paleontological resources in the vicinity of the Project include fossilized remains and their respective fossil sites, associated fossil specimen data and corresponding geologic and geographic site data, and the fossil-bearing rock units that lie immediately under the surface. Some of these rock units have potential to yield certain kinds of fossilized remains because they have yielded similar remains at previously recorded sites in or near the Project area (see Figure 3.2-25). Fossils, the remains or indications of once-living organisms, are an important scientific resource. They can be used to document the evolution of a particular group of organisms, reconstruct the environment in which the organisms lived, and determine the age of the rock unit where they were found, as well as learning more about the geologic events that created the rock units themselves.

Stratigraphic Inventory

As discussed in Section 3.2.3.2 (page 3-314), the Project study area is in the San Jacinto Valley and near the northeastern edge of the Perris Block, which is part of the northern Peninsular Ranges Geomorphic Province. Major linear geographic features (mountains and valleys) and the underlying geologic structures (faults and folds) trend in a dominantly northwesterly direction in this area (Jahns 1954, Morton 1971, Morton 1999, Rogers 1965, Woodford 1971). The Perris Block is a narrow crustal block that has the San Jacinto Fault Zone to the northeast, the Elsinore Fault Zone to the southwest, and a series of faults to the north that form the southern boundary of the Transverse Ranges Province, where the major geologic structures and geographic features trend in a predominantly east-west direction (Jahns 1954; Morton 1971, 1999; Rogers 1965; Woodford 1971).

Mapping (Dibblee 2003) indicates that the Project study area is underlain by three rock units, including (in order of decreasing geologic age) the late Cretaceous Peninsular Ranges, or Southern California, Batholith, which forms the hills in the Project study area, the Pleistocene older alluvium, which covers the lower slopes of the hills, and the younger alluvium, which underlies the valley floor and is Holocene at and near the surface, but late Pleistocene (Ice Age) at depth. These rock units are discussed below, in order of deposition.

- **Southern California Batholith.** This formation consists of granitic rocks that formed from a molten state deep in the crust of the earth. Because of its origin, this rock unit has no potential for fossils being encountered by earth-moving activities (Scott 2005).
- **Older Alluvium.** This sedimentary formation consists of slightly dissected late Quaternary alluvial sand and gravel that was eroded from and covers the adjacent bedrock hills, grading laterally downslope into the younger alluvium (Dibblee 2003). Because the older alluvium lies adjacent to its source areas, it is probably too coarse to contain fossils, thus has little potential for scientifically important fossilized remains being encountered by earth-moving activities.
- **Younger Alluvium.** This sedimentary formation consists of unconsolidated and undissected late Quaternary alluvial clay and sand that underlies the valley floors in the Project study area (Dibblee 2003). Numerous fossil sites have been recorded at relatively shallow depths in and near the study area. This indicates that the potential for encountering similar fossilized remains is high where the Project area is underlain by the younger alluvium (Scott 2005).

Paleontological Resource Assessment Criteria

The Society of Vertebrate Paleontology has developed guidelines for assessing the paleontological importance of rock units (SVP 1995). The paleontological importance (high, low, none, or undetermined productivity potential) of a rock unit is the measure most often used to assess the scientific importance of the paleontological resources in a project area because the rock units can be delineated on a topographic map. The paleontological importance of a rock unit reflects its potential yield and the scientific importance of the fossils it has produced.

The importance of a rock unit is based on the number of fossil specimens and sites that have been recorded for previous exposures of the rock unit in and near the Project area. The criteria for establishing the potential paleontological productivity (importance) of a rock unit that could be exposed by Project construction are described below.

- **High potential:** Rock unit contains relatively high numbers of fossil sites that have yielded many fossils in nearby areas and, therefore, likely contains similar sites in the Project area.
- **Low potential:** Rock unit has relatively low numbers of fossil sites, which have yielded very few or no fossils, in nearby areas and, therefore, is not likely to contain any fossils in the Project area. Such rock units would include those that are very coarse grained or are too young to contain remains old enough to be fossilized.
- **Undetermined potential:** Rock unit for which too few data are available from the vicinity of the Project to allow an accurate assessment of its potential for containing any unrecorded fossil site or for yielding any scientifically important fossilized remains.
- **No potential:** Unfossiliferous artificial fill and igneous and high-grade metamorphic rock units with no potential for containing any fossilized remains.

A fossil specimen is considered scientifically important if it is:

- Identifiable
- Complete
- Well preserved
- Age diagnostic
- Useful in environmental reconstruction
- A type or topotypic specimen
- A member of a rare species
- A species that is part of a taxonomically diverse assemblage
- A skeletal element different from or a specimen more complete than those now available for its respective species

Identifiable fossilized land mammal remains, for example, are considered scientifically important because of their rarity and their potential for providing accurate age determinations and environmental reconstructions of the rock units in which they occur. The geologic age of some fossils can be determined by carbon-14 dating.

3.2.4.3 Environmental Consequences

Paleontological resources (an undetermined number of fossilized remains and unrecorded fossil sites, associated fossil specimen data and corresponding geologic and geographic site data, and fossil-bearing strata) would be adversely affected by the permanent direct and indirect impacts resulting from earth-moving activities during construction of the Project.

The following tasks were conducted in compliance with Society of Vertebrate Paleontology (SVP 1995) guidelines for assessing the significance of construction-related impacts on paleontological resources or the paleontological sensitivity of a particular rock unit to such impacts.

The assessment of a rock unit includes a determination of its potential paleontological or scientific importance and its impact sensitivity. This assessment of the rock unit makes it possible to evaluate the potential for encountering fossil sites during earth-moving activities. As stated in the previous section, this method of impact assessment is most appropriate to an areal paleontological resource investigation because discrete levels of paleontological impact sensitivity or significance can be delineated on a topographic or geologic map of the Project area.

Paleontological resources would not be affected by burial of any part of the Project area (by berms or leveling, for example) because any fossilized remains would be at least 1.2 m (4.0 ft) below the present ground surface (bgs) and, therefore, would not be accessible for recovery.

Note, that any impact on a fossil site and the fossil-bearing strata would be considered significant paleontologically, regardless of the paleontological importance of the rock unit in which the site and strata occur. For example, excavation in an area where a rock unit of low importance is at or near the surface would have low potential for the disturbance of fossilized remains (in other words, the rock unit would have low sensitivity with regard to such impacts). Thus there would be little potential for the loss of paleontological resources during excavation activities.

Permanent Impacts

No Build Alternative

The No Build Alternative would not involve earth-moving activity that would disturb fossil-bearing strata, so it would have no permanent impacts on paleontological resources. On the other hand, any fossils that might have been exposed as a result of Project construction would not be accessible for recovery and scientific study.

All Build Alternatives and Design Options

Potential permanent impacts to paleontological resources would be the same for all Build alternatives and design options, as discussed below.

Direct impacts on the paleontological resources in the Project study area would result mostly from earth-moving activities (particularly excavation) in previously undisturbed strata, making the strata and their resources permanently unavailable for future scientific investigation. The attendant loss of any fossil specimens and site, associated data, and the fossil-bearing strata itself would be a permanent impact.

Indirect impacts could result from unauthorized fossil collecting by construction personnel, rock hounds, and amateur and commercial fossil collectors who would be afforded easier access to fossil-bearing strata by earth-moving activities. Unauthorized fossil collecting would be temporary, but would also result in the permanent loss of fossils and sites and associated data. The loss of these additional paleontological resources would be another permanent impact.

An assessment of the scientific importance of impacts on the paleontological resources in the Project study area is shown by Build alternative (including design options) and rock unit in Table 3.2-18.

Table 3.2-18 Paleontological Scientific Importance by Build Alternative (including Design Options) and Rock Unit

Build Alternative	Rock Unit		
	Southern California Batholith	Older Alluvium	Younger Alluvium
1a	none	Does not have Scientific Importance	Has Scientific Importance[a]
1b (including Design Option 1b1)[b]	none	Does not have Scientific Importance	Has Scientific Importance[a]
2a	none	Does not have Scientific Importance	Has Scientific Importance[a]
2b (including Design Option 2b1)[b]	none	Does not have Scientific Importance	Has Scientific Importance[a]

Source: Final Paleontological Identification and Paleontological Evaluation Report, January 2008; Technical Report Addendum Memorandum for Paleontological Resources, June 2010

[a]Locally important in areas where strata are fine grained and earth-moving activities would exceed depths of 1.2 m (4.0 ft) bgs; less important in areas where these activities would not exceed 1.2 m (4.0 ft).

[b]Information is the same for base condition and design option.

- **Southern California Batholith.** There would be no potential impact on paleontological resources as a result of earth-moving activities in the parts of the Project area where the Southern California Batholith is at or near the surface. Because of its origin from a molten state deep in the crust of the earth, this rock unit does not contain fossils.
- **Older Alluvium.** Potential for impacts on paleontological resources from earth-moving activities would be low in the parts of the Project area where older alluvium is at or near the surface. This rock unit is generally too coarse grained to contain fossils.
- **Younger Alluvium.** Potential for impacts on paleontological resources would be low in the parts of the Project area where younger alluvium is at or near the surface and earth moving does not extend deeper than 1.2 m (4 ft) bgs. At such shallow depths, this rock unit is probably too young to contain fossilized remains.

  On the other hand, the potential is high for impacts on paleontological resources from earth-moving activities that extend deeper than 1.2 m (4.0 ft) bgs, especially in the parts of the Project area where younger alluvium is at or near the surface. Based on a review of the previously recorded sites in the area, fossilized remains of late Pleistocene land mammals are likely to be encountered in this rock unit at these greater depths. Particularly sensitive parts of the Project area would be near the Eastside Pipeline between Cottonwood Avenue and Domenigoni Parkway and near Domenigoni Parkway between Winchester Road and Warren Road. Other parts of the Project area could be as sensitive as these areas, but have no previously recorded fossil sites.

Earth-moving activities could be more than 1.2 m (4.0 ft) deep during construction of roadway segments, bridges, grade-separated interchanges, aqueduct crossings, hydrology facilities, constructed traffic detours, connections to Hemet Channel, utility relocations, or other Project features.

When the Project would be close to the hills made of granitic rocks from the Southern California Batholith, the younger alluvium there would probably be too coarse grained to contain fossils. Any such remains would have been destroyed by when cobblestones and boulders were deposited as the hills eroded. For this reason, the potential for uncovering scientifically important fossils during earth-moving activities is low where the Project is adjacent to these hills and where the younger alluvium is at or near the surface.

Impacts resulting from earth-moving activities in fine-grained strata at more than 1.2 m (4.0 ft) bgs would be unavoidable and could not be adequately minimized by methods such as design modification. In particular, activities associated with the construction of bridges could result in the loss of fossilized bones and teeth from extinct species of late Pleistocene (Ice Age) land mammals. As a result, appropriate measures, as discussed in Section 3.2.4.4, would be implemented.

Note that the Project would also have some beneficial effects. These effects, if fossils were encountered, would include the exposure of fossils that would not have been discovered without the Project and, therefore, would not have been available for recovery and scientific study.

Temporary Impacts

No Build Alternative

The No Build Alternative would not involve earth-moving activity that would disturb fossil-bearing strata, so it would not cause temporary impacts. However, any fossils that could have been exposed as a result of Project construction would not be accessible for recovery and scientific study.

All Build Alternatives and Design Options

Potential temporary impacts to paleontological resources would be the same for all Build alternatives and design options, as discussed below.

Although earth-moving activities associated with the Build alternatives or design options would be temporary and would end when the Project has been built, any impact on paleontological resources encountered during construction would not be temporary. This is because any activity that results in the loss of a fossil, an unrecorded fossil site, loss of associated fossil or site data, or loss of fossil-bearing strata would have a permanent impact.

3.2.4.4 Avoidance, Minimization, and/or Mitigation Measures

Because of the potential for permanent and temporary impacts to paleontological resources, avoidance, minimization, and/or mitigation measures would be required for all Build alternatives and design options.

Earth-moving activities associated with the Build alternatives and design options could result in the loss of late Pleistocene fossils. These losses could occur in the areas of the Project where the younger alluvium, which underlies portions of all of the Build alternatives, is at or near the surface and where excavation would be more than 1.2 m (4.0 ft) bgs.

As stated earlier, the loss of a fossil, site, fossil-bearing strata, or associated specimen or site data would be a permanent impact. This potential impact, however, will be addressed by monitoring earth-moving activities. Appropriate monitoring will provide a method for the recovery and subsequent treatment (preparation, identification, curation, and cataloging) of fossils that have been exposed by earth-moving and other construction activities, for recording fossil specimen and site data, and for permanently storing the remains and archiving associated data.

A paleontological mitigation plan will address the permanent direct and indirect impacts to paleontological resources that can accompany the earth-moving activities (particularly excavation) required for construction of the Build alternatives. The mitigation program will provide for the recovery of scientifically important fossilized remains and associated specimen and site data, preservation of the remains in a recognized museum repository, and availability for future study by qualified scientific investigators. Without implementation of a mitigation program, these specimens and data could be lost to earth-moving activities or to unauthorized fossil collecting. Specimen recovery would be allowed under 23 USC 305, which provides for the use of federal transportation funds for paleontological salvage, and CEQA Appendix G (5c).

Mitigation measures would be required for all of the Build alternatives and both design options, but will be implemented only where the younger alluvium is at or near the surface and where excavation would extend at least 1.2 m (4.0 ft) bgs. Monitoring would be suspended in areas that are adjacent to bedrock hills from the Southern California Batholith once it has been demonstrated that the younger alluvium there is too coarse grained to contain fossils.

The level and type of mitigation recommended on a particular Build alternative will reflect the paleontological importance or impact sensitivity of the rock unit underlying that part of the Project area, the corresponding potential for fossils to be encountered by earth-moving activities, the type of rock constituting the rock unit, and the types and magnitudes of the impacts that could occur in the area. For example, excavation in an area where a rock unit with high potential is at or near the surface would require intensive paleontological monitoring during construction, while excavation of an area where a rock unit of low or undetermined potential is at or near the surface would require little or no monitoring. Monitoring would not be required in an area with artificial fill (unless a rock unit with high potential would be encountered at depth) or a rock unit of low or no paleontological potential is at or near the surface or an area where a rock unit with high potential would be buried, but not otherwise disturbed.

With a paleontological mitigation plan in place, the discovery and subsequent recovery of fossilized remains could result in a slight delay of some earth-moving activities. However, delays will be reduced as much as possible by ensuring that a paleontological construction monitor will be present when and where fossilized remains are most likely to be encountered by earth-moving activities. Such measures will allow for the rapid recovery of fossilized remains, if any are encountered, and associated fossil and site data. If necessary, the monitor will notify the Resident Engineer, who will divert the earth-moving activities around a newly discovered fossil site until the remains have been removed.

The literature review, archival searches, field survey, and a review of the geologic maps of the Project area indicate that a paleontologically highly sensitive rock unit (younger alluvium) would be at or near the surface where the earth-moving activities associated with Project construction would have high potential for encountering fossilized remains. Therefore, measures to mitigate potential impacts to paleontological resources would be required. The measures listed below represent the minimum required by Department guidelines. Other measures may be added as Project design progresses. The measures required by Department guidelines apply to all Build alternatives and design options and are summarized in Table 3.2-19 and are presented in detail following the table. These measures are also included in Appendix E (Volume 2).

Table 3.2-19 Paleontological Mitigation Measures by Build Alternative and Design Option and Rock Unit

Build Alternative	Rock Unit		
	Southern California Batholith	Older Alluvium	Younger Alluvium
1a	None	None[a]	PALEO-1 to -1h[b]
1b (including Design Option 1b1)[c]	None	None[a]	PALEO-1 to -1h[b]
2a	None	None[a]	PALEO-1 to -1h[b]
2b (including Design Option 2b1)[c]	None	None[a]	PALEO-1 to -1h[b]

Source: Final Paleontological Identification and Paleontological Evaluation Report, January 2008; Technical Report Addendum Memorandum for Paleontological Resources, June 2010

[a]No mitigation would be necessary unless comparatively fine-grained strata are encountered by earth-moving activities or fossilized remains are discovered unexpectedly.

[b]No mitigation would be necessary at less than 1.2 m (4.0 ft) below present ground surface unless remains are encountered by earth-moving activities. Mitigation measures PALEO-1 to -1h would be required where these activities exceed a depth of 1.2 m (4.0 ft).

[c]Measures would be the same for all Build alternatives and design options.

PALEO-1 **Paleontological Mitigation Plan (PMP)**. Prior to construction, the services of a qualified professional paleontologist will be retained by RCTC to prepare a PMP consistent with Department guidelines. The PMP will include the following:

- **PALEO-1a. Retention of Paleontologist.** The PMP will stipulate that prior to construction, the services of a qualified professional paleontologist will be retained by RCTC to implement the PMP during earth-moving activities.
- **PALEO-1b. Museum Storage Agreement.** The PMP will include a formal agreement that will be developed with a recognized museum repository, such as the San Bernardino County Museum Division of Geological Sciences.
- **PALEO-1c. Additional Paleontological Survey.** The PMP will provide measures for additional paleontological surveys if the location of any alternative is changed or if any unrecorded fossil sites are discovered or fossilized remains are recovered. Additional surveys will include recording any associated fossil specimen and site and identifying fine-grained strata suitable for containing fossilized remains.

- **PALEO-1d. Preconstruction Coordination with Resident Engineer.** The PMP will address coordination among the qualified professional paleontologist or field supervisor, the Resident Engineer, and construction contractor personnel regarding the protection of paleontological resources, including a preconstruction briefing on procedures to be implemented if a fossil site or remains are encountered by earth-moving activities, particularly when a paleontological construction monitor is not onsite.
- **PALEO-1e. Monitoring Plan.** The PMP will include a plan for monitoring and periodic dry-screen testing by a qualified paleontological construction monitor. A paleontological monitoring plan may include full-time or part-time monitoring, visually inspecting freshly exposed strata and debris piles, and dry-screen testing for smaller fossils, as well as methods for the discovery of fossilized remains, the recovery of fossilized remains, and instructions about how to coordinate with the Resident Engineer to divert construction activities away from the fossil site.
- **PALEO-1f. Specimen Handling.** The PMP will provide instructions for the preparation, identification, curation, and cataloging of fossil and/or sediment specimens.
- **PALEO-1g. Transfer of Fossil Collection to Museum.** The PMP will provide instructions for the transfer of the entire fossil collection, along with all supporting documentation, to a museum repository, where the fossils will be permanently stored and maintained.
- **PALEO-1h. Reporting.** The PMP will provide instructions for the paleontological construction monitor to report daily activities and for preparing a Paleontological Mitigation Report (PMR) that is consistent with Department guidelines. The PMR is to be prepared by a qualified professional paleontologist in accordance with Department and RCTC requirements.

3.2.5 Hazardous Waste/Materials

3.2.5.1 Regulatory Setting

Hazardous materials including hazardous substances and wastes are regulated by many state and federal laws. Statutes govern the generation, treatment, storage, and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

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

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act

- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

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

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires clean up of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is encountered, disturbed during, or generated during project construction.

3.2.5.2 Affected Environment

The analysis of hazardous waste/materials in the Project study area is based on the environmental review and conclusions presented in the Limited Subsurface Environmental Evaluation Near the Former Hemet Sanitary Landfill of June 2007, Final Initial Site Assessment (ISA) of June 2008, and Technical Report Addendum Memorandum, Final Initial Site Assessment of June 2010.

Study Methods and Procedures

The scope of the initial site assessment for the Project included the following tasks:

- Task coordination and attendance at a Project initiation meeting.
- Review of federal, state, and county regulatory agency databases to identify known hazardous waste sites, landfills, leaking and permitted underground storage tanks (USTs), and facilities that use, store, or dispose of hazardous materials within 0.40-km (0.25-mi) of the Project Impact Area (PIA).
- Overview site reconnaissance (from public rights-of-way) of properties on or adjacent to the PIA (which includes areas with unique design features) to visually verify known sites of concern (revealed by database and historical research) and locate other hazardous materials/waste sites that could have an impact on the Project.
- Review of historical land use, including readily available historical aerial photographs, historical oil-field maps, historical topographic maps, and historical fire-insurance maps.

- Preparation of the ISA, which summarized issues related to documented or suspected releases of hazardous materials at or adjacent to each of the Project alternatives.

The scope of the ISA did not include:

- Interviews with property owners or representatives, title search, environmental lien research, or reconnaissance on private property.

  The ISA is not intended to satisfy the guidelines set forth by the American Society for Testing and Materials (ASTM) Standard E 1527-05 for Phase I Environmental Site Assessments: Phase I Environmental Site Assessment Process or the requirement of the "All Appropriate Inquiries (AAI)" obligated under CERCLA.

The Project would have a detrimental impact if it exposes humans or their environment to hazardous materials or petroleum compounds. The construction activities associated with the Project could also increase the likelihood of hazardous substance or petroleum compound release and/or migration. The purpose of the ISA was to evaluate whether hazardous materials might be present in soil or groundwater in the Project study area and whether the presence of such materials would result in impacts from Project activities. The likelihood of specific places in the Project study area being contaminated by hazardous materials was ranked as high, moderate, or low, based on the following:

- **High** – Property with known or probable contamination within 0.40-km (0.25-mi) of the PIA. An example of a property in this category would be a leaking UST site where remediation has not been started or has not yet finished.
- **Moderate** – Property with potential or suspected contamination within 0.40-km (0.25-mi) of the PIA. Examples of properties in this category would be leaking UST sites in final stages of remediation or in post-remediation monitoring. Other examples would be a property with known use and storage of hazardous materials that has received violation notices from an inspecting agency or property where visual evidence of inadequate chemical and storage practices (such as significant staining) has been observed, but where no environmental assessment has occurred.
- **Low** – Property that uses or stores hazardous materials, but has had no significant violations, known releases, or evidence of inadequate chemical-handling practices. Example properties would be UST or dry cleaning facilities with no documented releases or where remediation of previous releases has been completed.

Site Reconnaissance and Current Photographs

A site reconnaissance provides site-specific, current information that is not obtainable through an environmental-records or aerial-photograph review. A site reconnaissance was performed from public rights-of-way in the Project area on July 10, 2007. The reconnaissance included visual inspections of the general Project area, unique design features of the Project, and adjoining properties.

During the site reconnaissance, several indicators of potential environmental impacts in the Project study area were evaluated. These included significant staining or degraded pavement, USTs, aboveground storage tanks (ASTs), storage of hazardous materials and wastes, groundwater monitoring wells and remediation systems, dry cleaning facilities, transformers, pesticide use, industrial facilities, current or historical gasoline stations, distressed vegetation, and the presence of waste pits, ponds, or lagoons. Note that the presence of ASTs, USTs, or chemical storage areas alone is not cause to classify a property as a moderate or high risk.

Review of Regulatory Agency Databases

FirstSearch® performed an environmental-records search of federal, state, and local files for sites located near the PIA. Six corridor searches, each with a search area of 0.40 km (0.25 mi) on either side of the PIA were ordered. Because of the immediate proximity and overlapping alignments of some roadway segments, the roadway segments were evaluated in groups by FirstSearch®. The results of the FirstSearch® evaluations were provided as six reports representing the roadway segments studied for the Project. Copies of the six reports are included in Appendix C of the ISA, Environmental Database Reports and ISA Checklist.

Review of Historical Topographic Maps and Sanborn Maps

Sanborn maps were originally created for assessing fire insurance liability in urbanized areas in the United States. Compiled by the Sanborn Fire Insurance Company, the maps include details about building information in approximately 12,000 U.S. towns and cities from 1867 to 2007. Thus they have become a highly useful resource for historical research, planning, preservation, sociological studies, and research of urban geography. Sanborn maps for the PIA and surrounding area were requested from FirstSearch®. However, FirstSearch® reported that no Sanborn maps were ever produced for the Project area.

Historical and current United States Geological Survey (USGS) 7.5-minute quadrangle maps, Lakeview (1953, 1979) and Winchester (1953, 1979), were obtained or reviewed. Copies of these topographic maps are included in Appendix D of the ISA, Index of Historical Topographic Maps and Sanborn Maps.

Review of Historical Aerial Photographs

Aerial photographs have been collected for the continental United States since the 1920s, with variable coverage and frequency (generally based on the importance of an area to national defense). Aerial photographs offer an opportunity for direct observation of site conditions over a period of time. These observations may include the locations of tank pits, drums, pits, ponds, lagoons, stained/stressed vegetation, or other site-development features that can indicate potential sources of contamination.

Aerial photographs of the Project area taken in 1954, 1967, 1976, 1980, 1994, and 2002 were provided for the ISA by FirstSearch®. A 2006 aerial photograph of the Project area was obtained electronically from an online service. The photographs varied in scale and clarity and were taken from various altitudes and angles. They are included in Appendix E of the ISA, Historical Aerial Photographs.

Department ISA Checklist

A Department ISA checklist was completed for the Project and is included in Appendix C of the ISA, Environmental Database Reports and ISA Checklist.

ISA Limitations and Exceptions

The information presented in the ISA was based on the Project scope of work. Information provided by others was relied on for the description of historical conditions and the review of regulatory databases and files. No warranties or guarantees regarding the accuracy or completeness of the information provided or compiled by others is made. Properties within and adjoining the Project area were observed from public rights-of-way only. Interviews with individual/property representatives were not conducted as part of this ISA.

No ISA can completely eliminate uncertainty about the potential for hazardous materials conditions in connection with a property. The ISA is intended to reduce, but not eliminate, uncertainty about the presence of hazardous materials conditions. The available data are not definitive in relation to past uses, operations, or incidents in the PIA or adjacent properties. The existence of site contamination that was not identified by this assessment is possible and cannot be adequately evaluated without additional research beyond the stated scope of work. Further evaluation of these types of risks could include subsurface exploration, sampling, or other forms of testing.

In addition, some substances may be present in the Project study area or in the vicinity in quantities below those designated as actionable by current environmental regulations. If, in the future, regulatory standards are changed and the current site conditions become actionable, the results of the ISA would need to be readdressed.

Special Terms and Conditions

No special terms and/or conditions are applicable.

Project Alternatives

No Build Alternative

The affected environment for the No Build Alternative would include undeveloped/vacant land, agricultural land, scattered residences, scattered commercial uses such as dairies, greenhouses, a gasoline station, and urban/commercial areas of Hemet and San Jacinto.

All Build Alternatives and Design Options

The affected environment in the PIA would include the same uses as the No Build Alternative, except that the realignment would bypass the urban/commercial areas in Hemet and San Jacinto.

Summary of Affected Environment

Based on site reconnaissance, historical documentation, and aerial photographs, uses of the environment that would be affected by the Project has not changed substantially since the early 1950s. The current and past uses of adjoining properties have also remained static. A summary of the affected environment is presented in Table 3.2-20 (page 3-339).

Table 3.2-20 Summary of Affected Environment for the Project Alternatives

Affected Environment	Project Alternative				
	No Build Alternative	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[a]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[a]
Vacant/Agricultural Land	Primary Observed Land Use	Primary Observed Land Use	Primary Observed Land Use	Primary Observed Land Use	Primary Observed Land Use
Residential	Limited	Limited	Limited	Limited	Limited
Commercial	Dairies, Vacant Commercial Buildings, Mobile Homes Sales	Dairies, Vacant Commercial Buildings, Mobile Homes Sales	Dairies, Vacant Commercial Buildings, Mobile Homes Sales	Dairies, Vacant Commercial Buildings, Mobile Homes Sales	Dairies, Vacant Commercial Buildings, Mobile Homes Sales
Other	Elementary School, Hemet Sanitary Landfill, Reflection Lake RV Resort, EMWD-RWRF, Mobil gasoline station	Elementary School, Adjacent to the former Hemet Sanitary Landfill, Reflection Lake RV Resort, EMWD-RWRF, Mobil gasoline station	Adjacent to the former Hemet Sanitary Landfill, Reflection Lake RV Resort, EMWD-RWRF, Mobil gasoline station	Elementary School, Adjacent to the former Hemet Sanitary Landfill, Reflection Lake RV Resort, EMWD-RWRF, Mobil gasoline station	Adjacent to the former Hemet Sanitary Landfill, Reflection Lake RV Resort, EMWD-RWRF, Mobil gasoline station

Source: Final Initial Site Assessment Report, June 2008; Technical Report Addendum Memorandum, Final Initial Site Assessment, June 2010

Note: EMWD-RWRF – Eastern Municipal Water District's Regional Water Reclamation Facility

RCTC purchased, demolished, and remediated the Mobil gasoline station after it had been observed during the site reconnaissance.

[a]Information is the same for the base condition and design options, so it is given only once.

3.2.5.3 Environmental Consequences

Permanent Impacts

The possible existence of permanent impacts was evaluated by observations made during a site reconnaissance and by reviews of regulatory agency databases, historical data sources, and regulatory agency files. Permanent impacts are generally equivalent to recognized environmental conditions (RECs) and historical recognized environmental conditions (HRECs) that could directly impact the Project.

Operation of the Project would not normally involve the storage, use, or disposal of hazardous materials or wastes. It also would not be expected to affect transportation of hazardous materials. Therefore, operation of the Project as a transportation corridor would not be expected to result in significant hazardous materials impacts.

No Build Alternative

The No Build Alternative would not cause Project-related hazardous materials impacts because no roadway construction would occur.

All Build Alternatives and Design Options

The permanent impacts associated with each of the proposed Build alternatives would be the same. Therefore, the following is applicable to all of the Build alternatives and design options.

Permanent Impacts Noted during Site Reconnaissance

No visual evidence of significant environmental risk indicators was noted during the site reconnaissance except for agricultural use, the Mobil gasoline station at 2070 North Sanderson Avenue, and the presence of the former Hemet Sanitary Landfill (see Figure 3.2-26).

Potentially significant pesticide residues may be present within the portions of the Project area used for agriculture. Pesticide storage or handling facilities were not observed within or adjacent to the Project area.

The Mobil gasoline station was not listed in any environmental databases. The station was acquired and demolished by RCTC after the initial observation during the site reconnaissance. RCTC completed remediation of the site after the Project baseline date of January 30, 2007.

A limited subsurface environmental evaluation was performed near the former Hemet Sanitary Landfill. The soil samples were evaluated for concentrations of chemicals of potential concern (COPCs), which include volatile organic compounds (VOCs), metals, and total petroleum hydrocarbons carbon chain (TPHcc). No detectable concentrations of VOCs or TPHcc were identified. In June 2008, this evaluation was documented in Limited Subsurface Environmental Evaluation, Near the Former Hemet Sanitary Landfill, Intersection of Esplanade Avenue and Warren Road, Hemet, California (RCTC 2007). Based on these findings, the former Hemet Sanitary Landfill would not be considered a permanent impact as long as buried waste is not disturbed by construction.

In preparation for the site reconnaissance, JRS Kar Korner, an automobile junkyard, was noted in the environmental databases as having had an unauthorized release of oil and hazardous substance. However, by the time of the reconnaissance, the site of the junkyard had been converted to a paved lot with a manufactured homes sales center and a Penske feed store. No visual staining was noted on the property. The Build alternatives would intersect Winchester Road and Domenigoni Parkway. They would also intersect SR 74/Florida Avenue. Aerially deposited lead (ADL) may be present where the Build alternatives intersect these roadways.

A summary of permanent impacts evaluated during the site reconnaissance is shown in Table 3.2-21 (page 3-341). The presence of ADL at intersections with existing roadways could be a permanent impact from the Build alternatives. All of the Build alternatives and design options would traverse agricultural land, so pesticide residues, if they are present, could be a permanent impact.

Table 3.2-21 Permanent Impacts Noted during Site Reconnaissance

Address/ General Location	Business Name	Site Use	Chemical Storage Areas	Dumped, Burned Material	Hydraulic Equipment (Lifts)	Bermed, Recessed, or Diked Areas	Chemical/Pesticide Mixing Areas	Sumps, Pits, Ponds, Lagoons, Clarifiers	Discharges/Disposal Areas	Groundwater Monitoring Wells or Other Wells	Remediation Equipment/Evidence or Remediation	Discolored or Polluted Water	Storage Tanks (Underground or Aboveground)	Drums	Stressed Vegetation	Discolored/Stained Soils	Degraded/Heavy Stained Pavement
2070 Ramona Expressway/ Build alternatives and design options[a]	Mobil	Gasoline station	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N
Build alternatives and design options[a]	Hemet Sanitary Landfill	Closed sanitary landfill	N	Y	N	N	N	N	N	Y	Y	N	N	N	N	N	N

Source: Final Initial Site Assessment Report, June 2008; Technical Report Addendum Memorandum, Final Initial Site Assessment, June 2010

Note: Y – Yes
N – No
UNK – Unknown
The existence of tanks or chemical storage areas alone is generally not cause to classify a property as moderate or high risk. However, evidence of a release, such as significant staining, groundwater monitoring wells, or remediation equipment, would be cause to classify a property as moderate or high risk.

[a]Information is the same for the base condition and the design options, so it is given only once.

Permanent Impacts Noted in Agency Database Review

An environmental records search of federal, state, and local files for properties in the Project study area, including areas with unique design features, was performed by FirstSearch®. As stated earlier in this section, the results of this search was documented in Appendix C of the ISA, Environmental Database Reports and ISA Checklist). Tables 3.2-22 (page 3-342), 3.2-23 (page 3-347), 3.2-24 (page 3-347), 3.2-25 (page 3-349), and 3.2-26 (page 3-350) show the number of properties reported by FirstSearch® for the databases evaluated for the reports.

The FirstSearch® report also includes a list of "orphan sites" that could not be mapped by the addresses included in the file. This list was reviewed, and it was determined that the orphan sites were not located within 0.40 km (0.25 mi) of any of the Build alternatives.

Table 3.2-22 Environmental Database Search Results for the Build Alternatives and Design Options

Database(s)	Description	Facilities Listed[a, b]			
		Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[c]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[c]
Federal Databases					
NPL	The National Priorities List (NPL) is USEPA's database of uncontrolled or abandoned hazardous waste facilities that have been listed for priority remedial actions under the Superfund Program. Updated quarterly.	0	0	0	0
CERCLIS/NFRAP	The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database is a compilation of facilities that USEPA has investigated or is currently investigating for a release or threatened release of hazardous substances pursuant to the CERCLA of 1980. NFRAP (No Further Remedial Action Planned) refers to facilities that have been removed and archived from its inventory of CERCLA sites.	0	0	0	0
RCRA CORRACTS/TSD	USEPA maintains a database of RCRA facilities associated with treatment, storage, or disposal (TSD) of hazardous materials that are undergoing "corrective action." A "corrective action" order is issued when there has been a release of hazardous waste or constituents into the environment from an RCRA facility.	0	0	0	0
RCRA Non-CORRACTS/TSD	The RCRA Non-CORRACTS/TSD Database is a compilation by USEPA of facilities that report storage, transportation, treatment, or disposal of hazardous waste. Unlike the RCRA CORRACTS/TSD database, the RCRA Non-CORRACTS/TSD database does not include RCRA facilities where corrective action is required.	0	0	0	0

Table 3.2-22 Environmental Database Search Results for the Build Alternatives and Design Options

Database(s)	Description	Facilities Listed[a, b]			
		Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[c]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[c]
RCRA Generators	The RCRA Generators database, maintained by USEPA, lists facilities that generate hazardous waste as part of their normal business practices. Generators are listed as large quantity generators (LQGs), small quantity generators (SQGs), or conditionally exempt small quantity generators (CESQGs). LQGs produce at least 1,000 kg/month of non-acutely hazardous waste or 1 kg/month of acutely hazardous waste. SQGs produce 100 to 1,000 kg/month of non-acutely hazardous waste. CESQGs are those that generate less than 100 kg/month of non-acutely hazardous waste.	1	1	1	1
ERNS	The Emergency Response Notification System (ERNS) records and stores information on reported releases of oil and hazardous substances.	0	0	0	0
State Databases					
CalSites	The CalSites database is maintained by the Cal/EPA, Department of Toxic Substances Control (DTSC). This database contains information on the annual workplan properties (AWP) list (the state equivalent of the NPL) and both known and potentially contaminated properties. Two-thirds of these properties have been classified, based on available information, as needing no further action (NFA) by the DTSC. The remaining properties are in various stages of review and remediation to determine if a problem exists.	1	0	1	0
Spills – 1990	The California RWQCBs maintain reports of sites that have records of spills, leaks, investigation, and cleanups.	0	0	0	0
SWLFs	The solid waste landfill (SWLF) database consists of open and closed solid waste disposal facilities and transfer stations. The data comes from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.	1	1	1	1
LUSTIS	Databases of the Leaking Underground Storage Tank Information System (LUSTIS) are maintained by the SWRCB and RWQCB.	0	0	0	0

Table 3.2-22 Environmental Database Search Results for the Build Alternatives and Design Options

Database(s)	Description	Facilities Listed[a, b]			
		Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)[c]	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)[c]
UST	The UST Information System, which may include the owner and location of the USTs, is maintained by the SWRCB. This database may also include registered ASTs.	4	4	4	4
Other	Riverside County Waste Generators – A list of facilities in Riverside County that generate hazardous waste.	1	1	1	1

Source: Final Initial Site Assessment Report, June 2008; Technical Report Addendum Memorandum, Final Initial Site Assessment, June 2010

Note: AST – Aboveground Storage Tank
AWP – Annual Workplan Properties
CERCLA – Comprehensive Environmental Response, Compensation and Liability Act
CESQG – Conditionally Exempt Small Quantity Generators
DTSC – Department of Toxic Substances Control
ERNS – Emergency Response Notification System
LQG – Large Quantity Generator
NFA – No Further Action
NFRAP – No Further Remedial Action Planned
NPL – National Priorities List
RCRA – Resource Conservation and the Recovery Act
RWQCB – Regional Water Quality Control Board
SQG – Small Quantity Generators
SWIS – Solid Waste Information System
SWLF – Solid Waste Landfill
SWRCB – State Water Resources Control Board
TSD – Treatment, Storage, and Disposal
USEPA – United States Environmental Protection Agency
UST – Underground Storage Tank

[a]Some facilities have multiple listings in a single database.

[b]Some facilities are listed in more than one segment group.

[c]Information is the same the base condition and design options, so it is given only once.

The CalSites database contains information regarding properties that may have been affected by the release of hazardous substances. Winchester 1800 Middle School site is listed as participating in a voluntary cleanup program based on previous agricultural land use at that location. The chemicals of concern were related to the use of pesticides. A preliminary environmental assessment is underway. The school location is 5.6 km (3.5 mi) south of the Project study area. Based on location and regulatory status, this facility would not be considered a significant environmental concern to the Project.

The Solid Waste Landfill (SWL) database lists open and closed solid waste disposal facilities and transfer stations. The data came from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database. One property is listed in the database. According to FirstSearch®, JRS Kar Korner, located at 26125 Cordoba Drive, is a closed "minor waste tire facility." No violations were noted for this facility. As noted earlier, this location was found to be paved during the site reconnaissance, with at least two businesses operating there.

UST and AST databases are provided by the State Water Resources Control Board. Being included on these lists is for permitting purposes and does not indicate a release. Gas Plus-Hemet (currently a Shell gasoline station), located at 5771 Florida Avenue, 0.8 km (0.5 mi) east of the Project study area, is listed as having three permitted USTs. No violations were noted for this site. Three listings for two other facilities were included in the database, a residence and an Arco gasoline station. Both facilities are approximately 3.2 km (2 mi) east of the Project study area and would not be considered an environmental concern at that distance.

Riverside County Waste Generators is a database of facilities in Riverside County that generate hazardous waste. Being included on these lists is for permitting purposes and does not indicate a release. One site was listed. Hemet Valley Imaging Medical Corporation, located at 37020 West Florida Avenue, approximately 0.8 km (0.5 mi) east of the Project study area, is in the database. No additional information was provided.

The RCRA Generators database lists facilities that generate hazardous waste as part of their normal business practices. This database is maintained by USEPA. Generators are listed as large, small, or conditionally exempt. One property in the Project study area was listed in the RCRA Generators database. According to FirstSearch®, the EMWD Regional Water Reclamation Facility (RWRF), located at 770 North Sanderson Avenue, is a large-quantity generator of corrosive waste. No violations were noted for this facility.

Permanent Impacts Noted in Topographical Maps and Sanborn Maps Review

Readily available historical and current USGS 7.5-minute quadrangle maps were reviewed for the Project. Sanborn maps were not available for the Project study area.

The Build alternatives would be within the areas shown on the USGS 7.5 Minute Series Winchester (dated 1953 and 1979), California, Topographic Quadrangle Maps and the USGS 7.5 Minute Series Lakeview (dated 1953 and 1979), California, Topographic Quadrangle Maps. The Build alternatives would generally be flat, with elevations ranging from 427 to 503 mm (1,400 to 1,650 ft) above msl.

On the 1953 topographic maps, the Project area is primarily undeveloped land, with scattered residential and agricultural uses. A "reservoir and dump" is noted at the southeastern corner of the intersection at Warren Road and Cottonwood Avenue. The San Diego Aqueduct is shown in the general configuration (in a northeasterly direction) of the San Diego Canal that was observed during the site reconnaissance. The Lakeview Mountains are shown west of the Project area.

The 1979 maps show an increase in residential and agricultural land use. The San Diego Canal (previously labeled San Diego Aqueduct) and the Casa Loma Canal are identified. The reservoir on the southeastern corner of the intersection at Warren Road and Cottonwood Avenue is labeled as Cottonwood Lake (currently Reflection Lake) and extends over the area where the dump was located on the 1953 topographic map. Because the historical "dump" is now covered by Reflection Lake Recreational Vehicle Resort and is not likely to be affected by the construction, it is not considered a concern for the Project. The Hemet Sanitary Landfill is not shown on these topographic maps.

The review of topographic maps did not indicate any permanent impacts other than those noted during the site reconnaissance.

Permanent Impacts Noted in Aerial Photographs Review

The aerial photograph review helped to verify information from other sources and in some cases was the primary source of information. Because the Project study area is relatively large, the following discussion is limited to parcels of potential concern that were revealed by regulatory information or the site reconnaissance.

The 1954, 1967, and 1976 aerial photographs show the Project study area and adjoining properties as vacant or undeveloped land, with some agricultural land and scattered residences. The San Diego Canal is visible in the 1954 aerial photograph. More residences and additional agricultural land (and several dairies) are visible in the 1980, 1994, 2002, and 2006 aerial photographs. A facility is visible at the location of JRS Kar Korner in the 1994 aerial photograph. The Hemet Sanitary Landfill boundaries are visible in the 1967 aerial photograph. The Mobil gasoline station is visible in the 1980 aerial photograph.

The review of aerial photographs did not suggest any permanent impacts beyond those noted during the site reconnaissance.

Permanent Impact Noted in Regulatory Agency/File Review

The former Hemet Sanitary Landfill was identified as a potential environmental issue for the Project, but was not listed in the environmental database searches. Nonetheless, available information related to the Hemet Sanitary Landfill was reviewed, including the report that followed an evaluation of the site by RCTC—Limited Subsurface Environmental Evaluation, Near the Former Hemet Sanitary Landfill, Intersection of Esplanade Avenue and Warren Road, Hemet, California (RCTC 2007). The report indicates that the landfill was operated from 1958 until March 1, 1972. Approximately 18.2 ha (45 ac) of the 24.2-ha (60-ac) facility were filled with refuse. Initially, the facility was a burn dump that accepted municipal solid waste, burned the waste, and the residuals were buried. Wastes disposed of at the facility consisted of household refuse and road construction debris. Nonchemical "seepage" waste and waste crankcase oil were accepted in unlined ponds at the site. Wet sludge from car washes was also accepted in the ponds.

Four groundwater monitoring wells were installed around the facility from May 16, 1989, to June 24, 1989. A downgradient monitoring well was installed in January 1999. The well location coordinates are listed in Table 3.2-23.

Table 3.2-23 Hemet Sanitary Landfill Monitoring Well Location Coordinates

Well Identification	Northing Coordinates	Easting Coordinates
HE-1	2228241.3328	6322990.8646
HE-2	2226852.8032	6323539.9039
HE-3	2227545.9053	6323541.9378
HE-4	2226306.5532	6322678.4937
HE-5	2228377.651	6325148.619

Source: Final Initial Site Assessment Report, June 2008

During the installation of wells HE-1 through HE-4, soil samples were collected from depths of 33.5 and 41 m (110 and 135 ft) from well borings HE-2 and HE-3. These samples were analyzed for purgeable hydrocarbons and volatile aromatic hydrocarbons by USEPA Test Methods 8010 and 8020, respectively. No compounds were detected at or above laboratory detection limits. These samples were also analyzed for metals, but concentrations above State of California limits (for hazardous waste) were not detected. A soil sample was collected from 33.5 m (110 ft) bgs during the installation of HE-5. The sample did not contain detectable concentrations of VOCs, pesticides, or herbicides. During groundwater sampling conducted in the spring of 2005, the depth to groundwater in the five wells ranged from 7.1 m (23.22 ft) bgs (HE-1) to 51.7 m (169.7 ft) bgs (HE-5). The measured groundwater gradient was 0.8 m per linear meter (0.25 ft per linear foot) toward the east.

Laboratory results from the first quarter 2012 sampling indicated that six constituents detected in the wells exceeded either the State of California maximum contaminant level (MCL) for drinking water or the California Department of Health Services Drinking Water Action Level, as shown in Table 3.2-24.

Table 3.2-24 Constituents Detected at Elevated Concentration at the Former Hemet Sanitary Landfill (First Quarter – 2012) in Groundwater

Parameter	Well ID	Concentrations (µg/L)
1,4-Dichlorobenze (MCL – 5.0 µg/L)	HE-3	5.5 µg/L
Cis-1,2-Dichloroethene (MCL – 6.0 µg/L)	HE-2 HE-3	30 µg/L 98 µg/L
Nitrate (MCL – 10.0 mg/L)	HE-1	28 mg/L
	HE-3	24 mg/L
	HE-5	19 mg/L
Tetrachloroethene (MCL – 5.0 µg/L)	HE-2	10 µg/L
	HE-3	20 µg/L
Trichloroethene (MCL – 5µg/L)	HE-2	9.5 µg/L
Vinyl Chloride (MCL – 0.5 µg/L)	HE-3	0.69 µg/L

Source: Semi-Annual Groundwater and General Site Monitoring Report (October 1, 2011 – March 31, 2012)

Note: µg/L – micrograms per liter

Note that the depths to groundwater in HE-2 and HE-3, the wells that would be closest to the Build alternatives, were measured at 43.45 and 43.79 m (142.57 and 143.67 ft) bgs, respectively, which is below the depth of likely construction activities.

The elevated levels of nitrate in wells HE-1 and HE-3 were reported to be potentially attributable to the septic ponds that were located adjacent to well HE-1. The elevated levels of nitrate in HE-5 were reported to be potentially attributable to farming and irrigation that have historically occurred in the vicinity of the well. Based on the documents reviewed, the likely source of groundwater contamination is the downward migration of landfill gases to the water table, not contact of landfill waste with groundwater. Groundwater monitoring reports are being performed on a semi-annual basis, with the last report completed April 30, 2012. It was reported in the April 2012 semi-annual report that the analytical results were generally consistent with past reporting periods and that the majority of VOCs demonstrate a trend of decreasing concentration (County 2012).

In October 1997, six probes were installed at the facility as part of a soil vapor extraction (SVE) system designed to mitigate the migration of landfill gases. The SVE system began operation on May 25, 1999. Landfill gas condensate monitoring reports are completed on an annual basis, with the last annual report completed April 30, 2012. The system collected approximately 1,832 liters (484 gallons) of gas condensate for the reporting period ending February 23, 2012 (County 2012).

To assess the impact of the landfill on the Project, a limited subsurface environmental evaluation was performed in June 2007 near the former Hemet Sanitary Landfill, adjacent to the Project study area. The soil samples were evaluated for concentrations of COPCs, which include VOCs, metals, and TPHcc. No detectable concentrations of TPHcc or VOCs were identified (RCTC 2007).

Based on the findings of the limited subsurface environmental evaluation conducted in June 2007, the Hemet Sanitary Landfill is not considered a permanent impact as long as buried waste is not disturbed by construction. Because the Project boundary does not intersect the Hemet Landfill, the potential for buried waste to be disturbed during construction is considered very low. Moreover, the elevated chemical constituents detected in the groundwater were more than 42.7 m (140 ft) bgs, a depth that is unlikely to be affected by construction activities.

Temporary Impacts

Building the Project would require removing some buildings, structures, and paving materials to accommodate new construction. Demolition activities may cause lead-based paint (LBP) and asbestos-containing building materials (ACMs) to be encountered. These substances might be present in structures completed prior to 1980. Proposed measures would address this impact.

Construction activities, including demolition, may also encounter or generate hazardous or solid wastes and debris. All hazardous or solid wastes and debris encountered or generated during construction and demolition activities would be disposed of in accordance with applicable federal, state, and local laws and regulations. As a result, the construction of the Project would not increase public health risks related to hazardous waste and materials in the short term and would decrease these risks in the long term as a result of the cleanup and remediation of any hazardous waste contamination that would be encountered during construction of the Project.

Summary of Environmental Consequences

Tables 3.2-25 and 3.2-26 (page 3-350) summarize and list permanent and temporary impacts. Permanent impacts are classified as high, medium, or low risk.

Table 3.2-25 Summary of Permanent Impacts (Low to Low-Moderate Risk Class) for the Build Alternatives and Design Options

Property Name/ Address/General Location	Site Operations – Reason for Risk Class[a]	Data Source[b]	Risk Class[c]
Mobil gasoline station/ 2070 North Sanderson Avenue/ (site would be affected by all of the Build alternatives and both design options)	Operating gasoline station with USTs; no documented releases or usual indicator of leaks	R	L[d]
Various agricultural parcels/ (would be intersected by all of the Build alternatives and both design options)	Potential for pesticide residue in soil	R, H	L-M
Various parcels with structures built prior to the 1980s (would be intersected by all of the Build alternatives and both design options)	Potential for LBP and ACM	R	L-M
Various parcels within the current ROW of SR 79/Winchester Road, SR 74/Florida Avenue, and Domenigoni Parkway (would be intersected by all of the Build alternatives and both design options)	Potential for ADL in soil	R, H	L-M

Source: Final Initial Site Assessment Report, June 2008; Technical Report Addendum Memorandum, Final Initial Site Assessment, June 2010

Note: ADL – Aerially Deposited Lead

LBP – Lead-based paint

ACM – Asbestos-containing material

[a]Description of site operations/primary reasons for risk class

[b]Indicates primary information sources for listing: R=Reconnaissance, D=Database, H=Historical Documentation

[c]Risk Class H = high, M = moderate, L = low

[d]Although the Mobil station has a "low" risk classification based on the criteria established in Section 3.2.5.2 (page 3-335), it is listed here because all of the Build alternatives and design options would have an impact on the site that could require mitigation. The Mobil station has been purchased, demolished, and remediated by RCTC.

Because the Project would involve excavation, the possibility of encountering previously unidentified USTs, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes exists. This could result in the exposure of the public and/or the environment to hazardous materials and would be considered a permanent impact.

