

SAITES OF AME

Mid County Parkway

RIVERSIDE COUNTY, CALIFORNIA District 8-RIV-KP 0.0/51.0 PM 0.0/31.7 EA 08-0F3200

DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL IMPACT STATEMENT AND SECTION 4(F) EVALUATION VOLUME I OF III



Prepared by the
U.S. Department of Transportation
Federal Highway Administration,
the State of California Department of Transportation
and the
Riverside County Transportation Commission





This page intentionally left blank

GENERAL INFORMATION ABOUT THIS DOCUMENT

What's in this document?

Riverside County Transportation Commission (RCTC), the State of California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), in cooperation with, have prepared this Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) which examines the potential environmental impacts of the alternatives being considered for the proposed Mid County Parkway project located in western Riverside County, California. FHWA is the lead agency under the National Environmental Policy Act (NEPA), RCTC is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is providing oversight for the NEPA process. The document describes why the project is being proposed, alternatives for the project including identification of a locally preferred alternative, the existing environment that could be affected by the project, the impacts from each of the alternatives, and the proposed avoidance, minimization and/or mitigation measures. After the construction of the Mid County Parkway, Caltrans will be given the opportunity to become the owner/operator of the facility; therefore, Caltrans has also provided design oversight to ensure Caltrans standards are implemented. Local jurisdictions will be the owners of the MCP project until such time as it is accepted by the State as a State Highway.

What you should do:

 Please read this Draft EIR/EIS. Additional copies of this document as well as the technical studies are available for review at the following locations.

Caltrans District 8 Federal Highway Administration 464 West 4th St, 6th floor 4080 Lemon Street, 3rd Floor 650 Capitol Mall, Suite 4-100 San Bernardino, CA 92401 Riverside, CA 92501 Sacramento, CA 95814-4708 Perris Public Library Corona Public Library San Jacinto Public Library 650 S. Main St. 163 E. San Jacinto Ave. 500 Idyllwild Dr. Corona, CA 92882 Perris, CA 92570 San Jacinto, CA 92583 Woodcrest Public Library Hemet Public Library City of Corona Public Works Department 16625 Krameria 300 E. Latham Ave., 400 S. Vicentia Ave., 2nd Floor, Suite 210 Riverside, CA 92504 Hemet, CA 92543 Corona, CA 92882

The Draft EIR/EIS is also available for review on the Internet at: www.midcountyparkway.org.

- We welcome your comments. If you have any comments regarding the proposed project, please attend the public hearing on November 6, 2008, at 6 p.m. at the Perris City Council Chambers, 101 North D Street, Perris, CA 92570 and/or November 12, 2008, at 9:30 a.m. at the RCTC Board Room, 4080 Lemon Street Main Floor, Riverside, CA 92501, and/or send your written comments to RCTC by the deadline.
- Submit comments via postal mail to:

Ms. Cathy Bechtel Riverside County Transportation Commission 4080 Lemon Street, 3rd Floor P.O. Box 12008 Riverside, CA 92502-2208 Mr. Tay Dam Federal Highway Administration 650 Capitol Mall, Suite 4-100 Sacramento, CA 95814-4708

- Submit comments via email to www.midcountyparkway.org.
- Submit comments by the deadline: December 8, 2008.

What happens next:

After comments are received from the public and reviewing agencies, FHWA, Caltrans, and RCTC may undertake additional environmental and/or engineering studies. A Final EIR/EIS will be circulated; the Final EIR/EIS will include responses to comments received on the Draft EIR/EIS. 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. If the project is given environmental approval and funding is appropriated, FHWA, Caltrans, and RCTC could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in alternate formats. To obtain a copy in an alternate format, please call (951) 787-7141 or write to: Ms. Cathy Bechtel, RCTC, 4080 Lemon Street 3rd Floor, P.O. Box 12008, Riverside, CA 92502-2208.

It should be noted that at a future date FHWA or another federal agency may publish a notice in the Federal Register, pursuant to 23 USC Section 139(l), indicating that a final action has been taken on this project by FHWA or another federal agency. If such notice is published, a lawsuit or other legal claim will be barred unless it is filed within 180 days after the date of publication of the notice (or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the federal agency action is allowed). If no notice is published, then the lawsuit or claim can be filed as long as the periods of time provided by other Federal laws that govern claims are met.

This page intentionally left blank

Mid County Parkway, a transportation highway from the City of San Jacinto in the east to the City of Corona in the west.

DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT AND SECTION 4(F) EVALUATION

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

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and
THE STATE OF CALIFORNIA
Department of Transportation, and
THE RIVERSIDE COUNTY TRANSPORTATION COMMISSION

COOPERATING AGENCY: U.S. Army Corps of Engineers
RESPONSIBLE AGENCIES:
California Department of Fish and Game
County of Riverside,
City of Corona,
City of Perris, and
City of San Jacinto

10/2/2008

Date of Approval

Anne Mayer

Executive Director

District Director
California Department

Riverside County Transportation Commission

Date of Approval

Date of Approval

Vincer

FOR Gene Fong

Division Administrator

Federal Highway Administration

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

Ms. Cathy Bechtel

Mr. Tay Dam

Riverside County Transportation Commission

Federal Highway Administration

4080 Lemon Street, 3rd Floor

650 Capitol Mall, Suite 4-100

Riverside, CA 92501

Sacramento, CA 95814-4708

Abstract: The Mid County Parkway project will provide a transportation highway that will effectively and efficiently accommodate regional east-west movement of people and goods between and through the cities of San Jacinto, Perris, and Corona. Potential benefits from future implementation include increased accessibility for residents and businesses and relieving traffic congestion on the regional and local transportation network. Key issues include impacts to community character and cohesion, land use, growth-related effects, biological resources, aquatic resources, cultural resources, aesthetics, park lands, open space, residential relocations, business relocations, traffic noise, and temporary construction effects.

If you have any comments regarding the proposed Mid County Parkway project, please send your written comments by December 8, 2008, to Ms. Cathy Bechtel, Riverside County Transportation Commission at the above address.

Caltrans is acting in the role of assisting FHWA (by providing oversight for NEPA).

This page intentionally left blank

Executive Summary

S.1 Overview of the Project Area

The Riverside County Transportation Commission (RCTC), California Department of Transportation (Caltrans), and the Federal Highway Administration (FHWA) propose to improve west-east transportation in western Riverside County between Interstate 15 (I-15) in the west and State Route 79 (SR-79) in the east, a distance of approximately 51 kilometers (km) (32 miles [mi]). The proposed project will construct a new parkway¹, known as the Mid County Parkway (MCP), which will provide a direct and continuous route connecting major population/employment centers identified in the Land Use Element of the County of Riverside General Plan and the plans of the cities of Corona, Perris, and San Jacinto.

The MCP project was identified as a key west-east regional transportation corridor as a result of several years of comprehensive land use and transportation planning in Riverside County through the Riverside County Integrated Project (RCIP). The purpose of the RCIP was to address the planning, environmental, and transportation issues that would result from the anticipated doubling of population in Riverside County, from 1.5 million residents currently to approximately 3.0 million by 2020. The RCIP included three components: (1) a new General Plan for Riverside County, adopted in October 2003; (2) a Multiple Species Habitat Conservation Plan

Design Manual (HDM). The term "parkway" is not used per the definition of

The use of the term "parkway" in this document is intended solely as an





parkway in the Caltrans HDM.

abbreviated reference to the Mid County Parkway project and should not be construed so as to define the type of roadway anticipated should the project be constructed. It is used because the public has become accustomed to the term during the history of the project; the project proposes "above standard" landscape mitigation, including the planting of native vegetation. A parkway is defined as a divided arterial highway with full control of access and with grade separations at local interchanges with major local arterials. It should be noted that even though the project title is "Mid County Parkway," not all of the alternatives consist of a "parkway" for its entire length. Some of the alternatives include segments that are "expressways and arterials," as defined in the Riverside County General Plan, and are designed to freeway/expressway standards as defined in the Caltrans Highway

(MSHCP) for western Riverside County (approved in June 2004); and (3) the Community and Environmental Transportation Acceptability Process (CETAP) to identify both intra-county and inter-county transportation corridors needed to support the projected population growth.

Tier 1 analyses and environmental documents were initiated for the two intracounty corridors in fall 2000: a north-south corridor, referred to as Winchester to Temecula, and a west-east corridor known as the Hemet to Corona/Lake Elsinore (HCLE) corridor. The purpose of the Tier 1 efforts was to select preferred alternatives and preserve needed right of way. After a Draft Tier 1 Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was completed for the HCLE Corridor and circulated for public review in 2002 with a suite of 14 "build" alternatives, the RCTC Board accepted a staff recommendation in June 2003 to proceed with the accelerated preparation of a project-level environmental document for an west-east alternative that would follow the existing alignment of Cajalco Road and Ramona Expressway, known as the MCP project. The MCP project is the west-east CETAP corridor envisioned in the RCIP planning process.

S.2 Purpose and Need

S.2.1 Project Purpose

The purpose of the proposed action is to provide a transportation parkway that will effectively and efficiently accommodate regional west-east movement of people and goods between and through Corona, Perris, and San Jacinto. More specifically, the selected Alternative will:

- Provide increased capacity to support the forecast travel demand for the 2035 design year;
- Provide a limited access parkway;
- Provide roadway geometrics to meet State highway design standards;
- Accommodate Surface Transportation Assistance Act (STAA) National Network trucks (these are larger trucks allowed on the federal Interstate system and non-Interstate federal-aid primary system); and
- Provide a parkway that is compatible with a future multimodal transportation system.