Table 3.2-26 Summary of Potential Permanent and Temporary Impacts Associated with the Project Alternatives

Impacts	Project Alternative				
	No Build Alternative	**Build Alternative 1a**	**Build Alternative 1b (including Design Option 1b1)[c]**	**Build Alternative 2a**	**Build Alternative 2b (including Design Option 2b1)[c]**
Permanent[a]					
Underground Storage Tanks (UST)	unknown	A Mobil gasoline station,[b] located at 2070 North Sanderson Avenue. Proposed mitigation includes removal of USTs and fueling systems, and obtaining UST removal case closure from regulatory agencies.			
Agricultural Pesticides	unknown	Parcels that have historically or are currently being utilized for agricultural proposes and that would be intersected by or would be adjacent to the Build alternatives or design options. Proposed mitigation measures for these properties include conducting a limited Phase II Environmental Site Assessment, followed by remediation and soil disposal as necessary.			
Aerial Deposited Lead (ADL)	unknown	Various parcels within the current ROW of SR 79/Winchester Road, SR 74/Florida Avenue, and Domenigoni Parkway. Proposed mitigation measures include an ADL survey to analyze for the presence of ADL in soil, and an appropriate soil management plan for the handling and disposal of any soil found to be contaminated with ADL.			
Temporary					
Lead-Based Paint (LBP) and Asbestos-Containing Materials (ACMs)	unknown	Construction of the Build alternatives and design options would require removal of buildings, structures, and paving materials. Demolition activities could cause LBP and ACMs to be encountered. Proposed mitigation measures include a survey of materials that would be removed during construction activities to identify LBP and ACMs. Remediation measures would be completed to minimize the impact from any identified materials.			
Hazardous or Solid Wastes and Debris	unknown	Construction of the Build alternatives and design options may also encounter or generate hazardous or solid wastes and debris. Construction contractors would be required to dispose of all hazardous or solid wastes and debris encountered or generated during construction and demolition activities in accordance with applicable federal, state, and local laws and regulations.			

Source: Final Initial Site Assessment Report, June 2008; Technical Report Addendum Memorandum, Final Initial Site Assessment, June 2010

[a]Permanent impacts are generally equivalent to RECs and HRECs that directly affect the PIA.

[b]The station has been acquired, demolished, and remediated by RCTC.

[c]Information would be the same for the base condition and design options, so it is given only once.

3.2.5.4 Avoidance, Minimization, and/or Mitigation Measures

Potential impacts associated with the former Hemet Sanitary Landfill were avoided by refining the Build alternatives and design options to bypass portions of the landfill footprint that had been identified in previous studies as contaminated with hazardous materials. Therefore, no further measures are required for this source.

The measures below are proposed for impacts from pesticides, aerially deposited lead, and asbestos-containing materials.

HAZMAT-1 **Phase II Environmental Site Assessment.** Conduct a limited Phase II Environmental Site Assessment (Phase II ESA) to address the possible presence of pesticides. A Phase II investigation for agricultural properties that have a potential for pesticides will be performed during right-of-way acquisition to confirm that the soil can be classified as nonhazardous based on the residual levels of pesticides.

In general, that Phase II ESA would include the following:

- Work Plan
- Health and Safety Plan
- Access agreements
- Field sampling in accordance with the work plan and health and safety plan
- Analytical testing
- Documentation
- Recommendation may include additional sampling, preparing a soil handling plan, or a remedial action plan
- Disposal of wastes

HAZMAT-2 **Aerially Deposited Lead Surveys.** Conduct aerially deposited lead (ADL) surveys where proposed roadway segments intersect the current rights-of-way of SR 79/Winchester Road, SR 74/Florida Avenue, and Domenigoni Parkway. An ADL investigation for these sites will be conducted during final design to confirm that the soil can be classified as a nonhazardous material according to Title 22 of the California Code of Regulations (CCR) and that it is suitable for reuse or disposal without restriction.

In general, ADL Surveys will include the following:

- Workplan
- Health and Safety Plan
- Access agreements
- Field sampling in accordance with the workplan and health and safety plan
- Analytical testing
- Traffic control

- Documentation
- Recommendations for proper disposal of the soil to be excavated during construction

HAZMAT-3 **Asbestos-Containing Materials and Lead-Based Paint Surveys.** Conduct asbestos containing materials (ACM) and/or lead-based paint (LBP) surveys to address the possibility of the presence of ACM and/or LBP in buildings that are scheduled for demolition and or/renovation. The ACM and/or LBP surveys will be completed during final design (before acquisition).

In general, the ACM and/or LBP surveys will include the following:

- Workplan
- Health and Safety Plan
- Access agreements
- Field sampling in accordance with the workplan and health and safety plan
- Analytical testing
- Documentation
- Recommendations for disposal and handling

The following minimization measures would address undocumented hazardous materials, structures, soil, and groundwater during construction.

HAZMAT-4 **Hazardous Materials Contingency Plan.** The Riverside County Transportation Commission will prepare a hazardous materials contingency plan addressing the potential for discovery of previously unidentified underground storage tanks (USTs), hazardous materials, petroleum hydrocarbons, hazardous or solid wastes, or contaminated soil encountered during construction. This contingency plan will address UST decommissioning, field screening and testing of potential contaminated materials and soil, mitigation and contaminant management requirements, and health and safety requirements.

HAZMAT-5 **National Pollutant Discharge Elimination System Permit.** Prior to any dewatering activities, RCTC will obtain a National Pollutant Discharge Elimination System (NPDES) permit. In areas where contaminated groundwater is suspected, specific conditions will apply with regard to acquisition of the NPDES permit, including testing and monitoring, as well as discharge limitations under the NPDES permit. The discharge limitations in the NPDES permit may include, as applicable, requirements pertaining to discharge of federal and/or state regulated pollutants that may be present in the water.

3.2.6 Air Quality

3.2.6.1 Regulatory Setting

The Federal Clean Air Act (FCAA), as amended in 1990, is the federal law that governs air quality while the California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency (U.S. EPA) and California Air Resources Board (ARB), set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns. The criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), broken down for regulatory purposes into particles of 10 micrometers or smaller—(PM_{10}) and particles of 2.5 micrometers and smaller—($PM_{2.5}$), lead (Pb), and sulfur dioxide (SO_2). In addition, state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at a level that protects public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics). Some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and state air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). In addition to this type of environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

The Federal Clean Air Act Section 176(c) prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs, or projects that are not first found to conform to State Implementation Plan (SIP) for achieving the goals of Clean Air Act requirements related to the NAAQS. "Transportation Conformity" Act takes place on two levels: the regional—or planning and programming—level, and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas sulfur dioxide (SO_2). California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb). However, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (TIPs) that include all of the transportation projects planned for a region over a period of at least 20 years for the RTP, and 4 years for the TIP. RTP and TIP conformity is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the

Metropolitan Planning Organization (MPO) and Federal Highway Administration (FHWA), and Federal Transit Administration (FTA), make determinations that the RTP and TIP are in conformity with the SIP for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP and/or TIP must be modified until conformity is attained. If the design concept, scope, and open to traffic schedule of a proposed transportation project are the same as described in the RTP and TIP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires "hot spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide (CO) and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is "nonattainment" if one or more of the monitoring stations in the region measures violation of the relevant standard, and U.S. EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by the U.S. EPA, and are then called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot spot analysis. In general, projects must not cause the "hot spot"-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

3.2.6.2 Affected Environment

The analysis of air quality is based on the environmental review and conclusions presented in the Final Air Quality Technical Report of September 2009 and the Technical Report Addendum Memorandum, Final Air Quality Technical Report, of June 2010.

Climate

The concentration of a pollutant in the atmosphere is dependent on the amount of pollutant released, the nature of the source, and the ability of the atmosphere to transport and disperse the pollutant. The main determinants of transport and dispersion are wind, atmospheric stability, topography, and, for some photochemically active pollutants, solar radiation.

The South Coast Air Basin (Basin), a coastal plain with connecting broad valleys and low hills, is bounded by the Pacific Ocean to the west and high mountains to the north and east. The Project would be located in the eastern part of the Basin, in Riverside County. The climate in the western part of the Basin is mild, tempered by cool sea breezes, while weather in the eastern part tends to be colder in the winter and hotter in the summer. This region experiences more days of sunlight than any other major urban area in the nation except Phoenix (SCAQMD 2003). Sunlight triggers the photochemical reactions that produce ozone.

During summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the surface of the ocean and the lowest layer of the atmosphere. The warm air mass forms a cap over the cool marine layer and keeps the pollutants in the marine layer from dispersing upward. Light winds during the summer further limit ventilation.

With light average wind speeds, the atmosphere of the Basin has a limited capability to disperse air contaminants horizontally, and vertical dispersion of pollutants is hampered by the presence of a persistent inversion layer (typically 0.6 km [1 mi] or less above sea level). During periods of limited horizontal and vertical mixing, pollutants released to the atmosphere at or near ground level are trapped. The pollutants accumulate and tend to form a uniform mixture between the ground and the base of the inversion layer (SCAQMD 1993).

As stated earlier, the proposed Project would be located in the Riverside County portion of the Basin. Riverside County is hot during the summer, when average temperatures exceed 89.6 degrees Fahrenheit (ºF). Temperatures near the proposed Project average between 44.6ºF and 80.6ºF, depending on the season. During the winter months, rainfall ranges from 2.5 to 5 centimeters (cm) (1 to 2 inches) each month. The annual rainfall in the Project study area is about 30 cm (11.8 inches).

Ambient Air Quality

Ambient air quality can be defined by monitored concentrations of CO, O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb. A brief description of each pollutant is presented in Table 3.2-27, followed by a summary of the pollutant concentrations measured near the proposed Project area in Table 3.2-28 (page 3-357).

Table 3.2-27 Summary of Ambient Air Quality Standards and Pollutant Effects and Sources

Pollutant	Averaging Time	State Standard	Federal Standard	Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	1 hour 8 hour	0.09 ppm 0.070 ppm	– 0.075 ppm	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include a number of known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.
Carbon monoxide (CO)	1 hour 8 hour 8 hour (Lake Tahoe)	20 ppm 9.0 ppm 6 ppm	35 ppm 9 ppm –	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable particulate matter (PM_{10})	24 hour Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 –	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).
Fine particulate matter ($PM_{2.5}$)	24 hour Annual	– 12 µg/m^3	35 µg/m^3 15 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric

Table 3.2-27 Summary of Ambient Air Quality Standards and Pollutant Effects and Sources

Pollutant	Averaging Time	State Standard	Federal Standard	Health and Atmospheric Effects	Typical Sources
				Most diesel exhaust particulate matter – considered a toxic air contaminant – is in the $PM_{2.5}$ size range. Many aerosol and solid compounds are part of $PM_{2.5}$.	chemical (including photochemical) reactions involving other pollutants including NO_X, sulfur oxides (SO_X), ammonia, and ROG.
Nitrogen dioxide (NO_2)	1 hour Annual	0.18 ppm 0.030 ppm	0.100 ppm 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the "NO_X" group of ozone precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.
Sulfur dioxide (SO_2)	1 hour 3 hours 24 hours Annual	0.25 ppm – 0.04 ppm –	0.075 ppm 0.5 ppm (secondary standard) 0.14 ppm (certain areas) 0.030 ppm (certain areas)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
Lead (Pb)	30-Day Average Calendar Quarter Rolling 3-month Average	1.5 µg/m^3 – –	– 1.5 µg/m^3 0.15 µg/m^3	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from gasoline may exist in soils along major roads.
Sulfates	24 hours	25 µg/m^3	–	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	–	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent	–	Reduces visibility. Produces haze. NOTE: not related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas.	See particulate matter above.

Table 3.2-27 Summary of Ambient Air Quality Standards and Pollutant Effects and Sources

Pollutant	Averaging Time	State Standard	Federal Standard	Health and Atmospheric Effects	Typical Sources
Vinyl Chloride	24 hour	0.01 ppm	–	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes

Source: 1. California Air Resources Board Ambient Air Quality Standards chart, updated June 7, 2012 *http://www.arb.ca.gov/research/aaqs/aaqs2.pdf*

2. NAAQS, updated October 2011, *http://www.epa.gov/air/criteria.html*

Note: 1: Final rule signed June 2, 2010. The 1971 annual and 24-hour SO2 standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Monitored Ambient Air Quality

SCAQMD operates a network of ambient monitoring stations in the Basin, which includes Riverside County. The monitoring station closest to the Project area, approximately 32 km (20 mi) to the southwest, is the Lake Elsinore-W Flint Street Station. Not all of the criteria pollutants are monitored at this site, so monitoring data from two other stations, Perris and Riverside-Magnolia, were used to augment data from the Lake Elsinore-W Flint Station and define the existing ambient air quality in the Project study area. The Perris station is about 23 km (14 mi) northwest of the Project study area, and the Riverside-Magnolia station is farther northwest, about 42 km (26 mi) away. The locations of the monitoring stations in relation to the Project study area are presented in Figure 3.2-27.

The maximum pollutant levels measured and the number of days each year the ambient concentrations were above the federal and California standards from 2004 to 2009 are presented in Table 3.2-28. As shown in Table 3.2-28, ozone and $PM_{2.5}$ concentrations exceeded the federal and California standards during each of the 6 years. The PM_{10} concentrations also exceeded the 24-hour California standards during each of the 6 years. The federal PM_{10} standard, however, was not exceeded. CO, NO_2, and SO_2 concentrations did not exceed federal or California standards in the 6 years.

Table 3.2-28 Summary of Maximum Monitored Ambient Air Quality Near the Project Study Area

Pollutant (Monitoring Station)	Year	Maximum Concentration (ppm)		Number of Days Standard Exceeded	
		1-hour	8-hour	State 1-hour/8-hour	Federal 1-hour/8-hour
CO (Lake Elsinore-W. Flint Street Station)	2004	2.0	1.14	0/0	0/0
	2005	1.7	1.00	0/0	0/0
	2006	1.4	1.01	0/0	0/0
	2006	1.8	1.40	0/0	0/0
	2008	1.1	0.84	0/0	0/0
	2009	[a]	0.73	0/0	0/0

Table 3.2-28 Summary of Maximum Monitored Ambient Air Quality Near the Project Study Area

Pollutant (Monitoring Station)	Year	Maximum Concentration (ppm)		Number of Days Standard Exceeded	
		1-hour	8-hour	State 1-hour/8-hour	Federal 1-hour/8-hour
O_3 (Lake Elsinore-W. Flint Street Station)	2004	0.130	0.113	34/51	NA/21
	2005	0.149	0.119	32/46	NA/15
	2006	0.142	0.109	42/24	NA/24
	2007	0.129	0.109	26/56	NA/35
	2008	0.139	0.118	49/91	NA/69
	2009	0.128	0.105	24/65	NA/35
		Maximum Concentration (ppm)		**Number of Days Standard Exceeded**	
Pollutant	**Year**	**1-hour**	**Annual Arithmetic Mean**	**State 1-hour**	
NO_2 (Lake Elsinore-W. Flint Street Station)	2004	0.090	0.015	0	
	2005	0.065	0.014	0	
	2006	0.072	0.015	0	
	2007	0.064	0.015	0	
	2008	0.055	0.013	0	
	2009	0.055	0.013	0	
		Maximum Concentration (µg/m^3)		**Number of Days Standard Exceeded**	
Pollutant	**Year**	**24-hour**	**Annual Arithmetic Mean**	**State 24-hour**	**Federal 24-hour**
PM_{10} (Perris Station)	2004	83	41	15	0
	2005	80	39	18	0
	2006	125	45	18	0
	2007	167[b]	65.4	25	2
	2008	85	29.6	8	0
	2009	80	[a]	6	0
$PM_{2.5}$ (Riverside-Magnolia Station)	2004	93.8	21	NA	2
	2005	94.9	17.9	NA	1
	2006	55.3	17	NA	1
	2007	68.5	18.3	NA	8
	2008	42.9	13.2	NA	4
	2009	42.1	13.3	NA	2
		Maximum Concentration (ppm)			**Number of Days Standard Exceeded**
Pollutant	**Year**	**1-hour**	**3-hour**	**24-hour**	**Federal/State**
SO_2	2004	0.017	0.016	0.015	0
	2005	0.024	0.012	0.011	0
	2006	0.012	0.007	0.003	0
	2007	0.016	0.007	0.004	0
	2008	0.011	0.003	0.003	0
	2009	[a]	[a]	0.003	0

Source: ARB *http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start* and USEPA *http://www.epa.gov/air/data/reports.html*

Note: Table values as of November 4, 2010

NA = not applicable.

The Lake Elsinore-W. Flint Street Station is located at 506 West Flint Street, Lake Elsinore, CA.

The Perris Station is located at 237 N. D Street, Perris, CA.

The Riverside-Magnolia Station is located at 7002 Magnolia Avenue, Riverside, CA.

ppm = parts per million

µg/m3 = micrograms per cubic meter

[a]There was insufficient (or no) data available to determine this value.

[b]The data reported for 2007 represents the 2nd high value. The first high value was measured on October 21, 2007, which coincides with three wildfires that occurred in Riverside County in October 2007. Therefore, it was assumed the first high values resulted from the wildfire and would not be representative of ambient concentrations.

Attainment Status

A region that is meeting the air quality standard for a given pollutant is designated as being in "attainment" for that pollutant. If the region is not meeting the air quality standard, then it is designated as being in "nonattainment" for that pollutant. Areas that were previously designated as nonattainment areas but have recently met the standard are designated as "maintenance" areas. Current state and federal designations of the Project area are presented in Table 3.2-29.

Table 3.2-29 Attainment Designations of the Project Area

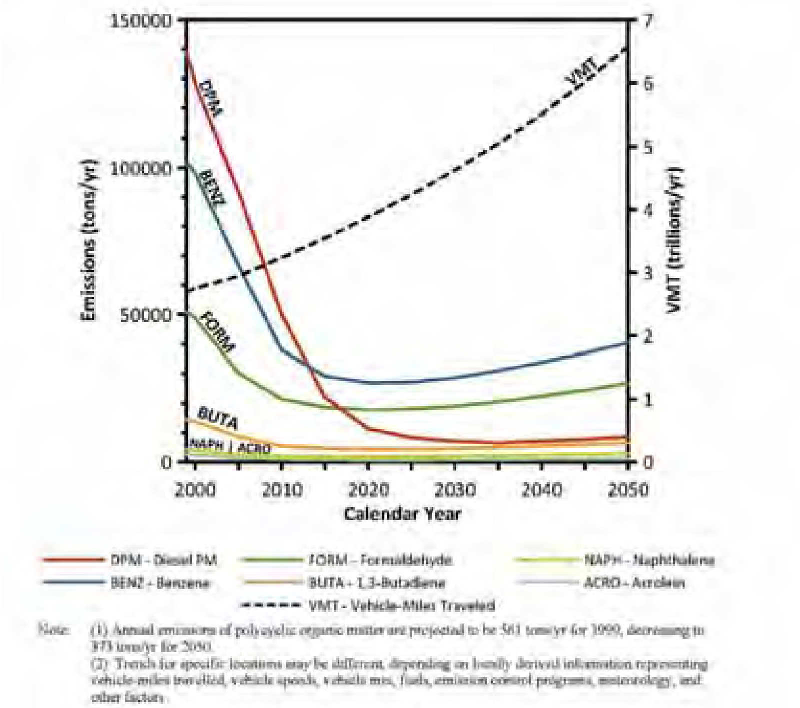
Pollutant	State Designation	Federal Designation
Ozone (8-hour)	Nonattainment	Extreme Nonattainment
Ozone (1-hour)	Extreme Nonattainment	Revoked (70 FR 44470)
PM_{10}	Nonattainment	Serious Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Nonattainment	Attainment/Maintenance
Lead (Pb)	Attainment	Attainment/Unclassified
All Others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2011a, 2011 State Area Designations, *http://www.arb.ca.gov/desig/adm/adm.htm*, accessed in September 2012. USEPA, *www.epa.gov/air/oaqps/greenbk/index.html*, federal designation as of July 2012.

Mobile Source Air Toxics

In addition to the criteria pollutants, mobile source air toxics are another group of pollutants of concern in the Basin. This section discusses mobile source toxics based on information and reports from USEPA, ARB, and SCAQMD. Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments of 1990, whereby Congress mandated that the USEPA regulate 188 air toxics, also known as hazardous air pollutants. The USEPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS). In addition, USEPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA). This subgroup of seven toxics includes benzene, formaldehyde, naphthalene, diesel particulate matter plus diesel exhaust organic gases, acrolein, 1,3-butadiene, and polycyclic organic matter (FHWA 2009). While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future USEPA rules. The USEPA rule on Control of Hazardous Air Pollutants from Mobile Sources mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines (FHWA 2009). According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles traveled) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in the graphic below (FHWA 2009).

Table 3.2-30 National MSAT Emission Trends 1999 – 2050 for Vehicles Operating on Roadways, Using EPA's Mobile6.2 Model



Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

Since 1990, the cancer risk from toxic air pollutants has fallen by 45 percent statewide, despite significant industrial growth and a substantial increase in the number of motor vehicles (ARB 2008c). ARB has 17 ambient monitors that measure concentrations of air toxics throughout the state. The Riverside-Rubidoux station is the monitor located closest to the proposed Project that measures ambient concentrations of air toxics. The location of the Riverside-Rubidoux station is shown in Figure 3.2-27. Measured concentrations of MSATs are presented in Table 3.2-31. During the past 10 years, measured MSAT concentrations have decreased. Diesel PM emissions are not included in Table 3.2-31 because ARB bases diesel PM air quality on emissions estimates. In addition, naphthalene and polycyclic organic matter concentrations are not currently monitored at the ARB stations. Riverside County ranks in the top 10 counties in the state for highest emissions of benzene (3 percent of state total) and diesel particulate matter (3 percent of state total) (ARB 2009).

Table 3.2-31 Summary of Maximum Monitored MSAT Concentrations Near the Project Study Area

Year	Maximum Measured Concentration (ppb)			
	Benzene	1,3-Butadiene	Acrolein	Formaldehyde
2009	1.1	0.34	1.3	7.9
2008	0.75	0.14	1.0	7.1
2007	1.0	0.29	1.2	6.9
2006	1.0	0.29	1.2	6.8
2005	1.4	0.51	5.1	6.5

Table 3.2-31 Summary of Maximum Monitored MSAT Concentrations Near the Project Study Area

Year	Maximum Measured Concentration (ppb)			
	Benzene	1,3-Butadiene	Acrolein	Formaldehyde
2004	1.3	0.36	1.2	11
2003	1.5	0.35	1.5	12
2002	1.4	0.56	*	10
2001	1.8	0.51	*	24
2000	2.3	0.68	*	5.8
1999	2.4	0.69	*	8.1
1998	1.8	0.54	*	10

Source: ARB Annual Toxics Summaries *http://www.arb.ca.gov/adam/toxics/toxics.html*

Note: Monitoring data from the Riverside-Rubidoux Station located at 5888 Mission Boulevard, Riverside, CA.

*Acrolein monitoring began in 2003.

SCAQMD completed the Multiple Air Toxics Exposure Study III (MATES-III), which is a monitoring and risk evaluation study conducted periodically in the Basin (SCAQMD 2008). The MATES-III study included a monitoring program, an updated emissions inventory of toxic air contaminants (TACs), and a modeling effort to characterize risk across the Basin (SCAQMD 2008). Compared to previous studies of air toxics in the Basin, the MATES-III study found decreasing risks for air toxics exposure (SCAQMD 2008). Although the study showed that exposures to emissions of air toxics are being reduced overall, the study concludes that the risks remain unacceptable and are higher near areas such as ports and transportation corridors (SCAQMD 2008). Based on the SCAQMD results of MATES-III study, the estimated existing cancer risk in the area near the proposed Project is approximately 300 in 1 million (SCAQMD 2008).

Sensitive Receptors

Sensitive air quality receptors, as defined by the SCAMQD, include receptors such as residences, schools, and hospitals. The ambient air concentrations presented in Tables 3.2-28 (page 3-357) and 3.2-29 (page 3-359) are representative of the existing conditions experienced by sensitive receptors located near the proposed Project. The communities of Hemet and San Jacinto are located near the proposed Project and include sensitive air quality receptors such as residences, schools, and hospitals. The locations of sensitive receptors, sensitive land use types, and their proximity to the roadway segments are shown in Figure 3.2-28.

3.2.6.3 Environmental Consequences

The environmental consequences are based on the analysis and conclusions presented in the Final Air Quality Technical Report of September 2009 and the Technical Report Addendum Memorandum, Final Air Quality Technical Report, of June 2010. The Project could result in air quality impacts during both construction and operation. During construction, exhaust emissions and fugitive dust emissions could have temporary impacts on air quality. During operation, redistribution of traffic along the realigned corridor could result in regional and localized air quality impacts. The air quality impacts with the No Build Alternative and the Build alternatives (including design options) were evaluated for the existing condition, Opening Year 2015, and the Design Horizon year of 2035.

No Build Alternative

Under No Build Alternative, no construction would occur and no changes would be made to the existing roadway system. There would be no temporary or permanent Project impacts from construction or operation.

All Build Alternatives and Design Options

The following discussion presents the potential permanent and temporary air quality impacts for the Project. The impacts to air quality would be similar with all of the Build alternatives and design options, so impacts were evaluated for the entire Project study area.

Permanent Impacts

This section presents the potential long-term air quality impacts of the Project. The impact assessment will discuss the regional- and project-level conformity requirements for the Project, MSAT, diesel PM, and naturally occurring asbestos (NOA). The evaluation of regional- and project-level conformity is applicable to the No Build Alternative and the Build alternatives (including design options). This section will show that operation of the No Build Alternative or the Build alternatives (including design options) would not have an adverse effect on air quality.

Regional Conformity

The Project would be located in a federal nonattainment area for ozone, $PM_{2.5}$, and PM_{10} and a federal maintenance area for CO and must demonstrate regional conformity for these pollutants.

The proposed Project is listed in the SCAG 2012-2035 financially constrained RTP, which was found to conform by SCAG on April 4, 2012, and FHWA and the Federal Transit Administration (FTA) made a regional conformity determination on June 4, 2012. The Project is also included in the SCAG financially constrained 2011 FTIP, Riverside County, Previously Obligated Projects, page 12, project ID RIV62024. The SCAG 2011 FTIP was determined to conform by FHWA and FTA on December 14, 2010. The Project description in the 2012-2035 RTP and 2011 FTIP is: “On SR 79 in Southwestern Riverside County between 2.0 kilometers south of Domenigoni Parkway to Gilman Springs Road: Realign and Widen SR 79 from 2 to 4 through lanes.” The design concept and scope of the proposed Project are consistent with the project description in the 2012-2035 RTP, and the 2011 FTIP, and the “open to traffic” assumptions of the SCAG’s regional emissions analysis.

Project-Level Conformity

The proposed Project would be located in a federal nonattainment or maintenance area for CO, $PM_{2.5}$, and PM_{10} and must also demonstrate project-level conformity. The following sections will evaluate whether the proposed Project would cause or contribute to any new localized CO, $PM_{2.5}$, and/or PM_{10} violations or increase the frequency or severity of any existing violations in CO, $PM_{2.5}$, and PM_{10}.

CO Hot Spots

The USEPA redesignated the Basin as attaining the federal CO standards, effective June 11, 2007. Under Section 175A of the CAA, however, this means that the Basin is a maintenance area for CO. According to the Transportation Conformity Regulation (40 Code of Federal Regulations [CFR] Part 93 Subpart A), maintenance areas must demonstrate project-level conformity for CO. Project-level conformity for CO is demonstrated by evaluating the potential for a project to create CO hot spots.

Localized CO impacts resulting from the proposed Project alternatives were evaluated following the Department guidance document, *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol) (UCDITS 1997). The CO Protocol includes two conformity requirement decision flow charts. The following discussion presents the questions from the flow charts and answers for the proposed Project alternatives. The responses to the questions apply to the No Build Alternative and Build alternatives (including design options) and were used to determine the level of CO analysis required. The CO protocol flowcharts with the pathway for the proposed Project highlighted are shown in Figure 3.2-29.

Responses to Questions from Requirements for New Projects

3.1.1 Is the project exempt from all emissions analyses?

No. The proposed Project is not included in the list of projects exempt in Table 1 of the CO Protocol.

3.1.2 Is the project exempt from regional emissions analysis?

No. The proposed Project is not included in the list of projects exempt from regional emissions analysis in Table 2 of the CO Protocol.

3.1.3 Is the project locally defined as regionally significant?

Yes. According to 40 CFR 93.101, a regionally significant project is a "transportation project that is on a facility which serves regional transportation needs…and would normally be included in the modeling of a metropolitan area's transportation network…" The proposed Project would meet this definition.

3.1.4 Is the project in a federal attainment area?

No. Although the USEPA redesignated the South Coast Air Basin as attainment for the federal CO standards effective June 11, 2007, the South Coast Air Basin is federally designated nonattainment for ozone, PM_{10}, and $PM_{2.5}$. Therefore, the proposed Project is subject to a regional conformity determination.

3.1.5 Is there a currently conforming RTP and TIP?

Yes. The SCAG 2012-2035 RTP and 2011 FTIP are the currently conforming plans. The 2011 FTIP was adopted by SCAG on September 2, 2010, and was approved by federal agencies on December 14, 2010.

3.1.6 Is the project included in the regional emissions analysis supporting the currently conforming RTP and TIP?

Yes. The proposed Project is consistent with the 2012-2035 RTP and the 2011 FTIP.

3.1.7 Has the project design concept and/or scope changed significantly from that in the regional emissions analysis?

No. The proposed Project design concept and scope are consistent with the description in the 2012-2035 RTP transportation conformity modeling and the 2011 FTIP regional emissions analysis.

3.1.9 Examine local impacts. (Proceed to Section 4 of the CO Protocol which includes Figure 3.)

According to the Protocol, the determination of project-level CO impacts should be carried out following the Local Analysis flowchart shown in Figure 3. The following presents the responses for the questions in Figure 3 of the CO Protocol.

Responses to Questions from Local CO Analysis of the CO Protocol

Level 1: Is the project in a CO nonattainment area?

No. The Project site is located in a federal CO attainment area effective June 11, 2007.

Level 1: Was the area redesignated as "attainment" after the 1990 Clean Air Act?

Yes. The area was redesignated "attainment" effective June 11, 2007.

Level 1: Has "continued attainment" been verified with the local air district, if appropriate?

Yes. A CO maintenance plan was approved by USEPA for the Project area on May 11, 2007 (Proceed to Level 7).

Level 7: Does the project worsen air quality?

Yes. The CO protocol lists three criteria to determine whether a project would worsen air quality. Because the proposed Project would change the location of the existing alignment in some locations, it was not possible to evaluate the criteria provided in the CO protocol for this question. Therefore, it was conservatively assumed that the Project may have the potential to worsen air quality, and the analysis proceeds to the next question.

Level 7: Is the project suspected of resulting in higher CO concentrations than those existing within the region at the time of attainment demonstration?

No. To answer this question, Section 4.7.2 of the CO Protocol recommends selecting one of the worst-case locations in the region where attainment has been demonstrated and compare it to the "build" scenario of the project with a similar configuration. Therefore, the intersection of Wilshire Boulevard and Veteran Avenue from the SCAQMD 2003 AQMP Appendix V attainment demonstration and the intersection of Sanderson Avenue and Florida Avenue for the Build alternatives and design options were compared to evaluate whether the Project would result in higher CO concentrations using the following conditions. Because there would be no difference in the traffic data for the alternatives, Build Alternatives 1a and 1b (including Design Option 1b1) were evaluated as Build Alternative 1 and Build Alternatives 2a and 2b (including Design Option 2b1) were evaluated as Build Alternative 2.

a. The receptors at the intersection of Sanderson Avenue and Florida Avenue would be the same distance or farther from the roadway than the receptors at the intersection of Wilshire Boulevard and Veteran Avenue for which attainment has been demonstrated. The attainment demonstration evaluated the CO concentrations at a distance of 3 m (10 ft) from the edge of the roadways. Because the CO Protocol does not permit the modeling of receptor locations closer than 3 m (10 ft), receptor locations for the Build alternatives would be the same or farther than the receptors evaluated for the attainment demonstration.

b. With the Build alternatives, the intersection at Sanderson Avenue and Florida Avenue would have fewer traffic lanes, lower traffic volumes, and better level of service (LOS) compared to the intersection at Wilshire Boulevard and Veteran Avenue. The intersection at Sanderson Avenue and Florida Avenue would be a 2x2 intersection compared to the intersection at Wilshire Boulevard and Veteran Avenue, which is a 4x4 intersection. The LOS for the Wilshire Boulevard and Veteran Avenue intersection used for the attainment demonstration was not listed; however, based on the traffic volumes and geometry, the intersection is likely LOS F. By comparison, the LOS for the Build alternatives would be LOS E. The traffic volumes and LOS are presented in Table 3.2-32.

Table 3.2-32 Intersection Peak Hour Traffic Volumes

Intersection	Peak Hour Traffic Lane Volumes				LOS
	West Link	East Link	North Link	South Link	
Attainment Demonstration: Wilshire Boulevard and Veteran Avenue	4,951	3,317	1,400	933	NA
Existing (2004): Sanderson Avenue and Florida Avenue	1,096	1,146	894	981	D
No Build Alternative (2035): Sanderson Avenue and Florida Avenue	2,810	2,750	3,480	2,210	F
Build Alternative 1 (2035): Sanderson Avenue and Florida Avenue	1,920	1,610	1,960	1,240	E
Build Alternative 2 (2035): Sanderson Avenue and Florida Avenue	1,940	1,740	1,970	1,310	E

Source: SCAQMD 2003 AQMP Appendix V (SCAQMD 2003a) and RCTC 2009

NA = LOS not available in attainment demonstration.

c. The meteorology used for the Sanderson Avenue and Florida Avenue intersection would be the same as the meteorology used for the Wilshire Boulevard and Veteran Avenue intersection in the attainment demonstration. The CAL3QHC model was used for the attainment demonstration. Therefore, if the proposed Project were modeled, both intersections would be evaluated using the same meteorology settings in the CAL3QHC model because the model only has one meteorological data set.

d. The peak hour traffic volumes presented in Table 3.2-32 (page 3-365) show that the peak hour traffic lane volumes for Sanderson Avenue and Florida Avenue would be lower than the traffic volumes at the intersection of Wilshire Boulevard and Veteran Avenue used in the attainment demonstration.

e. The number of vehicles operating in cold start mode was not available in the attainment demonstration for the Wilshire Boulevard and Veteran Avenue intersection. However, the percentage of vehicles operating during the peak hour in cold start mode for the Sanderson Avenue and Florida Avenue intersection would be expected to be the same or lower than Wilshire Boulevard and Veteran Avenue intersection.

f. The percentage of heavy-duty gas trucks utilizing the Sanderson Avenue and Florida Avenue intersection would be expected to be the same or less than the Wilshire Boulevard and Veteran Avenue intersection. It is assumed that the traffic distribution at the Wilshire Boulevard and Veteran Avenue intersection would not vary from the EMFAC2002 default distribution used for the attainment demonstration. The percentage of trucks would be expected to range from 6 to 8 percent with the Build alternatives, which would include both gasoline and diesel trucks. Therefore, the percentage of heavy-duty gas trucks would be expected to be the same.

g. The average delay and queue length for the Sanderson Avenue and Florida Avenue intersection would be expected to be the same or less than the Wilshire Boulevard and Veteran Avenue intersection used for the attainment demonstration. As shown in Table 3.2-32 (page 3-365), the predicted LOS for the intersection at Sanderson Avenue and Florida Avenue would be LOS E for the Build alternatives. As stated in Item b, the LOS for the intersection at Wilshire Boulevard and Veteran Avenue was not listed, but it was likely LOS F. Therefore, the average delay and queue length for the Build alternatives would be expected to be the same or less than the Wilshire Boulevard and Veteran Avenue intersection.

h. The background concentrations of CO in the Project area are lower than the CO concentrations used in the attainment demonstration for the intersection at Wilshire Boulevard and Veteran Avenue. The maximum background CO concentration measured from 2004 to 2009 in the Project area was 2.0 parts per million (ppm) for 1-hour measurements and 1.4 ppm for 8-hour measurements, which is lower than the background concentrations used for the attainment demonstration, which were predicted to be 10.8 for the 1-hour measurements and 9.9 for the 8-hour measurements for 2002 (SCAQMD 2003b).

The evaluation of the above conditions has shown that the intersection at Sanderson Avenue and Florida Avenue would not be expected to result in higher CO concentrations than the one at Wilshire Boulevard and Veteran Avenue that was used for the attainment demonstrations. Therefore, according to the CO protocol, the proposed Project is satisfactory, and no further analysis is needed. The proposed Project would not be expected to create a CO hot spot; therefore, the proposed Project has demonstrated project-level conformity for CO.

PM Hot Spots

On March 10, 2006, USEPA issued amendments to the Transportation Conformity Rule to address localized impacts of particulate matter: "$PM_{2.5}$ and PM_{10} Hot-Spot Analyses in Project-level Transportation Conformity Determinations for the New $PM_{2.5}$ and Existing PM_{10} National Ambient Air Quality Standards" (71 FR 12468). As required by the amended transportation conformity rule, a qualitative PM_{10} and $PM_{2.5}$ hot spot analysis was completed following the *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM_{10} and $PM_{2.5}$ Nonattainment and Maintenance Areas* (USEPA 2006). The PM_{10}/$PM_{2.5}$ hot spot analysis was submitted for review by the SCAG Transportation Conformity Working Group (TCWG) in October 2008. The PM_{10}/$PM_{2.5}$ hot spot analysis was approved for NEPA circulation at the November 2008 meeting. The TCWG concurrence of the analysis is included at the end of Chapter 5 (Volume 2). The entire qualitative PM_{10}/$PM_{2.5}$ analysis is included in Appendix C of the Final Air Quality Technical Report.

USEPA specified in 40 CFR 93.123(b)(1) of the final rule that projects of air quality concern (POAQC) are certain highway and transit projects that involve significant levels of diesel vehicle traffic, or any other project that is identified in the $PM_{2.5}$ or PM_{10} SIP as a localized air quality concern. A qualitative analysis of localized PM_{10} and $PM_{2.5}$ impacts was prepared because the proposed Project has the potential to be a POAQC. Although the proposed Project would not result in a significant increase in the number of diesel vehicles, the magnitude of the Project and the potential to move emissions sources closer to receptors were the criteria used to conclude that the Project might be a POAQC.

The project-level hot spot analysis for PM_{10} and $PM_{2.5}$ was conducted to assess whether the Project would cause or contribute to any new localized PM_{10} or $PM_{2.5}$ violations, increase the frequency or severity of any existing violations, or delay timely attainment of the PM_{10} or $PM_{2.5}$ NAAQS. The following NAAQS were used to evaluate the Project:

- PM_{10} 24-hour standard of 150 micrograms per cubic meter ($\mu g/m^3$)
- $PM_{2.5}$ 24-hour standard of 35 $\mu g/m^3$
- $PM_{2.5}$ annual standard of 15 $\mu g/m^3$

This qualitative analysis was based on considering nearby monitoring data, directly emitted emissions, including tailpipe, brake wear, and tire wear, and re-entrained road dust. Direct emissions were estimated using vehicle miles traveled (VMT) and EMFAC2007 (version 2.3) emission factors. Re-entrained road dust emissions were included in the analysis of PM_{10} based on the hot spot guide (USEPA 2006). For $PM_{2.5}$, re-entrained road dust emissions are only to be considered if the USEPA or the state air agency has made a finding that these emissions are a significant contributor to the $PM_{2.5}$ air quality problem (USEPA 2006). The USEPA published guidance on the use of AP-42 for re-entrained road dust for state implementation plan (SIP) development and conformity; therefore, re-entrained $PM_{2.5}$ emissions were also considered in this analysis (USEPA 2007b). Re-entrained road dust emissions were estimated using the USEPA Compilation of Air Pollutant Emission Factors (AP-42), Chapter 13.2.1, Paved Roads (USEPA 2006).

Construction-related $PM_{2.5}$ and PM_{10} emissions were not included in this hot spot analysis because the construction period for the Project would be less than 5 years (40 Code of Federal Regulations 93.123(c)(5)). Project construction activities are expected to require 39 or 40 months, depending on which Build alternative is selected. Finally, secondary $PM_{2.5}$ emissions were not included because these emissions would be associated with regional impacts rather than a localized impact.

The qualitative PM_{10}/$PM_{2.5}$ analysis evaluated the proposed Project's contribution to ambient concentrations, compared traffic conditions between the alternatives, and provided an estimate of emissions for 2004, 2015, and 2035. Peak direct emissions were estimated to occur in 2035, as shown in Table 3.2-33.

Table 3.2-33 Direct Emissions of PM_{10} and $PM_{2.5}$

Alternative	Vehicle Kilometers Traveled (VKT)	Vehicle Miles Traveled (VMT)	Emissions (grams/day)		Emissions (lb/day)	
			PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Existing (2004)	5,149,900	3,200,000	188,800	134,400	416	296
No Build Alternative (2015)	7,724,850	4,800,000	225,600	148,800	497	328
Build Alternative (2015)	7,563,920	4,700,000	211,500	136,300	466	300
No Build Alternative (2035)	12,231,010	7,600,000	319,200	205,200	704	452
Build Alternative (2035)	12,070,080	7,500,000	307,500	187,500	678	413

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009

Note: Emission factors from EMFAC2007 (version 2.3) for the Riverside County portion of the South Coast Air Basin.

The results for the Build alternative represent all of the Build alternatives and design options because the traffic data are similar.

These analyses found that the proposed Project would result in fewer emissions than the roadways near the monitoring stations with recorded PM_{10} and $PM_{2.5}$ exceedances and would improve LOS, increase vehicle speed, and result in peak emissions in 2035 that would be lower than the No Build Alternative. Therefore, any increase of PM_{10} and $PM_{2.5}$ cannot be attributable to the proposed Project, and so the Project would not be expected to cause or contribute to any new localized PM_{10} or $PM_{2.5}$ violations, would not increase the frequency or severity of any existing violations of the PM_{10} or $PM_{2.5}$ NAAQS, and would not delay timely attainment of the PM_{10} or $PM_{2.5}$ NAAQS. As such, the Project demonstrates the conformity requirements in 40 CFR 93.123(b). The entire qualitative PM_{10}/$PM_{2.5}$ analysis is included as Appendix C of the Final Air Quality Technical Report or can be downloaded from the SCAG TCWG website: *http://www.scag.ca.gov/tcwg/qualitative/november08.htm*.

MSAT Analysis

On September 30, 2009, the FHWA posted interim guidance on when and how to analyze MSATs as part of the NEPA process for highways (FHWA 2009). The MSAT Guide is termed 'interim' because the science of studying air toxics from mobile sources continues to evolve. Tools for estimating MSAT emissions, performing dispersion modeling, and assessing project-specific health impacts have not yet been developed.[9] In addition, there are no established criteria for determining when MSAT emissions should be considered a significant NEPA issue.

The MSAT Guide identified three levels of analysis.

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[9]Note: In December 2010, the USEPA released final guidance for quantifying the local air quality impacts of certain transportation projects and comparing them to the $PM_{2.5}$ and PM_{10} ambient air quality standards. The USEPA guidance details the tools, such as EMFAC2007 and the dispersion model American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), that can be used to estimate concentrations of $PM_{2.5}$ and PM_{10} from transportation projects. Currently, there is a two-year grace period before quantitative analysis is required for certain transportation projects in $PM_{2.5}$ or PM_{10} nonattainment or maintenance areas.

- Projects requiring no analysis
- Projects with low MSAT effects
- Projects with higher potential MSAT effects

The proposed Project would be considered a project with higher potential for MSAT effects because capacity would be added to an urban route by the design year and the proposed Project would be located near populated areas. Projects with a higher potential for MSAT effects due to concentrated diesel truck traffic, AADT greater than 150,000 AADT, and receptors within 500 feet may warrant a more detailed analysis such as a Health Risk Assessment. However, the AADT for this project is much lower than 150,000 AADT, with a maximum of approximately 60,000 AADT in the horizon year of 2035. Although sensitive receptors may be located within 500 ft, the volume of traffic along the Project alignments would not trigger a more detailed assessment of MSAT emissions beyond quantifying daily emissions. Because the Project AADT would be less than 150,000 and the percentage of truck traffic is expected to reduce in the future, a Health Risk Assessment would not be necessary. Therefore, Appendix C of the MSAT Interim Guide Update was used for the analysis.

MSAT emissions were estimated using the methodology and software tool developed by UC Davis in cooperation with the Department. The guidance, *CT-EMFAC: A Computer Model to Estimate Transportation Project Emissions* (UCDITS 2007), and software tool *CT-EMFAC version 2.6* (MSAT Tool), utilize EMFAC2007 emission factors and project-specific traffic data (e.g., volume and speed) to provide an estimate of MSAT emissions for each Project alternative. EMFAC2007 is the on-road emissions model developed and updated by the ARB. The EMFAC2007 emission factors used in the analysis were for the Riverside County portion of the Basin. Speciation factors are used in the MSAT tool to speciate the EMFAC2007 total organic gas emission factors into MSATs emissions. The speciation factors used in the MSAT tool were provided by the ARB (UCDITS 2007). MSAT emissions were estimated for the SR 79 segment of the existing alignment in the year 2004 (Existing), the SR 79 segment of the existing alignment in the years 2015 and 2035 (No Build Alternative), and the realigned SR 79 segment for the years 2015 and 2035 (Build Alternative) (shown in Table 3.2-34).

Table 3.2-34 MSAT Emission Summary

Alternative	Emissions (grams/day)				
	Diesel PM	**Benzene**	**1,3-Butadiene**	**Acrolein**	**Formaldehyde**
Existing (Year 2004)	9,502	5,327	1,054	238	5,336
No Build (Year 2015)	4,381	2,100	379	84	2,426
Build Alternative 1 (Year 2015)	2,309	1,446	307	69	1,457
Build Alternative 2 (Year 2015)	2,309	1,446	307	69	1,457
No Build (Year 2035)	1,901	1,436	247	55	1,516
Build Alternative 1 (Year 2035)	1,398	1,003	209	47	924
Build Alternative 2 (Year 2035)	1,398	1,003	209	47	924

Source: CT-EMFAC, version 2.6, UC Davis-Department Air Quality Project

For each alternative (No Build and Build alternatives), emissions would be predicted to be lower in the future than existing levels as a result of the USEPA national control programs, which are projected to reduce MSAT emissions by 72 percent between 1999 and 2050 (FHWA 2009). The average speed predicted for the No Build Alternative in the year 2015 would be 60 kilometers per hour (kph) (37.3 miles per hour [mph]) and in the year 2035 would be 55 kph (34.2 mph). The average speed predicted for Build Alternatives 1 and 2 in the year 2015 would be 105 kph (65.2 mph) and in the year 2035 would be 102 kph (63.3 mph). Local conditions may differ from these national projections in terms of fleet mix and turnover, vehicle miles traveled (VMT) growth rates, and local control measures (FHWA 2009). The magnitude of the USEPA-projected reductions, however, is so great (even after accounting for VMT growth) that MSAT emissions in the Project study area are likely to be lower in the future than current MSAT emissions. At the Project level, MSAT emissions for Build Alternative 1 and Build Alternative 2 would be lower than MSAT emissions for the No Build Alternative due to the improvement of LOS under the Build alternatives. At the regional level, MSAT emissions are likely to be substantially lower in the future due to the magnitude of the USEPA-projected reductions.

The following discussion regarding the limitations of the MSAT analysis is prototype language taken from Appendix C of the FHWA Interim Guidance Update (FHWA 2009).

Incomplete or Unavailable Information for Project Specific MSAT Health Impacts Analysis

This MSAT Analysis includes a basic analysis of the likely MSAT emission impacts of the proposed Project. However, the technical tools available to predict the Project-specific health impacts of the emission changes associated with the Project Build alternatives are limited. Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality regulations regarding incomplete or unavailable information (40 CFR 1502.22[b]).

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

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

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents (FHWA 2009). Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, *http://pubs.healtheffects.org/view.php?id=282*) or in the future as vehicle emissions substantially decrease (HEI, *http://pubs.healtheffects.org/view.php?id=306*).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EMFAC2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in an NCHRP study (*http://www.epa.gov/scram001/dispersion_alt.htm#hyroad*), which documents poor model performance at ten sites across the country – three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (*http://pubs.healtheffects.org/view.php?id=282*). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (*http://www.epa.gov/risk/basicinformation.htm#g*) and the HEI (*http://pubs.healtheffects.org/getfile.php?u=395*) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

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

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

The realigned travel lanes that would be part of the Project alternatives may have the effect of moving some traffic closer to sensitive land uses. Therefore, under Build Alternative 1 or Build Alternative 2, there may be localized areas where ambient concentrations of MSATs could be higher than the No Build Alternative. The California Air Resources Board *Air Quality and Land Use Handbook* identifies the following land uses as particularly sensitive to MSATs: residential areas, schools, hospitals and other health care facilities, day care and other child care facilities, and parks and playgrounds. The locations of sensitive land uses near the proposed Project are shown in Figure 3.2-28. However, as discussed above, the magnitude and the duration of these potential increases compared to the No Build Alternative cannot be accurately quantified due to the inherent deficiencies of current models. When a highway is widened and, as a result, moves closer to receptors, the localized effect of a given amount of MSAT emissions for the Build alternatives may be higher relative to the No Build Alternative, but this should be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). On a regional basis, USEPA and California vehicle and fuel regulations, coupled with fleet turnover, would cause substantial reductions over time that, in almost all cases, would cause region-wide MSAT levels to be significantly lower in the future than today.

Naturally Occurring Asbestos

In addition to CO, particulate matter ($PM_{2.5}$ and PM_{10}), and MSATs, asbestos may also cause localized impacts. Asbestos may occur naturally in serpentine and ultramafic rock and can be released when the rock is broken or crushed. Demolition would not occur as part of the proposed Project construction, so release of asbestos from construction is not expected. The Asbestos Airborne Toxic Control Measure (ATCM) for construction, grading, quarrying, and surface mining operations was adopted by the ARB on July 26, 2001. This ATCM covers disturbance of areas with NOA, serpentine, or ultramafic rock. According to the Department of Conservation, Division of Mines and Geology, the proposed Project is located in a county that does not contain serpentine or ultramafic rock (ARB 2001). Fugitive asbestos from these naturally occurring materials would not be emitted during construction or operation of the proposed Project. The proposed Project, therefore, is not expected to cause an impact to air quality from asbestos emissions.

Temporary Impacts

Construction of the proposed Project may result in temporary impacts to air quality from equipment exhaust emission and fugitive dust. According to 40 CFR 93.123(c)(5), "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established "Guideline"[10] methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site." Because the duration of construction activities for the Project would not exceed five years, construction emissions are considered a temporary impact and are not considered necessary to satisfy project level conformity requirements.

Under NEPA, emissions during construction, in particular the nonattainment pollutants, particulate matter and ozone precursors (NO_X and ROG), may result in temporary effects on air quality. The main sources of emissions from construction would be construction equipment and vehicle exhaust and fugitive dust from soil disturbance activities. Portable or mobile onsite construction equipment would include trucks, dozers, tractors, signal boards, excavators, scrapers, backhoes, crushing and/or processing equipment, concrete batch plants, generators, graders, rollers, and pavers. Potential sources of fugitive dust would include grading, material handling, travel on unpaved roads, and blasting activities. Emissions from construction were evaluated using the Roadway Construction Emissions Model, version 6.3.2, developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD 2009). The model estimates emissions from four construction phases; Grubbing/Land Clearing, Grading/Excavation, Drainage/Utilities/Subgrade, and Paving. Emissions were estimated using the Alternative lengths and areas, anticipated construction duration, and construction workforce described in Sections 2.2 (page 2-1) and 3.1 (page 3-7) and conservatively assuming haul trucks with a capacity of 15.3 cubic meters (20 cubic yards) would be used to move soil within the proposed Project area. The estimated maximum daily emissions are presented in Table 3.2-35 (page 3-374).

[10] "Guideline" refers to 40 CFR part 51, Appendix W, Guideline on Air Quality Models.

Table 3.2-35 Summary of Maximum Daily Construction Emissions by Alternative

Build Alternative	Maximum Daily Emissions (lb/day)				
	ROG	CO	NO_X	PM_{10}	$PM_{2.5}$
Build Alternative 1a	120	1,644	455	54	22
Build Alternative 1b (including Design Option 1b1)[a]	126	1,725	475	53	22
Build Alternative 2a	137	1,880	514	56	24
Build Alternative 2b (including Design Option 2b1)[a]	126	1,724	474	52	22

Source: Roadway Construction Emissions Model, version 6.3.2.

Note: Emissions represent the maximum daily emissions expected to occur during the grading/excavation phase of the project. Emissions from other phases (clearing/grubbing, drainage/utilities/subgrade, and paving) would be less than the values shown in the table. The model does not estimate emissions of SO_2 from construction; however, ultra low sulfur diesel is the only diesel fuel available for use in California.

The emissions model does not estimate SO_2 emissions; however, ultra low sulfur diesel in the only type of diesel fuel available for use in California.

Detailed fugitive dust emission estimates associated with individual material handling operations and/or activity/vehicle types cannot be conducted with the current version of the model (SMAQMD 2009).

[a]Information is the same for the base condition and the design options, so the information is given only once.

Fugitive Dust Emissions from Construction

Potential sources of fugitive dust during construction would include grading, material handling, travel on unpaved roads, and blasting activities. The methodology in the Roadway Construction Emissions Model to estimate fugitive dust emissions is a simplified methodology involving estimates of the maximum area (acreage) of land disturbed daily (SMAQMD 2009). The Project would include fugitive dust emissions from sources not included in the model; however, the measures described below would be implemented to reduce fugitive dust emissions from sources, such as material handling and travel on unpaved roads.

Excavation activities associated with the proposed Project includes blasting for rock removal. These techniques may be required for segments A, B, D, G, or H, as presented in Table 3.2-16 (page 3-321). Blasting operations have the potential to create fugitive dust emissions, therefore, the nonstandard special provisions (NSSPs) would be implemented to reduce fugitive dust emissions, including watering the area both before and after blasting operation and the use of blasting mats during blasting activities.

Exhaust Emissions from Construction

Exhaust emissions of ROG, CO, NO_X, PM_{10}, and $PM_{2.5}$ would result from construction equipment and vehicle operations. Onsite equipment would include graders, dozers, tractors, signal boards, excavators, backhoes, scrapers, rollers, and pavers. Based on the maximum daily emissions presented in Table 3.2-35 (page 3-374), emissions of NO_X, CO, ROG, PM_{10}, and $PM_{2.5}$ would be expected to have a potential temporary effect on air quality. The standard conditions and minimization measures for reducing temporary construction emissions described in Section 3.2.6.4 (page 3-376) would be implemented to reduce ROG, PM_{10}, and $PM_{2.5}$ emissions during construction. Further evaluation was necessary for CO and NO_X because emissions would be elevated.

Exhaust emissions of CO were further evaluated using the screening model, SCREEN3 (USEPA 1995). Daily CO emissions were modeled as an area source over a 14,973 m^2 (3.7 ac) area and assuming a source height of 5 m (16.4 ft) and receptor height of 1.8 m (5.9 ft). The location of the receptor from the source is assumed at a minimum distance of 30 m (98.4 ft) and a maximum distance of 100 m (328.1 ft). The nearest receptor location is approximately 0.8 km (0.5 mi) from the proposed alignment. Based on the results of the screening analysis, 1-hour and 8-hour CO concentrations, when considered in combination with the background values presented in Table 3.2-28 (page 3-357), would be less than the federal CO standards. Therefore, construction CO emissions would be expected to have a less than significant impact on air quality.

Construction NO_X emissions were evaluated because ozone is derived from NO_X and ROGs in the presence of sunlight and heat. SCAQMD's strategy to demonstrate attainment of the 8-hour ozone standard is to through reducing emissions of NO_X and ROG (SCAQMD 2007). Therefore, it is expected that the elevated NO_X emissions from construction would contribute to an exceedance of the ozone standard since the background ozone concentrations exceed the federal 8-hour standard (see Table 3.2-28 [page 3-357]). The conditions and minimization measures described below would be implemented to reduce NO_X and ROG emissions during construction. The Sacramento Roadway Emissions Model is not designed to calculate emission reductions with implementation of measures to reduce emissions. For the four construction phases evaluated, NO_X emissions ranged from approximately 65 pounds per day to the maximum of 514 pounds per day during Grading/Excavation. Implementation of standard conditions and minimization measures would be expected to reduce emissions; however, elevated NO_X emissions are still anticipated to temporarily affect air quality during the Grading/ Excavation phase.

The SCAQMD has adopted the criteria pollutant significance thresholds for construction emissions presented in Table 3.2-36. Although the use of locally adopted CEQA thresholds of significance for construction emissions is not required by the Department, these SCAQMD significance thresholds were considered by the Department in evaluating the Project's impacts from construction emissions.

Table 3.2-36 SCAQMD Significance Thresholds for Construction

Pollutant	Mass Daily Thresholds (lb/day)
NO_X	100
VOC	75
PM_{10}	150
$PM_{2.5}$	55
SO_X	150
CO	550
Lead	3

Source: SCAQMD, 2011

Construction Phasing

As discussed in Section 2.2.1.3, (page 2-20), construction of the proposed Project may include multiple construction phases, which would result in multiple interim completion years. With construction phasing, the proposed Project may have interim open-to-traffic years from 2015 to 2020.

The air quality analysis discussed above evaluated an opening year of 2015 rather than the interim opening years that would result from construction phasing. The evaluation of an opening year of 2015 for air quality impacts was considered to be conservative compared to evaluating the interim opening years. As discussed in the PM_{10}/$PM_{2.5}$ hot spot and MSAT analyses, vehicle emissions would be expected to be lower in future years due to improvements in vehicle fleet emission standards even though VMT would increase. Therefore, emissions in an opening year of 2015 would be expected to be higher than emissions in the interim opening years. Because the opening year of 2015 would not have an adverse effect on air quality, the interim opening years would also not be expected to have an adverse effect on air quality.

Climate Change

Climate change is analyzed in Chapter 4. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website (*http://www.fhwa.dot.gov/hep/climate/index.htm*), climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the California Environmental Quality Act (CEQA) chapter of this environmental document and may be used to inform the National Environmental Policy Act (NEPA) decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

3.2.6.4 Avoidance, Minimization, and/or Mitigation Measures

Construction of the proposed Project would result in temporary elevated NO_X emissions. Implementation of the minimization measures described below will reduce these temporary impacts. In addition, compliance with state and local regulatory requirements, Department Standard Specifications for Construction, and the NSSPs would be expected to further reduce the temporary effects of construction on air quality from emissions of NO_X, ROG, CO, PM_{10}, and $PM_{2.5}$.

Standard Conditions for Reducing Temporary Construction Emissions

The following standard conditions will minimize the potential temporary adverse effects from fugitive dust and exhaust emissions during construction. The construction contractor shall comply as specified below:

- Compliance with *California Department of Transportation Standard Specifications for Construction* (specifically, Sections 14-9 Air Quality, 17 Watering, 18 Dust Palliative, and Section 39 [Hot Mix Asphalt]) is required.
- Compliance with South Coast Air Quality Management District (SCAQMD) Rule 403 Fugitive Dust (amended June 3, 2005) shall be required for construction activities. The applicable Best Available Control Measures (BACMs) and the Dust Control Measures for Large Operations listed in Rule 403 shall be implemented and documented during all applicable construction activities.
- Compliance with SCAQMD Rules 1108 and 1108.1 Cutback Asphalt and Emulsified Asphalt is required.
- Compliance of portable equipment with the requirements of the CARB Statewide Portable Equipment Registration Program.
- Idling times shall be minimized either by shutting vehicles off when not in use or reducing the maximum idling time to five minutes (as required by CCR Title 13, Chapter 9, Section 2449 and Chapter 10, Section 2485).
- All fleets of diesel-fueled off-road vehicles shall comply with particulate matter and NOx emissions standards per CCR Title 13, Chapter 9, Section 2449.

Minimization Measures for Construction Emissions

Construction activities would result in temporary exhaust emissions of CO, NO_X, ROG, PM_{10}, and $PM_{2.5}$. The following minimization measures will be implemented to address potential adverse effects to air quality during construction. Implementation of these measures is expected to reduce the potential temporary exhaust and fugitive dust emissions generated during construction of the Project. After implementation of the minimization measures below, temporary NO_X emissions resulting from construction of the Project may remain temporarily elevated due to the many activities required to construct the Project. The construction contractor will comply as specified below.

AQ-1 **Second-Stage Smog Alerts.** Suspension of all construction equipment operations during second-stage smog alerts is required.

AQ-2 **Electricity.** To the extent feasible, use electricity from power poles rather than temporary diesel- or gasoline-powered generators.

AQ-3 **Construction Parking.** Configure construction parking to minimize traffic interference on local streets.

AQ-4 **Construction Truck Routes.** To the extent feasible, reroute construction trucks from congested streets or sensitive receptor areas.

AQ-5 **Onsite Construction Traffic Control.** Provide temporary traffic controls, such as a flag man, for onsite construction vehicles during all phases of construction to maintain smooth traffic flow.

AQ-6 **Construction Vehicle Turn Lanes.** Provide dedicated turn lanes for movement of construction vehicles if no turn lane currently exists.

The following measures will be identified as NSSPs and will be implemented during construction to minimize potential temporary impacts. The construction contractor shall comply as specified below:

AQ-7 **Blasting Activities.** During blasting operations, the work area shall be watered before and after the blasting activities, and blasting mats shall be used to prevent debris from escaping the blasting area.

AQ-8 **Signal Boards.** All message/signal boards shall be solar powered.

AQ-9 **Environmentally Sensitive Areas (ESAs).** Establish ESAs according to the following:

- An ESA fence will be defined and delineated along all portions of the construction limits, 152 meters (500 feet) from adjacent developed residential areas and/or from all adjacent businesses that include health care facilities or substantial outdoor activity, such as playgrounds, prior to commencement of construction activities within those parts of the Project area.
- An ESA fence will be defined and delineated along all portions of the construction limits, 304.5 meters (1,000 feet) from adjacent schools and licensed day care centers, prior to commencement of construction activities within those parts of the Project area.
- No staging or storage of materials will be allowed within these ESAs; however, equipment activity necessary for construction of the portion of the Project located within the ESA areas can occur.
- All construction equipment emissions within these 152-meter (500-foot) and 304.5-meter (1,000-foot) ESAs will be minimized to the maximum extent feasible by shutting down equipment not in use and not idling for more than 5 minutes, or the applicable SCAQMD best practices time limit in effect during the time of construction (reducing all criteria pollutant emissions during construction).

3.2.7 Noise and Vibration

3.2.7.1 Regulatory Setting

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

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this section will focus on the NEPA-23 Code of Federal Regulations (CFR) 772 noise analysis; please see Chapter 4 of this document for further information on noise analysis under CEQA.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA (and the Department, as assigned) involvement, the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations [CFR] 772) govern the analysis and abatement of traffic noise impacts.[11] The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA-23 CFR 772 analysis.

Table 3.2-37 Noise Abatement Criteria

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

Table 3.2-38 (page 3-380) lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

[11] This analysis was conducted in accordance with the Caltrans Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006. FHWA approved a new policy on July 13, 2011. This Draft EIR/EIS is considered grandfathered from the new protocol. The noise analysis is based on the environmental review and conclusions presented in the Noise Study Report (NSR) of July 2010, the Noise Abatement Decision Report (NADR) of July 2010, and the NSR Technical Report Addendum Memorandum (TRAM) of August 2010.

Table 3.2-38 Noise Levels of Common Activities

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

In accordance with the Department's *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, *August 2006*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

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

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

Construction Noise Regulations

State of California

Caltrans Standard Specifications Section 14-8.02, Noise Control, establishes a noise level limit of 86 A-weighted decibels (dBA) at 15.2 m (50 ft) from construction activities from 9:00 p.m. to 6:00 a.m. The Standard Specifications require use of an alternative warning method for moving equipment instead of a sound signal unless required by safety laws. The provisions also require that an internal combustion engine be equipped with the manufacturer-recommended muffler and prohibit operation of an internal combustion engine on the job site without the appropriate muffler.

Standard Special Provisions S5-310 of Caltrans construction contract standards include prescribed language to be used for construction contracts to allow certain construction activities that may exceed the 86 dBA limit, such as pile driving, concrete removal, and certain pavement work, and define the time limits for such activities.

County of Riverside

County of Riverside Noise Ordinance No. 847, which regulates noise, establishes exterior noise level limits for various land use categories. The ordinance, however, exempts capital improvement projects that are funded by governmental agencies from these provisions. The Project qualifies as a "capital improvement project" funded by governmental agencies, RCTC and FHWA; thus the Project is exempt from the provisions of the County of Riverside Noise Ordinance No. 847. Further, construction noise must follow County of Riverside Noise Ordinance No. 457 of February 1999, which states that whenever a construction site is within 0.4 km (0.25 mi) of an occupied residence or residences, no construction activities shall be undertaken between 6:00 p.m. and 6:00 a.m. from June through September and between 6:00 p.m. and 7:00 a.m. from October through May. Exceptions to these standards shall be allowed only with the written consent of the County building official.

City of Hemet

City of Hemet Ordinance No. 1620 of April 2000 addresses public nuisances caused by construction activities. Construction activities are limited to 6:00 a.m. to 6:00 p.m. from June through September and between 7:00 a.m. and 6:00 p.m. from October through May. Saturday construction is permitted between 7:00 a.m. and 6:00 p.m., and Sunday construction is prohibited. Exceptions to these standards may be granted only by the City building official and/or the city council.

City of San Jacinto

The City of San Jacinto Municipal Code (2005) restricts construction activities, whether on private property or within the public right-of-way, between 7:00 p.m. of one day and 7:00 a.m. of the following day and at any time on Sunday. Emergency construction activities or emergency repairs resulting from an unforeseen occurrence are specifically exempt from the provisions of the Municipal Code. Construction equipment includes, but is not limited to, trucks, road graders, tractors, power saws, power drills, and generators.

3.2.7.2 Affected Environment

This noise analysis is based on the environmental review and conclusions presented in the Noise Study Report (NSR) of July 2010, the Noise Abatement Decision Report (NADR) of July 2010, and the NSR Technical Report Addendum Memorandum (TRAM) of August 2010.

Methodology

Operations

Locations representing potential sensitive noise receivers throughout the Project study area were identified in Hemet, San Jacinto, and the community of Winchester. Short-term field measurements were taken in accordance with the procedures cited in the Department's Technical Noise Supplement (TeNS) (Department 1998). Each measurement lasted 15 minutes, and noise levels are stated in dBA 1-hour equivalent noise level ($L_{eq(h)}$). Long-term (24-hour) measurements were also conducted at four locations to identify the time of day when the highest existing noise levels occur.

Because of the size of the Project area and the number of sites, short-term noise measurements were conducted at 32 sites between 8:00 a.m. and 5:00 p.m. For estimating existing peak hour noise levels, the measured noise levels were then adjusted to peak hour conditions utilizing detailed topographical computer-aided drafting data and existing peak hour traffic volumes.

The Winchester Elementary School, which is situated close to the intersection of Winchester Road and Haddock Street, would be near Build Alternatives 1a and 2a. Simultaneous interior and exterior short-term measurements were taken at classrooms that would be closest to the Project to determine the outdoor-to-indoor noise reduction capability of the classroom buildings.

Future (2035) traffic noise levels that would be generated by the Project alternatives were calculated using the Federal Highway Administration's Traffic Noise Model (FHWA TNM) (FHWA 2004). It is Department practice to limit noise assessments to approximately 150 m (500 ft) from the roadway under consideration.

TNM calculates traffic noise based on the geometry of the site, which includes the positioning of lanes, receivers, and barriers. The noise source is the traffic flow, which is input into the program in terms of hourly volumes and speeds of automobiles, medium trucks, heavy trucks, buses, and motorcycles. Vehicle distributions varied by roadway and Build alternative, but were typically 90 percent cars and 10 percent trucks. Vehicle speeds also varied. Variations included roadway type and vehicle type. The highest speeds were on the existing and proposed highways. Here, automobiles were modeled assuming a speed of 105 kph (65 mph). Trucks were modeled at 97 kph (60 mph). The lowest speeds modeled, on existing side roads, were 64 kph (40 mph). Future mainline traffic volumes used for the proposed Project were 1,950 vehicles per lane per hour (LOS C), as recommended by the Department. Future traffic volumes at intersecting roads were obtained from the Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009.

Predicted peak hour noise levels were compared to the applicable NAC to identify locations where adverse noise impacts would occur with each alternative. Barriers of varying heights and locations were evaluated for abatement of noise at those locations. Noise barriers were determined to be feasible where the barrier would be capable of reducing noise by at least 5 decibels (dB). The feasible noise barriers were then evaluated for their reasonableness based on the number of benefited receivers, the noise barrier cost allowance (determined based on Department Protocol), and the estimated cost of the noise barrier.

The noise evaluation determines preliminary recommendations for noise barriers that would be feasible and reasonable to construct as part of the Project. Final decisions about noise abatement will be made once the Preferred Alternative has been identified and Project design is near completion.

Construction

Construction-related noise impacts would occur to sensitive receivers over an extended period. During construction, overall noise levels would vary based on the level of activity, the types of equipment used, when the equipment is used, and the distance from the activities to the receivers.

To estimate construction equipment usage, durations, and overlapping activities, a preliminary schedule was developed for each of the Build alternatives. Typical construction equipment noise-level data were obtained from several sources, including USEPA, FHWA, American Road Builders Association, and the Construction Industry Research and Information Association. These data and those from the schedules confirm that the two construction activities that would generate the highest noise levels for the longest durations would be roadway excavation and bridge construction. The various types of standard equipment used for these activities are shown in Table 3.2-39.

Table 3.2-39 Noise Levels of Construction Equipment Grouped by Construction Activity

Equipment	Noise Level Range (dBA at 15.2 m [50 ft])
Excavation and Earth Moving	
Bulldozer	80
Backhoe	72-93
Front-end loader	72-84
Dump truck	81-98
Jackhammer	83-94
Scraper	80-93
Bridge Construction	
Crane	75-87
Welding generator	71-82
Concrete mixer	74-88
Concrete pump	81-84
Concrete vibrator	76
Cement and dump trucks	83-94
Air compressor	74-87
Pneumatic tools	81-98
Bulldozer	80
Pile driver	91-105
Front-end loader	72-84

Table 3.2-39 Noise Levels of Construction Equipment Grouped by Construction Activity

Equipment	Noise Level Range (dBA at 15.2 m [50 ft])
Dump truck	83-84
Paver	86-88

Source: USEPA 1972; FHWA 1974; American Road Builders Association 1972; Construction Industry Research and Information Association 1984

Excavation sequences would depend on the availability and location of fill material, as well as the availability of access for construction vehicles and equipment. Project phasing has been planned so that fill material would be available from within the Project ROW. Construction vehicles and equipment would be used to excavate and transfer material from one area to another. A variety of equipment, including bulldozers, excavators, trucks, and scrapers, would be used during construction.

For this Project, bridges would be used to separate local and regional traffic by elevating the expressway over a local street or vice versa. Simply put, bridge construction involves building a substructure (columns, girders, column caps, etc.) to support the bridge superstructure. The superstructure would include a falsework, reinforcing bars, post-tension tubes, bridge rails, and the deck (the roadway itself). A variety of equipment, such as concrete trucks, pile drivers, cranes, and vibrating plates, would be used during construction.

Excessive noise levels from roadway excavation and bridge construction would be intermittent and only during daylight hours, Monday through Friday. Project construction is expected to take between 39 and 40 months.

Consistent with the guidance from the Caltrans Technical Noise Supplement and the FHWA Roadway Construction Noise Model, construction noise was calculated at a representative subset of the sensitive receivers established for the NSR. The impact of construction noise on nearby sensitive receivers was calculated based on the type of construction activity, duration of the construction activity, type of equipment used, individual equipment peak noise levels, and the distance between the receiver and Project ROW.

The construction-related noise impacts would require that a construction noise abatement plan be developed prior to construction to ensure compliance with applicable local noise restrictions.

Existing Noise Levels

Existing sources of environmental noise throughout the Project study area include vehicular traffic on existing SR 79 and other arterial and local roadways, occasional aircraft overflights, barking dogs, birds chirping, and other natural sounds typical of suburban environments. The populated areas in Winchester, Hemet, and San Jacinto have numerous noise-sensitive receivers.

Winchester consists of several scattered rural residential properties, horse ranches, farmlands, and small commercial properties. Sensitive receivers that would be affected by noise from Project construction and operation are in residential communities close to Winchester Road between Haddock Street and Simpson Road. The terrain southwest of Winchester Road is hilly. North of Winchester Road, the terrain is flat.

After the NSR was submitted, it was discovered that the area southwest of Winchester Road and Newport Road no longer includes residential receivers. According to the County of Riverside, receiver 1B-B2.1/2B-B2.1 is now an abandoned mobile home, and the parcel where it is located will be converted to commercial use in the future. The southernmost receiver (1B-B2.2/2B-B2.2) will be acquired by the SR 79 Widening Project, Thompson Road to Domenigoni Parkway (EA 08-464600). Therefore, no further analysis of these two receivers is needed.

A large number of sensitive receivers were identified in Hemet. Hemet is more developed and more urbanized than Winchester or San Jacinto. A typical sensitive receiver in Hemet would be the Roseland Mobile Home Estates community, which would be adjacent to the SR 74/Florida Avenue interchange (Opening Year 2015). Churches, horse ranches, and breeding farms characterize the remaining areas. Terrain is relatively flat throughout the area, but a few estate properties have varying terrain.

Fewer sensitive receivers were identified in San Jacinto. Much of San Jacinto consists of newly constructed medium-sized and large residential neighborhoods. There are, however, still many acres of undeveloped land. South of Ramona Expressway, cattle ranches, sod and turf fields, and poultry farms surround the scattered rural residences that sit on large parcels of land. The terrain throughout San Jacinto is relatively flat.

Existing noise levels were measured at 34 short-term locations, and peak hour noise levels were estimated at all 145 receiver locations identified for the study. The maps included in Figure 3.2-30 show all of the noise receiver locations evaluated in the noise study.

Existing adjusted peak hour noise levels range from 34 to 69 dBA in Winchester, 38 to 76 dBA in Hemet, and 36 to 62 dBA in San Jacinto. Existing adjusted peak hour noise levels are presented in Tables 3.2-40 (page 3-388), 3.2-41 (page 3-397), 3.2-42 (page 3-406), and 3.2-43 (page 3-415) by Project alternative.

Noise levels at some locations along SR 79 currently approach or exceed the NAC. These locations are as follows:

Community of Winchester

- Exterior of Winchester Elementary School, closest to Winchester Road
- First row of homes along Winchester Road and north of Olive Avenue

City of Hemet

- Nearest residential units to Florida Avenue in Roseland Estates
- First row of future homes along the east side of Sanderson Avenue and north of Cottonwood Avenue

3.2.7.3 Environmental Consequences

The Project could result in noise impacts during construction and operation. Construction activities and equipment usage could result in temporary noise impacts. During operation (i.e., after the Project is built), noise from the movement of traffic along realigned SR 79 and other local roads could affect nearby receivers. The noise impacts associated with the No Build Alternative and Build alternatives (including design options) were evaluated for the existing and future (Design Horizon year of 2035) conditions.

Potential noise impacts from the Build alternatives and design options were evaluated for representative receivers throughout the Project study area. This section presents the potential permanent and temporary noise impacts of the proposed Project.

Permanent Impacts

No Build Alternative

Future (2035) noise levels with the No Build Alternative would be similar to or would increase marginally from existing noise levels. Any increases in future noise levels would be related to increases in traffic volume that would come from growth and development along existing SR 79. Future (2035) No Build Alternative noise levels are shown in Tables 3.2-40 (page 3-388), 3.2-41 (page 3-397), 3.2-42 (page 3-406), and 3.2-43 (page 3-415) by alternative.

Receiver locations where future noise levels under the No Build Alternative would approach or exceed the NAC are as follows:

Community of Winchester

- Single-family homes on the northwest corner of the intersection at Olive Avenue and Winchester Road
- Exterior of Winchester Elementary School, closest to Winchester Road

City of Hemet

- First row of mobile homes in Roseland Mobile Home Estates, which is on the south side of Florida Avenue
- First row of single-family homes located west of Warren Road and north of Devonshire Avenue

City of San Jacinto

- First row of future homes along the east side of Sanderson Avenue, south of Ramona Boulevard
- First row of future homes along both sides of Sanderson Avenue, north of Cottonwood Avenue

Build Alternative 1a

Future noise levels at 14 locations were evaluated for Build Alternative 1a. Table 3.2-40 (page 3-388) summarizes the highest hourly traffic-noise levels that have been predicted for Build Alternative 1a at the 14 locations and compares them to existing and future No Build Alternative noise levels.

With Build Alternative 1a, future noise levels would approach or exceed the NAC at nearly all studied locations. Future traffic noise would also exceed existing noise levels at most receivers. Therefore, Build Alternative 1a would cause traffic-noise impacts at all noise-sensitive locations in the Project corridor. Locations that would be affected by noise from Build Alternative 1a include the following:

Community of Winchester

- Single-family homes located on the northwest corner of the intersection at Olive Avenue and Winchester Road

- Exterior of Winchester Elementary School, closest to Winchester Road
- Single-family and mobile homes located south of Simpson Road between Winchester Road and Patterson Avenue (north of Build Alternative 1a)
- Single-family homes on both sides of Grand Avenue, east of Oxbow Drive
- Isolated homes along the west side of SR 79 between Ranchland Road and Stowe Road
- Isolated home north of Stowe Road and east of SR 79

City of Hemet

- Mobile homes in Roseland Mobile Home Estates, which would be west of Build Alternative 1a and south of Florida Avenue
- Single-family residences west of California Avenue and north of future SR 79
- Single-family homes south of Tres Cerritos Avenue and west of future SR 79
- Single-family homes west of Warren Road and north of Devonshire Avenue
- Isolated homes west of Maze Stone Court, along the west side of future SR 79

City of San Jacinto

- First row of homes facing SR 79, south of Esplanade Avenue and east of SR 79
- Future homes along the east side of SR 79 between Seventh Street and Esplanade Avenue
- Isolated homes west of the San Diego Canal and south of Cottonwood Avenue
- Existing homes on Cottonwood Avenue
- Tamarisk Park and Ambassador Street Sports Field
- Future single-family homes south of Cottonwood Avenue and east of SR 79
- First row of future homes along the east side of Sanderson Avenue, south of future SR 79

Table 3.2-40 Existing and Predicted (2035) Noise Levels Build Alternative 1a

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA															
					Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR)												
								2.4 meters (8 feet)			3.1 meters (10 feet)			3.7 meters (12 feet)			4.3 meters (14 feet)			Is Noise Barrier Reasonable and Feasible?
								L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR	
1A-E1.1	1A-E1	2	28800 Highway 79	59	61	71	SI	68	3	0	68	3	0	68	3	0	68	3	0	YES
1A-E1.2		4	33124 Haddock Street	56	57	69	SI	66	3	0	66	3	0	65	4	0	65	4	0	
1A-E1.3*		6	33225 Finch Street	50	51	71	SI	66	5	6	65	6	6	65	6	6	64	7	6	
1A-E1.4		5	Modeled	51	52	68	SI	64	4	0	64	4	0	63	5	5	63	5	5	
1A-E1.5		6	Modeled	53	54	69	SI	65	4	0	65	4	0	64	5	6	64	5	6	
1A-E1.6		6	33121 Haddock Street	56	57	70	SI	66	4	0	66	4	0	65	5	6	65	5	6	
1A-E1.7		5	Modeled	52	53	68	SI	64	4	0	64	4	0	63	5	5	63	5	5	
1A-E1.8		2	Modeled	60	62	69	A/E	69	0	0	69	0	0	68	1	0	68	1	0	
1A-E1.9		2	Modeled	60	62	69	A/E	68	1	0	68	1	0	67	2	0	67	2	0	
1A-A4.1		4	32920 Olive Avenue	64	66	69	A/E	69	0	0	69	0	0	69	0	0	69	0	0	
1A-A4.2		1	28975 Winchester Road	69	71	73	A/E	72	1	0	72	1	0	72	1	0	72	1	0	
1A-SCH.1		1	28751 Winchester Road	67	69	73	A/E	73	0	0	73	0	0	73	0	0	73	0	0	
R1		3	Modeled	69	71	71	A/E	70	1	0	70	1	0	70	1	0	70	1	0	
R1a		3	Modeled	67	69	71	A/E	70	1	0	70	1	0	70	1	0	70	1	0	
R2		1	Modeled	67	69	70	A/E	70	0	0	70	0	0	70	0	0	70	0	0	
R3		1	Modeled	67	69	70	A/E	70	0	0	70	0	0	70	0	0	70	0	0	
R4		5	Modeled	56	57	67	A/E	65	2	0	65	2	0	65	2	0	65	2	0	
R5		5	Modeled	56	57	68	SI	66	2	0	66	2	0	65	3	0	65	3	0	
R6		3	Modeled	52	53	67	SI	64	3	0	64	3	0	63	4	0	63	4	0	
R7		4	Modeled	52	53	68	SI	64	4	0	64	4	0	64	4	0	63	5	4	
R8		10	Modeled	60	62	67	A/E	64	3	0	63	4	0	63	4	0	63	4	0	
R9		6	Modeled	60	62	68	A/E	64	4	0	64	4	0	63	5	6	63	5	6	
							Total NBR per Height			**6**			**6**			**34**			**38**	

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-40 Existing and Predicted (2035) Noise Levels Build Alternative 1a

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)		I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)		I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)		I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)		I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
1A-SCH.1*	1A-SCH-1	1	School	67	69	73	A/E	69	R	4	0	67	T	6	1	66		7	1	65		8	1	NO
Total NBR per Height											**0**				**1**				**1**				**1**	
1A-SCH.2*	1A-SCH-2	1	School	53	54	68	SI	64		4	0	63		5	1	62	RT	6	1	62		6	1	NO
Total NBR per Height											**0**				**1**				**1**				**1**	
1A-E2.1		1	Modeled	47	56	62	SI	61		1	0	61		1	0	61		1	0	61		1	0	
1A-E2.2		1	33934 Milan Road	44	49	66	SI	63		3	0	62		4	0	61		5	1	61		5	1	
1A-E2.3		1	Modeled	45	49	66	SI	65		1	0	65		1	0	64		2	0	63		3	0	
1A-E2.4	1A-E2	1	Modeled	43	46	67	SI	66		1	0	65		2	0	64	R	3	0	64	T	3	0	NO
1A-E2.5		1	33870 E Grand Avenue	43	47	66	SI	65		1	0	64		2	0	64		2	0	63		3	0	
1A-E2.6*		1	Modeled	40	41	68	SI	65		3	0	64		4	0	63		5	1	63		5	1	
1A-E2.7		1	Modeled	41	45	68	SI	65		3	0	63		5	1	62		6	1	61		7	1	
Total NBR per Height											**0**				**1**				**3**				**3**	
1A-E3.1*	1A-E3	1	Modeled	48	59	66	SI	62		4	0	61	R	5	2	61		5	2	61		5	2	NO
Total NBR per Height											**0**				**2**				**2**				**2**	

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

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R-101		8	Modeled	62	64	70	A/E	64	6	8	63	7	8	62	8	8	61	9	8	
R-102		7	Modeled	53	55	68	SI	64	4	0	63	5	7	63	5	7	62	6	7	
R-103		9	Modeled	57	58	69	SI	65	4	0	64	5	9	63	6	9	63	6	9	
R-104		11	Modeled	62	64	69	A/E	66	3	0	65	4	0	64	5	11	64	5	11	
R-105		12	Modeled	62	64	70	A/E	67	3	0	66	4	0	66	4	0	65	5	12	
R-18		2	Modeled	53	54	68	SI	65	3	0	64	4	0	64	4	0	63	5	2	
R-19		9	Modeled	53	54	68	SI	64	4	0	64	4	0	63	5	9	63	5	9	
R-20		2	Modeled	53	54	69	SI	65	4	0	65	4	0	64	5	2	64	5	2	
1A-G1.2		6	34763 Donald Street	50	52	67	SI	63	4	0	61	6	6	61	6	6	60	7	6	
1A-G1.3		6	Modeled	50	51	67	SI	62	5	6	61	6	6	60	7	6	60	7	6	
1A-G1.4		8	Modeled	50	51	68	SI	62	6	8	62	6	8	61	7	8	61	7	8	
1A-G1.5	1A-G1	8	Modeled	50	52	67	SI	63	4	0	62	5	8	62	5	8	61	6	8	**YES**
1A-G1.6		6	Modeled	50	51	69	SI	65	4	0	64	5	6	64	5	6	63	6	6	
1A-G1.7		4	Modeled	51	53	68	SI	63	5	4	62	6	4	61	7	4	60	8	4	
1A-G1.8		2	26210 California Avenue	53	54	68	SI	65	3	0	64	4	0	63	5	2	63	5	2	
1A-G1.9*		1	35099 Highway 74	76	78	77	SV	72	5	1	69	8	1	67	10	1	65	12	1	
1A-G1.10		6	Modeled	53	54	68	SI	64	4	0	63	5	6	62	6	6	62	6	6	
1A-G1.11		6	35099 Highway 74	57	58	68	A/E	64	4	0	63	5	6	62	6	6	62	6	6	
1A-G1.12		4	Modeled	53	55	68	SI	64	4	0	63	5	4	62	6	4	62	6	4	
1A-G1.13		5	Modeled	62	64	71	A/E	65	6	5	63	8	5	62	9	5	62	9	5	
1A-G1.14		2	Modeled	66	68	73	A/E	66	7	2	65	8	2	64	9	2	63	10	2	
1A-G1.15		4	Modeled	65	67	73	A/E	67	6	4	66	7	4	65	8	4	65	8	4	
1A-G1.16		10	Modeled	65	67	72	A/E	69	3	0	68	4	0	68	4	0	68	4	0	
							Total NBR per Height			**38**			**90**			**114**			**128**	

Note:

R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.

T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

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1A-I1.1*	1A-I1	1	25190 Hyatt Avenue	41	46	71	SV	65		6	1	63		8	1	62		9	1	61		10	1	NO
1A-I1.2		1	Modeled	39	44	68	SI	62	R	6	1	61		7	1	60		8	1	58		10	1	
1A-I1.3		1	Modeled	39	44	68	SI	64		4	0	63		5	1	62		6	1	62		6	1	
1A-I1.4		1	Modeled	39	45	68	SI	63		5	1	62		6	1	60		8	1	59		9	1	
Total NBR per Height											**3**				**4**				**4**				**4**	
1A-I2.1	1A-I2	5	Modeled	62	68	72	A/E	66		6	5	65		7	5	61		11	5	60		12	5	NO
1A-I2.2*		5	Modeled	61	68	73	SI	67	R	6	5	66		7	5	63		10	5	62		11	5	
1A-I2.3		5	Modeled	54	60	69	SI	63		6	5	63		6	5	61		8	5	60		9	5	
1A-I2.4		6	Modeled	54	60	68	SI	62		6	6	62		6	6	59		9	6	58		10	6	
Total NBR per Height											**21**				**21**				**21**				**21**	
1A-J1.1*	1A-J1	1	Modeled	44	48	70	SI	65		5	1	64		6	1	63		7	1	63		7	1	NO
1A-J1.2		1	24155 Maze Stone Court	40	44	64	SI	60	R	4	0	59		5	1	59	T	5	1	58		6	1	
1A-J1.3		1	23931 Warren Road	47	49	66	SI	63		3	0	63		3	0	63		3	0	63		3	0	
Total NBR per Height											**1**				**2**				**2**				**2**	

Note:
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T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
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[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
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1A-J2.1*	1A-J2	7	Modeled	44	45	71	SI	67		4	0	66		5	7	66		5	7	66		5	7	YES
1A-J2.2		4	Modeled	43	44	69	SI	64		5	4	64		5	4	63		6	4	63		6	4	
1A-J2.3		5	Modeled	43	44	68	SI	64		4	0	64		4	0	63		5	5	62		6	5	
1A-J2.4		6	Modeled	43	45	68	SI	65		3	0	64		4	0	63		5	6	62		6	6	
1A-J2.5		7	Modeled	44	46	69	SI	66		3	0	65		4	0	64		5	7	63		6	7	
1A-J2.6		7	Modeled	44	46	68	SI	66		2	0	65		3	0	64		4	0	64		4	0	
1A-J2.7		5	Modeled	43	45	66	SI	64		2	0	64		2	0	63		3	0	63		3	0	
1A-J2.8		11	Modeled	45	46	66	SI	65		1	0	65		1	0	64		2	0	64		2	0	
1A-J2.9		6	Modeled	46	47	64	SI	63		1	0	63		1	0	63		1	0	63		1	0	
1A-J2.10		5	Modeled	49	50	65	SI	65		0	0	65		0	0	65		0	0	65		0	0	
1A-J2.11		2	Modeled	58	58	70	SI	69		1	0	69		1	0	69		1	0	69		1	0	
1A-J2.12		3	Modeled	61	61	71	A/E	71		0	0	71		0	0	71		0	0	71		0	0	
R-14		9	Modeled	43	44	67	SI	63		4	0	62		5	9	62		5	9	61		6	9	
R-15		7	Modeled	43	44	67	SI	63		4	0	63		4	0	62		5	7	62		5	7	
Total NBR per Height											**4**				**20**				**45**				**45**	
1A-J3.1*	1A-J3	3	1475 Alabaster Avenue	55	55	69	SI	64	R	5	3	63		6	3	63	T	6	3	62		7	3	NO
1A-J3.2		3	Modeled	50	51	63	SI	60		3	0	60		3	0	60		3	0	60		3	0	
1A-J3.3		2	1428 Turnstone Court	48	50	61	SI	59		2	0	58		3	0	58		3	0	58		3	0	
Total NBR per Height											**3**				**3**				**3**				**3**	
1A-JL1.1	1A-JL1	7	Modeled	54	60	68	SI	63	R	5	7	62		6	7	61		7	7	60		8	7	NO
1A-JL1.2		8	202 Gladiolus Way	49	53	65	SI	61		4	0	61		4	0	60		5	8	59		6	8	
1A-JL1.3*		8	3079 Cottonwood Avenue	48	52	68	SI	63		5	8	62		6	8	61		7	8	61		7	8	
Total NBR per Height											**15**				**15**				**23**				**23**	

Note:

R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.

T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-40 Existing and Predicted (2035) Noise Levels Build Alternative 1a

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)	2.4 meters (8 feet) I.L.	2.4 meters (8 feet) NBR	3.1 meters (10 feet) L_{eq}(h)	3.1 meters (10 feet) I.L.	3.1 meters (10 feet) NBR	3.7 meters (12 feet) L_{eq}(h)	3.7 meters (12 feet) I.L.	3.7 meters (12 feet) NBR	4.3 meters (14 feet) L_{eq}(h)	4.3 meters (14 feet) I.L.	4.3 meters (14 feet) NBR	Is Noise Barrier Reasonable and Feasible?
1A-L2.1		3	Modeled	51	57	63	SI	59	4	0	58	5	3	57	6	3	56	7	3	
1A-L2.2		4	Modeled	54	61	68	SI	60	8	4	59	9	4	57	11	4	57	11	4	
1A-L2.3*		3	Modeled	58	65	69	A/E	59	10	3	58	11	3	57	12	3	56	13	3	
1A-L2.4		2	Modeled	49	55	63	SI	58	5	2	57	6	2	56	7	2	55	8	2	
1A-L2.5		4	Modeled	48	54	63	SI	59	4	0	57	6	4	56	7	4	55	8	4	
1A-L2.6		3	Modeled	47	53	63	SI	59	4	0	58	5	3	57	6	3	56	7	3	
1A-L2.7		3	Modeled	41	46	63	SI	61	2	0	60	3	0	59	4	0	57	6	3	
1A-L2.8		10	Modeled	42	47	65	SI	63	2	0	62	3	0	60	5	10	59	6	10	
1A-L2.9	1A-L2	3	Modeled	44	49	65	SI	62	3	0	61	4	0	60	5	3	58	7	3	**YES**
1A-L2.10		5	Modeled	43	48	64	SI	61	3	0	60	4	0	58	6	5	57	7	5	
R-205		3	Modeled	48	54	63	SI	58	5	3	57	6	3	56	7	3	55	8	3	
R-206		3	Modeled	53	63	63	NONE	59	4	0	58	5	3	57	6	3	56	7	3	
R-207		2	Modeled	49	55	63	SI	58	5	2	57	6	2	56	7	2	55	8	2	
R-208		4	Modeled	41	46	62	SI	60	2	0	59	3	0	58	4	0	57	5	4	
R-209		5	Modeled	43	48	59	SI	55	4	0	56	3	0	53	6	5	52	7	5	
R-210		5	Modeled	41	46	60	SI	58	2	0	56	4	0	55	5	5	54	6	5	
R-211		4	Modeled	41	46	59	SI	57	2	0	56	3	0	54	5	4	53	6	4	
							Total NBR per Height			**14**			**27**			**59**			**66**	

Note:

R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.

T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-40 Existing and Predicted (2035) Noise Levels
Build Alternative 1a

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)		I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)		I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)		I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)		I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
1A-L3.1	1A-L3	2	1996 Ramona Boulevard	51	56	61	NONE	59	R	2	0	59	T	2	0	58		3	0	58		3	0	YES
1A-L3.2		3	Modeled	44	53	65	SI	63		2	0	62		3	0	62		3	0	61		4	0	
1A-L3.3		6	Modeled	53	65	64	NONE	58		6	6	57		7	6	56		8	6	55		9	6	
1A-L3.4		8	Modeled	51	62	63	SI	58		5	8	56		7	8	55		8	8	54		9	8	
1A-L3.5		5	Modeled	55	66	65	NONE	59		6	5	58		7	5	57		8	5	57		8	5	
1A-L3.6		2	Modeled	50	61	63	SI	58		5	2	57		6	2	56		7	2	56		7	2	
1A-L3.7		7	Modeled	52	64	65	SI	60		5	7	59		6	7	58		7	7	57		8	7	
1A-L3.8*		10	Modeled	52	63	67	SI	62		5	10	61		6	10	60		7	10	59		8	10	
1A-L3.9		9	Modeled	49	61	65	SI	60		5	9	58		7	9	57		8	9	57		8	9	
1A-L3.10		7	Modeled	48	59	62	SI	57		5	7	56		6	7	55		7	7	54		8	7	
						Total NBR per Height					**54**				**54**				**54**				**54**	

Source: Noise Study Report, July 2010

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Build Alternative 1b

Future noise levels at 15 locations were evaluated for Build Alternative 1b. Table 3.2-41 (page 3-397) summarizes the predicted highest hourly traffic noise levels 15 locations and compares them to existing and future No Build Alternative noise levels.

With Build Alternative 1b, future traffic-noise levels would approach or exceed the NAC at nearly all studied locations. Future traffic noise would also exceed existing noise levels at most receivers. Therefore, Build Alternative 1b would cause impacts at all noise-sensitive locations along the Project corridor. Locations that would be affected by traffic noise from Build Alternative 1b include the following:

Community of Winchester

- Residences along Patterson Avenue south of Patton Avenue
- Isolated home north of Simpson Road and south of the Hemet Channel
- Single-family homes on both sides of East Grand Avenue, east of Oxbow Drive
- Homes along the west side of SR 79 between Ranchland Road and Stowe Road
- Isolated home north of Stowe Road and east of SR 79

City of Hemet

- Mobile homes in Roseland Mobile Home Estates, which would be west of future SR 79 and south of Florida Avenue
- Single-family residences west of California Avenue and north of future SR 79
- Single-family homes south of Tres Cerritos Avenue and west of future SR 79
- Single-family homes west of Warren Road and north of Devonshire Avenue
- Homes along Maze Stone Court, along the west side of future SR 79

City of San Jacinto

- First row of homes nearest to SR 79, south of Esplanade Avenue and east of SR 79
- Future homes along the east side of SR 79 between Seventh Street and Esplanade Avenue
- Isolated homes west of the San Diego Canal and south of Cottonwood Avenue
- Existing homes on Cottonwood Avenue
- Tamarisk Park and Ambassador Street Sports Field
- Future single-family homes south of Cottonwood Avenue and east of SR 79
- First row of future homes nearest to SR 79, west of Sanderson Avenue
- Homes along the east side of Sanderson Avenue, south of future SR 79
- Homes along both sides of future SR 79 south of Ramona Boulevard

Design Option 1b1

Design Option 1b1 would be a modification of Build Alternative 1b between Domenigoni Parkway and SR 79/Florida Avenue. These changes would affect future noise levels at 27 receiver locations. These would include residences east of future SR 79 between Newport Road and Patton Avenue (Receivers 1B-B1.1 through 1B-B1.5), residences on both sides of future SR 79 near the Ranchland Road Interchange (Receivers 1B-C1.1 through 1B-C1.6 and 1B-C2.1), and mobile homes and single-family residences in the southwest quadrant of the future SR 79/Florida Avenue interchange (Receivers 1B-G2.1 through 1B-G2.16). North of SR 79/Florida Avenue, Design Option 1b1 would be identical to Build Alternative 1b. The modifications would be primarily roadway profile changes. These changes would affect Noise Barriers 1B-B1, 1B-C1, 1B-C2, and 1B-G2, but the noise-impact determinations and recommendations for these barriers would be identical to the ones for the base condition.