The MCP project has logical termini since it connects to two major north-south transportation facilities (I-15 and SR-79) with the Interstate 215 (I-215) in the middle,







has independent utility since the project is usable and a reasonable expenditure even if no additional transportation improvements in the area are made, and does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

S.2.2 Project Need

The MCP project is located in an area of western Riverside County that is currently undergoing substantial population and employment growth. Population in Riverside County overall is expected to double between 2000 and 2020 from 1.5 million to 3.1 million. Growth in employment is expected to occur at an even higher rate, with an increase of over 115 percent in the number of jobs. Although currently funded transportation improvements will address some of the projected future demand, additional transportation improvements are needed to provide for the efficient movement of people and goods in the future.

S.2.2.1 Capacity, Transportation Demand and Safety

The existing major west-east facilities in western Riverside County consist of State Routes 60, 91, and 74 (SR-60, SR-91, and SR-74, respectively). These facilities provide linkages between the major north-south facilities of SR-79, I-215, and I-15. In 2035, SR-60 and SR-91, as well as several segments of SR-74, are projected to operate at level of service (LOS) F.

While the Riverside County General Plan (2003) identifies several major west-east arterials south of SR-74 that provide alternative west-east routes, Ramona Expressway and Cajalco Road comprise the only existing and proposed major continuous transportation corridor between SR-74 and SR-60/SR-91. Cajalco Road is a two- to four-lane arterial with no access control, and Ramona Expressway is a two-to six-lane expressway with partial access control.

Level of Service

Existing Cajalco Road already operates at an unacceptable LOS (LOS E/F) through many segments. By 2035, the roadway will experience further delay if additional capacity is not provided.

Transportation modeling based on the adopted Riverside County General Plan (2003) land uses indicates that the LOS on west-east arterials will be degraded without implementation of the MCP project.









Travel Time

A Travel Time Analysis (VRPA, 2008) prepared for the MCP project concluded that under Alternatives 1A (No Project/No Action – Existing Ground Conditions) and Alternative 1B (No Project/No Action - General Plan Circulation Element Conditions) the travel time between I-15 and SR-79 in 2035 would be 193.4 minutes and 92.1 minutes, respectively. Under the MCP Build Alternatives (Alternatives 4, 5, 6, 7 and 9), the travel time would range between 31.1 minutes and 32.5 minutes.

Population/Traffic Forecast

The MCP project would link the existing and growing population centers of the city of Corona on the west, city of Perris in the central portion of the MCP study area, and city of San Jacinto on the east. In addition, the MCP project would link I-15, I-215, and SR-79, thereby facilitating regional traffic movement by providing a west-east connection to these major north-south transportation facilities.

Capacity Needs

Travel patterns in western Riverside County are characterized by large numbers of commuters traveling from western Riverside County to jobs in Los Angeles and Orange Counties. Intercounty commuter traffic is expected to grow substantially in the future as Riverside County's population grows. In addition, the growth of employment opportunities within western Riverside County is expected to result in substantial increases in traffic through and connecting with other employment and population centers in the county. The MCP project will serve as a major west-east connection within western Riverside County and will also provide for regional movement of people and goods to eastern Riverside County, Los Angeles County, and Orange County.



To serve the projected travel demand in this area, there is a need to maximize the capacity of the MCP project by limiting access. There is also a need for the MCP project to accommodate truck traffic, which will be integral to future economic growth in the area.

Safety

While accident rates are not appreciably different from similar facilities, there are locations along existing Cajalco Road and Ramona Expressway where design features (such as curves and/or steep grades) and land use conflicts (including direct driveway access to the roadway) represent conditions that could contribute to higher accident rates with the growth in traffic volumes on these two roadways. Further, it is not



feasible to convert existing Cajalco Road or Ramona Expressway to a parkway that meets Caltrans standards due to the roadway deficiencies discussed below and terrain in some areas. By limiting access and designing a transportation facility that is consistent with current State highway standards, the MCP project will provide an alternative route and relieve regional congestion, thus resulting in an overall improvement in traffic safety and reduction in accidents.

S.2.2.2 Roadway Deficiencies

Existing Cajalco Road and Ramona Expressway combine to form the only existing, continuous west-east facility in the MCP study area. There are certain limitations related to design and capacity that restrict the ability of the existing roadways to meet future travel demand.