Table 3.2-41 Existing and Predicted (2035) Noise Levels Build Alternative 1b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)		I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)		I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)		I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)		I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
1B-B1.1	1B-B1	1	29765 Patterson Avenue	49	47	60	NONE	59		1	0	58		2	0	58		2	0	58		2	0	NO
1B-B1.2		1	29765 Patterson Avenue	46	45	67	SI	62		5	1	61		6	1	60		7	1	59		8	1	
1B-B1.3		1	34765 Patton Avenue	45	43	70	SI	66	R	4	0	65		5	1	65	T	5	1	65		5	1	
1B-B1.4		2	29955 Patterson Avenue	51	50	64	SI	63		1	0	63		1	0	63		1	0	63		1	0	
1B-B1.5*		1	33613 Patton Avenue	46	44	73	SI	68		5	1	68		5	1	66		7	1	66		7	1	
							Total NBR per Height				**2**				**3**				**3**				**3**	
1B-C1.1	1B-C1	1	Modeled	34	39	66	SV	63		3	0	62		4	0	62		4	0	61		5	1	NO
1B-C1.2		1	Modeled	47	58	61	SI	61		0	0	61		0	0	61		0	0	61		0	0	
1B-C1.3		1	33934 Milan Road	44	49	67	SI	64	R	3	0	64		3	0	63		4	0	63	T	4	0	
1B-C1.4		1	Modeled	44	49	67	SI	64		3	0	64		3	0	64		3	0	64		3	0	
1B-C1.5*		1	Modeled	41	45	67	SI	62		5	1	62		5	1	61		6	1	61		6	1	
1B-C1.6		1	33870 E Grand Avenue	42	46	66	SI	62		4	0	62		4	0	61		5	1	61		5	1	
							Total NBR per Height				**1**				**1**				**2**				**3**	
1B-C2.1*	1B-C2	2	34150 Stowe Road	48	59	66	SI	62		4	0	61	R	5	2	61		5	2	61		5	2	NO
							Total NBR per Height				**0**				**2**				**2**				**2**	

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-41 Existing and Predicted (2035) Noise Levels Build Alternative 1b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)	I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)	I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)	I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)	I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
R-101		8	Modeled	62	60	70	A/E	64	6	8	63	7	8	63	7	8	62	8	8	
R-102		7	Modeled	53	52	68	SI	64	4	0	63	5	7	63	5	7	62	6	7	
R-103		9	Modeled	57	55	69	SI	65	4	0	64	5	9	63	6	9	63	6	9	
R-104		11	Modeled	62	60	69	A/E	66	3	0	65	4	0	64	5	11	64	5	11	
R-105		12	Modeled	62	60	70	A/E	67	3	0	66	4	0	66	4	0	65	5	12	
R-18		2	Modeled	50	49	68	SI	65	3	0	64	4	0	64	4	0	63	5	2	
R-19		9	Modeled	50	49	68	SI	64	4	0	64	4	0	63	5	9	63	5	9	
R-20		2	Modeled	50	49	69	SV	65	4	0	65	4	0	64	5	2	64	5	2	
1B-G2.2		6	34763 Donald Street	50	49	67	SI	63	4	0	61	6	6	61	6	6	60	7	6	
1B-G2.3		6	Modeled	50	49	67	SI	62	5	6	61	6	6	60	7	6	60	7	6	
1B-G2.4		8	Modeled	50	49	68	SI	62	6	8	62	6	8	61	7	8	61	7	8	
1B-G2.5	1B-G2	8	Modeled	53	51	67	SI	63	4	0	62	5	8	62	5	8	61	6	8	**YES**
1B-G2.6		6	Modeled	51	50	69	SI	65	4	0	64	5	6	64	5	6	63	6	6	
1B-G2.7		4	Modeled	53	51	68	SI	63	5	4	62	6	4	61	7	4	60	8	4	
1B-G2.8		2	26210 California Avenue	50	49	68	SI	65	3	0	64	4	0	63	5	2	63	5	2	
1B-G2.9*		1	35099 Highway 74	76	72	77	SV	72	5	1	69	8	1	69	8	1	67	10	1	
1B-G2.10		6	Modeled	53	51	68	SI	64	4	0	63	5	6	62	6	6	62	6	6	
1B-G2.11		6	35099 Highway 74	57	55	68	A/E	64	4	0	63	5	6	62	6	6	62	6	6	
1B-G2.12		8	Modeled	62	60	68	A/E	64	6	8	63	7	8	63	7	8	62	8	8	
1B-G2.13		7	Modeled	53	52	71	SI	64	4	0	63	5	7	63	5	7	62	6	7	
1B-G2.14		9	Modeled	57	55	73	SI	65	4	0	64	5	9	63	6	9	63	6	9	
1B-G2.15		11	Modeled	62	60	73	A/E	66	3	0	65	4	0	64	5	11	64	5	11	
1B-G2.16		12	Modeled	62	60	72	A/E	67	3	0	66	4	0	66	4	0	65	5	12	
							Total NBR per Height			**38**			**90**			**114**			**128**	

Note:

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T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-41 Existing and Predicted (2035) Noise Levels Build Alternative 1b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)		I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)		I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)		I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)		I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
1B-I1.1*	1B-I1	1	25190 Hyatt Avenue	41	46	71	SV	65	R	6	1	63		8	1	62		9	1	61		10	1	NO
1B-I1.2		1	Modeled	39	44	68	SI	62		6	1	61		7	1	60		8	1	58		10	1	
1B-I1.3		1	Modeled	39	44	68	SI	64		4	0	63		5	1	62		6	1	62		6	1	
1B-I1.4		1	Modeled	39	45	68	SI	63		5	1	62		6	1	60		8	1	59		9	1	
Total NBR per Height											**3**				**4**				**4**				**4**	
1B-I2.1	1B-I2	5	Modeled	62	68	72	A/E	66	R	6	5	65		7	5	61		11	5	60		12	5	NO
1B-I2.2*		5	Modeled	61	68	73	SI	67		6	5	66		7	5	63		10	5	62		11	5	
1B-I2.3		5	Modeled	54	60	69	SI	63		6	5	63		6	5	61		8	5	60		9	5	
1B-I2.4		6	Modeled	53	60	68	SI	62		6	6	62		6	6	59		9	6	58		10	6	
Total NBR per Height											**21**				**21**				**21**				**21**	
1B-K2.1	1B-K2	1	Modeled	45	49	66	SI	61	R	5	1	60	T	6	1	60		6	1	60		6	1	NO
1B-K2.2		1	24155 Stone Maze Court	38	42	58	SI	56		2	0	56		2	0	55		3	0	55		3	0	
1B-K2.3		1	24060 Maze Stone Court	50	54	64	SI	63		1	0	62		2	0	62		2	0	62		2	0	
1B-K2.4*		1	24230 Maze Stone Court	49	54	68	SI	62		6	1	61		7	1	60		8	1	60		8	1	
1B-K2.5		1	Modeled	49	54	65	SI	62		3	0	61		4	0	60		5	1	60		5	1	
Total NBR per Height											**2**				**2**				**3**				**3**	

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-41 Existing and Predicted (2035) Noise Levels Build Alternative 1b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA																			
					Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR)																
								2.4 meters (8 feet)				3.1 meters (10 feet)				3.7 meters (12 feet)				4.3 meters (14 feet)				Is Noise Barrier Reasonable and Feasible?
								L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	
1B-K3.1*		7	Modeled	44	48	69	SI	67		2	0	67		2	0	67		2	0	67		2	0	
1B-K3.2		4	Modeled	43	47	66	SI	63		3	0	62		4	0	62		4	0	61		5	4	
1B-K3.3		5	Modeled	43	47	65	SI	61		4	0	60		5	5	60		5	5	59		6	5	
1B-K3.4		6	Modeled	43	48	64	SI	60		4	0	58		6	6	57		7	6	56		8	6	
1B-K3.5		7	Modeled	44	49	65	SI	60		5	7	59		6	7	58		7	7	58		7	7	
1B-K3.6		7	Modeled	44	48	63	SI	60		3	0	58		5	7	57		6	7	56		7	7	
1B-K3.7	1B-K3	5	Modeled	43	47	60	SI	57		3	0	56		4	0	55		5	5	55		5	5	**YES**
1B-K3.8		11	Modeled	45	49	59	SI	59		0	0	58		1	0	58		1	0	58		1	0	
1B-K3.9		6	Modeled	46	50	57	NONE	57		0	0	57		0	0	57		0	0	57		0	0	
1B-K3.10		5	Modeled	49	52	59	NONE	59		0	0	59		0	0	59		0	0	59		0	0	
1B-K3.11		2	Modeled	58	60	65	NONE	65		0	0	65		0	0	65		0	0	65		0	0	
1B-K3.12		3	Modeled	61	63	68	A/E	68		0	0	68		0	0	68		0	0	68		0	0	
R-14		9	Modeled	43	47	63	SI	59		4	0	59		4	0	58		5	9	57		6	9	
R-15		7	Modeled	43	47	63	SI	59		4	0	58		5	7	57		6	7	56		7	7	
							Total NBR per Height				**7**				**32**				**46**				**50**	
1B-K4.1*		3	1475 Alabaster Avenue	53	56	69	SI	64		5	3	63		6	3	63		6	3	62		7	3	
1B-K4.2	1B-K4	3	Modeled	55	59	63	NONE	60	R	3	0	60		3	0	60	T	3	0	60		3	0	NO
1B-K4.3		2	1428 Turnstone Court	48	52	61	SI	59		2	0	58		3	0	58		3	0	58		3	0	
							Total NBR per Height				**3**				**3**				**3**				**3**	
1B-M2.1		7	3079 Cottonwood Avenue	54	60	68	SI	63		5	7	62		6	7	61		7	7	60		8	7	
1B-M2.2	1B-M2	8	202 Gladiolus Way	49	53	65	SI	61	R	4	0	61		4	0	60	T	5	8	59		6	8	NO
1B-M2.3*		8	Modeled	48	52	68	SI	63		5	8	62		6	8	61		7	8	61		7	8	
							Total NBR per Height				**15**				**15**				**23**				**23**	

Note:

R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.

T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-41 Existing and Predicted (2035) Noise Levels Build Alternative 1b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level $L_{eq}(h)$, dBA	SR 79 Future Worst-Hour Noise Levels – $L_{eq}(h)$, dBA															
					Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR)												
								2.4 meters (8 feet)			3.1 meters (10 feet)			3.7 meters (12 feet)			4.3 meters (14 feet)			Is Noise Barrier Reasonable and Feasible?
								$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	
1B-M3.1		3	Modeled	51	57	63	SI	59	4	0	58	5	3	57	6	3	56	7	3	
1B-M3.2		4	Modeled	54	61	68	SI	60	8	4	59	9	4	57	11	4	57	11	4	
1B-M3.3*		3	Modeled	58	65	69	SI	59	10	3	58	11	3	57	12	3	56	13	3	
1B-M3.4		2	Modeled	49	55	63	SI	58	5	2	57	6	2	56	7	2	55	8	2	
1B-M3.5		4	Modeled	48	54	63	SI	59	4	0	57	6	4	56	7	4	55	8	4	
1B-M3.6		3	Modeled	47	53	63	SI	59	4	0	58	5	3	57	6	3	56	7	3	
1B-M3.7		3	Modeled	41	46	63	A/E	61	2	0	60	3	0	59	4	0	57	6	3	
1B-M3.8		10	Modeled	42	47	65	SI	63	2	0	62	3	0	60	5	10	59	6	10	
1B-M3.9	1B-M3	3	Modeled	44	49	65	SI	62	3	0	61	4	0	60	5	3	58	7	3	**YES**
1B-M3.10		5	Modeled	43	48	64	SI	61	3	0	60	4	0	58	6	5	57	7	5	
R-205		3	Modeled	48	54	63	SI	58	5	3	57	6	3	56	7	3	55	8	3	
R-206		3	Modeled	47	53	63	SI	59	4	0	58	5	3	57	6	3	56	7	3	
R-207		2	Modeled	49	55	63	SI	58	5	2	57	6	2	56	7	2	55	8	2	
R-208		4	Modeled	43	48	62	SI	60	2	0	59	3	0	58	4	0	57	5	4	
R-209		5	Modeled	43	48	59	SI	55	4	0	55	4	0	53	6	5	52	7	5	
R-210		5	Modeled	41	46	60	SI	58	2	0	56	4	0	55	5	5	54	6	5	
R-211		4	Modeled	41	46	59	SI	57	2	0	59	0	0	54	5	4	53	6	4	
						Total NBR per Height				**14**			**27**			**59**			**66**	

Note:

R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.

T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-41 Existing and Predicted (2035) Noise Levels Build Alternative 1b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level $L_{eq}(h)$, dBA	SR 79 Future Worst-Hour Noise Levels – $L_{eq}(h)$, dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) $L_{eq}(h)$		I.L.	NBR	3.1 meters (10 feet) $L_{eq}(h)$		I.L.	NBR	3.7 meters (12 feet) $L_{eq}(h)$		I.L.	NBR	4.3 meters (14 feet) $L_{eq}(h)$		I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
1B-M4.1		19	Modeled	37	46	70	SV	65		5	19	64		6	19	63		7	19	63		7	19	
1B-M4.2*		5	Modeled	38	48	73	SV	65		8	5	64		9	5	62		11	5	61		12	5	
1B-M4.3		5	Modeled	38	48	72	SV	65		7	5	64		8	5	62		10	5	61		11	5	
1B-M4.4		8	Modeled	40	50	73	SV	66		7	8	64		9	8	61		12	8	60		13	8	
1B-M4.5		9	Modeled	40	50	72	SV	66		6	9	64		8	9	62		10	9	61		11	9	
1B-M4.6	1B-M4	5	Modeled	42	52	73	SV	66	R	7	5	64		9	5	62	T	11	5	60		13	5	**YES**
1B-M4.7		6	Modeled	42	53	71	SI	66		5	6	65		6	6	64		7	6	63		8	6	
1B-M4.8		5	Modeled	46	56	70	SI	64		6	5	63		7	5	61		9	5	60		10	5	
1B-M4.9		7	Modeled	48	58	73	SI	65		8	7	64		9	7	62		11	7	61		12	7	
1B-M4.10		5	Modeled	52	62	69	SI	62		7	5	61		8	5	59		10	5	58		11	5	
1B-M4.11		5	Modeled	61	71	71	A/E	63		8	5	62		9	5	60		11	5	59		12	5	
1B-M4.12		5	Modeled	63	73	67	A/E	61		6	5	60		7	5	59		8	5	59		8	5	
							Total NBR per Height				**84**				**84**				**84**				**84**	
1B-M5.1		1	Modeled	54	64	67	SI	65		2	0	64		3	0	64		3	0	64		3	0	
1B-M5.2		2	Modeled	52	62	66	SI	63		3	0	62		4	0	62		4	0	62		4	0	
1B-M5.3	1B-M5	5	Modeled	53	62	66	SI	63		3	0	63		3	0	63		3	0	63		3	0	NO
1B-M5.4		2	Modeled	64	74	70	SV	64		6	2	63		7	2	63		7	2	63		7	2	
1B-M5.5		4	Modeled	65	74	69	SV	62		7	4	62		7	4	61		8	4	61		8	4	
1B-M5.6*		4	Modeled	66	75	74	SV	69		5	4	69		5	4	69		5	4	69		5	4	
							Total NBR per Height				**10**				**10**				**10**				**10**	

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-41 Existing and Predicted (2035) Noise Levels Build Alternative 1b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA																			
					Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR)																Is Noise Barrier Reasonable and Feasible?
								2.4 meters (8 feet)				3.1 meters (10 feet)				3.7 meters (12 feet)				4.3 meters (14 feet)				
								L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	
1B-N1.1		1	1996 Ramona Boulevard	51	56	67	SI	65		2	0	65		2	0	65		2	0	64		3	0	
1B-N1.2		1	Modeled	54	59	69	SI	68		1	0	68		1	0	68		1	0	67		2	0	
1B-N1.3		3	Modeled	44	54	74	SV	66		8	3	65		9	3	63		11	3	62		12	3	
1B-N1.4		7	Modeled	44	54	75	SV	68		7	7	65		10	7	64		11	7	63		12	7	
1B-N1.5		8	Modeled	42	52	72	SV	65		7	8	63		9	8	62		10	8	60		12	8	
1B-N1.6*		10	Modeled	43	54	75	SV	68		7	10	67		8	10	64		11	10	63		12	10	
1B-N1.7		5	Modeled	42	52	72	SV	66		6	5	64		8	5	63		9	5	61		11	5	
1B-N1.8	1B-N1	6	Modeled	43	54	75	SV	69	R	6	6	68		7	6	66		9	6	64		11	6	**YES**
1B-N1.9		2	Modeled	42	52	73	SV	68		5	2	66		7	2	65		8	2	64		9	2	
1B-N1.10		2	Modeled	45	54	75	SV	66		9	2	66		9	2	64		11	2	63		12	2	
1B-N1.11		5	Modeled	45	54	71	SI	65		6	5	65		6	5	64		7	5	63		8	5	
1B-N1.12		3	Modeled	44	53	71	SI	65		6	3	64		7	3	63		8	3	62		9	3	
1B-N1.13		1	Modeled	45	53	69	SI	65		4	0	64		5	1	63		6	1	63		6	1	
R-89		3	Modeled	42	52	71	SI	64		7	3	63		8	3	62		9	3	61		10	3	
R-90		2	Modeled	42	52	71	SI	65		6	2	64		7	2	62		9	2	61		10	2	
Total NBR per Height											**56**				**57**				**57**				**57**	

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-41 Existing and Predicted (2035) Noise Levels Build Alternative 1b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)	2.4 meters (8 feet) I.L.	2.4 meters (8 feet) NBR	3.1 meters (10 feet) L_{eq}(h)	3.1 meters (10 feet) I.L.	3.1 meters (10 feet) NBR	3.7 meters (12 feet) L_{eq}(h)	3.7 meters (12 feet) I.L.	3.7 meters (12 feet) NBR	4.3 meters (14 feet) L_{eq}(h)	4.3 meters (14 feet) I.L.	4.3 meters (14 feet) NBR	Is Noise Barrier Reasonable and Feasible?
1B-N2.1		5	Modeled	48	59	73	SI	67	6	5	66	7	5	66	7	5	65	8	5	
1B-N2.2		6	Modeled	46	57	74	SI	67	7	6	66	8	6	65	9	6	64	10	6	
1B-N2.3		6	Modeled	47	58	69	SI	65	4	0	65	4	0	64	5	6	64	5	6	
1B-N2.4		5	Modeled	47	58	71	SI	66	5	5	66	5	5	65	6	5	65	6	5	
1B-N2.5*		4	Modeled	46	56	75	SV	67	8	4	66	9	4	64	11	4	64	11	4	
1B-N2.6		8	Modeled	49	60	70	SI	67	3	0	67	3	0	66	4	0	66	4	0	
1B-N2.7		7	Modeled	48	58	73	SI	67	6	7	66	7	7	65	8	7	64	9	7	
1B-N2.8		2	Modeled	50	61	71	SI	68	3	0	67	4	0	67	4	0	67	4	0	
R-183		2	Modeled	49	60	72	SI	68	4	0	68	4	0	67	5	2	67	5	2	
R-184		6	Modeled	49	60	72	SI	67	5	6	67	5	6	66	6	6	66	6	6	
R-185	1B-N2	4	Modeled	49	60	74	SI	67	7	4	67	7	4	66	8	4	65	9	4	YES
R-186		6	Modeled	49	60	71	SI	67	4	0	67	4	0	66	5	6	66	5	6	
R-187		6	Modeled	49	60	69	SI	66	3	0	66	3	0	66	3	0	66	3	0	
R-188		6	Modeled	49	60	75	SI	68	7	6	66	9	6	65	10	6	65	10	6	
R-189		6	Modeled	49	60	69	SI	66	3	0	66	3	0	66	3	0	66	3	0	
R-190		6	Modeled	49	60	69	SI	66	3	0	66	3	0	66	3	0	66	3	0	
R-191		6	Modeled	49	60	74	SI	67	7	6	65	9	6	64	10	6	64	10	6	
R-192		6	Modeled	49	60	69	SI	67	2	0	67	2	0	66	3	0	66	3	0	
R-193		6	Modeled	49	60	69	SI	67	2	0	67	2	0	67	2	0	67	2	0	
R-194		4	Modeled	49	60	72	SI	69	3	0	68	4	0	68	4	0	68	4	0	
R-195		3	Modeled	49	60	74	SI	69	5	3	67	7	3	67	7	3	67	7	3	
Total NBR per Height										**52**			**52**			**66**			**66**	

Source: Noise Study Report, July 2010

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Build Alternative 2a

Future noise levels at 12 locations were evaluated for Build Alternative 2a. Table 3.2-42 (page 3-406) summarizes the predicted highest hourly traffic noise levels at the 12 locations and compares them to existing and future No Build Alternative noise levels.

With Build Alternative 2a, future noise levels would approach or exceed the NAC at nearly all locations that were studied. Future traffic-noise levels at most of the locations would also exceed existing noise levels. Therefore, Build Alternative 2a would cause noise impacts at all noise-sensitive locations along the Project corridor. Locations that would be affected by noise from Build Alternative 2a include the following:

Community of Winchester

- Single-family homes located on the northwest corner at the intersection of Olive Avenue and Winchester Road
- Exterior of Winchester Elementary School, closest to Winchester Road
- Single-family and mobile homes south of Simpson Road between Winchester Road and Patterson Avenue (north of Build Alternative 2a)

City of Hemet

- Mobile homes in Roseland Mobile Home Estates, which would be west of future SR 79 and south of Florida Avenue
- Single-family residences west of California Avenue and north of future SR 79
- Single-family homes south of Tres Cerritos Avenue and west of future SR 79
- Single-family homes west of Warren Road and north of Devonshire Avenue
- Isolated homes west of Maze Stone Court, along the west side of future SR 79

City of San Jacinto

- First row of homes nearest to SR 79, south of Esplanade Avenue and east of SR 79
- Future homes along the east side of SR 79 between Seventh Street and Esplanade Avenue
- Isolated homes west of the San Diego Canal and south of Cottonwood Avenue
- Existing homes on Cottonwood Avenue
- Tamarisk Park and Ambassador Street Sports Field
- Future single-family homes south of Cottonwood Avenue and east of SR 79
- First row of future homes along the east side of Sanderson Avenue, south of future SR 79

Table 3.2-42 Existing and Predicted (2035) Noise Levels Build Alternative 2a

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)		I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)		I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)		I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)		I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
2A-A3.1*	2A-A3	1	30193 Winchester Road	72	72	75	SV	72		3	0	69	R	6	1	66		9	1	64		11	1	NO
2A-A3.2		1	30163 Winchester Road	68	67	68	A/E	65		3	0	63		5	1	62		6	1	60		8	1	
							Total NBR per Height				**0**				**2**				**2**				**2**	
2A-F1.1	2A-F1	2	28800 Highway 79	59	61	71	SI	68		3	0	68		3	0	68		3	0	67		4	0	**YES**
2A-F1.2		5	33225 Willard Street	50	50	67	SI	63		4	0	62		5	5	62		5	5	61		6	5	
2A-F1.3		5	33225 Willard Street	49	50	66	SI	62		4	0	62		4	0	62		4	0	61		5	5	
2A-F1.4		2	28651 Patterson Avenue	62	65	66	A/E	66		0	0	65		1	0	65		1	0	65		1	0	
2A-F1.5		6	28691 Patterson Avenue	50	52	66	SI	64		2	0	64		2	0	63		3	0	63		3	0	
2A-F1.6		6	Modeled	53	54	69	SI	64		5	6	64		5	6	63		6	6	63		6	6	
2A-F1.7		6	Modeled	54	55	69	SI	65		4	0	65		4	0	65		4	0	63		6	6	
2A-F1.8*		5	33225 Finch Street	50	50	69	SI	63		6	5	62		7	5	61		8	5	61		8	5	
2A-F1.10		1	Modeled	52	53	70	SI	65		5	1	63		7	1	62		8	1	62		8	1	
2A-A0.1		1	32920 Olive Avenue	55	56	69	SI	69		0	0	69		0	0	69		0	0	69		0	0	
2A-A0.2		4	28975 Winchester Road	65	68	72	A/E	72		0	0	72		0	0	72		0	0	72		0	0	
2A-SCH.1		1	28751 Winchester Road	67	69	73	A/E	73		0	0	73		0	0	73		0	0	73		0	0	
R1a		1	Modeled	67	69	71	A/E	70		1	0	70		1	0	70		1	0	70		1	0	
R1		4	Modeled	67	69	71	A/E	70		1	0	70		1	0	70		1	0	70		1	0	
R2		4	Modeled	67	69	70	A/E	70		0	0	70		0	0	70		0	0	70		0	0	
R3		1	Modeled	67	69	70	A/E	70		0	0	70		0	0	70		0	0	70		0	0	
R4		1	Modeled	56	57	66	A/E	64		2	0	64		2	0	64		2	0	64		2	0	
R5a		5	Modeled	56	50	69	A/E	65		4	0	65		4	0	65		4	0	65		4	0	
R5		5	Modeled	56	50	68	A/E	65		3	0	65		3	0	64		4	0	64		4	0	
R6		3	Modeled	52	55	66	A/E	63		3	0	63		3	0	62		4	0	62		4	0	

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Table 3.2-42 Existing and Predicted (2035) Noise Levels Build Alternative 2a

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)		I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)		I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)		I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)		I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
R7	2A-F1	4	Modeled	52	55	68	A/E	63		5	4	63		5	4	63		5	4	62		6	4	YES
R8		10	Modeled	60	53	66	A/E	62		4	0	62		4	0	62		4	0	61		5	10	
R9		6	Modeled	55	56	67	A/E	63		4	0	63		4	0	62		5	6	62		5	6	
R10		2	28691 Patterson Avenue	62	53	66	A/E	65		1	0	65		1	0	65		1	0	65		1	0	
							Total NBR per Height				**16**				**21**				**27**				**48**	
2A-SCH.1*	2A-SCH-1	1	School	67	69	73	A/E	69	R	4	0	67	T	6	1	66		7	1	65		8	1	NO
							Total NBR per Height				**0**				**1**				**1**				**1**	
2A-SCH.2*	2A-SCH-2	1	School	52	53	69	SI	64		5	1	64	RT	5	1	63		6	1	63		6	1	NO
							Total NBR per Height				**1**				**1**								**1**	
R-101	2A-H1	8	Modeled	62	64	68	A/E	63		5	8	62		6	8	61		7	8	61		7	8	YES
R-102		7	Modeled	53	55	66	SI	63		3	0	62		4	0	62		4	0	61		5	7	
R-103		9	Modeled	57	58	67	A/E	63		4	0	63		4	0	62		5	9	62		5	9	
R-104		11	Modeled	62	64	67	A/E	65		2	0	64		3	0	64		3	0	63		4	0	
R-105		12	Modeled	62	64	69	A/E	66		3	0	66		3	0	66		3	0	65		4	0	
R-18		5	Modeled	52	53	66	SI	63		3	0	62		4	0	62		4	0	62		4	0	
R-19		9	Modeled	52	53	66	SI	63		3	0	63		3	0	62		4	0	62		4	0	
R-20		2	Modeled	52	53	66	SI	63		3	0	62		4	0	61		5	2	61		5	2	
2A-H1.2		6	34763 Donald Street	50	52	64	SI	63		1	0	62		2	0	62		2	0	62		2	0	
2A-H1.3		6	Modeled	50	51	64	SI	61		3	0	61		3	0	61		3	0	61		3	0	
2A-H1.4		8	Modeled	50	51	65	SI	62		3	0	62		3	0	61		4	0	61		4	0	
2A-H1.5		8	Modeled	50	52	66	SI	63		3	0	63		3	0	62		4	0	62		4	0	
2A-H1.6		6	Modeled	50	51	66	SI	62		4	0	61		5	6	61		5	6	61		5	6	
2A-H1.7		4	Modeled	51	52	65	SI	60		5	4	59		6	4	59		6	4	58		7	4	

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Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA																			Is Noise Barrier Reasonable and Feasible?
					Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR)																
								2.4 meters (8 feet)				3.1 meters (10 feet)				3.7 meters (12 feet)				4.3 meters (14 feet)				
								L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	
2A-H1.8		2	California Avenue	52	53	65	SI	63		2	0	62		3	0	62		3	0	62		3	0	
2A-H1.9*		1	35099 Highway 74	76	78	77	A/E	71		6	1	69		8	1	67		10	1	65		12	1	
2A-H1.10		6	Modeled	53	55	66	SI	62		4	0	62		4	0	61		5	6	61		5	6	
2A-H1.11		6	35099 Highway 74	57	58	66	A/E	62		4	0	62		4	0	61		5	6	61		5	6	
2A-H1.12		4	Modeled	53	55	66	SI	62		4	0	62		4	0	61		5	4	61		5	4	
2A-H1.13	2A-H1	5	Modeled	62	64	69	A/E	64		5	5	63		6	5	62		7	5	61		8	5	**YES**
2A-H1.14		2	Modeled	65	67	71	A/E	65		6	2	64		7	2	63		8	2	62		9	2	
2A-H1.15		4	Modeled	64	65	69	A/E	65		4	0	64		5	4	64		5	4	63		6	4	
2A-H1.16		10	Modeled	64	65	70	A/E	67		3	0	66		4	0	66		4	0	66		4	0	
2A-H1.17		4	Modeled	50	52	66	SI	61		5	4	60		6	4	59		7	4	59		7	4	
							Total NBR per Height				**24**				**34**				**61**				**68**	
2A-I1.1*		1	25190 Hyatt Avenue	41	46	71	SV	65		6	1	63		8	1	62		9	1	61		10	1	
2A-I1.2	2A-I1	1	Modeled	39	44	68	SI	62	R	6	1	61		7	1	60		8	1	58		10	1	NO
2A-I1.3		1	Modeled	39	44	68	SI	64		4	0	63		5	1	62		6	1	62		6	1	
2A-I1.4		1	Modeled	40	45	68	SI	63		5	1	62		6	1	60		8	1	59		9	1	
							Total NBR per Height				**3**				**4**				**4**				**4**	
2A-I2.1		5	Modeled	62	68	72	A/E	66		6	5	65		7	5	61		11	5	60		12	5	
2A-I2.2*	2A-I2	5	Modeled	62	68	73	A/E	67	R	6	5	66		7	5	63		10	5	62		11	5	NO
2A-I2.3		5	Modeled	54	60	69	SI	63		6	5	63		6	5	61		8	5	60		9	5	
2A-I2.4		6	Modeled	53	60	68	SI	62		6	6	62		6	6	59		9	6	58		10	6	
							Total NBR per Height				**21**				**21**				**21**				**21**	

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					Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR)																Is Noise Barrier Reasonable and Feasible?
								2.4 meters (8 feet)				3.1 meters (10 feet)				3.7 meters (12 feet)				4.3 meters (14 feet)				
								L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	
2A-J3.1*	2A-J3	3	1475 Alabaster Avenue	55	59	70	SI	65	R	5	3	64		6	3	63	T	7	3	63		7	3	NO
2A-J3.2		3	Modeled	50	54	65	SI	63		2	0	63		2	0	62		3	0	62		3	0	
2A-J3.3		2	1428 Turnstone Court	48	52	63	SI	62		1	0	62		1	0	61		2	0	61		2	0	
							Total NBR per Height				**3**				**3**				**3**				**3**	
2A-K2.1	2A-K2	1	Modeled	45	49	66	SI	61	R	5	1	60	T	6	1	60		6	1	60		6	1	NO
2A-K2.2		1	24155 Maze Stone Court	38	42	58	SI	56		2	0	56		2	0	55		3	0	55		3	0	
2A-K2.3		1	24060 Maze Stone Court	50	54	64	SI	63		1	0	62		2	0	62		2	0	62		2	0	
2A-K2.4*		1	24230 Maze Stone Court	49	54	68	SI	62		6	1	61		7	1	60		8	1	60		8	1	
2A-K2.5		1	Modeled	49	54	65	SI	62		3	0	61		4	0	60		5	1	60		5	1	
							Total NBR per Height				**2**				**2**				**3**				**3**	

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2A-K3.1*		7	Modeled	44	48	65	SI	61		4	0	61		4	0	60		5	7	59		6	7	
2A-K3.2		4	Modeled	43	47	65	SI	61		4	0	59		6	4	58		7	4	57		8	4	
2A-K3.3		5	Modeled	43	47	64	SI	60		4	0	59		5	5	57		7	5	57		7	5	
2A-K3.4		6	Modeled	43	48	64	SI	59		5	6	58		6	6	57		7	6	56		8	6	
2A-K3.5		7	Modeled	44	49	65	SI	60		5	7	59		6	7	58		7	7	57		8	7	
2A-K3.6		7	Modeled	44	48	63	SI	59		4	0	58		5	7	57		6	7	56		7	7	
2A-K3.7	2A-K3	5	Modeled	43	47	60	SI	57		3	0	56	R	4	0	55	T	5	5	54		6	5	**YES**
2A-K3.8		11	Modeled	45	49	59	SI	59		0	0	58		1	0	58		1	0	58		1	0	
2A-K3.9		6	Modeled	46	50	57	NONE	57		0	0	57		0	0	57		0	0	57		0	0	
2A-K3.10		5	Modeled	49	52	59	NONE	59		0	0	59		0	0	59		0	0	59		0	0	
2A-K3.11		2	Modeled	58	60	65	NONE	65		0	0	65		0	0	65		0	0	65		0	0	
2A-K3.12		3	Modeled	61	63	68	A/E	68		0	0	68		0	0	68		0	0	68		0	0	
R-14		9	Modeled	43	47	62	SI	58		4	0	57		5	9	55		7	9	55		7	9	
R-15		7	Modeled	43	47	63	SI	59		4	0	58		5	7	56		7	7	55		8	7	
Total NBR per Height											**13**				**45**				**57**				**57**	
2A-L1.1		7	Modeled	47	52	63	SI	63		0	0	63		0	0	63		0	0	63	R	0	0	
2A-L1.2	2A-L1	8	202 Gladiolus Way	48	53	63	SI	62		1	0	62	T	1	0	62		1	0	62		1	0	NO
2A-L1.3*		8	3079 Cottonwood Avenue	54	61	67	SI	64		3	0	63		4	0	63		4	0	62		5	8	
Total NBR per Height											**0**				**0**				**0**				**8**	

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2A-L2.1		3	Modeled	51	57	63	SI	59	4	0	58	5	3	57	6	3	56	7	3	
2A-L2.2		4	Modeled	54	61	68	SI	60	8	4	59	9	4	57	11	4	57	11	4	
2A-L2.3*		3	Modeled	58	65	69	A/E	59	10	3	58	11	3	57	12	3	56	13	3	
2A-L2.4		2	Modeled	49	55	63	SI	58	5	2	57	6	2	56	7	2	55	8	2	
2A-L2.5		4	Modeled	48	54	63	SI	59	4	0	57	6	4	56	7	4	55	8	4	
2A-L2.6		3	Modeled	47	53	63	SI	59	4	0	58	5	3	57	6	3	56	7	3	
2A-L2.7		3	Modeled	41	46	63	SI	61	2	0	60	3	0	59	4	0	57	6	3	
2A-L2.8		10	Modeled	42	47	65	SI	63	2	0	62	3	0	60	5	10	59	6	10	
2A-L2.9	2A-L2	3	Modeled	44	49	65	SI	62	3	0	61	4	0	60	5	3	58	7	3	**YES**
2A-L2.10		5	Modeled	43	48	64	SI	61	3	0	60	4	0	58	6	5	57	7	5	
R-205		3	Modeled	48	54	63	SI	58	5	3	57	6	3	56	7	3	55	8	3	
R-206		3	Modeled	47	53	63	SI	59	4	0	58	5	3	57	6	3	56	7	3	
R-207		2	Modeled	49	55	63	SI	58	5	2	57	6	2	56	7	2	55	8	2	
R-208		4	Modeled	43	48	62	SI	60	2	0	59	3	0	58	4	0	57	5	4	
R-209		5	Modeled	43	48	59	SI	55	4	0	56	3	0	53	6	5	52	7	5	
R-210		5	Modeled	41	46	60	SI	58	2	0	56	4	0	55	5	5	54	6	5	
R-211		4	Modeled	41	46	59	SI	57	2	0	56	3	0	54	5	4	53	6	4	
Total NBR per Height										**14**			**27**			**59**			**66**	

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					Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR)																
								2.4 meters (8 feet)				3.1 meters (10 feet)				3.7 meters (12 feet)				4.3 meters (14 feet)				Is Noise Barrier Reasonable and Feasible?
								L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	
2A-L3.1		2	Modeled	51	56	61	NONE	59		2	0	59		2	0	58		3	0	58		3	0	
2A-L3.2		3	Modeled	44	52	65	SI	63		2	0	62		3	0	62		3	0	61		4	0	
2A-L3.3		6	Modeled	53	63	64	NONE	58		6	6	57		7	6	56		8	6	55		9	6	
2A-L3.4		8	Modeled	51	61	63	SI	58		5	8	56		7	8	55		8	8	54		9	8	
2A-L3.5	2A-L3	5	Modeled	55	65	65	NONE	59	R	6	5	58	T	7	5	57		8	5	57		8	5	**YES**
2A-L3.6		2	Modeled	50	60	63	SI	58		5	2	57		6	2	56		7	2	56		7	2	
2A-L3.7		7	Modeled	52	62	65	SI	60		5	7	59		6	7	58		7	7	57		8	7	
2A-L3.8*		10	Modeled	52	61	67	SI	62		5	10	61		6	10	60		7	10	59		8	10	
2A-L3.9		9	Modeled	49	59	65	SI	60		5	9	58		7	9	57		8	9	57		8	9	
2A-L3.10		7	Modeled	48	57	62	SI	57		5	7	56		6	7	55		7	7	54		8	7	
							Total NBR per Height				**54**				**54**				**54**				**54**	

Source: Noise Study Report, July 2010

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SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Build Alternative 2b

Future noise levels at 15 locations were evaluated for Build Alternative 2b. Table 3.2-43 (page 3-415) summarizes the predicted highest hourly traffic noise levels at the 12 locations and compares them to existing and future No Build Alternative noise levels.

With Build Alternative 2b, future noise levels would approach or exceed the NAC at nearly all locations that were studied. Future traffic-noise levels at most locations would also exceed existing noise levels. Therefore, Build Alternative 2b would cause noise impacts at all noise-sensitive areas along the Project corridor. Areas that would be affected by traffic noise from Build Alternative 2b include the following:

Community of Winchester

- Residences along Patterson Avenue south of Patton Avenue
- Isolated home south of Simpson Road and west of future SR 79

City of Hemet

- Isolated home south of Simpson Road and east of future SR 79
- Mobile homes in Roseland Mobile Home Estates, which would be west of future SR 79 and south of Florida Avenue
- Single-family residences west of California Avenue and north of future SR 79
- Single-family homes south of Tres Cerritos Avenue and west of future SR 79
- Single-family homes west of Warren Road and north of Devonshire Avenue
- Homes along the west side of Maze Stone Court, west of future SR 79

City of San Jacinto

- First row of homes nearest to SR 79, south of Esplanade Avenue and east of SR 79
- Future homes along the east side of SR 79 between Seventh Street and Esplanade Avenue
- Isolated homes west of the San Diego Canal and south of Cottonwood Avenue
- Existing homes on Cottonwood Avenue
- Tamarisk Park and Ambassador Street Sports Field
- Future single-family homes south of Cottonwood Avenue and east of SR 79
- First row of future homes nearest to SR 79 west of Sanderson Avenue
- Homes along the east side of Sanderson Avenue, south of future SR 79
- Homes along both sides of future SR 79 south of Ramona Boulevard

Design Option 2b1

Design Option 2b1 is a modification of Build Alternative 2b between Domenigoni Parkway and SR 79/Florida Avenue. These changes would affect future noise levels at 23 receiver locations. These receivers would include residences east of future SR 79 between Newport Road and Patton Avenue (Receivers 2B-B1.1 through 2B-B1.5), isolated homes on both sides of future SR 79 south of Simpson Road (Receivers 2B-D2.1 and 2B-D4.1), and mobile homes and single-family residences in the southwest quadrant of the future SR 79/Florida Avenue interchange (Receivers 2B-H1.1 through 2B-H1.17). North of SR 79/Florida Avenue, Design Option 2b1 would be identical to Build Alternative 2b. The modifications represented by Design Option 2b1 are primarily roadway profile changes. These changes would affect Noise Barriers 2B-B1, 2B-D2, 2B-D4, and 2B-H1, but impact determinations and barrier recommendations would be identical to the ones for the base condition.

Table 3.2-43 Existing and Predicted (2035) Noise Levels Build Alternative 2b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)		I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)		I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)		I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)		I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
2B-B1.1		1	29765 Patterson Avenue	49	48	60	NONE	59		1	0	58		2	0	58		2	0	58		2	0	
2B-B1.2		1	29765 Patterson Avenue	48	47	67	SI	62		5	1	61		6	1	60		7	1	59		8	1	
2B-B1.3	2B-B1	1	34765 Patton Avenue	47	46	70	SI	66	R	4	0	65		5	1	65	T	5	1	65		5	1	NO
2B-B1.4		2	29955 Patterson Avenue	52	51	64	SI	63		1	0	63		1	0	63		1	0	63		1	0	
2B-B1.5*		1	33613 Patton Avenue	48	47	73	SI	68		5	1	68		5	1	66		7	1	66		7	1	
Total NBR per Height											**2**				**3**				**3**				**3**	
2B-D2.1*	2B-D2	1	Modeled	59	57	68	A/E	65		3	0	65		3	0	64		4	0	64		4	0	NO
Total NBR per Height											**0**				**0**				**0**				**0**	
2B-D4.1*	2B-D4	1	Modeled	67	68	70	SV	68		2	0	68		2	0	67		3	0	67		3	0	NO
Total NBR per Height											**0**				**0**				**0**				**0**	
R-101		8	Modeled	62	64	68	A/E	63		5	8	62		6	8	61		7	8	61		7	8	
R-102		7	Modeled	53	55	66	SI	63		3	0	62		4	0	62		4	0	61		5	7	
R-103		9	Modeled	57	58	67	A/E	63		4	0	63		4	0	62		5	9	62		5	9	
R-104		11	Modeled	62	64	67	A/E	65		2	0	64		3	0	64		3	0	63		4	0	
R-105		12	Modeled	62	64	69	A/E	66		3	0	66		3	0	66		3	0	65		4	0	
R-18		2	Modeled	52	53	66	SI	63		3	0	62		4	0	62		4	0	62		4	0	
R-19	2B-H1	9	Modeled	52	53	66	SI	63		3	0	63		3	0	62		4	0	62		4	0	**YES**
R-20		2	Modeled	52	53	66	SI	63		3	0	62		4	0	61		5	2	61		5	2	
2B-H1.2		6	34763 Donald Street	50	52	64	SI	63		1	0	62		2	0	62		2	0	62		2	0	
2B-H1.3		6	Modeled	50	51	64	SI	61		3	0	61		3	0	61		3	0	61		3	0	
2B-H1.4		8	Modeled	50	51	65	SI	62		3	0	62		3	0	61		4	0	61		4	0	
2B-H1.5		8	Modeled	50	52	66	SI	63		3	0	63		3	0	62		4	0	62		4	0	
2B-H1.6		6	Modeled	50	51	66	SI	62		4	0	61		5	6	61		5	6	61		5	6	

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-43 Existing and Predicted (2035) Noise Levels Build Alternative 2b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet)				3.1 meters (10 feet)				3.7 meters (12 feet)				4.3 meters (14 feet)				Is Noise Barrier Reasonable and Feasible?
								L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	
2B-H1.7		4	Modeled	51	52	65	SI	60		5	4	59		6	4	59		6	4	58		7	4	
2B-H1.8		2	California Avenue	52	53	65	SI	63		2	0	62		3	0	62		3	0	62		3	0	
2B-H1.9*		1	35099 Highway 74	76	78	77	A/E	71		6	1	69		8	1	67		10	1	65		12	1	
2B-H1.10		6	Modeled	53	55	66	SI	62		4	0	62		4	0	61		5	6	61		5	6	
2B-H1.11		6	35099 Highway 74	57	58	66	A/E	62		4	0	62		4	0	61		5	6	61		5	6	
2B-H1.12	2B-H1	4	Modeled	53	55	66	SI	62		4	0	62		4	0	61		5	4	61		5	4	**YES**
2B-H1.13		5	Modeled	62	64	69	A/E	64		5	5	63		6	5	62		7	5	61		8	5	
2B-H1.14		2	Modeled	65	67	71	A/E	65		6	2	64		7	2	63		8	2	62		9	2	
2B-H1.15		4	Modeled	64	65	69	A/E	65		4	0	64		5	4	64		5	4	63		6	4	
2B-H1.16		10	Modeled	63	65	70	A/E	67		3	0	66		4	0	66		4	0	66		4	0	
2B-H1.17		4	Modeled	50	52	66	SI	61		5	4	60		6	4	60		6	4	59		7	4	
Total NBR per Height											**24**				**34**				**61**				**68**	
2B-I1.1*		1	25190 Hyatt Avenue	41	46	71	SV	65		6	1	63		8	1	62		9	1	61		10	1	
2B-I1.2	2B-I1	1	Modeled	39	44	68	SI	62	R	6	1	61		7	1	60		8	1	58		10	1	NO
2B-I1.3		1	Modeled	39	44	68	SI	64		4	0	63		5	1	62		6	1	62		6	1	
2B-I1.4		1	Modeled	40	45	68	SI	63		5	1	62		6	1	60		8	1	59		9	1	
Total NBR per Height											**3**				**4**				**4**				**4**	
2B-I2.1		5	Modeled	62	68	72	A/E	66		6	5	65		7	5	61		11	5	60		12	5	
2B-I2.2*	2B-I2	5	Modeled	62	68	73	A/E	67	R	6	5	66		7	5	63		10	5	62		11	5	NO
2B-I2.3		5	Modeled	54	60	69	SI	63		6	5	63		6	5	61		8	5	60		9	5	
2B-I2.4		6	Modeled	53	60	68	SI	62		6	6	62		6	6	59		9	6	58		10	6	
Total NBR per Height											**21**				**21**				**21**				**21**	

Note:

R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.

T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-43 Existing and Predicted (2035) Noise Levels Build Alternative 2b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA																			
					Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR)																
								2.4 meters (8 feet)				3.1 meters (10 feet)				3.7 meters (12 feet)				4.3 meters (14 feet)				Is Noise Barrier Reasonable and Feasible?
								L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	L_{eq}(h)		I.L.	NBR	
2B-J1.1*		1	Modeled	45	49	71	SI	65		6	1	64		7	1	63		8	1	63		8	1	
2B-J1.2	2B-J1	1	24155 Maze Stone Court	41	45	65	SI	61	R	4	0	60		5	1	59	T	6	1	58		7	1	NO
2B-J1.3		1	23931 Warren Road	47	50	66	SI	63		3	0	63		3	0	63		3	0	63		3	0	
							Total NBR per Height				**1**				**2**				**2**				**2**	
2B-J2.1*		7	Modeled	43	48	71	SI	67		4	0	66		5	7	66		5	7	66		5	7	
2B-J2.2		4	Modeled	42	47	69	SI	64		5	4	64		5	4	63		6	4	63		6	4	
2B-J2.3		5	Modeled	43	47	68	SI	64		4	0	64		4	0	63		5	5	62		6	5	
2B-J2.4		6	Modeled	43	48	68	SI	65		3	0	64		4	0	63		5	6	62		6	6	
2B-J2.5		7	Modeled	44	49	69	SI	66		3	0	65		4	0	64		5	7	63		6	7	
2B-J2.6		7	Modeled	44	48	68	SI	66		2	0	65		3	0	64		4	0	64		4	0	
2B-J2.7		5	Modeled	43	48	66	SI	64		2	0	64		2	0	63		3	0	63		3	0	
2B-J2.8	2B-J2	11	Modeled	45	49	66	SI	65		1	0	65		1	0	64		2	0	64		2	0	**YES**
2B-J2.9		6	Modeled	46	50	64	SI	63		1	0	63		1	0	63		1	0	63		1	0	
2B-J2.10		5	Modeled	49	52	65	SI	65		0	0	65		0	0	65		0	0	65		0	0	
2B-J2.11		2	Modeled	58	60	70	SI	69		1	0	69		1	0	69		1	0	69		1	0	
2B-J2.12		3	Modeled	61	63	71	A/E	71		0	0	71		0	0	71		0	0	71		0	0	
R-14		9	Modeled	43	47	67	SI	63		4	0	62		5	9	62		5	9	61		6	9	
R-15		7	Modeled	43	47	67	SI	63		4	0	63		4	0	62		5	7	62		5	7	
							Total NBR per Height				**4**				**20**				**45**				**45**	
2B-J3.1*		3	1475 Alabaster Avenue	55	59	70	SI	65		5	3	64		6	3	63		7	3	63		7	3	
2B-J3.2	2B-J3	3	Modeled	50	54	65	SI	63	R	2	0	63		2	0	62	T	3	0	62		3	0	NO
2B-J3.3		2	1428 Turnstone Court	48	52	63	SI	62		1	0	62		1	0	61		2	0	61		2	0	
							Total NBR per Height				**3**				**3**				**3**				**3**	

Note:

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[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

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Table 3.2-43 Existing and Predicted (2035) Noise Levels Build Alternative 2b

					SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA																			
								Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR)																
								2.4 meters (8 feet)				3.1 meters (10 feet)				3.7 meters (12 feet)				4.3 meters (14 feet)				
Receiver I.D.	**Barrier I.D.**	**Number of Residences (Dwelling Units)**	**Address**	**Existing Noise Level L_{eq}(h), dBA**	**Design Year Noise Level without Project**	**Design Year Noise Level with Project**	**Impact Type[a]**	**L_{eq}(h)**		**I.L.**	**NBR**	**L_{eq}(h)**		**I.L.**	**NBR**	**L_{eq}(h)**		**I.L.**	**NBR**	**L_{eq}(h)**		**I.L.**	**NBR**	**Is Noise Barrier Reasonable and Feasible?**
2B-M2.1		7	3079 Cottonwood Avenue	54	60	68	SI	63		5	7	62		6	7	61		7	7	60		8	7	
2B-M2.2	2B-M2	8	202 Gladiolus Way	49	53	65	SI	61	R	4	0	61		4	0	60	T	5	8	59		6	8	NO
2B-M2.3*		8	Modeled	48	52	68	SI	62		6	8	62		6	8	61		7	8	60		8	8	
Total NBR per Height											**15**				**15**				**23**				**23**	
2B-M3.1		3	Modeled	41	46	63	SI	59		4	0	58		5	3	57		6	3	56		7	3	
2B-M3.2		10	Modeled	42	47	65	SI	61		4	0	60		5	10	59		6	10	58		7	10	
2B-M3.3		3	Modeled	44	49	65	SI	61		4	0	60		5	3	58		7	3	58		7	3	
2B-M3.4		5	Modeled	43	48	63	SI	59		4	0	58		5	5	57		6	5	56		7	5	
2B-M3.5		3	Modeled	51	57	61	NONE	58		3	0	57		4	0	56		5	3	55		6	3	
2B-M3.6		4	Modeled	54	61	68	SI	59		9	4	58		10	4	57		11	4	56		12	4	
2B-M3.7*		3	Modeled	58	65	69	A/E	59		10	3	58		11	3	58		11	3	57		12	3	
2B-M3.8		2	Modeled	49	55	63	SI	58		5	2	57		6	2	57		6	2	56		7	2	
2B-M3.9	2B-M3	4	Modeled	48	54	62	SI	57		5	4	56		6	4	56		6	4	55		7	4	**YES**
2B-M3.10		3	Modeled	47	53	62	SI	58		4	0	57		5	3	56		6	3	55		7	3	
R-205		3	Modeled	48	54	62	SI	57		5	3	56		6	3	55		7	3	55		7	3	
R-206		3	Modeled	47	53	62	SI	58		4	0	57		5	3	56		6	3	55		7	3	
R-207		2	Modeled	49	55	62	SI	58		4	0	57		5	2	56		6	2	56		6	2	
R-208		4	Modeled	43	48	62	SI	58		4	0	57		5	4	56		6	4	55		7	4	
R-209		5	Modeled	43	48	57	SI	54		3	0	53		4	0	52		5	5	52		5	5	
R-210		5	Modeled	41	46	59	SI	56		3	0	55		4	0	54		5	5	53		6	5	
R-211		4	Modeled	41	46	59	SI	55		4	0	54		5	4	53		6	4	52		7	4	
Total NBR per Height											**16**				**53**				**66**				**66**	

Note:

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T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

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[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

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2B-M4.1		19	Modeled	37	46	70	SV	65		5	19	64		6	19	63		7	19	63		7	19	
2B-M4.2*		5	Modeled	38	48	73	SV	65		8	5	64		9	5	62		11	5	61		12	5	
2B-M4.3		5	Modeled	38	48	72	SV	65		7	5	64		8	5	62		10	5	61		11	5	
2B-M4.4		8	Modeled	40	50	73	SV	66		7	8	64		9	8	61		12	8	60		13	8	
2B-M4.5		9	Modeled	40	50	72	SV	66		6	9	64		8	9	62		10	9	61		11	9	
2B-M4.6	2B-M4	5	Modeled	42	52	73	SV	66	R	7	5	64		9	5	62	T	11	5	60		13	5	**YES**
2B-M4.7		6	Modeled	42	53	71	SI	66		5	6	65		6	6	64		7	6	63		8	6	
2B-M4.8		5	Modeled	46	56	70	SI	64		6	5	63		7	5	61		9	5	60		10	5	
2B-M4.9		7	Modeled	48	58	73	SI	65		8	7	64		9	7	62		11	7	61		12	7	
2B-M4.10		5	Modeled	52	62	69	SI	62		7	5	61		8	5	59		10	5	58		11	5	
2B-M4.11		5	Modeled	61	71	71	A/E	63		8	5	62		9	5	60		11	5	59		12	5	
2B-M4.12		5	Modeled	63	73	67	A/E	61		6	5	60		7	5	59		8	5	59		8	5	
							Total NBR per Height				**84**				**84**				**84**				**84**	
2B-M5.1		1	Modeled	54	64	67	SI	65		2	0	64		3	0	64		3	0	64		3	0	
2B-M5.2		2	Modeled	52	62	66	SI	63		3	0	62		4	0	62		4	0	62		4	0	
2B-M5.3	2B-M5	5	Modeled	53	62	66	SI	63		3	0	63		3	0	63		3	0	63		3	0	NO
2B-M5.4		2	Modeled	64	74	70	A/E	64		6	2	63		7	2	63		7	2	63		7	2	
2B-M5.5		4	Modeled	65	74	69	A/E	62		7	4	62		7	4	61		8	4	61		8	4	
2B-M5.6*		4	Modeled	66	75	74	A/E	69		5	4	69		5	4	69		5	4	69		5	4	
							Total NBR per Height				**10**				**10**				**10**				**10**	

Note:
R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.
T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.
*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:
A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.
SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.
SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-43 Existing and Predicted (2035) Noise Levels Build Alternative 2b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)	I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)	I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)	I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)	I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
2B-N1.1		1	1996 Ramona Boulevard	51	56	67	SI	65	2	0	65	2	0	65	2	0	64	3	0	
2B-N1.2		1	Modeled	54	59	69	SI	68	1	0	68	1	0	68	1	0	67	2	0	
2B-N1.3		3	Modeled	44	54	74	SV	66	8	3	65	9	3	63	11	3	62	12	3	
2B-N1.4		7	Modeled	44	54	75	SV	68	7	7	65	10	7	64	11	7	63	12	7	
2B-N1.5		8	Modeled	42	52	72	SV	65	7	8	63	9	8	62	10	8	60	12	8	
2B-N1.6*		10	Modeled	43	54	75	SV	68	7	10	67	8	10	64	11	10	63	12	10	
2B-N1.7		5	Modeled	42	52	72	SV	66	6	5	64	8	5	63	9	5	61	11	5	
2B-N1.8	2B-N1	6	Modeled	43	54	75	SV	69	6	6	68	7	6	66	9	6	64	11	6	**YES**
2B-N1.9		2	Modeled	42	52	73	SV	68	5	2	66	7	2	65	8	2	64	9	2	
2B-N1.10		2	Modeled	45	54	75	SV	66	9	2	66	9	2	64	11	2	63	12	2	
2B-N1.11		5	Modeled	45	53	71	SI	65	6	5	65	6	5	64	7	5	63	8	5	
2B-N1.12		3	Modeled	44	53	71	SI	65	6	3	64	7	3	63	8	3	62	9	3	
2B-N1.13		1	Modeled	45	53	69	SI	65	4	0	64	5	1	63	6	1	63	6	1	
R-89		3	Modeled	42	52	71	SI	64	7	3	63	8	3	62	9	3	61	10	3	
R-90		2	Modeled	42	52	71	SI	65	6	2	64	7	2	62	9	2	61	10	2	
						Total NBR per Height				**56**			**57**			**57**			**57**	

Note:

R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.

T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Table 3.2-43 Existing and Predicted (2035) Noise Levels Build Alternative 2b

Receiver I.D.	Barrier I.D.	Number of Residences (Dwelling Units)	Address	Existing Noise Level L_{eq}(h), dBA	SR 79 Future Worst-Hour Noise Levels – L_{eq}(h), dBA: Design Year Noise Level without Project	Design Year Noise Level with Project	Impact Type[a]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Residences (NBR): 2.4 meters (8 feet) L_{eq}(h)	I.L.	NBR	3.1 meters (10 feet) L_{eq}(h)	I.L.	NBR	3.7 meters (12 feet) L_{eq}(h)	I.L.	NBR	4.3 meters (14 feet) L_{eq}(h)	I.L.	NBR	Is Noise Barrier Reasonable and Feasible?
2B-N2.1		5	Modeled	48	59	73	SI	67	6	5	66	7	5	66	7	5	65	8	5	
2B-N2.2		6	Modeled	46	57	74	SI	67	7	6	66	8	6	65	9	6	64	10	6	
2B-N2.3		6	Modeled	47	58	69	SI	65	4	0	65	4	0	64	5	6	64	5	6	
2B-N2.4		5	Modeled	47	58	71	SI	66	5	5	66	5	5	65	6	5	65	6	5	
2B-N2.5*		4	Modeled	46	56	75	SV	67	8	4	65	10	4	64	11	4	64	11	4	
2B-N2.6		8	Modeled	49	60	70	SI	67	3	0	67	3	0	66	4	0	66	4	0	
2B-N2.7		7	Modeled	48	58	73	SI	67	6	7	66	7	7	65	8	7	64	9	7	
2B-N2.8		2	Modeled	50	61	71	SI	68	3	0	67	4	0	67	4	0	67	4	0	
R-183		2	Modeled	49	60	72	SI	68	4	0	68	4	0	67	5	2	67	5	2	
R-184		6	Modeled	49	60	72	SI	67	5	6	67	5	6	66	6	6	66	6	6	
R-185	2B-N2	4	Modeled	49	60	74	SI	67	7	4	67	7	4	66	8	4	65	9	4	**YES**
R-186		6	Modeled	49	60	71	SI	67	4	0	67	4	0	66	5	6	66	5	6	
R-187		6	Modeled	49	60	69	SI	66	3	0	66	3	0	66	3	0	66	3	0	
R-188		6	Modeled	49	60	75	SI	68	7	6	66	9	6	65	10	6	65	10	6	
R-189		6	Modeled	49	60	69	SI	66	3	0	66	3	0	66	3	0	66	3	0	
R-190		6	Modeled	49	60	69	SI	66	3	0	66	3	0	66	3	0	66	3	0	
R-191		6	Modeled	49	60	74	SI	67	7	6	65	9	6	64	10	6	64	10	6	
R-192		6	Modeled	49	60	69	SI	67	2	0	67	2	0	66	3	0	66	3	0	
R-193		6	Modeled	49	60	69	SI	67	2	0	67	2	0	67	2	0	67	2	0	
R-194		4	Modeled	49	60	72	SI	69	3	0	68	4	0	68	4	0	68	4	0	
R-195		3	Modeled	49	60	74	SI	69	5	3	67	7	3	67	7	3	67	7	3	
							Total NBR per Height			**52**			**52**			**66**			**66**	

Source: Noise Study Report, July 2010

Note:

R – Recommended barrier height to attain feasibility requirements of Caltrans Traffic Noise Analysis Protocol.

T – Minimum height needed to break the line of sight between 11.5 foot truck stack and first row receivers.

*Critical Design Receiver where after-Project noise level or increase is expected to be the greatest (bold).

[a]Impact types:

A/E – Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria.

SI – A substantial increase where predicted worst-hour design-year noise levels exceed existing worst-hour nose level by 12 dBA.

SV – A severe noise impact where predicted exterior noise levels equal or exceed 75 dBA or are 30 dB or more above existing noise levels.

Temporary Impacts

The Project would cause some temporary noise impacts during construction. Because of the physical size of the Project, noise impacts from construction activities were analyzed for sensitive receivers in each major area and are presented in the following sections. Receivers closest to the Project right-of-way would be most affected by construction noise.

Community of Winchester

Roadway excavation is expected to be the noisiest construction activity. Noise levels from roadway excavation at receivers adjacent to Winchester Road and south of Newport Road are expected to have the highest noise impact in the area. Peak equipment-noise levels would range from 89 to 108 dBA.

Bridge construction, including associated piling driving, is expected to be the second noisiest construction activity. Noise levels from the equipment used to construct bridge superstructures would be in the mid 90-dBA range. For example, backhoes, vibrating plates, and flatbed trucks could create maximum noise levels up to 95 dBA. Bridge construction noise levels at receivers near the Olive Avenue and Winchester Road intersection could reach as high as 97 dBA.

City of Hemet

Receivers in the western part of Hemet could be affected by noise from construction. These receivers would be single-family residences, horse ranches, agricultural land, and undeveloped land. Some could be more affected by construction noise than the receivers in the Winchester area. Receivers near excavation activities or haul routes could be subjected to prolonged noise impacts from the transport of excavated material to and from the construction sites.

Roadway excavation and grading are expected to be the noisiest construction activities. Noise levels at the receivers that would be closest to the Project right-of-way were calculated for all construction that would take place in Hemet. Heavy trucks, bulldozers, and other vibrating equipment used for placing topsoil, grading, and construction of embankments would generate noise ranging from 83 dBA to 95 dBA. Receivers near the intersection of SR 74 and Build Alternatives 1a and 1b (or Design Option 1b1) would experience maximum noise levels in the upper 90-dBA range. Receivers farther away, at the intersection of Winchester Road and SR 74, would experience noise levels in the low 80-dBA range.

Bridge construction, including associated piling driving, would produce the second noisiest construction activity. Noise levels during bridge construction at sensitive receiver locations in Hemet would range from 82 dBA to 98 dBA.

City of San Jacinto

Noise during construction at the northern end of the Project would impact receivers in the city of San Jacinto, even though fewer sensitive receivers were identified there than in Winchester and Hemet. Receivers closest to the Project in San Jacinto would be single-family residences, a poultry farm, and a lakeside recreational campground. The design options would not vary from the base condition in this part of the Project.

Roadway excavation is expected to be the noisiest construction activity. Receivers near Build Alternatives 1b and 2b would experience maximum noise levels ranging from 89 dBA to 108 dBA, while receivers near Build Alternatives 1a and 2a would be exposed to noise levels approaching 96 dBA. Receivers in rural areas far removed from roadway excavation activities would experience noise levels in the low 80-dBA range.

Bridge construction, including associated piling driving, is expected to be the second noisiest construction activity. Noise levels as high as 98 dBA would be experienced at receivers near the construction of the future interchange at Cottonwood Avenue and Build Alternatives 1b and 2b, whereas receivers located farther north, near the intersection of Cottonwood Avenue and Sanderson Avenue, are projected to experience noise levels ranging from 74 dBA to 86 dBA.

3.2.7.4 Avoidance, Minimization, and/or Mitigation Measures

As indicated in Section 3.2.7.3 (page 3-385), all of the Build alternatives and both design options would cause traffic noise impacts. An assessment of abatement measures is required for projects with noise impacts. Potential noise abatement measures identified in the Protocol include:

- Avoiding the Project impact by using design alternatives, such as altering the horizontal and vertical alignment of the project
- Constructing noise barriers
- Acquiring property to serve as a buffer zone
- Using traffic management measures to regulate types of vehicles and speeds
- Acoustically insulating public use or nonprofit institutional structures

The noise abatement chosen for this Project is the construction of noise barriers. Impact avoidance was not practical due to the locations of the noise-sensitive land uses in relation to the Project alignments. Property acquisition is rarely implemented solely or primarily on the basis of potential noise impacts. Under Department guidelines, such measures are typically only considered when “severe” noise impacts are projected (“severe” impacts are defined as 75 dBA $L_{eq}(h)$ or more at residences or project-generated noise-level increases of 30 dBA or more).

Noise barriers were studied at the sensitive receivers that would approach or exceed the NAC or would experience substantial increases above existing noise levels due to the Project. Other projects with approved development plans were included in the noise analysis. The construction of the recommended noise barriers is considered to be an environmental commitment of the Project. The configuration of noise barriers would, at a minimum, conform to the recommendations contained in this report.

For abatement measures to be incorporated into the Project, they must be both feasible and reasonable. Feasibility of noise abatement is an engineering concern. A minimum 5-dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety. Once a modeled noise barrier was shown to be feasible (that it would achieve the minimum 5-dBA reduction at a given receiver), the reasonableness of that barrier was also determined. To determine whether a noise barrier would be reasonable, the total cost allowance is calculated in accordance with the Protocol, then compared to the total estimated cost of the barrier.

Maps in Figure 3.2-30 show all of the noise barriers that were determined to be reasonable and feasible and are therefore recommended for further consideration.

The preliminary noise abatement recommendations are based on the NSR, the NADR, and the NSR TRAM. The NSR investigated existing conditions, the potential for noise impacts, the appropriate type of mitigation for this Project, the potential for acoustically feasible mitigation, and the reasonable allowance for mitigation. To develop noise barrier recommendations, the NADR was produced. The noise abatement decisions in the NADR were based on the NSR, the cost estimates for the NSR barriers, and the optimization of those barriers with NSR reasonable allowances and cost estimates that could be modified to create a feasible and reasonable barrier. The optimization process refers to evaluating barrier heights and lengths to achieve the most practical barrier possible. Following the completion of the studies for the NSR/NADR, additional design options were developed. These design options were evaluated in the NSR TRAM.

The preliminary noise abatement recommendations presented in this report are based on preliminary project alignments and profiles, which may be subject to change. As such, the physical characteristics of noise abatement described herein also may be subject to change. If during final design conditions have substantially changed, noise abatement may not be necessary. The final design of the noise abatement will be made upon completion of the project design and the public involvement processes.

The following barriers have been determined to be both feasible and reasonable and are therefore recommended for further consideration (see Figure 3.2-30):

Build Alternative 1a

Based on the studies completed to date for Build Alternative 1a, the Department intends to incorporate noise abatement in the form of five noise barriers with average heights of 3.1 to 4.3 meters (m) (10 to 14 feet [ft]) and a total length of 5,323.33 m (17,465 ft) (about 5.33 kilometers [km] [3.31 miles (mi)]). Preliminary recommendations for noise barriers with this alternative are as follows:

- **Noise Barrier 1A-E1:** This barrier would be located along the shoulder of SR 79, southbound between Olive Avenue and Simpson Road. In addition to the numerous existing single-family residences in the community of Winchester, Winchester Elementary School is nearby. The recommendation for 1A-E1 is a 770-m (2,526-ft) –long, 3.7- or 4.3-m (12- or 14-ft) -high barrier. Calculations based on preliminary design data indicate that barriers at these heights would reduce noise levels by 5 to 7 dBA for 34 to 38 residences at an estimated total cost of $2.06 million to $2.23 million.

- **Noise Barrier 1A-G1:** This barrier would be located in the southwestern quadrant of the Florida Avenue interchange. Existing sensitive receivers include the Donald Street subdivision and Roseland Mobile Home Estates.

Noise Barrier 1A-G1 would curve very close to the sensitive receivers, increasing traffic-noise impacts and the efficiency of the barrier. When optimized, 3.1- through 4.3-m (10- through 14-ft) barriers would balance reasonable allowances and estimated construction costs.

Preliminary barrier investigations included the analysis of a noise barrier along the south side of Florida Avenue and east side of Roseland Mobile Home Estates to eliminate future severe noise impacts to the mobile homes. A portion of this particular noise barrier would be outside the Project ROW and would require a temporary construction easement (TCE). Secondary environmental effects of the required TCE would include impacts to vegetation, burrowing owl habitat, and land use. Table 3.2-44 is a summary of these secondary environmental impacts.

Table 3.2-44 Secondary Environmental Impacts of Noise Barrier Temporary Construction Easement

Resource	Hectares	Acres
Vegetation – Annual Grassland (Angr)	0.4	1.0
Vegetation – Developed (Dev)	1.5	3.7
Burrowing Owl Habitat – Excluded	1.0	2.4
Burrowing Owl Habitat – Suitable	0.9	2.3
Riverside Co GP – Commercial Retail (CR)	1.0	2.5
Riverside Co GP – High Density Residential (HDR)	0.9	2.3

Source: Draft Project Report, January 2013

Calculations based on preliminary design data indicate that the barriers at heights of 3.1 to 4.3 m (10 to 14 ft) would reduce noise levels by 5 to 12 dBA for 90 to 128 residences, at an estimated total cost of $4.10 million to $4.98 million.

- **Noise Barrier 1A-L3:** This barrier would be located along the shoulder of SR 79 northbound, between Sanderson Avenue and De Anza Drive. In this area, near the northern end of the Project, SR 79 would traverse part of a large pending/approved single-family development. Only the 2.4- and 3.1-m (8- and 10-ft) iterations would be economically reasonable. Calculations based on preliminary design data indicate that the barrier at a height of 3.1 m (10 ft) would reduce noise levels by 6 to 7 dBA for 54 residences, at an estimated cost of $2.85 million.

- **Noise Barrier 1A-J2:** Noise Barrier 1A-J2 would be located along the shoulder of SR 79 northbound, between Esplanade Avenue and Seventh Street. This noise barrier would provide abatement for a relatively dense single-family subdivision proposed/approved for the currently vacant area. The exact noise barrier location would depend on how the northbound on-ramp is configured.

  Noise Barrier 1A-J2 would be reasonable to construct at 3.7- and 4.3-m (12- and 14-ft) barrier heights. Calculations based on preliminary design data indicate that at heights of 3.7 to 4.3 m (12 to 14 ft), this barrier would reduce noise levels by 5 to 6 dBA for 45 residences, at an estimated total cost of $2.59 million to $2.80 million.

- **Noise Barrier 1A-L2:** This barrier would be located in the southeastern quadrant of the Cottonwood Avenue interchange. The barrier would provide abatement for a large proposed/approved single-family residential subdivision and Tamarisk Park/Ambassador Street Sports Field.

  With Noise Barrier 1A-L2, the 3.7- and 4.3-m (12- and 14-ft) barriers would have a reasonable allowance that is higher than the estimated construction cost. Calculations based on preliminary design data indicate that these barriers would reduce noise levels by 6 to 13 dBA for 59 to 66 residences, at an estimated total cost of $3.38 million to $3.66 million. A variable height barrier may be more effective.

Build Alternative 1b and Design Option 1b1

Based on the studies completed to date for Build Alternative 1b and Design Option 1b1, the Department intends to incorporate noise abatement in the form of six noise barriers with average heights between 3.1 and 4.3 m (10 and 14 ft) and a total length of 6,709.56 m (22,013 ft) (about 6.71 km [4.17 mi]). Preliminary recommendations for noise barriers with this alternative (and design option) are as follows:

- **Noise Barrier 1B-G2:** This barrier would be located in the southwestern quadrant of the Florida Avenue interchange. Existing sensitive receivers include the Donald Street subdivision and Roseland Mobile Home Estates.

  Noise Barrier 1B-G2 would curve very close to the sensitive receivers, increasing traffic-noise impacts and the efficiency of the barrier. When optimized, 3.1- through 4.3-m (10- through 14-ft) barriers would balance reasonable allowances and estimated construction costs.

  Preliminary barrier investigations included the analysis of a noise barrier along the south side of Florida Avenue and east side of Roseland Mobile Home Estates to eliminate future severe noise impacts to the mobile homes. Table 3.2-44 (page 3-425) summarizes the secondary environmental impacts of this barrier.

  Calculations based on preliminary design data indicate that barrier 1B-G2 at heights of 3.1 to 4.3 m (10 to 14 ft) would reduce noise levels by 5 to 9 dBA for 90 to 128 residences, at an estimated total cost of $4.10 million to $4.98 million.

- **Noise Barrier 1B-K3:** This barrier would be located along the shoulder of SR 79 northbound, between Esplanade Avenue and Seventh Street. It would provide abatement for a relatively dense single-family subdivision proposed/approved for the currently vacant area. Build Alternative 1b proposes an Esplanade Avenue interchange. The exact noise barrier location would follow the northbound on-ramp configuration. Noise Barrier 1B-K3 would be reasonable at heights of 3.7 and 4.3 m (12 and 14 ft).

  Calculations based on preliminary design data indicate that the barrier at heights of 3.7 to 4.3 m (12 to 14 ft) would reduce noise levels by 5 to 7 dBA for 46 to 50 residences, at an estimated total cost of $2.33 million to $2.52 million.

- **Noise Barrier 1B-M3:** This barrier would be located in the southeastern quadrant of the Cottonwood Avenue interchange. It would provide abatement for a large proposed/approved single-family residential subdivision and Tamarisk Park/Ambassador Street Sports Field. This barrier would be reasonable to construct at heights of 3.7 and 4.3 m (12 and 14 ft). Calculations based on preliminary design data indicate that the barrier at heights of 3.1 to 4.3 m (10 to 14 ft) would reduce noise levels by 5 to 13 dBA for 59 to 66 residences, at an estimated total cost of $3.38 million to $3.66 million.

- **Noise Barrier 1B-M4:** This noise barrier would be located in the southeastern quadrant of the Sanderson Avenue interchange. It would provide abatement to a large proposed/approved single-family residential subdivision. All barrier heights (3.1 to 4.3 m [10 to 14 ft]) would be economically reasonable. Calculations based on preliminary design data indicate that the barrier would reduce noise levels by 6 to 13 dBA for 84 residences, at an estimated total cost of up to $3.80 million.

- **Noise Barrier 1B-N1:** This barrier would be located along the shoulder of SR 79 northbound at De Anza Drive, near the northern end of the Project. In this area, SR 79 would traverse the area immediately adjacent to a large pending/approved single-family development. All noise barrier heights would be reasonable to construct. Calculations based on preliminary design data indicate that the barrier would reduce noise levels by 5 to 12 dBA for 84 residences, at an estimated total cost of $2.72 million to $3.58 million.

- **Noise Barrier 1B-N2:** This barrier would provide noise abatement for a large pending/approved residential subdivision located between existing Sanderson Avenue and realigned SR 79. All barrier heights have reasonable allowances that are higher than estimated construction costs. Calculations based on preliminary design data indicate that the barrier would reduce noise levels by 5 to 11 dBA for 52 to 66 residences, at an estimated total cost of $2.70 million to $3.57 million.

Build Alternative 2a

Based on the studies completed to date for Build Alternative 2a, the Department intends to incorporate noise abatement in the form of five noise barriers with average heights between 3.1 and 4.3 m (10 and 14 ft) and a total length of 4,692.09 m (15,394 ft) (about 4.70 km [2.92 mi]). Preliminary recommendations for noise barriers with this alternative are as follows:

- **Noise Barrier 2A-F1:** This barrier would be located along the shoulder of SR 79 southbound, between Olive Avenue and Simpson Road. The recommended length for this noise barrier is 2,237 feet. In addition to the numerous existing single-family residences in the community of Winchester, Winchester Elementary School is nearby. Calculations based on preliminary design data indicate that this barrier would be reasonable to construct at 4.3 m (14 ft) and would reduce noise levels by 5 to 8 dBA for 48 residences, at an estimated total cost of $2.32 million.

- **Noise Barrier 2A-H1:** This barrier would be located in the southwestern quadrant of the Florida Avenue interchange. Existing sensitive receivers include the Donald Street subdivision and Roseland Mobile Home Estates.

With Build Alternative 2a, the alignment of SR 79 at the proposed Florida Avenue interchange would be farther away from the existing residences than with other Build alternatives. This would reduce barrier effectiveness. Nevertheless, 3.7- and 4.3-m (12- and 14-ft) heights are recommended for this noise barrier.

Preliminary barrier investigations included the analysis of a noise barrier along the south side of Florida Avenue and east side of Roseland Mobile Home Estates to eliminate future severe noise impacts to the mobile homes. Table 3.2-44 (page 3-425) summarizes the secondary environmental impacts of this barrier.

Calculations based on preliminary design data indicate that Noise Barrier 2A-H1 at heights of 3.7 to 4.3 m (12 to 14 ft) would reduce noise levels by 5 to 12 dBA for 61 to 68 residences, at an estimated total cost of $3.14 million to $3.44 million.

- **Noise Barrier 2A-K3:** This barrier would be located along the shoulder of SR 79 northbound, between Esplanade Avenue and Seventh Street. It would provide abatement for a relatively dense single-family subdivision proposed/approved for the currently vacant area. Build Alternative 2a would have an interchange at Esplanade Avenue. The exact noise barrier location would follow the northbound on-ramp configuration. This barrier would be reasonable at heights of 3.1 and 4.3 m (10 and 14 ft).

  Calculations based on preliminary design data indicate that the barrier would reduce noise levels by 5 to 8 dBA at 57 residences, at an estimated total cost of $2.11 million to $2.52 million.

- **Noise Barrier 2A-L2:** This barrier would be located in the southeastern quadrant of the Cottonwood Avenue interchange. It would provide abatement for a large proposed/approved single-family residential subdivision and Tamarisk Park/Ambassador Street Sports Field. With this barrier, 3.7- and 4.3-m (12- and 14-ft) -high versions would have a reasonable allowance that is higher than the estimated construction cost. A variable height noise barrier may be more effective. Calculations based on preliminary design data indicate that a barrier at a height of 4.3 m (14 ft) would reduce noise levels by 5 to 13 dBA at 66 residences, with an estimated total cost of about $3.66 million.

- **Noise Barrier 2A-L3:** This barrier would be located along the shoulder of SR 79 northbound, between Sanderson Avenue and De Anza Drive. In this area, near the northern end of the Project, SR 79 would traverse part of a large pending/approved single-family development. Only the 2.4- and 3.1-m (8- and 10-ft) iterations would be economically reasonable. Calculations based on preliminary design data indicate that the barrier at a height of 3.1 m (10 ft) would reduce noise levels by 6 to 7 dBA for 54 residences, at an estimated total cost of $2.85 million.

Build Alternative 2b and Design Option 2b1

Based on the studies completed to date for Build Alternative 2b and Design Option 2b1, the Department intends to incorporate noise abatement in the form of six noise barriers with average heights between 3.1 and 4.3 m (10 and 14 ft) and a total length of 6,339.23 m (20,798 ft) (about 6.34 km [3.94 mi]). Preliminary recommendations for noise barriers with this alternative (and design option) are as follows:

- **Noise Barrier 2B-H1:** This barrier would be located in the southwestern quadrant of the Florida Avenue interchange. Existing sensitive receivers include the Donald Street subdivision and Roseland Mobile Home Estates.

  With Build Alternative 2b, the alignment of SR 79 at the proposed Florida Avenue interchange would be farther away from the existing residences than with other alternatives. This would reduce barrier effectiveness. Nevertheless, 3.7- and 4.3-m (12- and 14-ft) heights are recommended for this noise barrier.

  Preliminary barrier investigations included the analysis of a noise barrier along the south side of Florida Avenue and east side of Roseland Mobile Home Estates to eliminate future severe noise impacts to the mobile homes. Table 3.2-44 (page 3-425) summarizes the secondary environmental impacts of this barrier.

  Calculations based on preliminary design data indicate that Noise Barrier 2B-H1 at heights of 3.7 and 4.3 m (12 and 14 ft) would reduce noise levels by 5 to 12 dBA for 61 to 68 residences, with an estimated total cost of $3.14 million to $3.44 million.

- **Noise Barrier 2B-J2:** Noise Barrier 2B-J2 would be located along the shoulder of SR 79 northbound, between Esplanade Avenue and Seventh Street. This barrier would provide noise abatement for a relatively dense single-family subdivision proposed/approved for the currently vacant area. Build Alternative 2b would have an interchange at Esplanade Avenue. The exact noise barrier location would depend on the northbound on-ramp configuration.

  This noise barrier would be reasonable to construct at 3.7- and 4.3-m (12- and 14-ft) heights. Calculations based on preliminary design data indicate that at heights of 3.7 and 4.3 m (12 and 14 ft), this barrier would reduce noise levels by 5 to 6 dBA for 45 residences, with an estimated total cost of $2.59 million to $2.80 million.

- **Noise Barrier 2B-M3:** This barrier would be located in the southeastern quadrant of the Cottonwood Avenue interchange. It would provide noise abatement for a large proposed/approved single-family residential subdivision and Tamarisk Park/Ambassador Street Sports Field.

  This barrier would be reasonable to construct at heights of 3.1 through 4.3 m (10 through 14 ft). Calculations based on preliminary design data indicate that at heights of 3.1 to 4.3 m (10 to 14 ft), this barrier would reduce noise levels by 5 to 12 dBA for 53 to 66 residences, at an estimated total cost of $3.07 million to $3.66 million.

- **Noise Barrier 2B-M4:** This noise barrier would be located in the southeastern quadrant of the Sanderson Avenue interchange. It would provide noise abatement for a large proposed/approved single-family residential subdivision. All barrier heights would be economically reasonable. Calculations based on preliminary design data indicate that at heights of 3.1 to 4.3 m (10 to 14 ft), this barrier would reduce noise levels by 6 to 13 dBA for 84 residences, with an estimated total cost of $3.18 million to $3.80 million.

- **Noise Barrier 2B-N1:** This barrier would be located along the shoulder of SR 79 northbound, at De Anza Drive, near the northern end of the Project. SR 79 would traverse the area immediately adjacent to a large pending/approved single-family development. All noise barrier heights would be reasonable to construct. Calculations based on preliminary design data indicate that at heights of 3.1 to 4.3 m (10 to 14 ft), this barrier would reduce noise levels by 5 to 12 dBA for 57 residences, with an estimated total cost of $3.00 million to $3.58 million.

- **Noise Barrier 2B-N2:** This barrier would provide noise abatement for a large pending/approved residential subdivision located between existing Sanderson Avenue and the realigned SR 79. All barrier heights have reasonable allowances that are higher than estimated construction costs. Calculations based on preliminary design data indicate that at heights of 3.1 to 4.3 m (10 to 14 ft), this barrier would reduce noise levels by 5 to 11 dBA for 52 to 66 residences, with an estimated total cost of $2.98 million to $3.57 million.

Construction

To decrease the overall Project construction schedule and to help reduce Project costs, some Project construction activities would be required outside the hours designated by each local jurisdiction. Construction work is planned to occur for 39 months, with two 12-hour shifts for 5 days per week. Because some of these activities may exceed local noise-level standards and/or designated work-activity timeframes, specific requests would be made to each jurisdiction, as needed, to obtain noise variances from ordinances that limit construction hours.

The control of noise from construction activities will conform to the provisions of the Caltrans Standard Specifications in Section 14-8.02, Noise Control, and Section S5-310 of the Special Provisions.

The Standard Specifications Provisions used are quoted below:

- *Do not exceed 86 dBA at 50 feet from the job site activities from 9 p.m. to 6 a.m. Use an alternative warning method instead of a sound signal unless required by safety laws.*
- *Equip an internal combustion engine with the manufacturer recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.*

As noted above, the barriers listed by Build alternative were determined to be both feasible and reasonable and are, therefore, recommended for further consideration. Also, as stated above, control of noise from construction activities will conform to the provisions of the Caltrans Standard Specifications in Section 14-8.02, Noise Control and Section S5-310 of the Special Provisions. Therefore, the Project will incorporate the following abatement measures:

NO-1 **Installation of Recommended Noise Barriers Shown to be Feasible and Reasonable.** Recommended noise barriers that are shown to be feasible and reasonable under each Build alternative or design option should be considered further for inclusion as part of the Project. While primarily an abatement measure for traffic noise, barriers will also provide abatement of construction noise if they are in place prior to construction. The noise barriers per alternative are:

- Build Alternative 1a: Five noise barriers, including 1A-E1, 1A-G1, 1A-J2, 1A-L2, and 1A-L3
- Build Alternative 1b (including Design Option 1b1): Six noise barriers, including 1B-G2, 1B-K3, 1B-M3, 1B-M4, 1B-N1, and 1B-N2

- Build Alternative 2a: Five noise barriers, including 2A-F1, 2A-H1, 2A-K3, 2A-L2, and 2A-L3
- Build Alternative 2b (including Design Option 2b1): Six noise barriers, including 2B-H1, 2B-J2, 2B-M3, 2B-M4, 2B-N1, and 2B-N2

NO-2 **Observation of Time Restrictions and Use of Alternative Alarms.** As required by the Standard Specifications Provisions, do not exceed 86 dBA at 50 feet from the job site activities from 9:00 p.m. to 6:00 a.m. Use an alternative warning method instead of a sound signal unless required by safety laws.

NO-3 **Use Mufflers on Equipment with Internal Combustion Engines.** As required by the Standard Specifications Provisions, equip internal combustion engines with manufacturer-recommended mufflers. Do not operate an internal combustion engine on the job site without the appropriate muffler.

NO-4 **Placement of Stationary Equipment.** Stationary construction equipment will be placed such that noise is directed away from sensitive receivers nearest the activity.

NO-5 **Construction Equipment Staging.** Construction equipment and supplies will be located in staging areas that will create the greatest distance between construction-related noise sources and noise-sensitive receivers nearest the activity.

3.2.8 Energy

3.2.8.1 Regulatory Setting

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

The California Environmental Quality Act (CEQA) Guidelines, Appendix F, Energy Conservation, state that EIRs are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

3.2.8.2 Affected Environment

Energy is currently consumed in the study area for the construction of public and private projects, operation of automobiles and trucks, and for operation of existing land uses. Automobile and truck fueling stations are located throughout the Project study area but outside the PIA.

The following are SCAG policies that are considered applicable to the proposed Project.

Energy Constrained Policies

EN-8: Developers should incorporate and local governments should include the following land use principles that use resources efficiently, eliminate pollution and significantly reduce waste into their projects, zoning codes and other implementation mechanisms:

- Mixed-use residential and commercial development that is connected with public transportation and utilizes existing infrastructure
- Land use and planning strategies to increase biking and walking trips

3.2.8.3 Environmental Consequences

The Project was evaluated to determine if it would result in a demand for energy that would exceed the current supply or if it would cause a substantial increase in the rate of energy use.

Methodology

Construction

Energy consumption during Project construction would involve energy used by construction equipment, haul trucks, and workers' commute vehicles. It was assumed that all heavy-construction equipment, such as loaders, cranes, scrapers, bulldozers, and heavy trucks, would use diesel fuel, while work trucks (pickups) and personal vehicles used for commuting would be gasoline fueled.

Construction equipment fuel consumption was calculated based on the equipment horsepower rating, fuel consumption rate, and the operating hours of the equipment. The fuel consumption of construction equipment was based on the *Caterpillar Performance Handbook* (Caterpillar 2010). Fuel consumption due to vehicle travel, including haul trucks, pickups, and workers' commute vehicles, was calculated based on vehicle miles traveled (VMT) and fuel economy rates in units of miles per gallon. The fuel economy rates were obtained from the *2010 Transportation Energy Data Book* (USDOE 2010).

Operations

Estimates of local energy demand directly related to the operation of each Build alternative were analyzed for the existing condition of 2004 (the base year of the Project traffic study), year open to traffic of 2015, and the horizon year of 2035. Local energy demand for transportation projects is typically dominated by vehicle fuel usage. The energy demand analysis assumes that the energy consumption by vehicles would be much more than the incremental change in electrical energy consumption for any additional lighting required for the Project area. Therefore, energy use from lighting has not been quantified.

Annual VMT in the Project area was used to calculate energy consumption and characterize the energy demand the Project would have on local resources. Because there would be only minor differences in VMT from one Build alternative to another, the VMT was assumed to represent the Build alternatives and design options equally. The daily VMT of cars and trucks was converted to annual VMT by assuming 365 days per year.

Permanent Impacts

Annual fuel use and energy use for the existing (2004) condition, the No Build Alternative, and the Build alternatives and design options are presented in Tables 3.2-45 (page 3-433) and 3.2-46 (page 3-434), respectively.

No Build Alternative

Automobiles would account for most of the energy consumed during the operation of SR 79. With the No Build Alternative, fuel consumption would be expected to increase from existing conditions in response to growth and development. Fuel consumption with the No Build Alternative would also be higher than the Build alternatives or design options in both 2015 and 2035. The No Build Alternative would have a longer route, thus higher VMT and fuel consumption than the Build alternatives or design options.

All Build Alternatives and Design Options

Energy consumption during operation of SR 79 would continue whether the Project is built or not. The estimated energy consumption for the Build alternatives and design options would be less than the No Build Alternative in both 2015 and 2035. Based on this, operation of the Project with any of the Build alternatives or design options would not have a significant effect on local energy demand.

As stated earlier, the VMT projections for the No Build Alternative and the Build alternatives and design options are similar. Travel would increase in the area with or without the Project. The Build alternatives or design options would provide a more direct, less congested route than existing SR 79. Because the proposed Project would reduce overall congestion and provide a more direct route from Domenigoni Parkway to Gilman Springs Road, regional traffic can be expected to the more direct route, thereby reducing overall VMT and energy consumption.

Table 3.2-45 Annual Fuel Consumption during Operation

Alternative	Vehicle Miles Traveled (VMT/day)	Fuel Use (gallons/year)		Total (gallons/year)
		Automobiles	Trucks	
Existing (2004)	3,200,000	46,513,274	13,741,176	60,254,451
No Build Alternative (2015)	4,800,000	72,095,575	14,428,235	86,523,811
Build Alternative (2015)	4,700,000	70,593,584	14,127,647	84,721,231
No Build Alternative (2035)	7,600,000	114,151,327	22,844,706	136,996,033
Build Alternative (2035)	7,500,000	112,649,336	22,544,118	135,193,454

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009*; Transportation Energy Data Book*, Edition 29

Note: Calculation of the fuel use assumes daily VMT for 365 days per year.

For automobiles, a fuel economy factor of 22.6 miles per gallon was used. For trucks, a fuel economy factor of 8.5 miles per gallon was used. These values were obtained from the 2010 Transportation Energy Data Book.

For 2004, it was assumed that automobiles accounted for 90 percent of the VMT, and trucks accounted for 10 percent. For 2015 and 2035, it was assumed that automobiles would account for 93 percent of the VMT, and trucks would account for 7 percent.

The traffic data for Build Alternatives 1a, 1b, 2a, and 2b and the design options are similar, so the VMT is the same for each of the Build alternatives and design options.

Table 3.2-46 Annual Energy Consumption during Operation

Alternative	Vehicle Miles Traveled (VMT/day)	Energy Use (MMBtu/yr)		Total (MMBtu/yr)
		Automobiles	Trucks	
Existing (2004)	3,200,000	5,744,808	4,286,912	10,031,720
No Build Alternative (2015)	4,800,000	8,904,452	2,707,523	11,611,976
Build Alternative (2015)	4,700,000	8,718,943	2,651,117	11,370,060
No Build Alternative (2035)	7,600,000	14,098,716	4,286,912	18,385,628
Build Alternative (2035)	7,500,000	13,913,207	4,230,505	18,143,712

Source: Traffic Analysis for State Route 79 Realignment, July 2005, revised January 2006 and November 2009; *Transportation Energy Data Book*, Edition 29

Note: Calculations assume daily VMT for 365 days per year.

For automobiles, an energy consumption factor of 5,465 Btu/VMT was used. For trucks, an energy consumption factor of 22,077 Btu/VMT was used. These values were obtained from the 2010 Transportation Energy Data Book.

For 2004, it was assumed that automobiles accounted for 90 percent of the VMT, and trucks accounted for 10 percent. For 2015 and 2035, it was assumed that automobiles would account for 93 percent of the VMT, and trucks would account for 7 percent.

The traffic data for Build Alternatives 1a, 1b, 2a, and 2b and the design options are similar, so the VMT provided for the Build alternatives represents all Build alternatives and design options.

MMBtu = Million British Thermal Units

Temporary Impacts

No Build Alternative

The No Build Alternative would entail no action; therefore, no Project-related changes to the existing environment would occur with this alternative. There would be no construction activities and no change on the demand for energy.

All Build Alternatives and Design Options

Temporary energy consumption during construction of the Project would be from heavy-construction equipment, trucks, and worker vehicles for construction detours. Energy would be expended during construction of the Project, but these expenditures would be short term and would occur only while the Project is being built (about 39 months). The potential for wasteful energy use during construction would be low. Crews would work two 12-hour shifts, 5 days a week. Energy expended during construction would be ongoing in nature, and phasing construction activities would lessen the potential for wasteful use of energy.

Most Project construction would occur before Opening Year (2015), but some additional construction would be associated with the Planning Horizon (2035). The fuel consumption for the construction completed by Opening Year (2015) is summarized in Table 3.2-47 (page 3-435), and the fuel consumption for construction completed by the Planning Horizon in 2035 is summarized in Table 3.2-48 (page 3-435). Fuel consumption for Opening Year (2015) construction would be similar with all of the Build alternatives and design options. Fuel consumption for Planning Horizon (2035) construction would vary substantially depending on the additional construction required by each Build alternative or design option.

Construction of the Build alternatives would cause a temporary increase in energy consumption. However, the construction energy demand would be much lower than the energy demand for operation of the Project. Therefore, construction would not be expected to impact regional energy demand.

Table 3.2-47 Annual Fuel Consumption during Construction (Opening Year 2015)

Alternative	Diesel Fuel Consumption (gallons)	Gasoline Consumption (gallons)
Build Alternative 1a	7,216,286	860,858
Build Alternative 1b (including Design Option 1b1)[a]	7,710,188	971,897
Build Alternative 2a	7,365,770	1,000,671
Build Alternative 2b (including Design Option 2b1)[a]	7,440,529	952,309

Source: Engineer's estimate using Heavy Construction System Specialists, Inc (HCSS) HeavyBid software

Note: The fuel consumption represents the total amount of fuel consumed during the 39-month construction schedule.

[a]Information is the same for the base condition and the design options, so the information is given only once.

Table 3.2-48 Annual Fuel Consumption during Construction (Planning Horizon 2035)

Alternative	Diesel Fuel Consumption (gallons)	Gasoline Consumption (gallons)
Build Alternative 1a	989,748	152,755
Build Alternative 1b (including Design Option 1b1)[a]	293,910	262,247
Build Alternative 2a	903,666	393,134
Build Alternative 2b (including Design Option 2b1)[a]	NA	NA

Source: Engineer's estimate using Heavy Construction System Specialists, Inc (HCSS) HeavyBid software

Note: The construction associated with the planning horizon year would not involve interchanges associated with Build Alternative 2b; therefore, fuel consumption was not estimated for this alternative.

[a]Information is the same for the base condition and the design options, so the information is given only once.

3.2.8.4 Avoidance, Minimization, and/or Mitigation Measures

The Build alternatives and design options would result in lower energy consumption than the No Build Alternative. Therefore, the Build alternatives and design options would not have an adverse effect on energy demand, and no avoidance, minimization, or mitigation measures would be required.

During construction, there would be a temporary increase in energy demand for the Build alternatives and design options compared to the No Build Alternative. Because the construction energy demand would be much lower than the energy demand for operation of the Project, construction would not be expected to impact regional energy demand. Therefore, no avoidance, minimization, or mitigation measures would be needed for construction of the Project.

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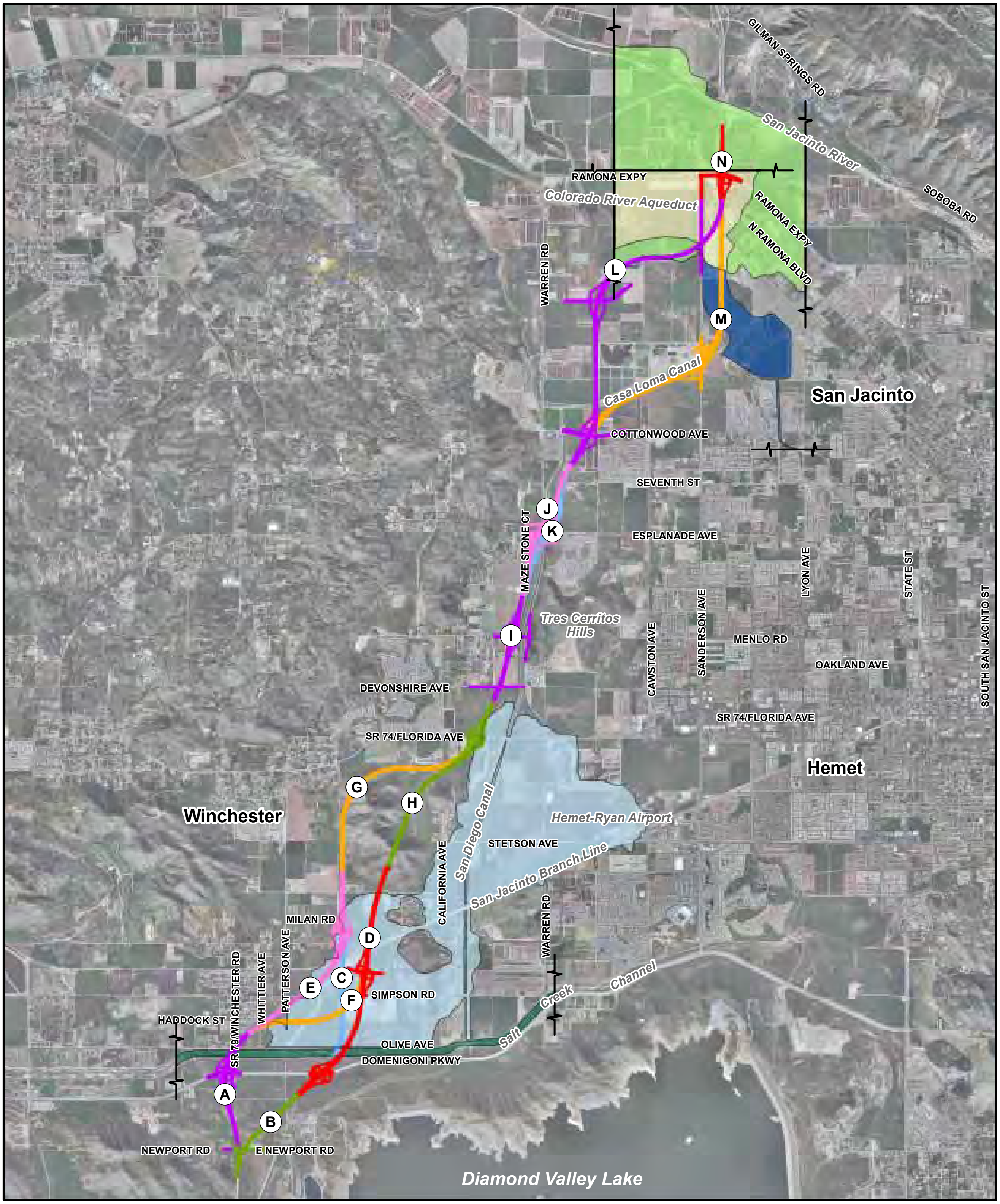

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LEGEND

Limit of Study Area

Existing Floodplains[FE]

- Hemet Channel
- Salt Creek Channel
- San Jacinto River
- Sanderson Avenue
- San Jacinto River and Sanderson Avenue

0 7,500 Feet

0 1,500 Meters

1:90,000

Source: FE - FEMA FIRM Maps

Figure 3.2-1
Existing Floodplain Map
Study Area

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LEGEND

Roadway Segment Match Line

Approximate Limits of the 100-Year Floodplain - Existing Conditions

0 1,400 Feet

0 350 Meters

1:17,200

Figure 3.2-2
Existing Floodplain Map San Jacinto River

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LEGEND

- Roadway Segment Match Line
- Approximate Limits of the 100-Year Floodplain - Existing Conditions

0 2,000 Feet

0 500 Meters

1:24,000

Figure 3.2-3
Existing Floodplain Map
Sanderson Avenue

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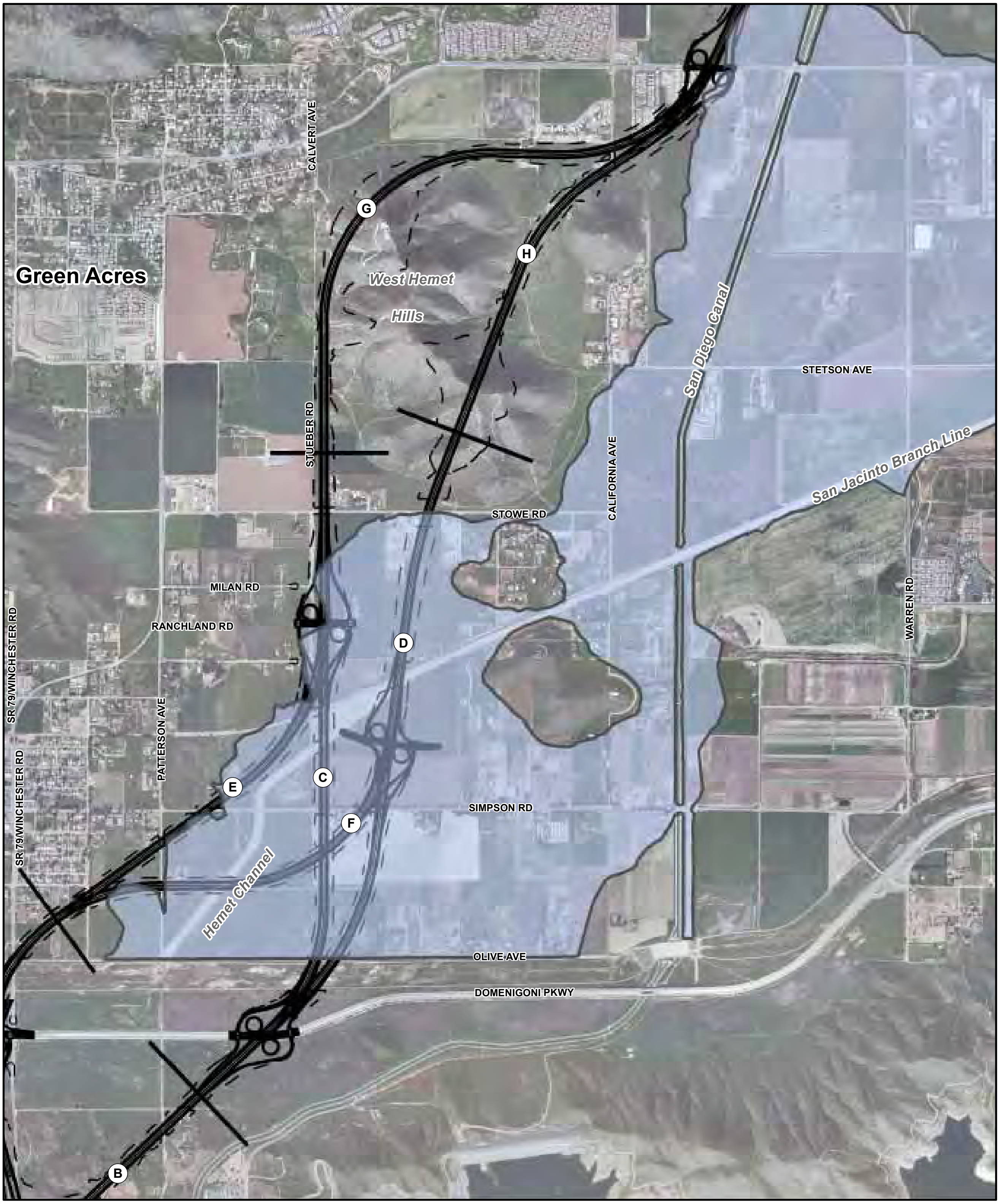

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LEGEND

Roadway Segment

Match Line

Approximate Limits of the 100-Year Floodplain - Existing Conditions

0 2,700 Feet

0 600 Meters

1:31,200

Figure 3.2-4
Existing Floodplain Map
Hemet Channel

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LEGEND

- Roadway Segment
- Match Line
- Approximate Limits of the 100-Year Floodplain - Existing Conditions

0 2,700 Feet

0 600 Meters

1:31,200

Figure 3.2-5
Existing Floodplain Map
Salt Creek Channel

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LEGEND

- Roadway Segment
- Match Line
- Approximate Limits of the 100-Year Floodplain - Existing Conditions
- Approximate Limits of the 100-Year Floodplain - Proposed Conditions

0 2,700 Feet

0 600 Meters

1:31,200

Figure 3.2-6
Proposed Floodplain Map
Salt Creek Channel
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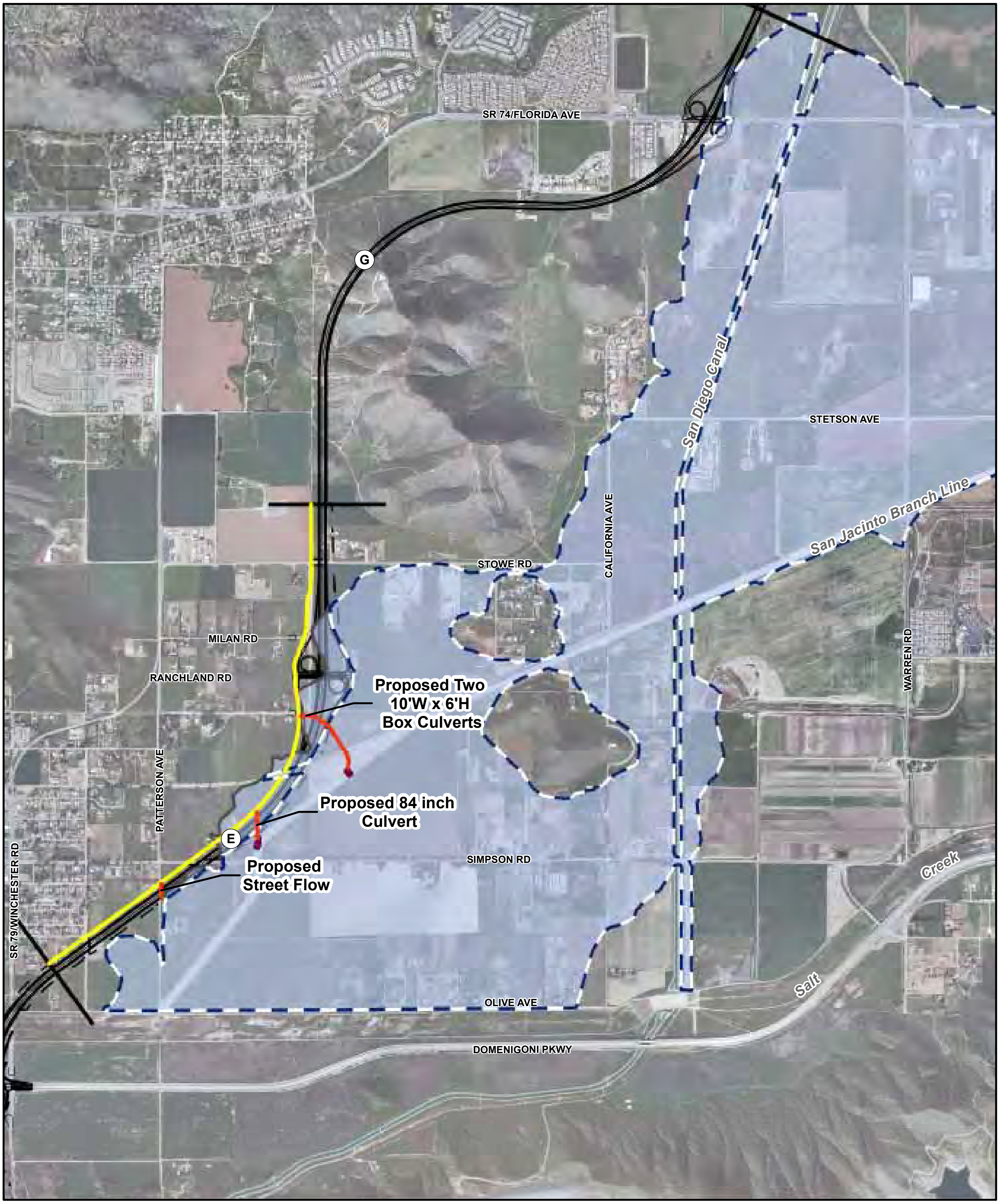

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LEGEND

- Roadway Segment
- Match Line
- Proposed Drainage Facility
- Proposed Roadside Ditch
- Connection to Hemet Channel Outside the Project Right-of-Way
- Approximate Limits of the 100-Year Floodplain - Existing Conditions
- Approximate Limits of the 100-Year Floodplain - Proposed Conditions

0 2,600 Feet

0 600 Meters

1:31,200

Figure 3.2-7
Proposed Floodplain Map
Hemet Channel
Build Alternative 1a

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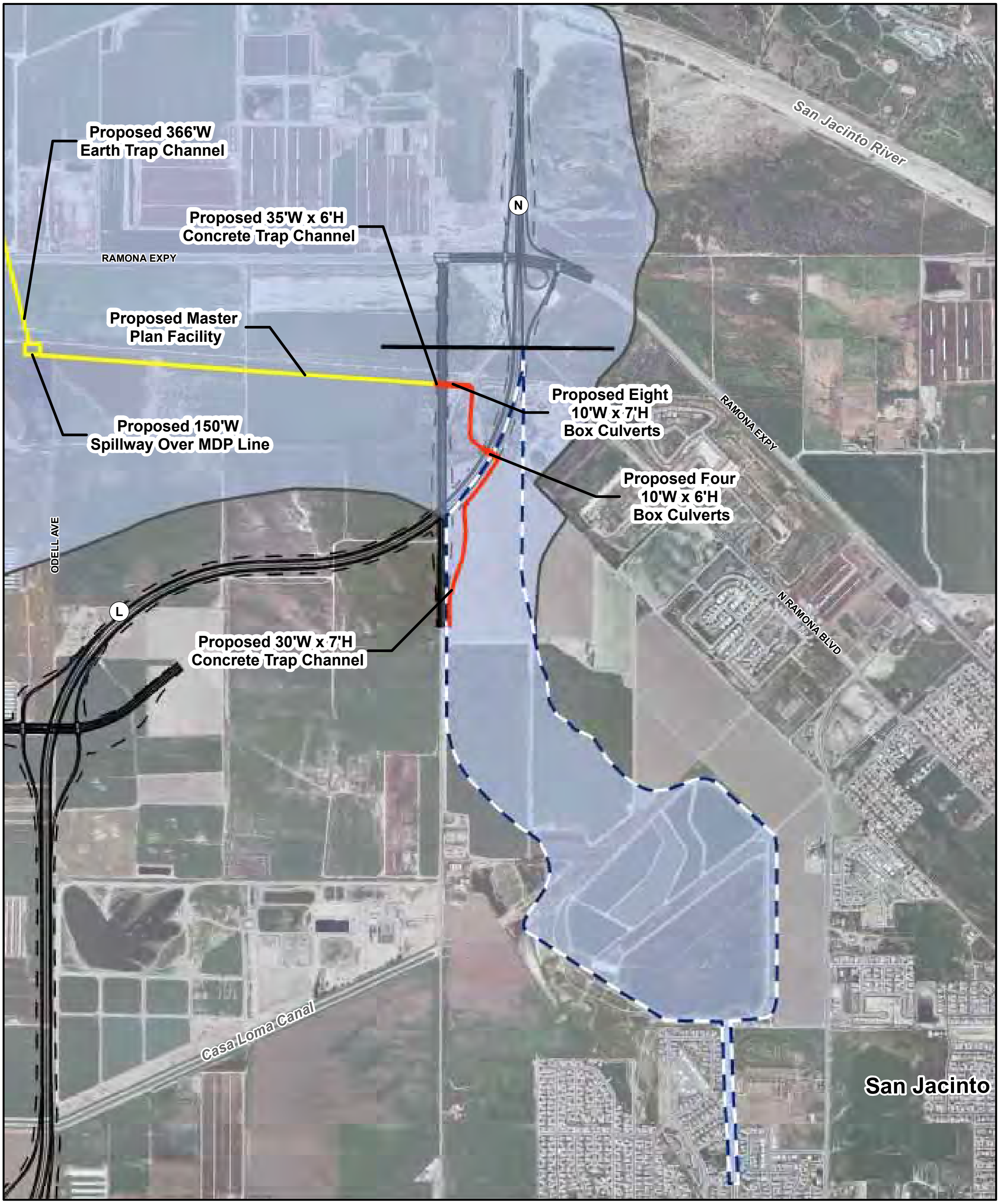

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LEGEND

- Roadway Segment
- Match Line
- Proposed Master Plan Facility (Study in Progress)
- Proposed Channel
- Approximate Limits of the 100-Year Floodplain - Existing Conditions
- Approximate Limits of the 100-Year Floodplain - Proposed Conditions

0 2,000 Feet

0 500 Meters

1:24,000

Figure 3.2-8
Proposed Floodplain Map
Sanderson Avenue
Build Alternative 1a and 2a

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LEGEND

- Roadway Segment Match Line
- Approximate Limits of the 100-Year Floodplain - Existing Conditions
- Approximate Limits of the 100-Year Floodplain - Proposed Conditions

0 1,400 Feet

0 350 Meters

1:17,200

Figure 3.2-9
Proposed Floodplain Map
San Jacinto River
Build Alternative 1a and 2a

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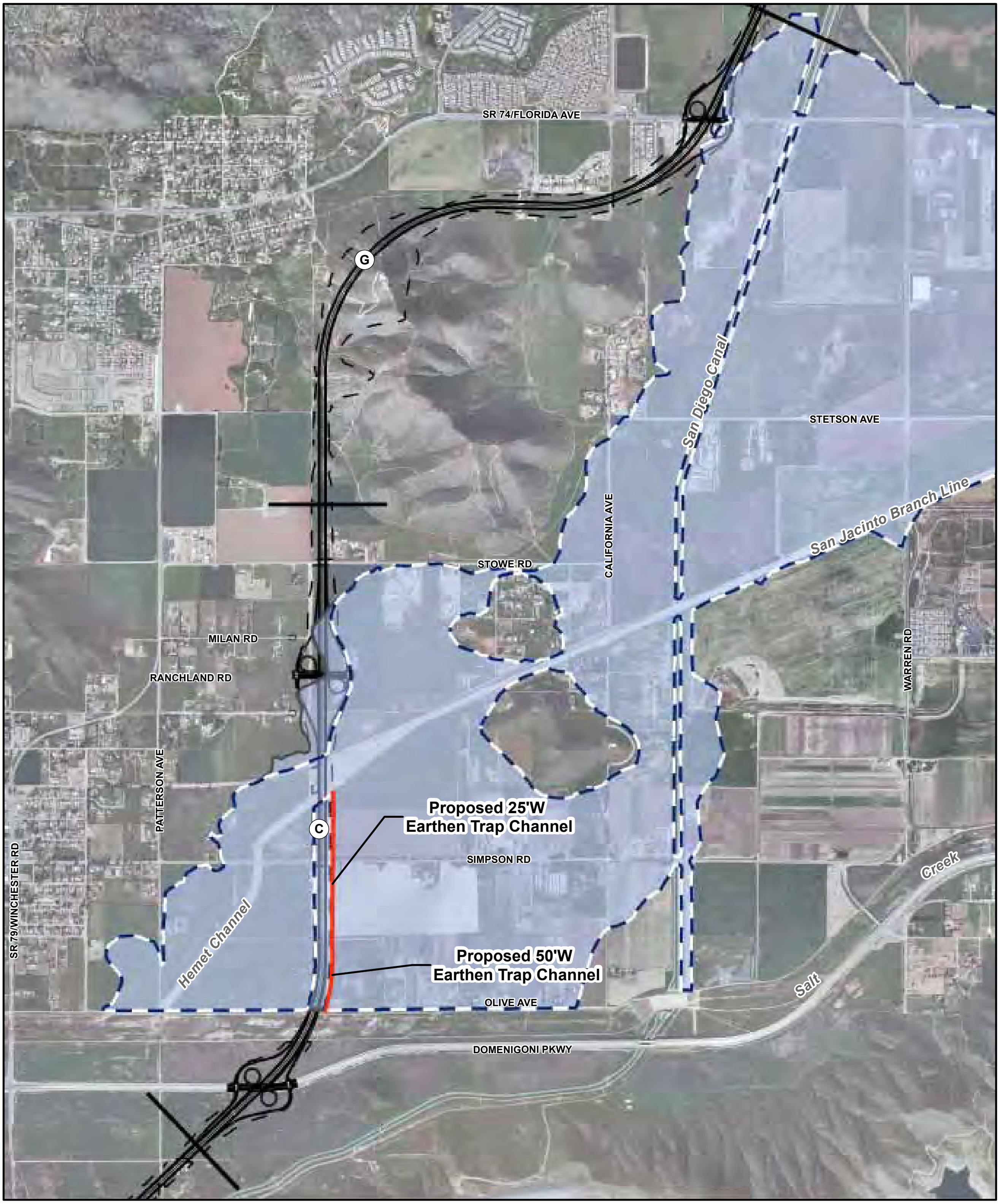

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LEGEND

- Roadway Segment
- Match Line
- Proposed Drainage Facility
- Approximate Limits of the 100-Year Floodplain - Existing Conditions
- Approximate Limits of the 100-Year Floodplain - Proposed Conditions

0 2,600 Feet

0 600 Meters

1:31,200

Figure 3.2-10
Proposed Floodplain Map
Hemet Channel
Build Alternative 1b

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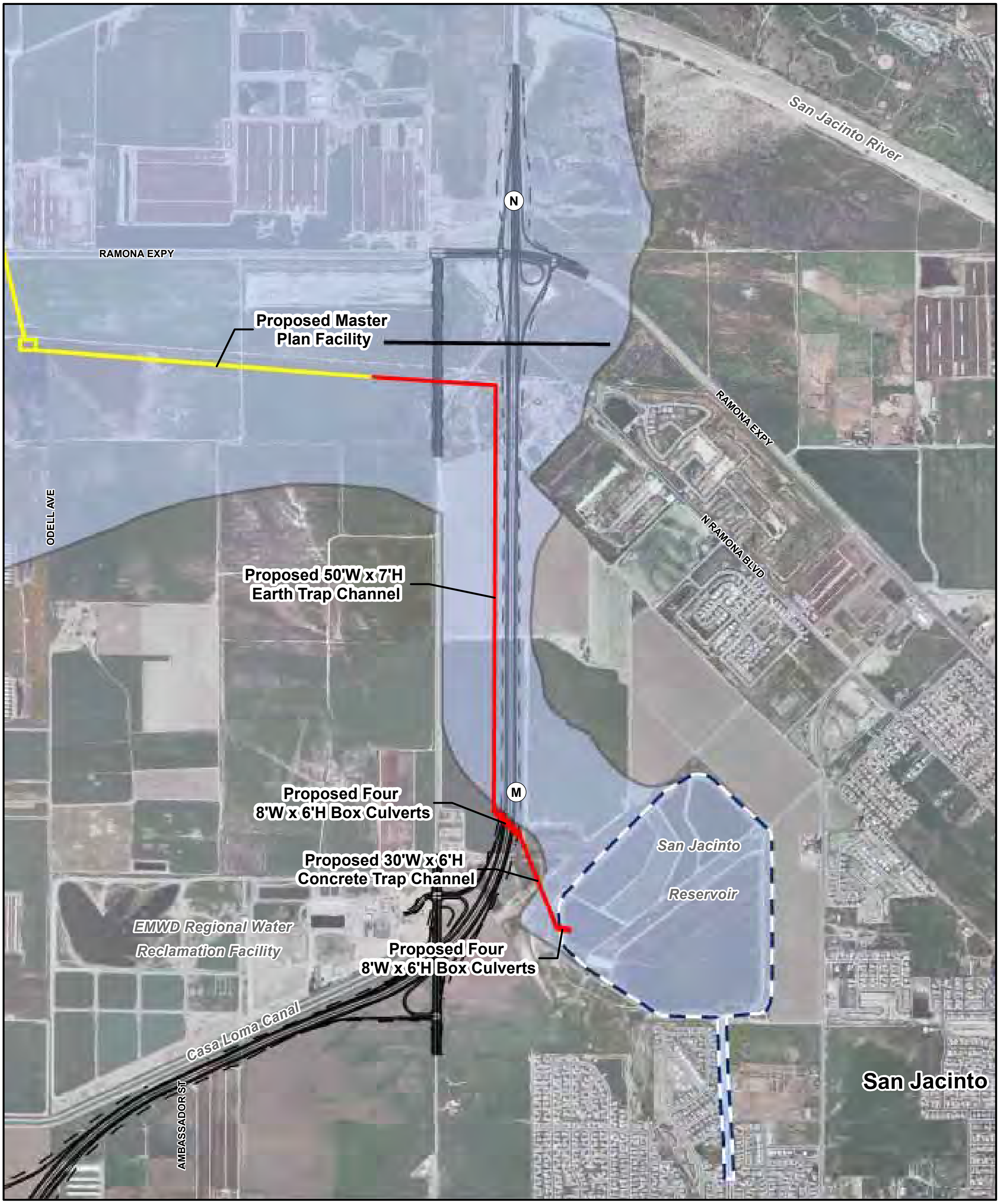

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LEGEND

- Roadway Segment
- Match Line
- Proposed Channel
- Proposed Master Plan Facility (Study in Progress)
- Approximate Limits of the 100-Year Floodplain - Existing Conditions
- Approximate Limits of the 100-Year Floodplain - Proposed Conditions

0 2,000 Feet

0 500 Meters

1:24,000

Figure 3.2-11
Proposed Floodplain Map
Sanderson Avenue
Build Alternative 1b and 2b

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LEGEND

- Roadway Segment Match Line
- Approximate Limits of the 100-Year Floodplain - Existing Conditions
- Approximate Limits of the 100-Year Floodplain - Proposed Conditions

0 1,400 Feet

0 350 Meters

1:17,200

Figure 3.2-12
Proposed Floodplain Map
San Jacinto River
Build Alternative 1b and 2b

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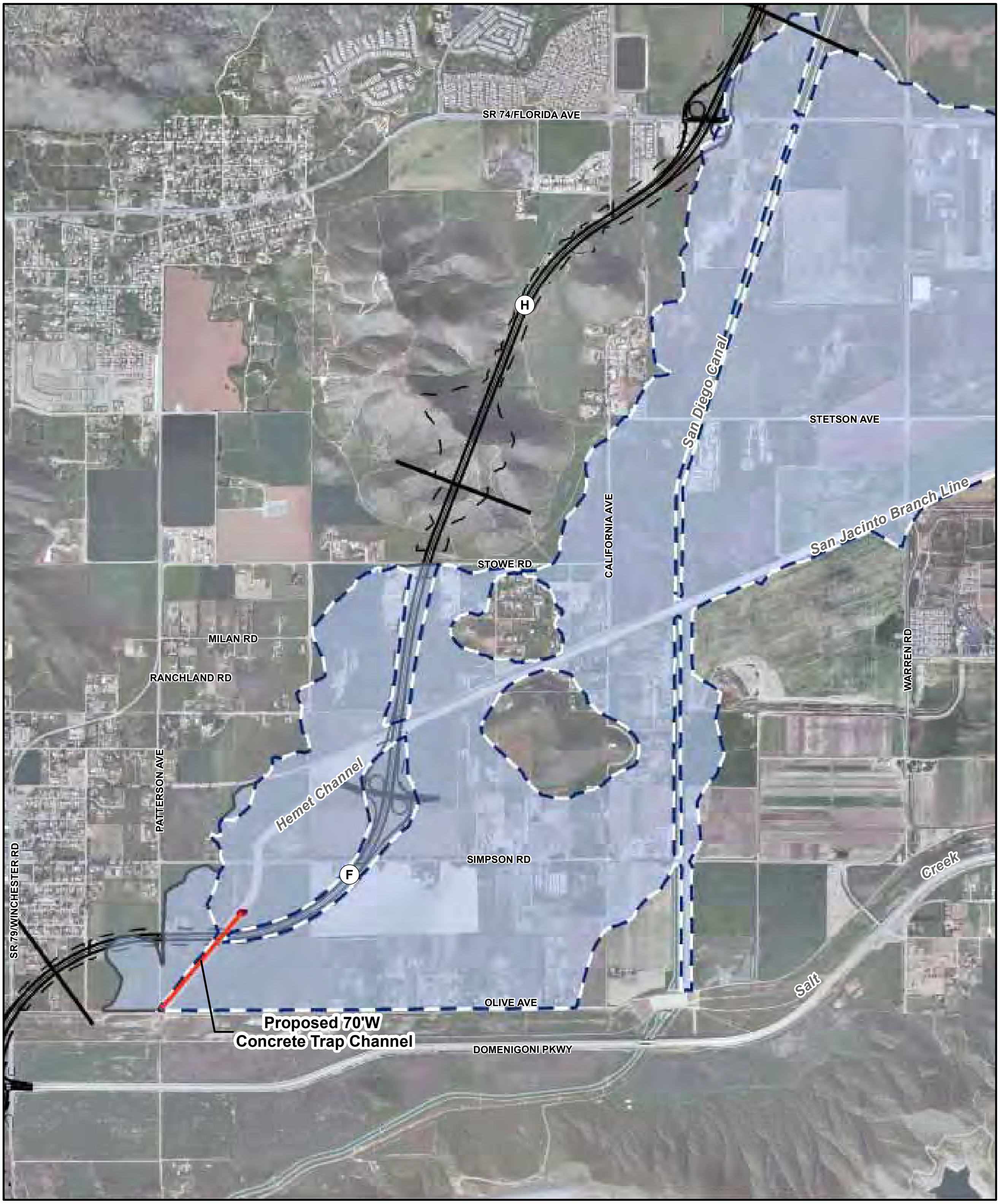

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LEGEND

- Roadway Segment
- Match Line
- Proposed Drainage Facility
- Connection to Hemet Channel Outside the Project Right-of-Way
- Approximate Limits of the 100-Year Floodplain - Existing Conditions
- Approximate Limits of the 100-Year Floodplain - Proposed Conditions

0 2,600 Feet

0 600 Meters

1:31,200

Figure 3.2-13
Proposed Floodplain Map
Hemet Channel
Build Alternative 2a

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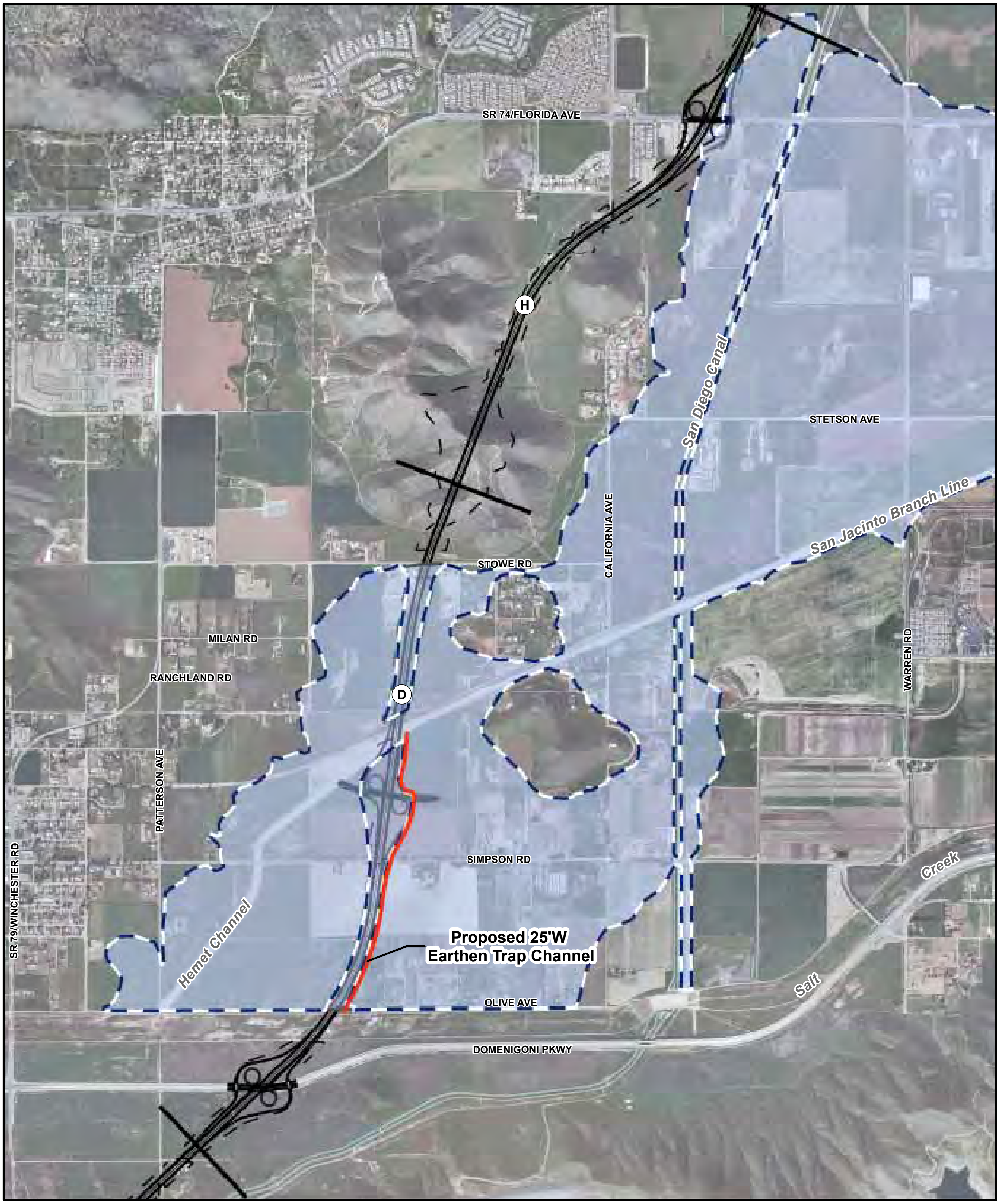

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LEGEND

- Roadway Segment
- Match Line
- Proposed Drainage Facility
- Approximate Limits of the 100-Year Floodplain - Existing Conditions
- Approximate Limits of the 100-Year Floodplain - Proposed Conditions

0 — 2,600 Feet

0 — 600 Meters

1:31,200

Figure 3.2-14
Proposed Floodplain Map
Hemet Channel
Build Alternative 2b

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Environmental Impact Statement
State Route 79 Realignment Project

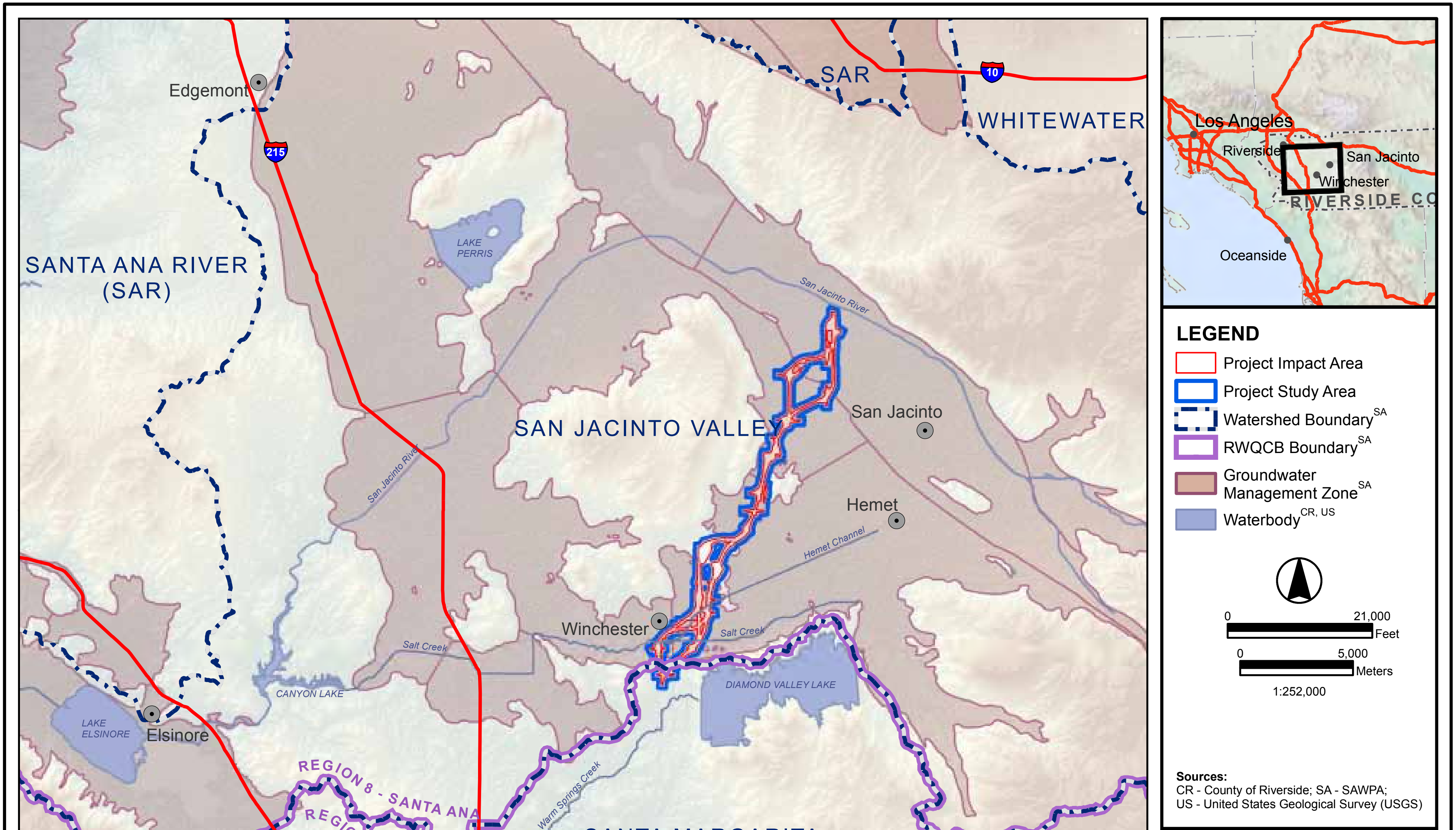
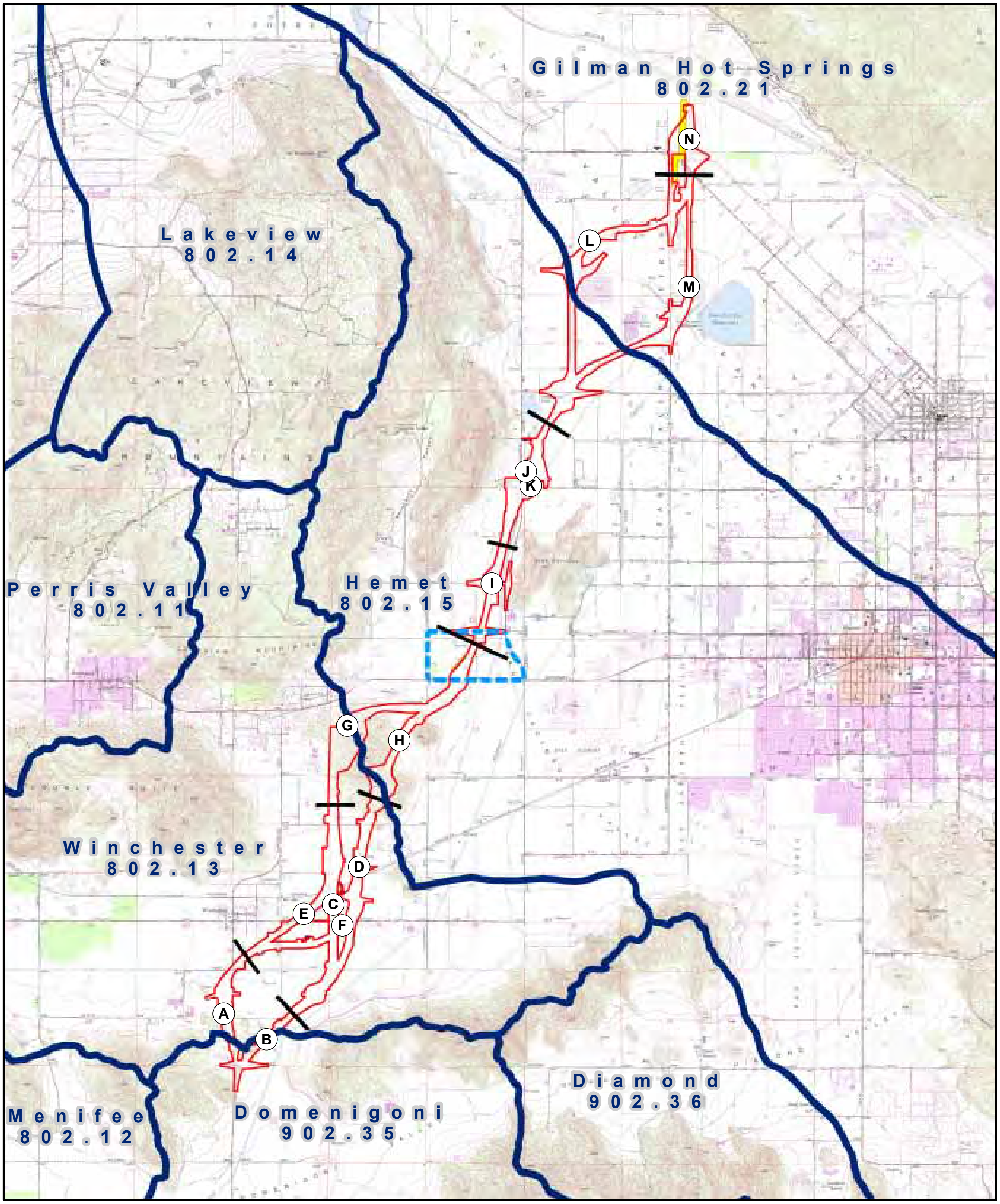


Figure 3.2-15
Study Area Location
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



24k Topographic Map Date: February, 2004

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Hydrologic Sub-Area[CR]

0 8,000 Feet

0 2,000 Meters

1:96,000

Source: CR - County of Riverside

Figure 3.2-16
Hydrologic Sub-Areas Within Project Area

Draft Environmental Impact Report/
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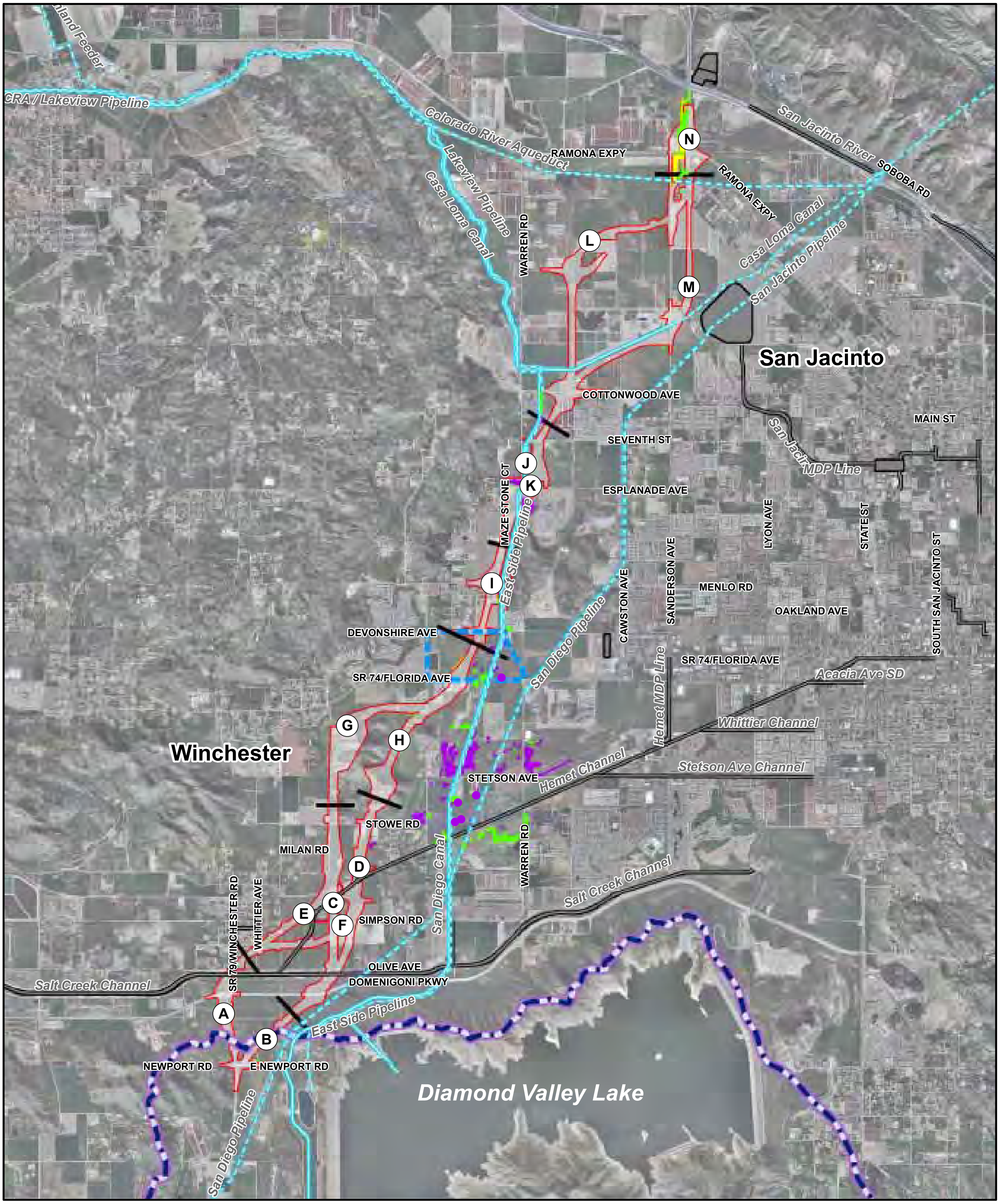
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Pipeline[US]
- Aqueduct / Canal[US]
- Drainage Facility[CR]
- RWQCB and Watershed Approximate Boundary[SA]
- Seasonal Wetland
- Vernal Pool

0 8,000 Feet

0 2,000 Meters

1:96,000

Sources: CR - County of Riverside; SA - SAWPA; US - United States Geological Survey (USGS)

Figure 3.2-17
Water Supply and Drainage Features Within Project Area

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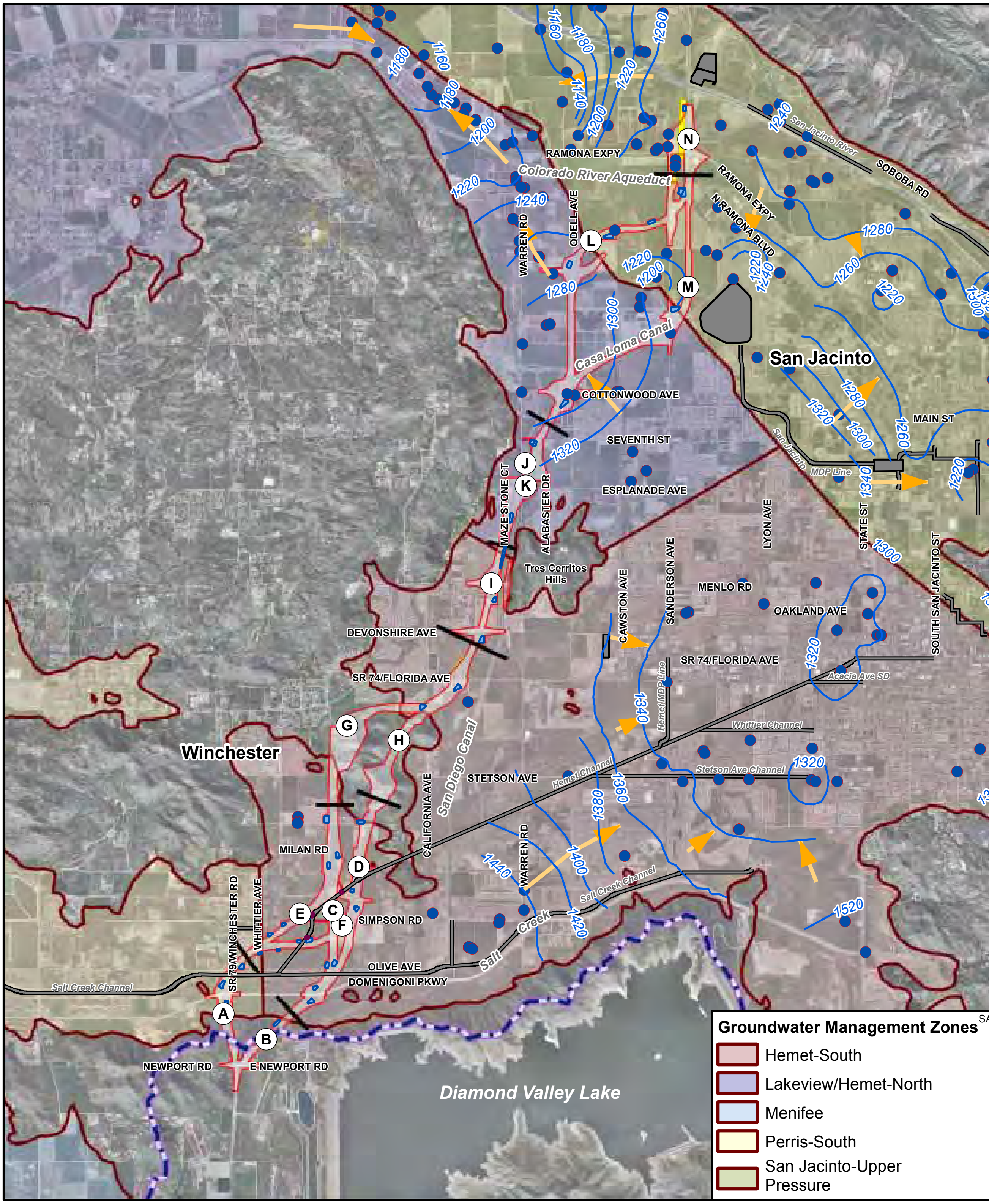
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\WQA_GWMZ_A.MXD WQA_GWMZ_A.PDF 01/06/2012

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Well[EW]
- Groundwater Flow Direction[EW]
- Groundwater Contour[EW]
- Drainage Facility[CR]
- Treatment BMP
- RWQCB and Watershed Approximate Boundary[SA]

0 8,000 Feet

0 2,000 Meters

1:96,000

Sources: CR - County of Riverside; EW - Eastern Municipal Water District; SA - SAWPA

Figure 3.2-18
Groundwater Features Within Project Area

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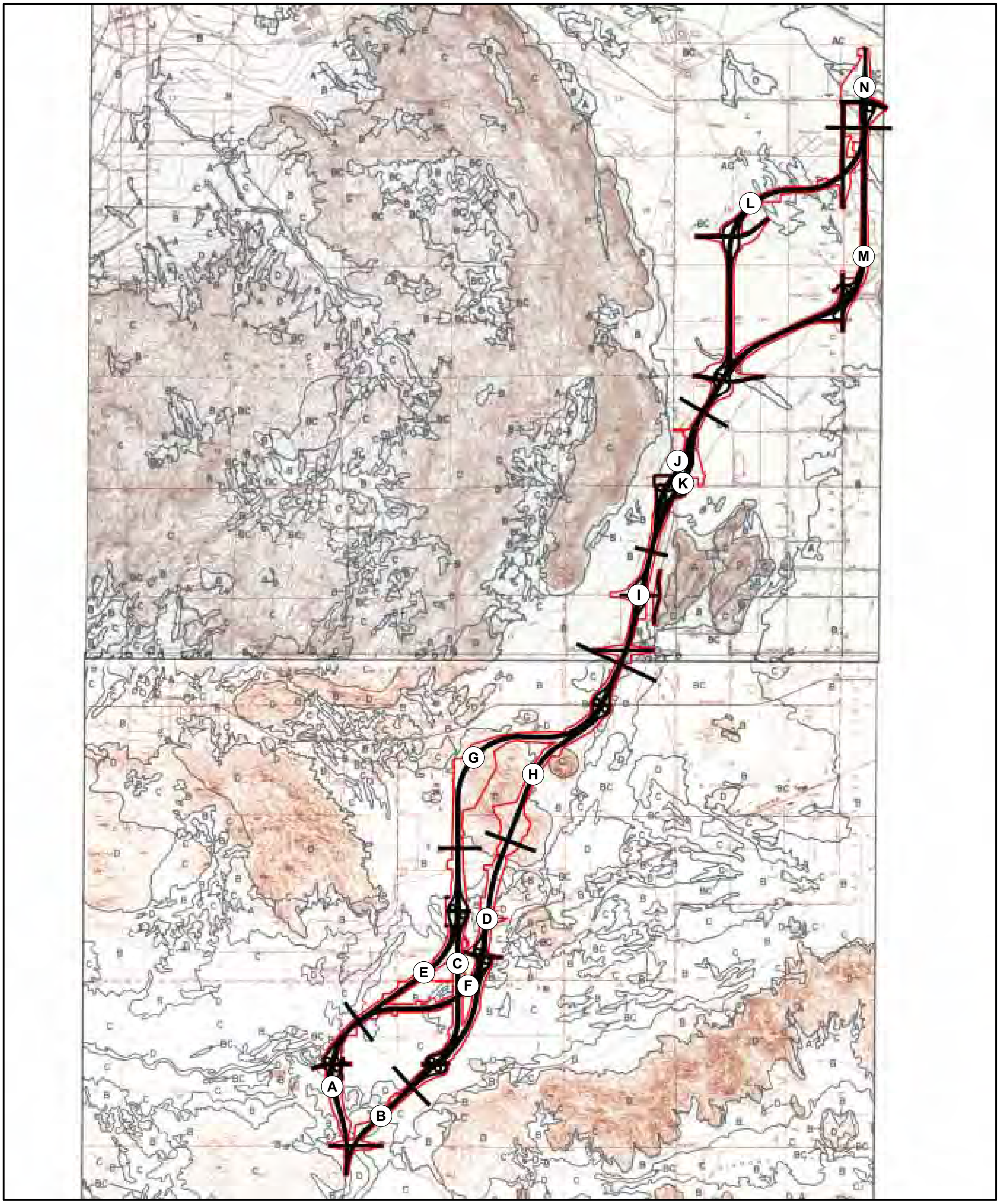
State Route 79 Realignment Project



Riverside County Flood Control and Water Conservation District, April 1978 (Winchester/Lakeview)

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LEGEND

Roadway Segment Match Line

Project Impact Area

0 7,000 Feet

0 1,500 Meters

1:84,000

Figure 3.2-19
Hydrologic Soil Groups Within Project Area

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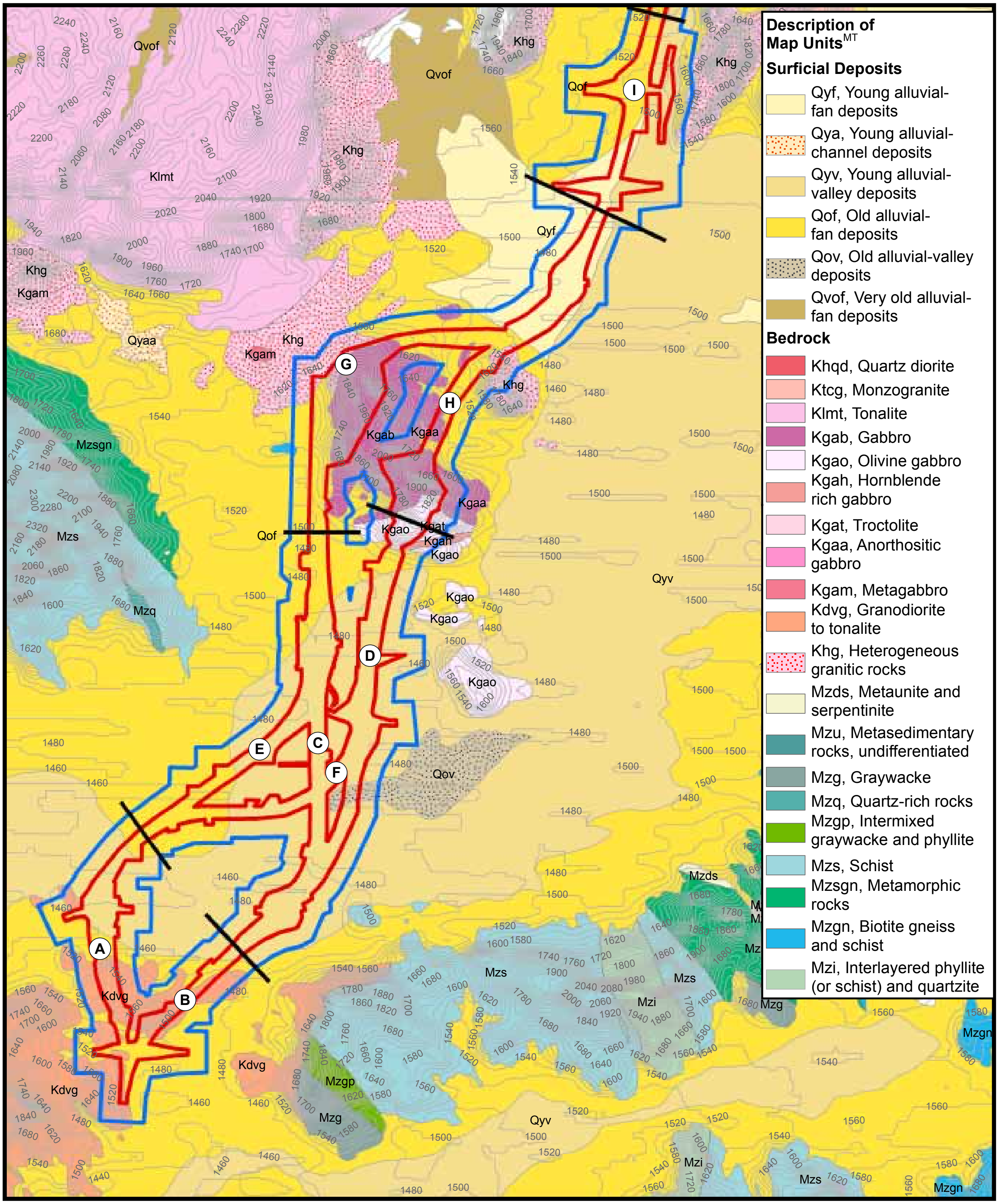
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Project Impact Area
- Project Study Area
- Contours[CR]

0 4,000 Feet

0 1,000 Meters

1:48,000

Sources: CR - County of Riverside; MT - Morton, D.M., 2001, Preliminiary Geologic Map of the Winchester 7.5' Quadrangle, Riverside County, California: Version 1.0

Figure 3.2-20
Geologic Map (Southern Half)
Project Study Area

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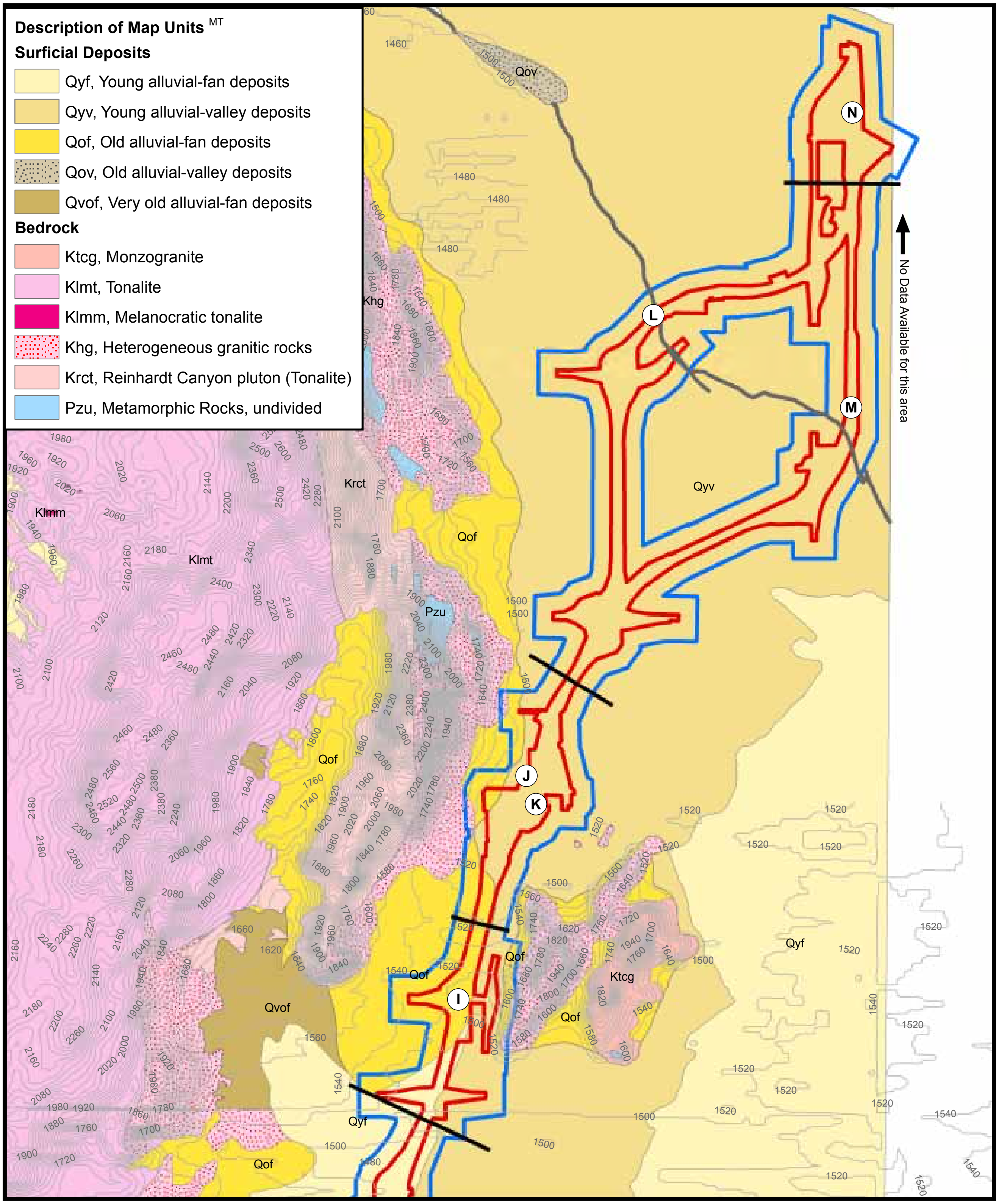
State Route 79 Realignment Project



\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\GEO_GEO_NORTH_A.MXD GEO_GEO_NORTH_A.PDF 01/06/2012

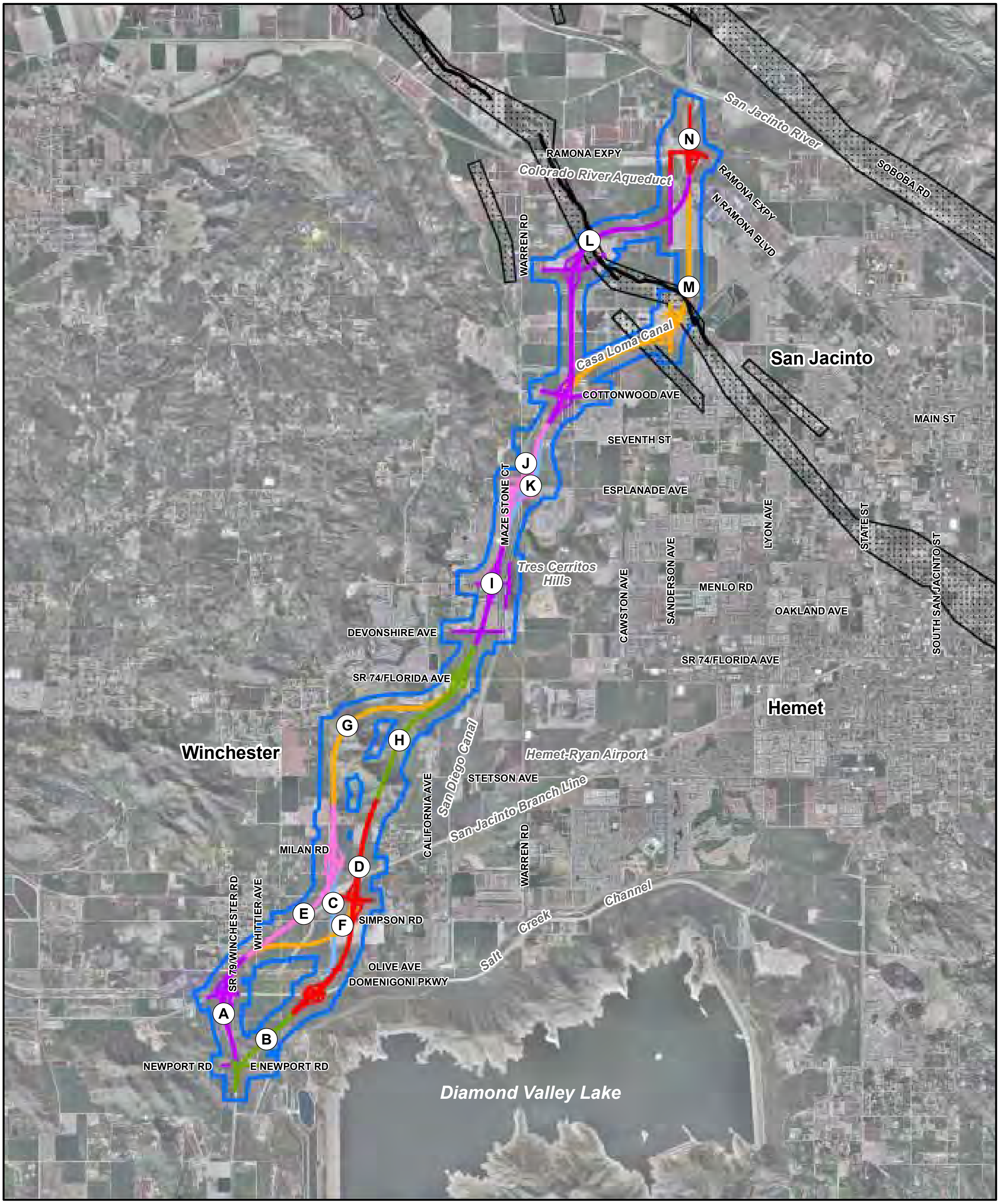
LEGEND

- Roadway Segment Match Line
- Project Impact Area
- Project Study Area
- Contours[CR]
- Casa Loma Fault of San Jacinto Fault Zone[MT]

0 4,000 Feet
0 1,000 Meters
1:48,000

Sources: CR - County of Riverside; MT - Morton, D.M., 2001, Preliminiary Geologic Map of the Lakeview 7.5' Quadrangle, Riverside County, California: Version 1.0

Figure 3.2-21
Geologic Map
(Northern Half)
Project Study Area
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Project Study Area
- Fault[SC]
- San Jacinto Fault Zone[SC]

0 8,000 Feet

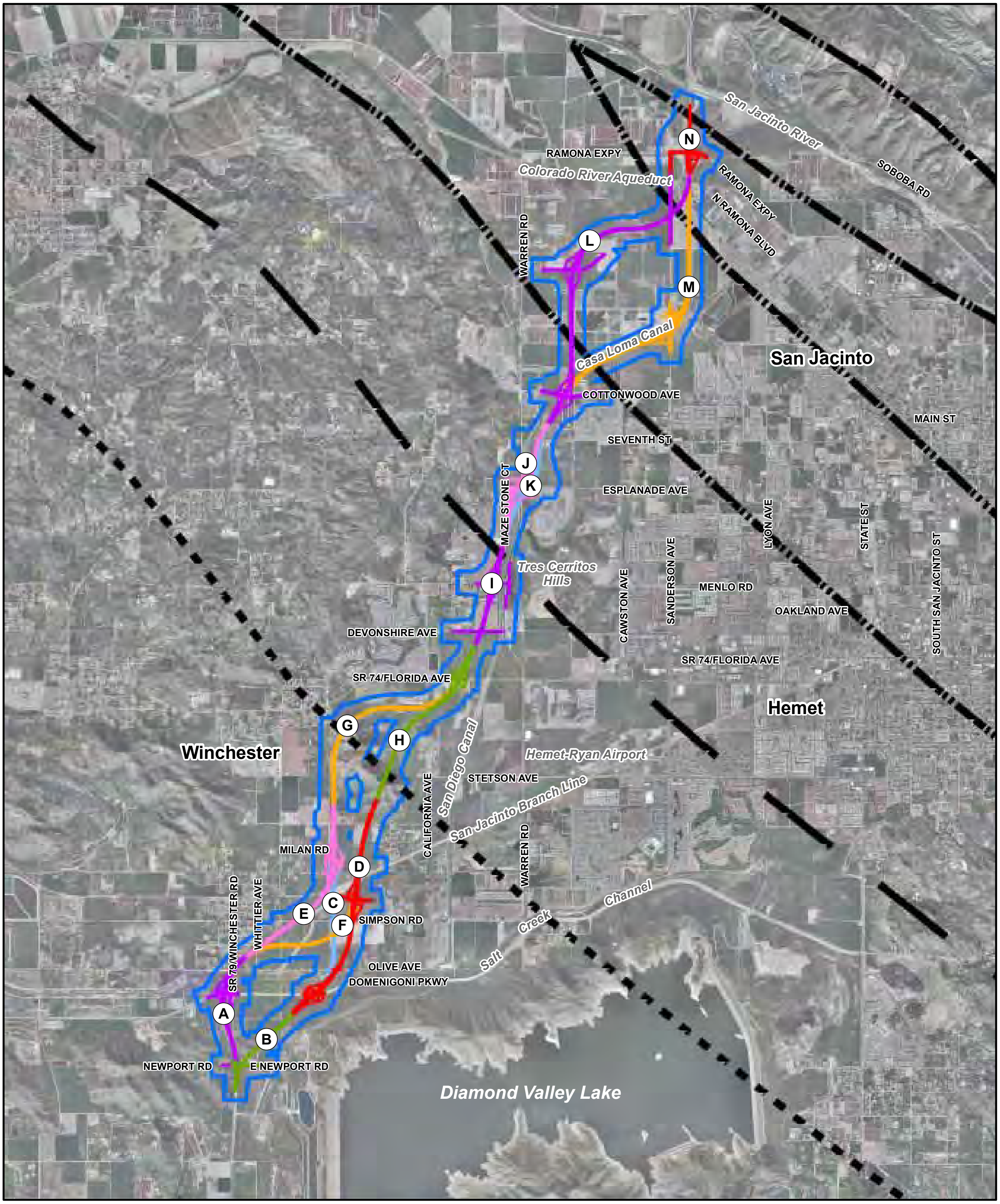
0 2,000 Meters

1:96,000

Source: SC - State of California, 1988, Earthquake Fault Zones, Lakeview Quadrangle, Riverside County, California

Figure 3.2-22
Fault Location Map
Project Roadway Segments
Planning Horizon

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

Project Study Area

0.3g Peak Ground Acceleration Contour[MC]

0.4g Peak Ground Acceleration Contour[MC]

0.5g Peak Ground Acceleration Contour[MC]

0 8,000 Feet

0 2,000 Meters

1:96,000

Note: [1] These deterministic contours are for prelilminary assessment only. They do not incorporate any site correction factors and are not to be used for final seismic analysis and design. Note that probabilistic pga may control. See the latest Caltrans seismic design criteria for further guidance.

Source: MC - Merriam, M., Shantz, T., 2007 Caltrans Deterministic PGA Map.; Dated September 2007

Figure 3.2-23
Peak Ground Acceleration Map
Project Roadway Segments Planning Horizon[1]

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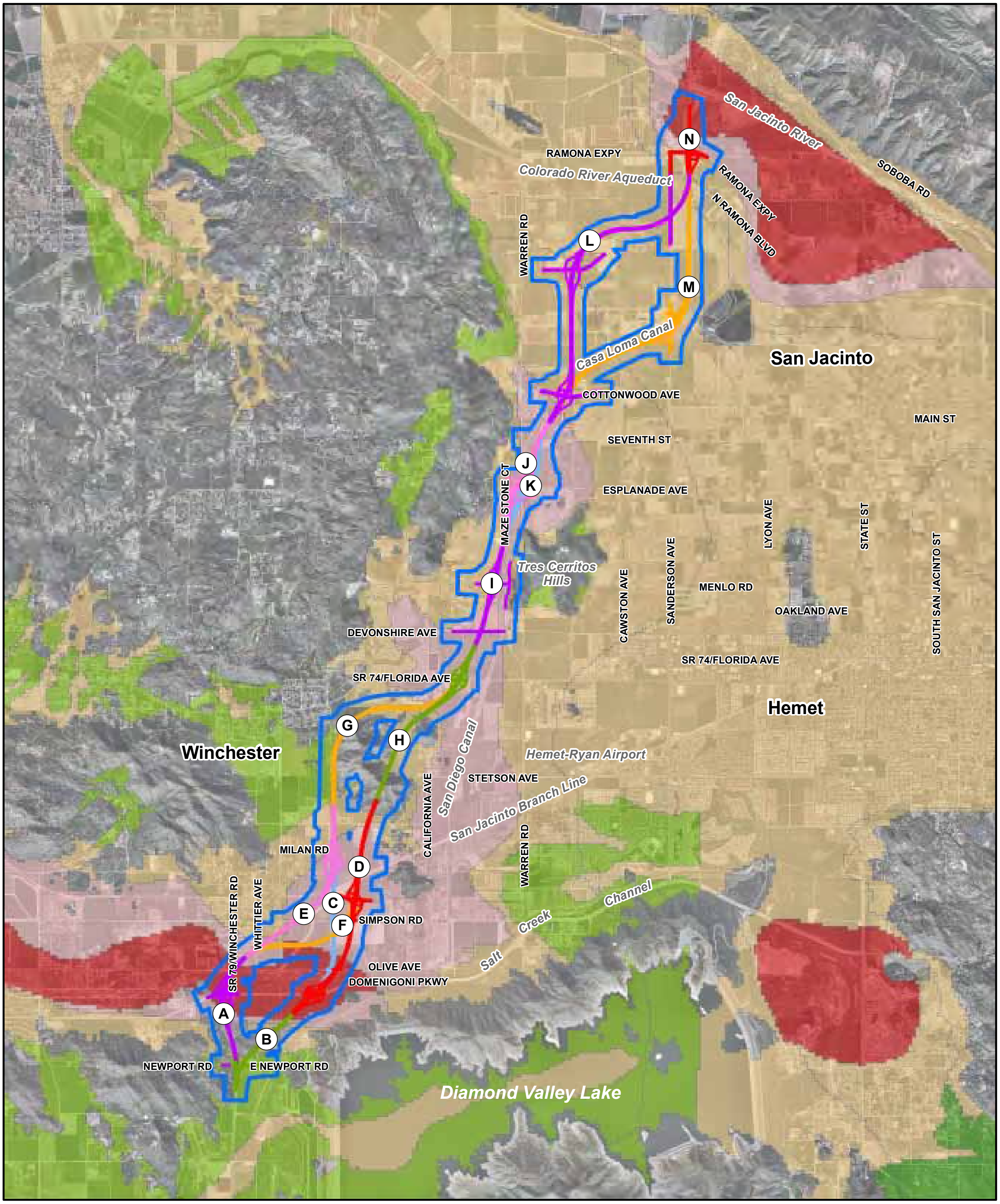
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

Project Study Area

Liquefaction Susceptibility Rating: CR

- Very low
- Low
- Moderate
- High
- Very High

0 8,000 Feet

0 2,000 Meters

1:96,000

Source: CR - County of Riverside

Figure 3.2-24
Liquefaction Susceptibility Map
Project Roadway Segments
Planning Horizon

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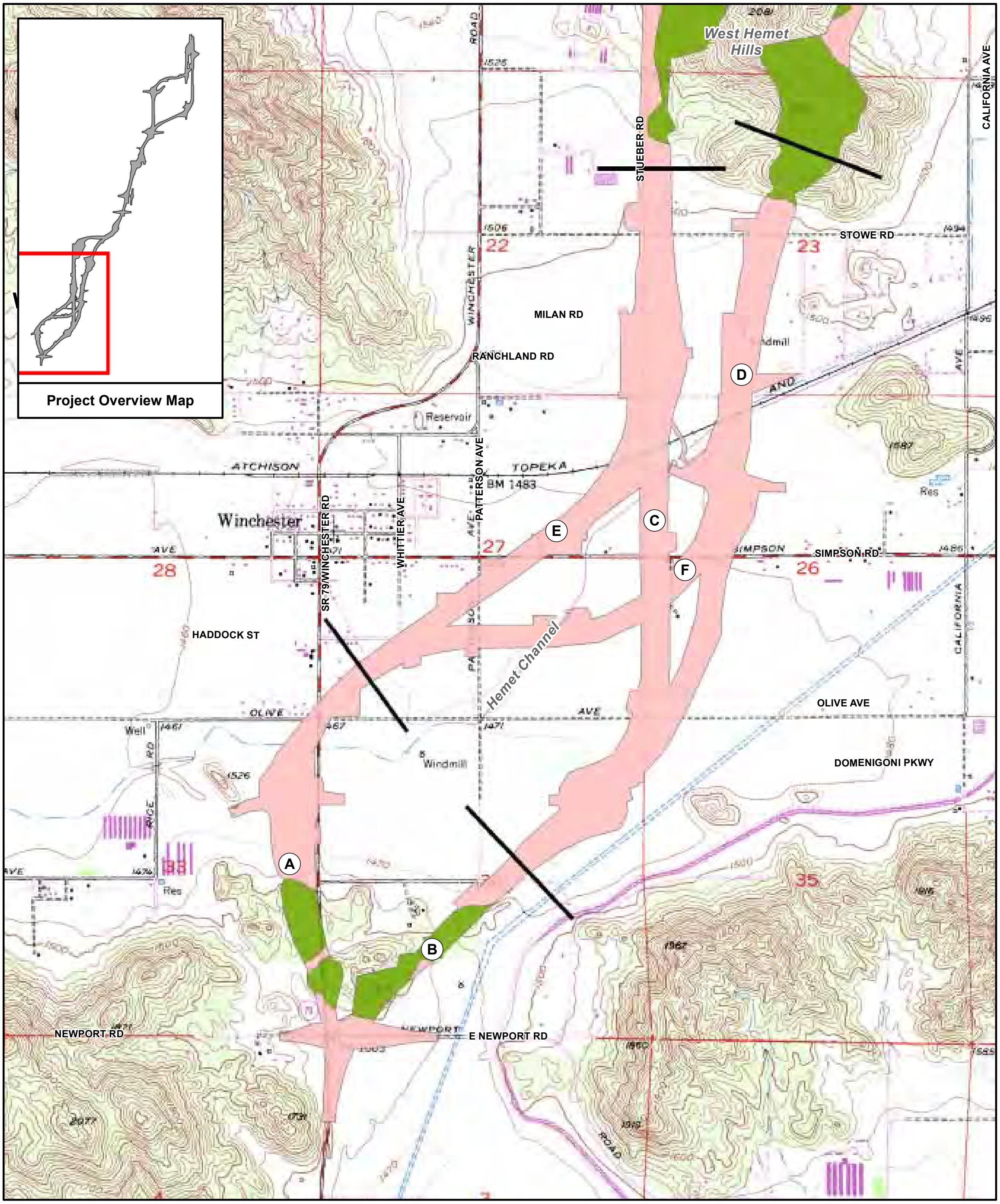
Environmental Impact Statement
State Route 79 Realignment Project



USGS 7.5' Quadrangles: Winchester (1979), CA \\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\PER_GEO_PALEO_PLTS_A.MXD PER_GEO_PALEO_PLTS_A.PDF 01/06/2012

LEGEND

Roadway Segment Match Line

Geologic Units and Paleontological Resource Sensitivity

- Southern California Batholith - No Sensitivity
- Older Alluvium - Low Sensitivity
- Younger Alluvium - High Sensitivity (depths greater than 4 feet and where fine grained)

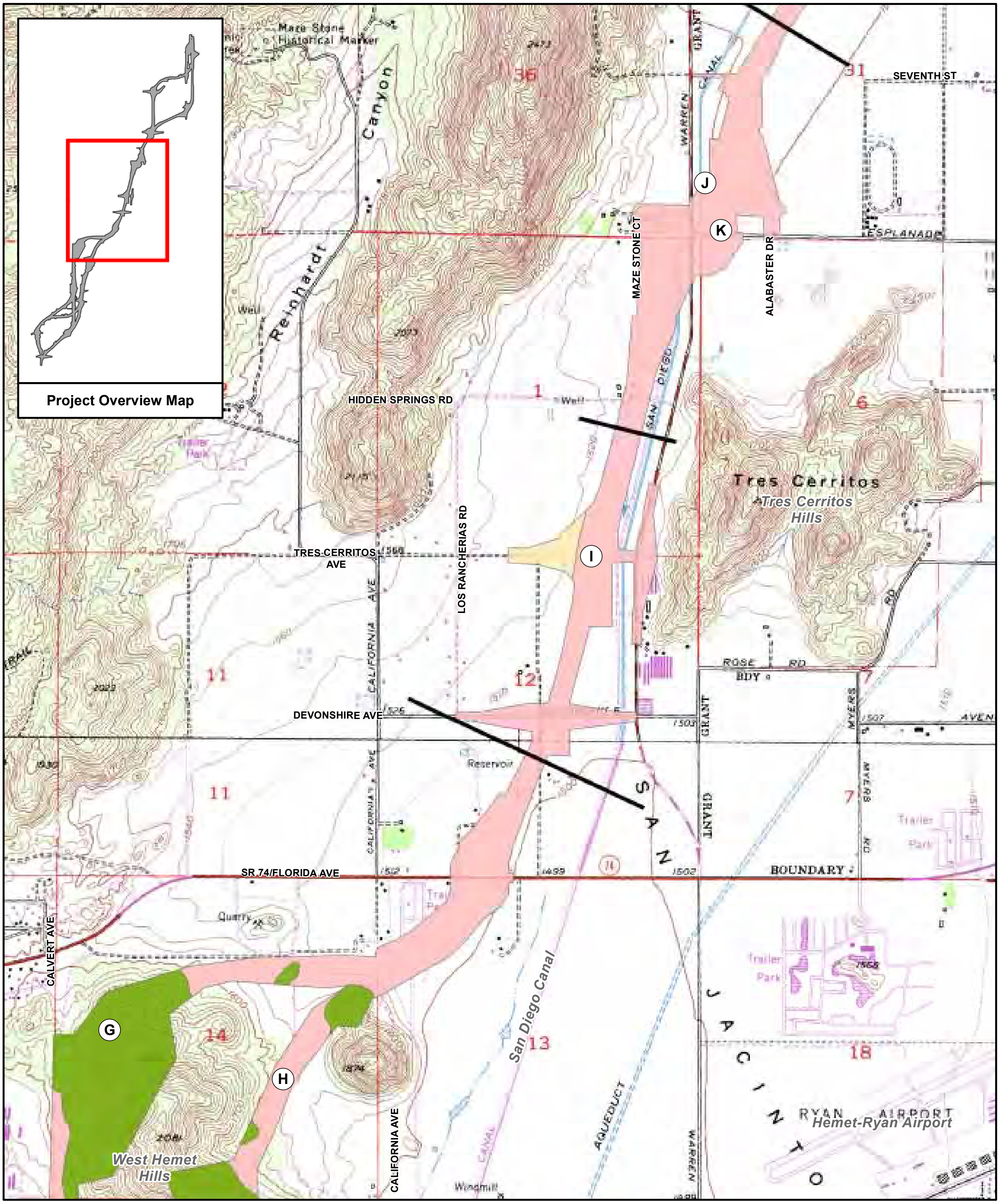
0 2,400 Feet

0 500 Meters

1:28,800

Figure 3.2-25a
Geological and Paleontologial Resource Sensitivity Map

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



USGS 7.5' Quadrangles: Winchester (1979), CA \\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\PER_GEO_PALEO_PLTS_A.MXD PER_GEO_PALEO_PLTS_A.PDF 01/06/2012

LEGEND

Roadway Segment Match Line

Geologic Units and Paleontological Resource Sensitivity

- Southern California Batholith - No Sensitivity
- Older Alluvium - Low Sensitivity
- Younger Alluvium - High Sensitivity (depths greater than 4 feet and where fine grained)

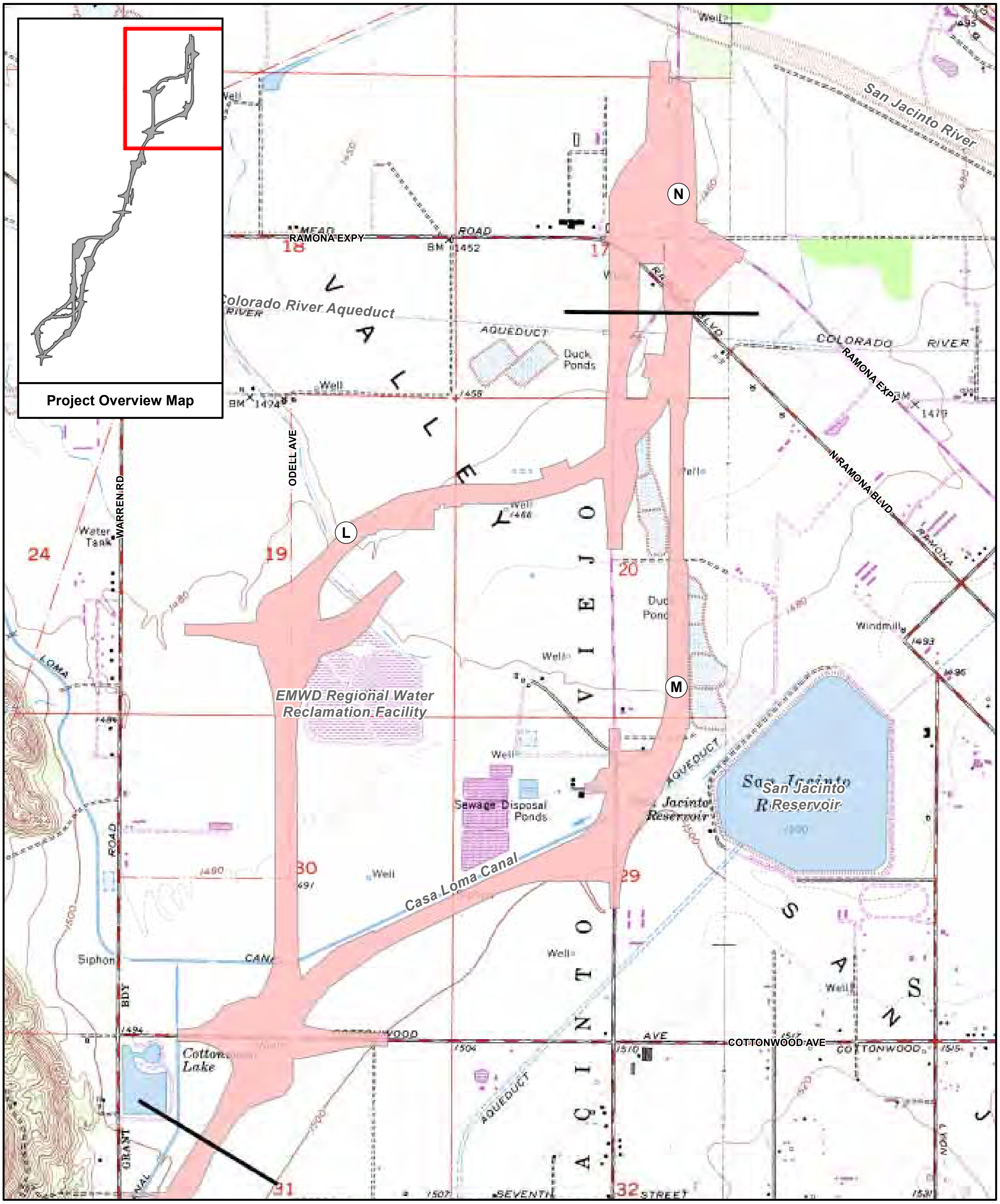
0 2,400 Feet

0 500 Meters

1:28,800

Figure 3.2-25b
Geological and Paleontologial Resource Sensitivity Map

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



USGS 7.5' Quadrangles: Winchester (1979), CA \\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\PER_GEO_PALEO_PLTS_A.MXD PER_GEO_PALEO_PLTS_A.PDF 01/06/2012

LEGEND

Roadway Segment Match Line

Geologic Units and Paleontological Resource Sensitivity

- Southern California Batholith - No Sensitivity
- Older Alluvium - Low Sensitivity
- Younger Alluvium - High Sensitivity (depths greater than 4 feet and where fine grained)

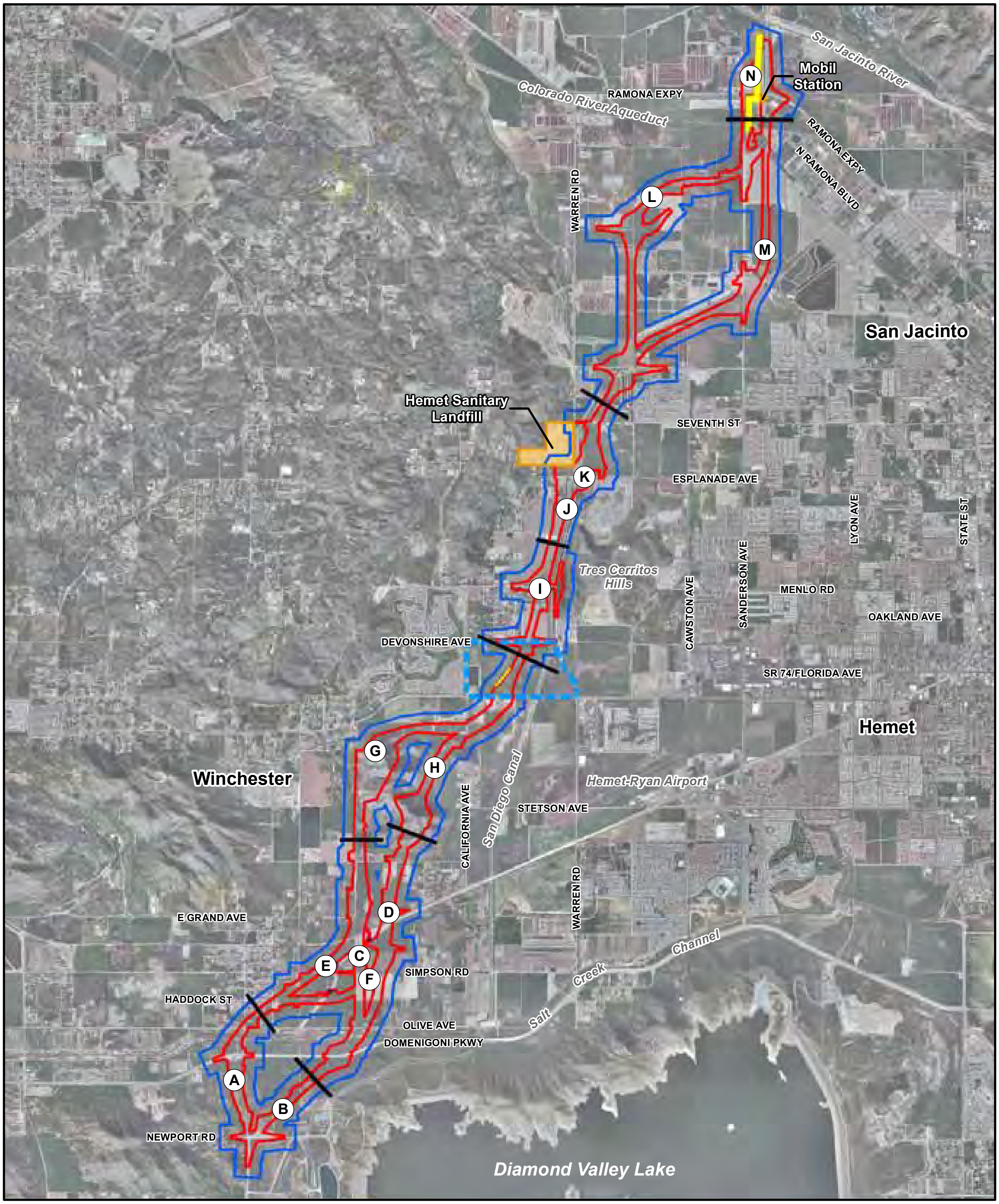
0 2,400 Feet

0 500 Meters

1:28,800

Figure 3.2-25c
Geological and Paleontologial Resource Sensitivity Map

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

- Site Location[NM]
- Project Impact Area
- Study Area

0 7,000 Feet

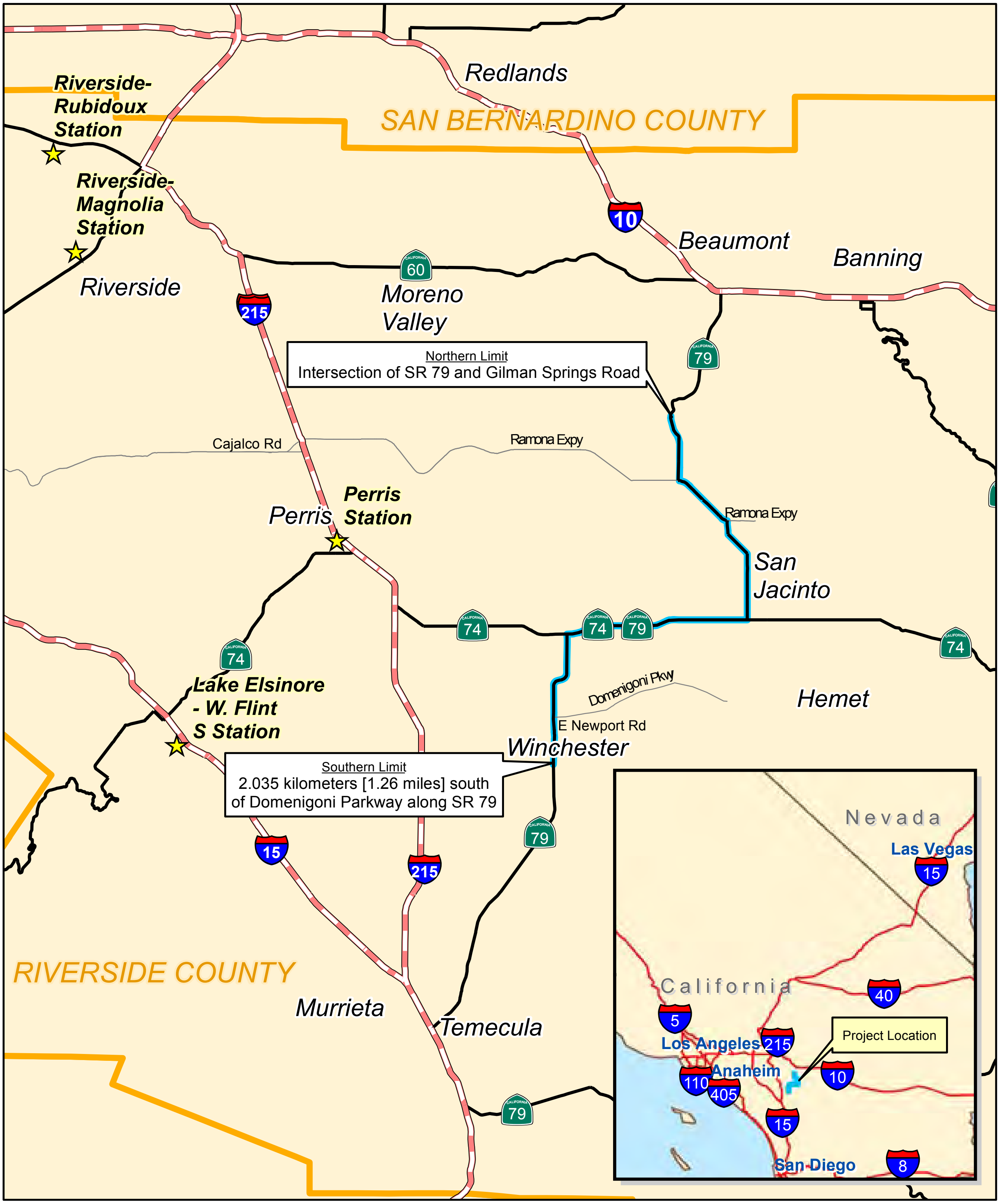
0 1,700 Meters

1:84,000

Source: NM - Ninyo and Moore

Figure 3.2-26
Location of Recognized Environmental Conditions and Historic Recognized Environmental Conditions

Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment



Basemap Data: ESRI StreetMaps, 2004.

\\GALT\PROJ\RCTC\171146\2012\MAPFILES\EIS\AQL_RPL_A.MXD AQL_RPL_A.PDF 01/06/2012

LEGEND

- Existing State Route 79 Proposed for Realignment
- Interstate[ES]
- State Route[ES]
- Local Road[ES]
- County Boundary[CR]
- Air Monitoring Location[AB]

0 100 Mi

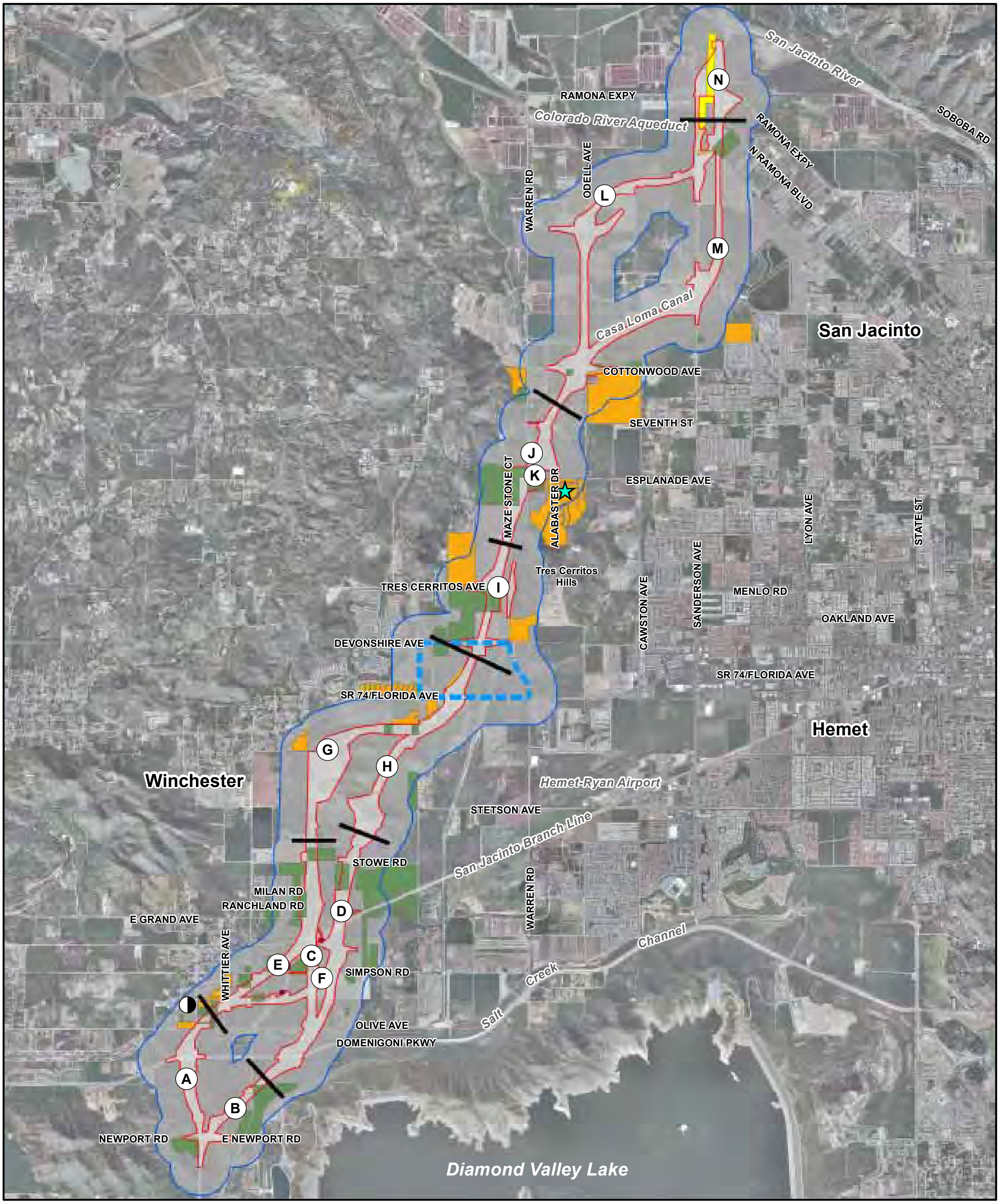
0 100 Km

1:348,480

Sources: CR - County of Riverside; ES - ESRI; AB - ARB 2007

Figure 3.2-27
Monitoring Station Locations

Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: June 2009, Lenska Aerial Images

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LEGEND

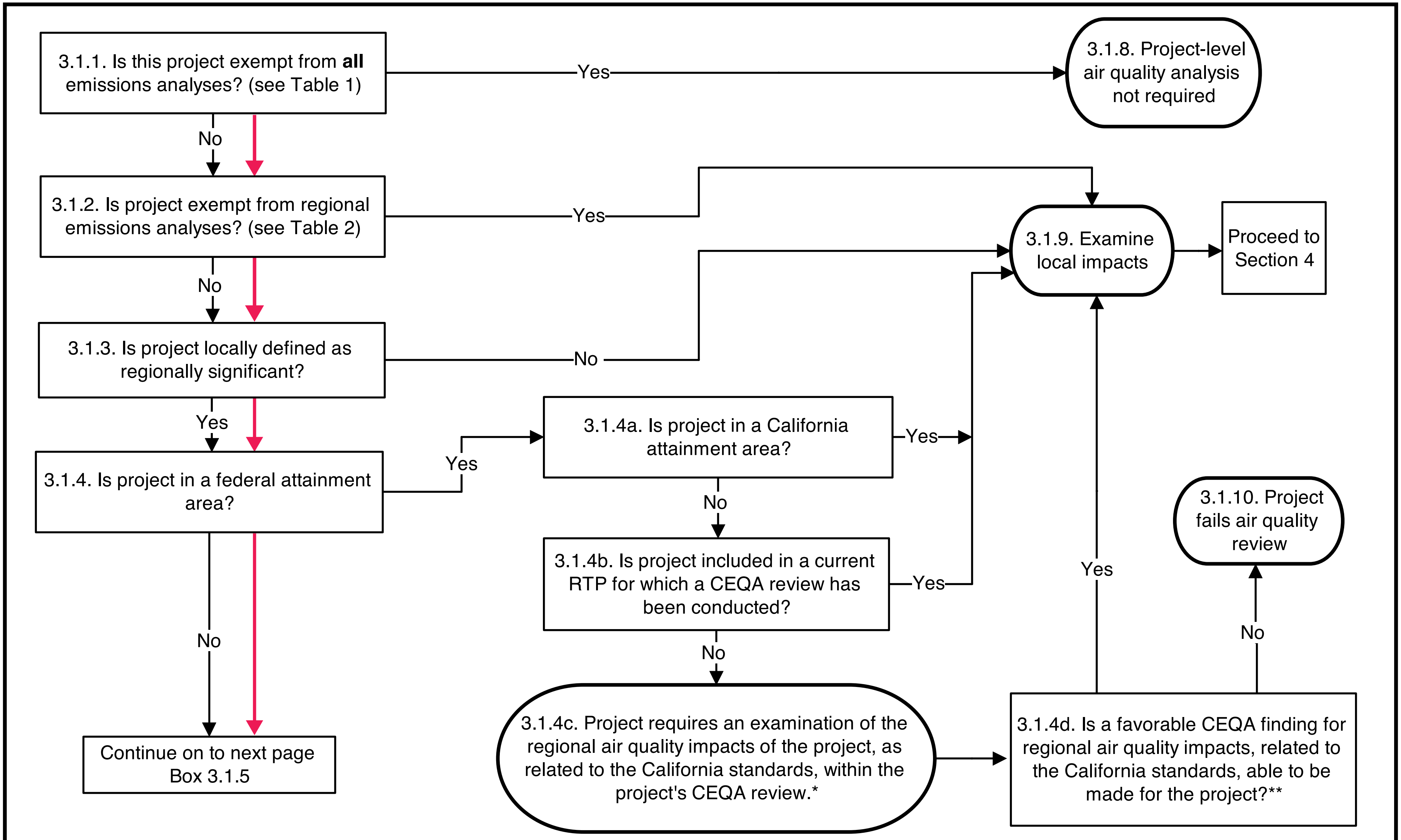
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- 1/4 Mile Buffer from Project Footprint
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Daycare Center
- School
- Rural Residential
- Residential

0 7,000 Feet

0 1,500 Meters

1:84,000

Figure 3.2-28
Sensitive Land Uses Near the Proposed Project
Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



*In consultation w/MPO and Caltrans

**In consultation w/MPO, local air district, CARB and Caltrans

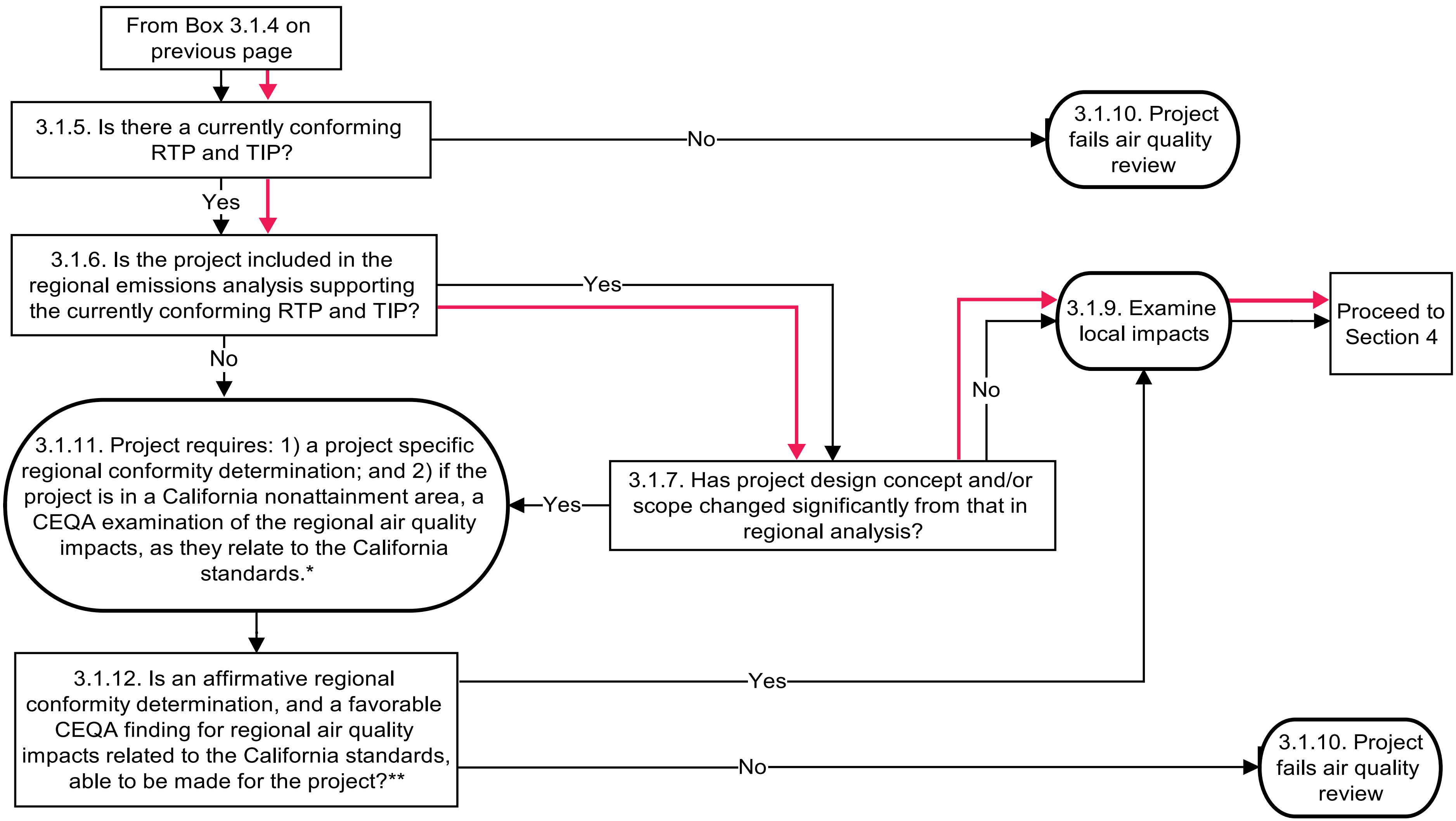
Source: Figure 1 and Figure 3 from the *Transportation Project-Level Carbon Monoxide Protocol Revised December 1997*. University of California, Davis, Institute of Transportation Studies.

Figure 3.2-29 1 of 4

CO Hot Spot Flowchart

Draft Environmental Impact Report/
Environmental Impact Statement

State Route 79 Realignment Project

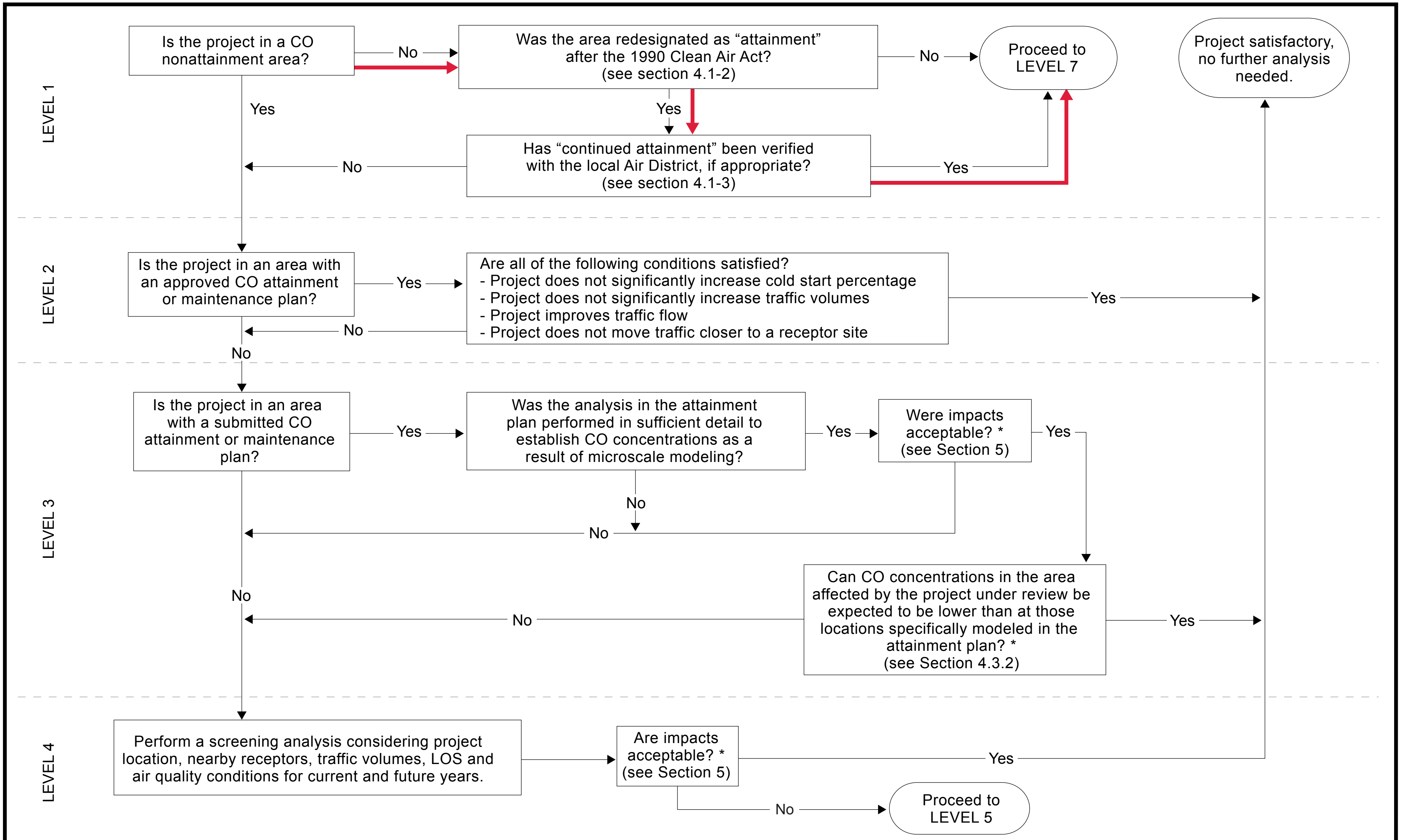


*In consultation w/MPO and Caltrans

**In consultation w/MPO, local air district, CARB and Caltrans

Source: Figure 1 and Figure 3 from the *Transportation Project-Level Carbon Monoxide Protocol Revised December 1997*. University of California, Davis, Institute of Transportation Studies.

Figure 3.2-29 2 of 4
CO Hot Spot Flowchart
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



*Consultation with MPO and Local Air District required in addition to normal NEPA/CEQA requirements

**Consultation with MPO, Local Air District, ARB and Caltrans (District & Headquarters) required in addition to normal NEPA/CEQA requirements

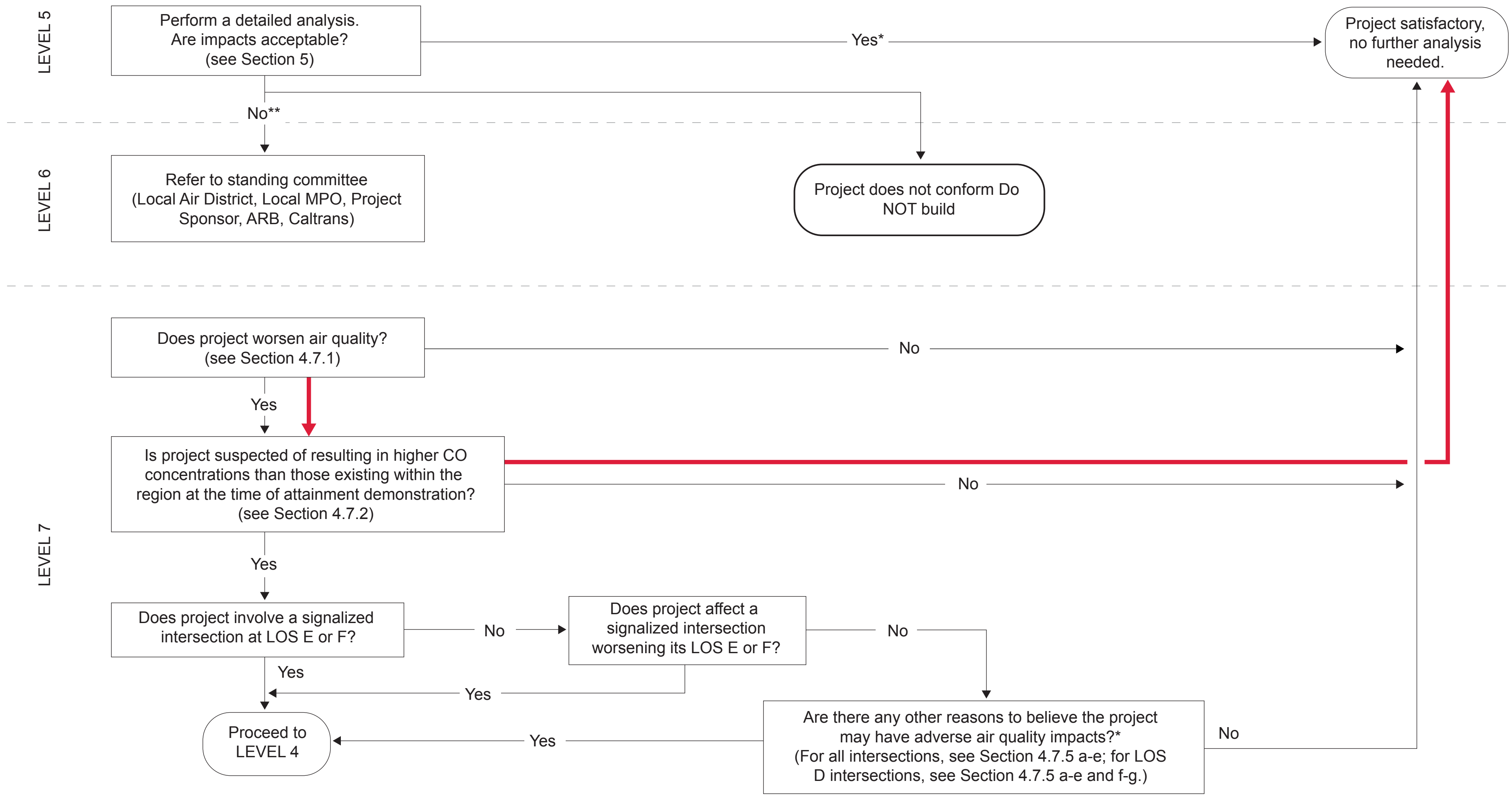
Source: Figure 1 and Figure 3 from the *Transportation Project-Level Carbon Monoxide Protocol Revised December 1997*. University of California, Davis, Institute of Transportation Studies.

Figure 3.2-29 3 of 4

CO Hot Spot Flowchart

Draft Environmental Impact Report/ Environmental Impact Statement

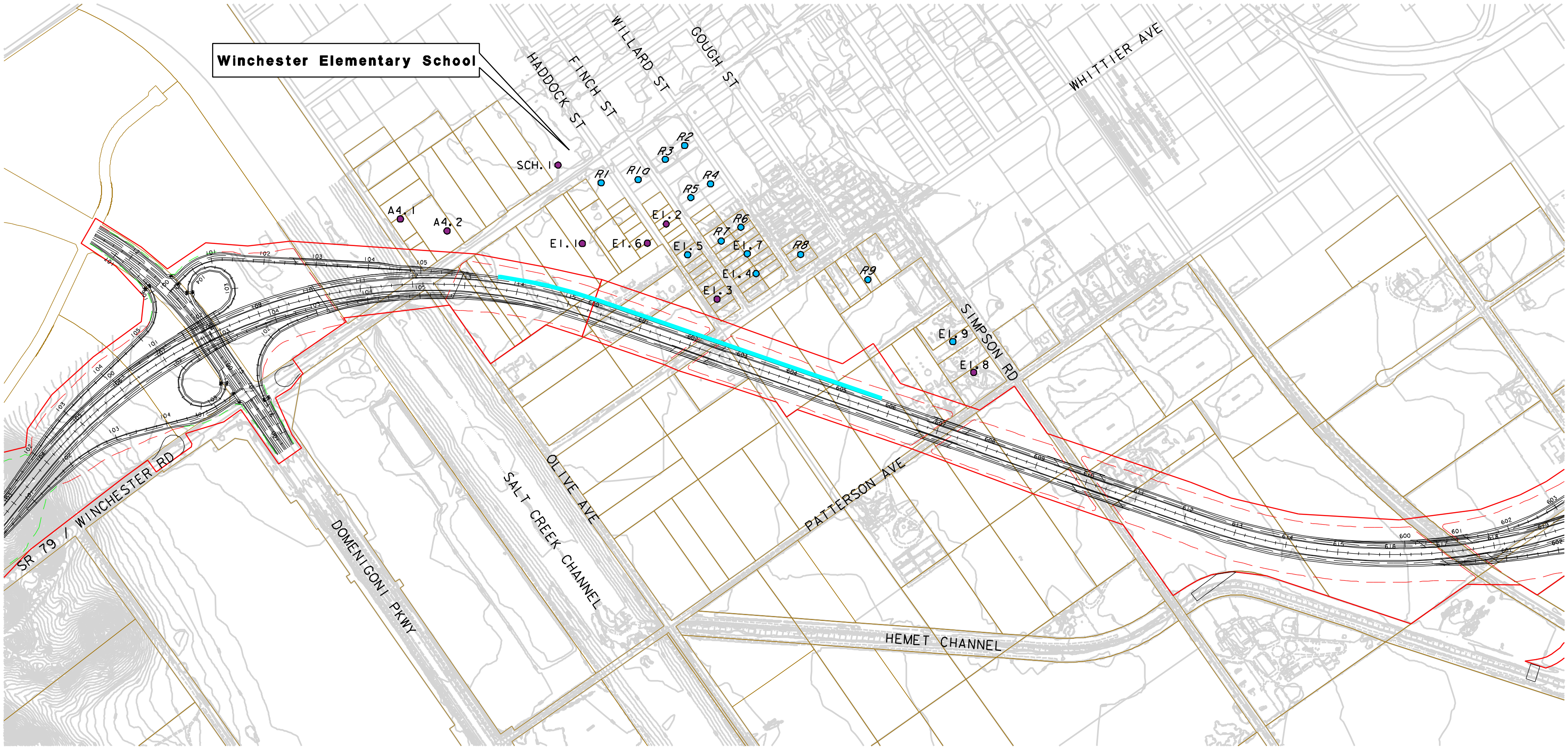
State Route 79 Realignment Project



*Consultation with MPO and Local Air District required in addition to normal NEPA/CEQA requirements
**Consultation with MPO, Local Air District, ARB and Caltrans (District & Headquarters) required in addition to normal NEPA/CEQA requirements

Source: Figure 1 and Figure 3 from the *Transportation Project-Level Carbon Monoxide Protocol Revised December 1997*. University of California, Davis, Institute of Transportation Studies.

Figure 3.2-29 4 of 4
CO Hot Spot Flowchart
Draft Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



*Noise Barrier 2A-F1 is also a proposed noise barrier at this interchange. (See Figure 3.2-30 Map 10)

LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

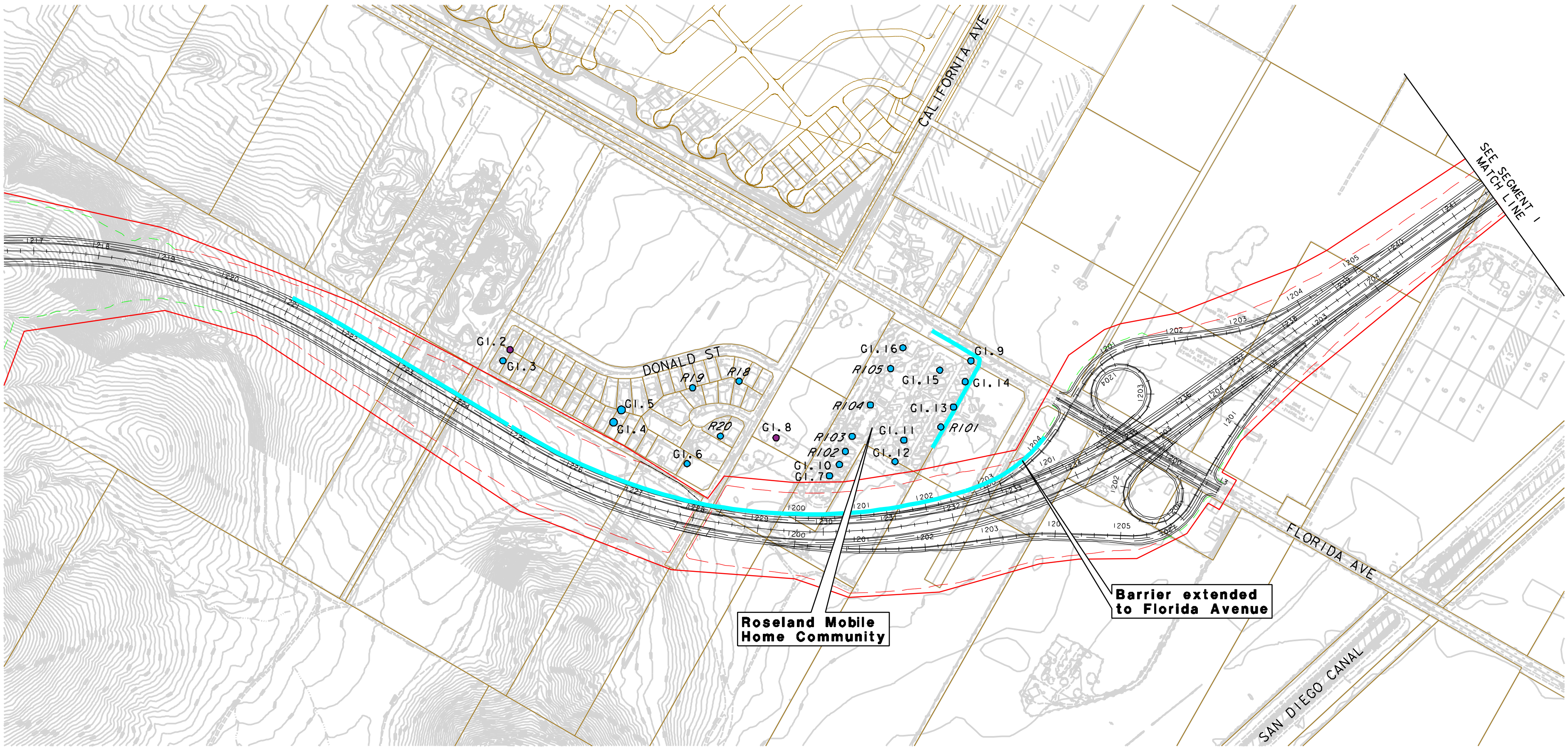
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Figure 3.2-30 Map 1
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barrier 1A-E1
Community of Winchester (Segment E)

Source: Noise Abatement Decision Report (July 2010)



*Noise Barrier 1B-G2 also applies to Design Option 1b1.
*Noise Barriers 2A-H1 and 2B-H1 are also proposed noise barriers at this interchange. (See Figure 3.2-30 Map 11)

LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

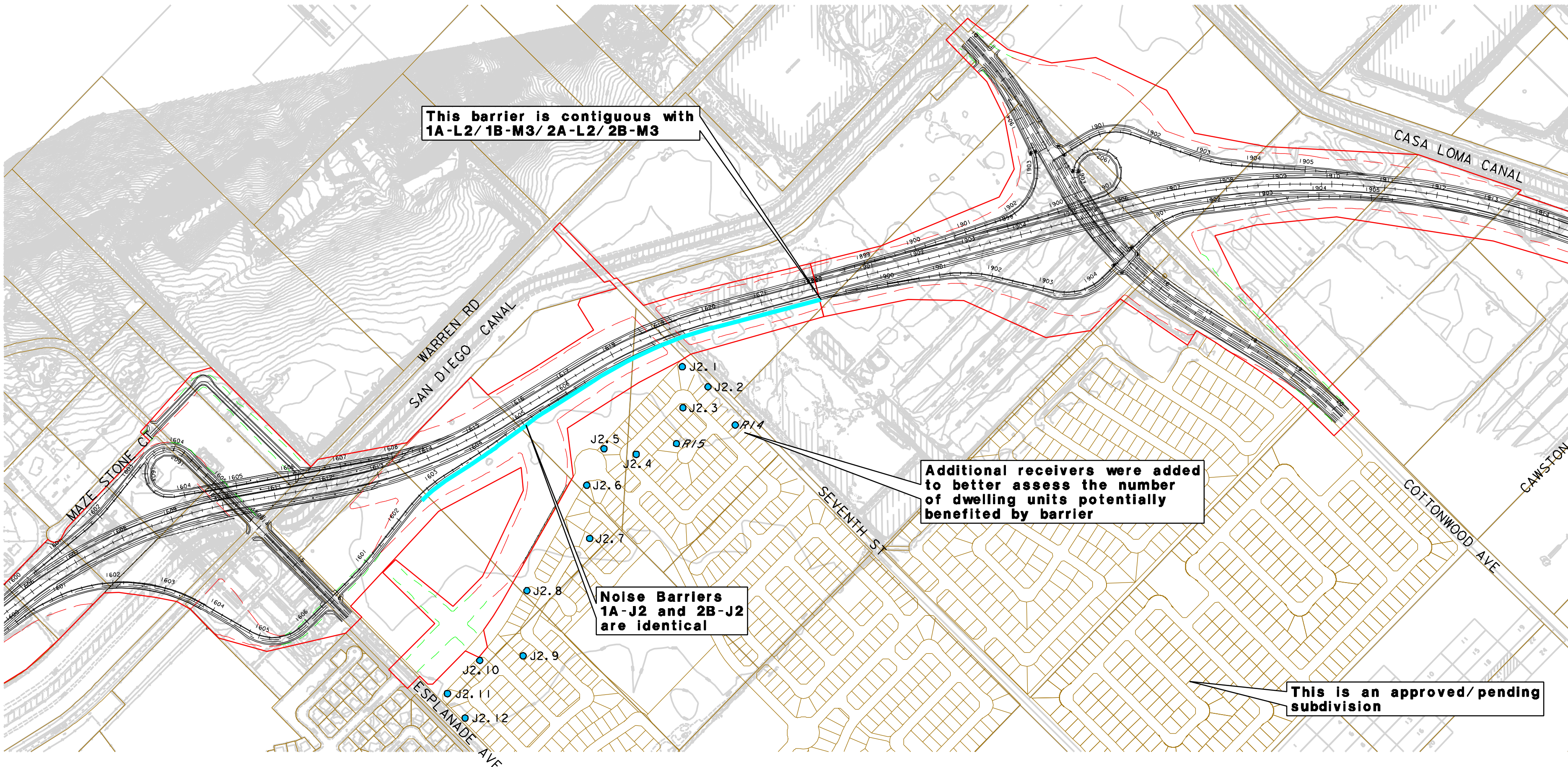
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Source: Noise Abatement Decision Report (July 2010)

Figure 3.2-30 Map 2
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barriers 1A-G1 and 1B-G2
City of Hemet (Segment G)



*Noise Barriers 1B-K3 and 2A-K3 are also proposed noise barriers at this interchange. (See Figure 3.2-30 Map 6)

LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

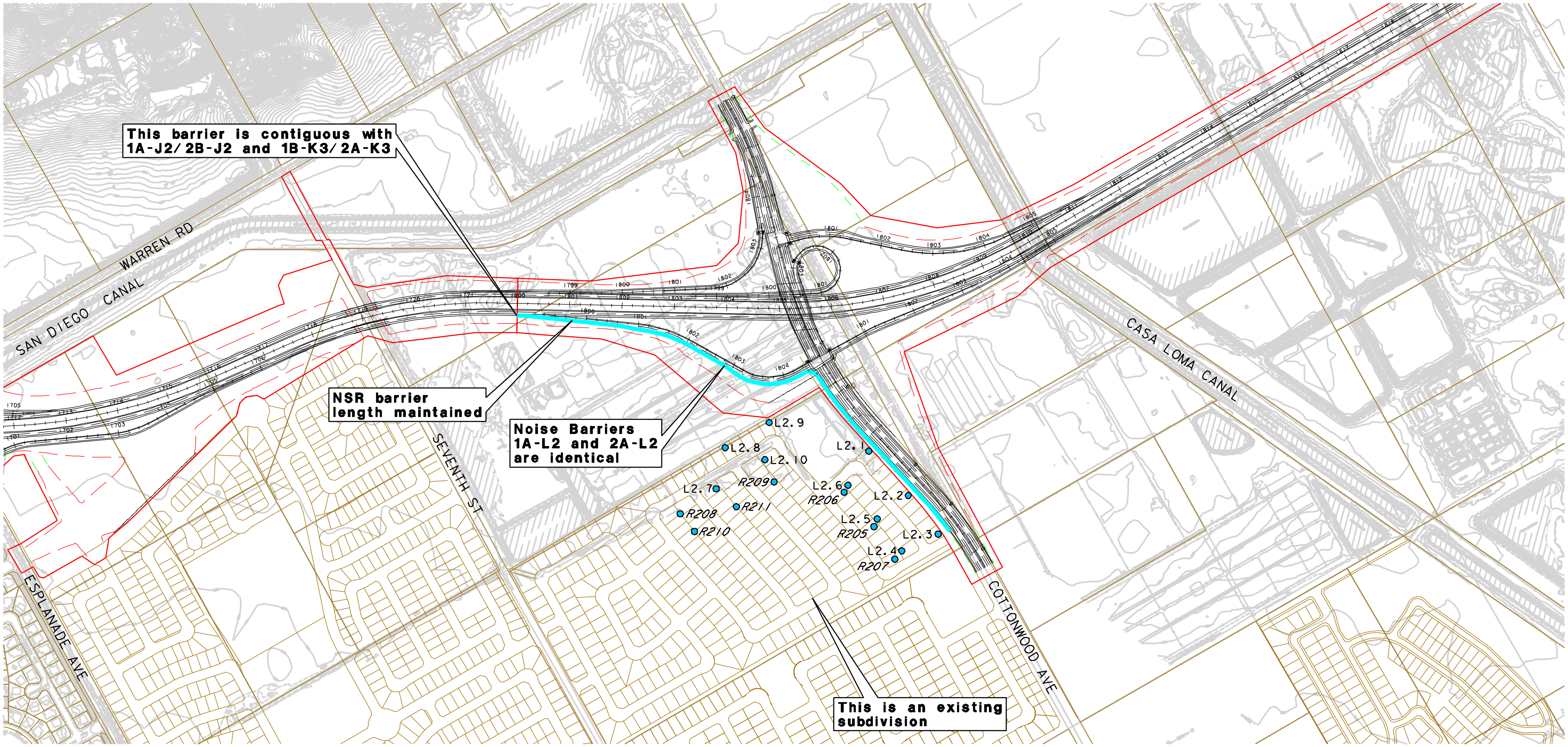
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Figure 3.2-30 Map 3
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barriers 1A-J2 and 2B-J2
City of San Jacinto (Segment J)

Source: Noise Abatement Decision Report (July 2010)



*Noise Barriers 1B-M3 and 2B-M3 are also proposed noise barriers at this interchange. (See Figure 3.2-30 Map 7)

LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

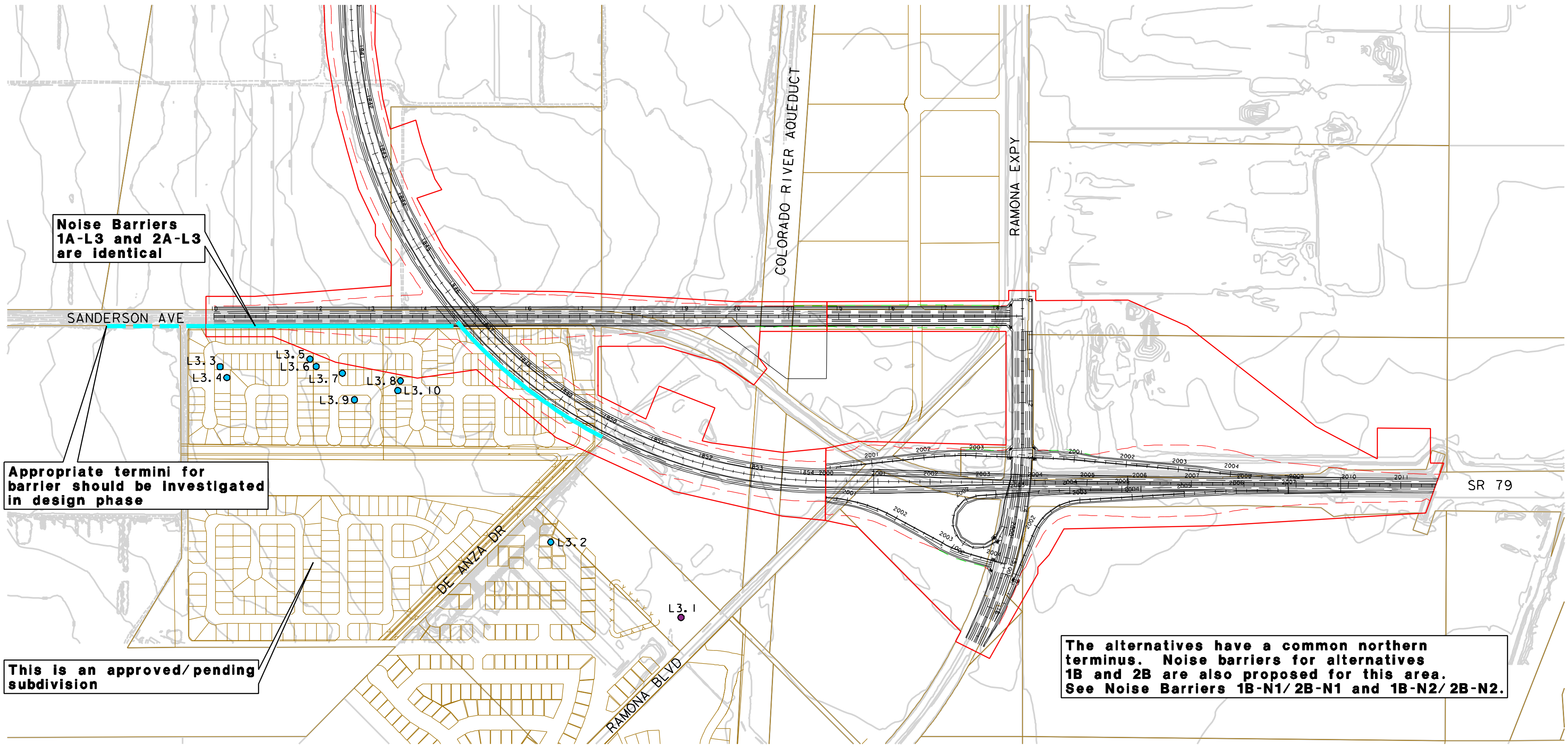
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Figure 3.2-30 Map 4
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barriers 1A-L2 and 2A-L2
City of San Jacinto (Segment L)

Source: Noise Abatement Decision Report (July 2010)



LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

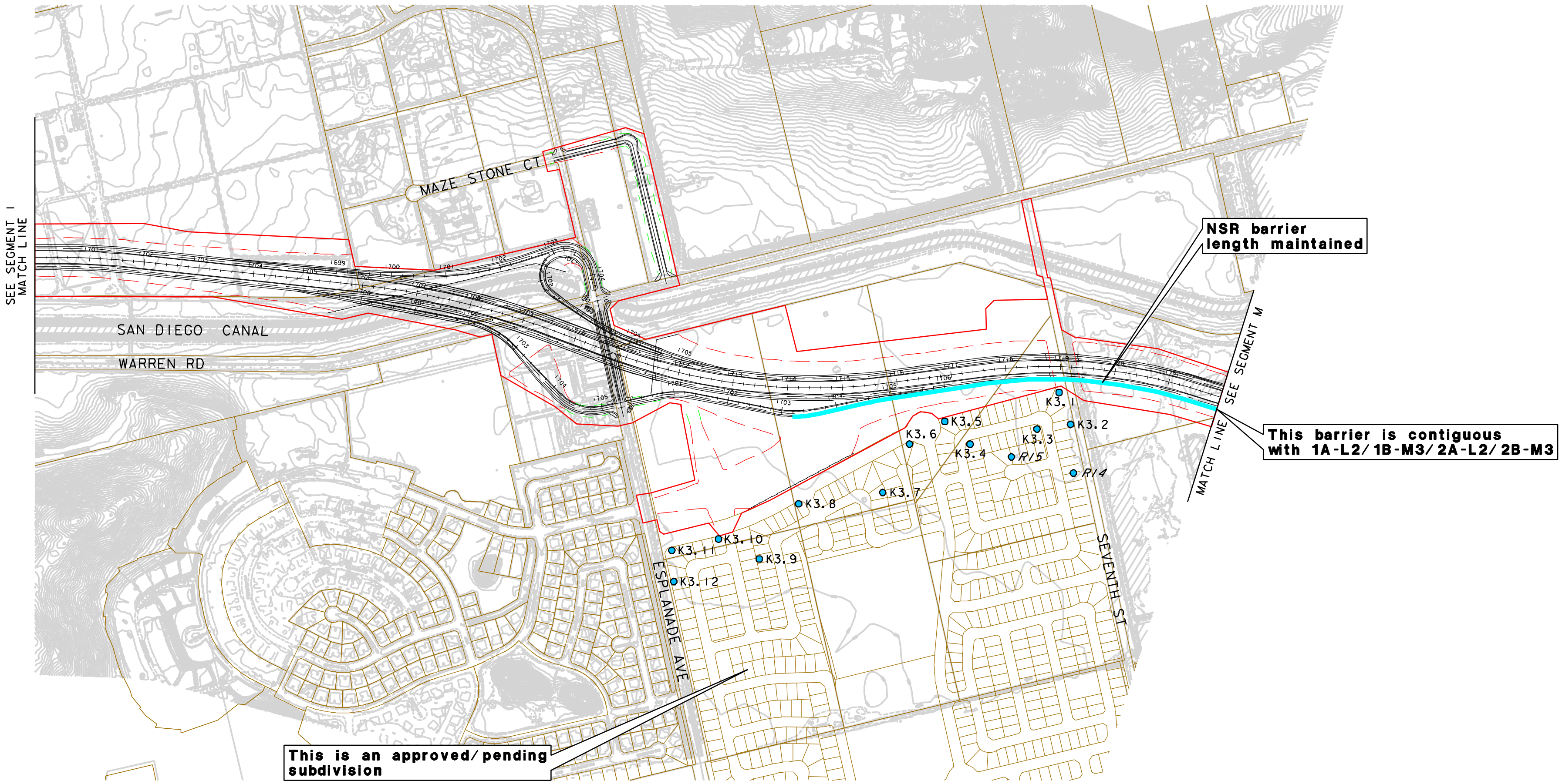
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Figure 3.2-30 Map 5
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barriers 1A-L3 and 2A-L3
City of San Jacinto (Segment L)

Source: Noise Abatement Decision Report (July 2010)



*Noise Barriers 1A-J2 and 2B-J2 are also proposed noise barriers at this interchange. (See Figure 3.2-30 Map 3)

LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

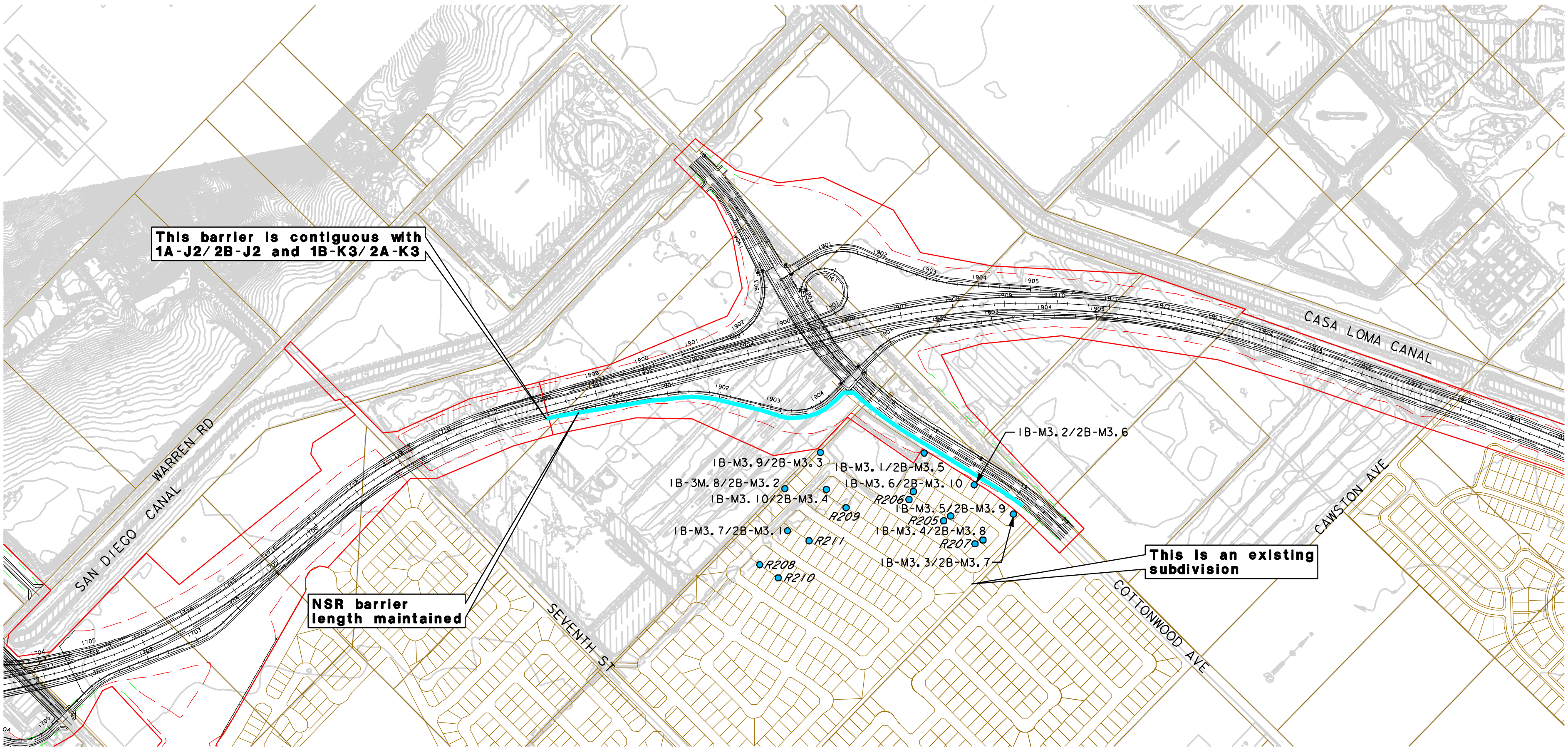
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Figure 3.2-30 Map 6
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barriers 1B-K3 and 2A-K3
City of San Jacinto (Segment K)

Source: Noise Abatement Decision Report (July 2010)



*Noise Barriers 1A-L2 and 2A-L2 are also proposed noise barriers at this interchange. (See Figure 3.2-30 Map 4)

LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

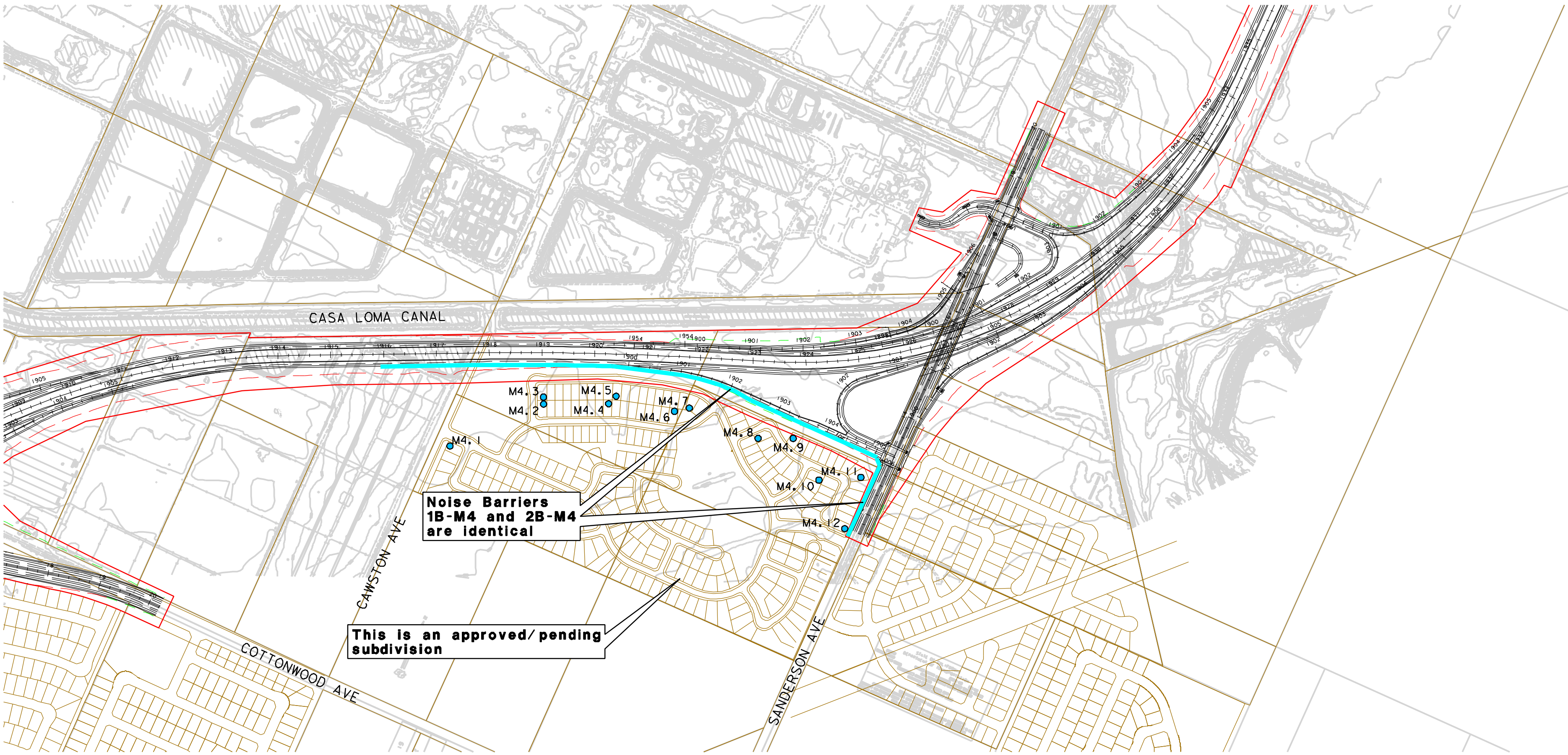
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Figure 3.2-30 Map 7
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barriers 1B-M3 and 2B-M3
City of San Jacinto (Segment M)

Source: Noise Abatement Decision Report (July 2010)



LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

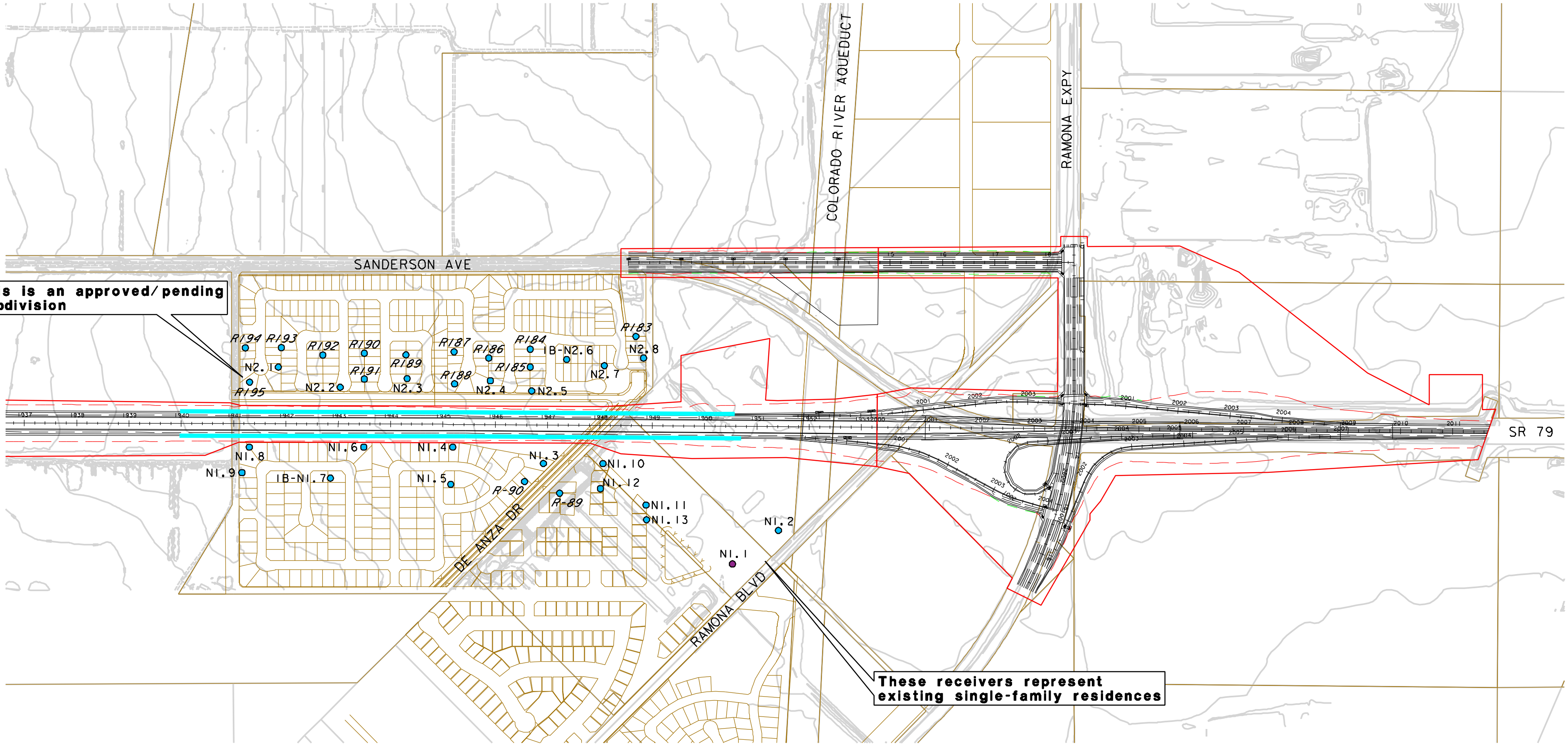
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Figure 3.2-30 Map 8
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barriers 1B-M4 and 2B-M4
City of San Jacinto (Segment M)

Source: Noise Abatement Decision Report (July 2010)



LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

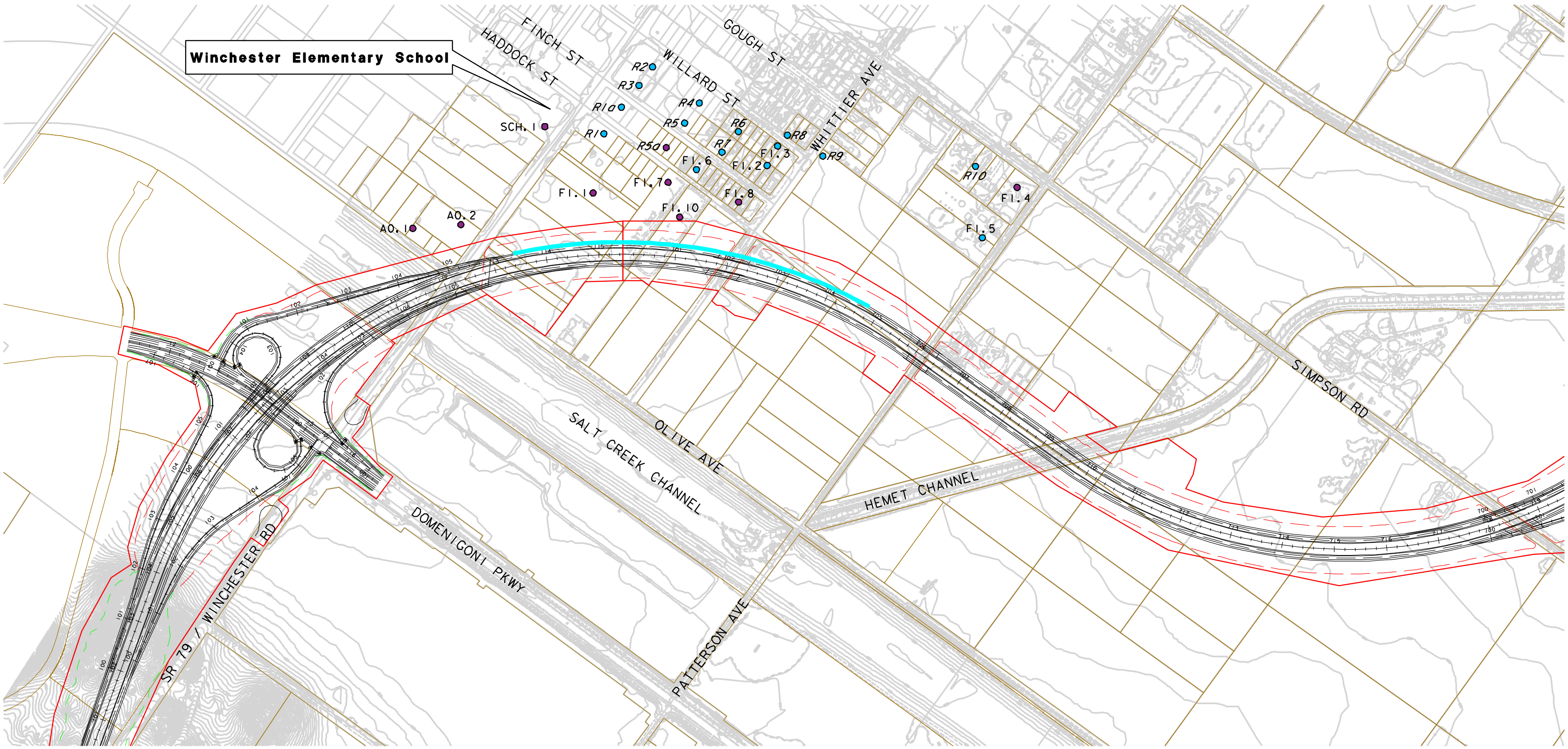
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Figure 3.2-30 Map 9
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barriers 1B-N1/2B-N1 and 1B-N2/2B-N2
City of San Jacinto (Segments M and N)

Source: Noise Abatement Decision Report (July 2010)



*Noise Barrier 1A-E1 is also a proposed noise barrier at this interchange. (See Figure 3.2-30 Map 1)

LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

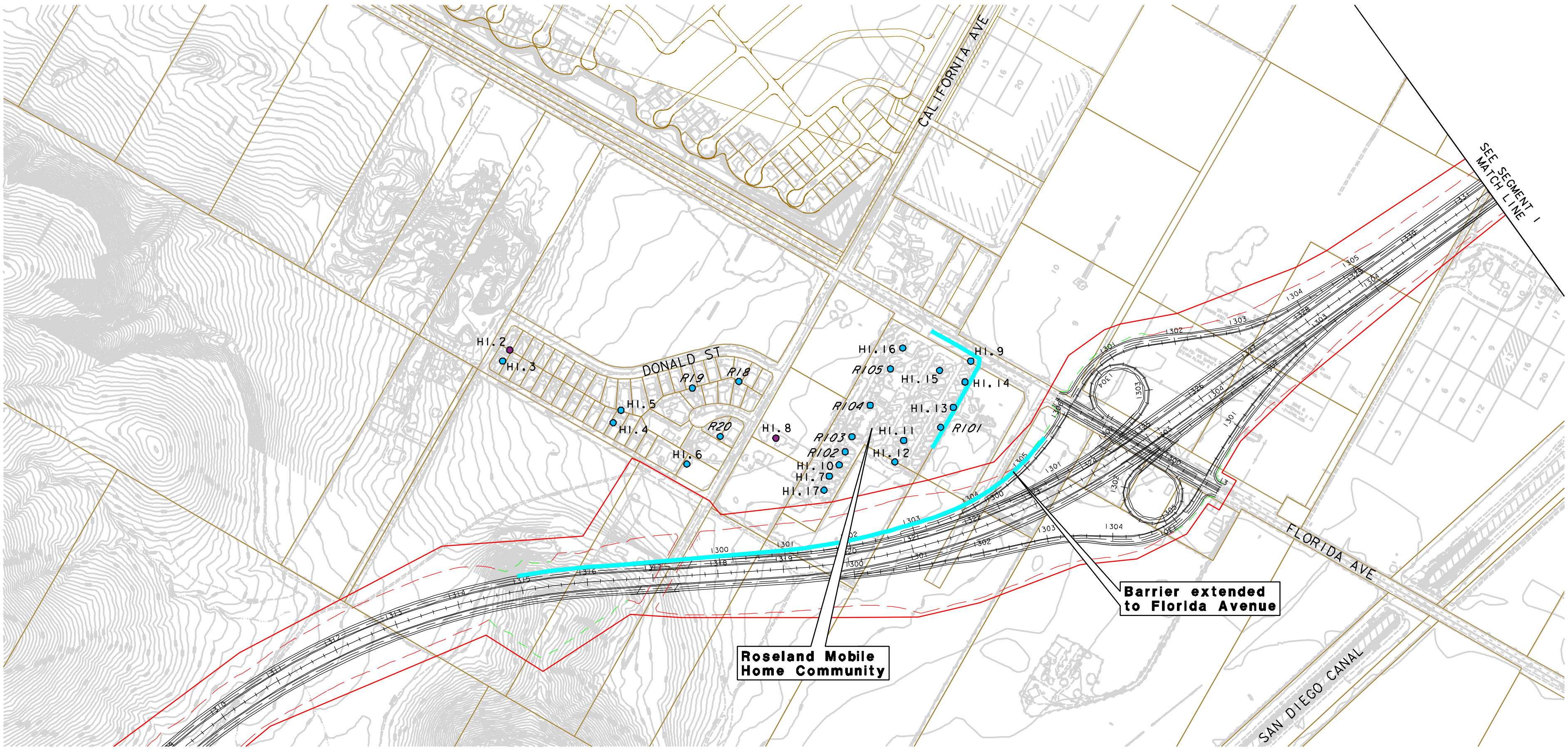
- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Source: Noise Abatement Decision Report (July 2010)

Figure 3.2-30 Map 10
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barrier 2A-F1
Community of Winchester (Segments A and F)



*Noise Barrier 2B-H1 also applies to Design Option 2B1.

*Noise Barriers 1A-G1 and 1B-G2 are also proposed noise barriers at this interchange. (See Figure 3.2-30 Map 2)

LEGEND:

- Right-of-Way
- Parcel Boundary
- Cut
- Fill
- Reasonable and Feasible Noise Barrier*

Noise Receiver

- Measured & Modeled
- Modeled

*Recommended barrier to provide at least a 5 dB noise reduction as required by the Caltrans Traffic Noise Analysis Protocol.

Figure 3.2-30 Map 11
Location of Noise Receivers and Barriers
Draft Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project

Noise Barriers 2A-H1 and 2B-H1
City of Hemet (Segment H)

Source: Noise Abatement Decision Report (July 2010)