The Cajalco Road and Ramona Expressway roadway geometric sections do not meet current Caltrans or Riverside County standards for major roadways. The 2001 Caltrans Highway Design Manual identifies key design standards that will be applied in the design of the MCP project. Even if the MCP project is not designated a State highway in the future, compliance with Caltrans design standards will be required at the interchanges with I-15, I-215, and SR-79. These standards include a design speed, a minimum curve radius, and a maximum vertical grade. The existing roadway geometry does not meet Caltrans standards in several areas; therefore, widening the existing facility in these areas without redesign is not feasible. All of the curves on existing Cajalco Road do not meet the Caltrans minimum standards and, similarly, curve radii for the realigned Cajalco Road, as designated in the existing Riverside County General Plan Circulation Element, are also below the standard. Existing Ramona Expressway includes six horizontal curves that do not meet Caltrans standards.

The grade of existing Cajalco Road west of Lake Mathews also has deficiencies, and currently there are numerous direct access points (driveways and local roadways) onto Cajalco Road and Ramona Expressway that could lead to opportunities for conflict that would impede traffic flow on the existing roadways. Uncontrolled access points reduce the overall capacity of the roadways and increase the potential for accidents.



S.2.2.3 Social Demands or Economic Development

The MCP project was identified as a key west-east regional transportation corridor as a result of several years of comprehensive land use, habitat conservation, and transportation planning in Riverside County through the RCIP.

The MCP project executes the intent of the prior RCTC and County of Riverside actions with regard to the planning of the HCLE CETAP corridor and is consistent with the intent of the Riverside County Circulation Element, which recognizes that the specific alignment decisions regarding the CETAP corridors may result in amendments to the Riverside County General Plan.

The MCP project is consistent with the 2008 Regional Transportation Plan (RTP), which emphasizes the identification of long-range corridors. The MCP project is also consistent with the Riverside County General Plan (2003), which sets forth the need to incorporate future growth with transportation and multipurpose open space systems in areas that are well served by public facilities and services and preserve significant environmental features.

S.2.2.4 Legislation

Executive Order

On September 18, 2002, President George W. Bush signed Executive Order (EO) 13274 for environmental stewardship and streamlining. This order required transportation and natural, cultural, and historical resource agencies to establish realistic time frames on environmental transportation documents, and required the agencies to work together to provide efficient review of the documents while protecting the environment. CETAP, of which the MCP project is a part, was one of the first seven projects to be placed on the national priority list for review under EO 13274.

County

Riverside County voters approved Measure A in 1988. Measure A permits a half-cent sales tax program to be implemented to collect funding for transportation improvement projects in Riverside County. Measure A was set to expire in 2009; however, voters approved a 30-year extension for the sales tax program in 2002. The MCP project is one transportation project being considered by the RCTC that may receive partial funding from Measure A.

The RCTC may initiate future legislation to designate the MCP as a State highway.



S.2.2.5 Modal Interrelationships and System Linkages

In addition to the rapid population growth in western Riverside County, the employment base is also increasing, particularly in intermodal goods distribution. The MCP project is located between and through the future population and employment centers it will serve from planned development, including Corona, the Perris/Moreno Valley/March Air Reserve Base area, and San Jacinto. Furthermore, the location of the MCP project through the city of Perris offers an opportunity to create a linkage between the MCP project and two major planned transit projects (the Perris Valley Line [PVL] and Perris Multimodal Facility). The proposed PVL will provide commuter rail service from the city of Riverside to the city of Perris by extending existing service (Metrolink 91 Line) that links the city of Riverside with downtown Los Angeles via Fullerton. It is anticipated that the proposed PVL will connect with a new Perris Multimodal Facility to be located in downtown Perris off C Street and will provide for connecting bus (including the Riverside Transit Agency) and rail (including Metrolink) service. The Perris Multimodal Facility is in close proximity to the MCP project. Seven new stations have been identified for construction along the PVL, including one adjacent to the MCP study area. By reducing travel time and congestion in the MCP study area, the MCP project would help improve accessibility to stations serving the PVL.

System Linkages

The MCP project is located between the SR-91/SR-60 corridor and SR-74, and will provide another needed west-east corridor/connection to improve the regional transportation network and to meet future west-east travel demand.

Related Projects

Information concerning related projects provides contextual information for the MCP project and identifies how the transportation agencies have coordinated transportation planning efforts. The MCP project will be implemented in a manner that is consistent with the following programmed and planned improvements:

• Constructing SR-79 as a Four-Lane Expressway: Constructing SR-79 as a four-lane expressway on a new alignment from the SR-79/Sanderson Avenue junction to SR-79/Domenigoni Parkway, generally following an alignment west of Warren Road. This study is in progress by RCTC and Caltrans. Construction of initial phases is tentatively scheduled to begin in 2012.





- **SR-79 Widening:** The SR-79 Interim Widening project will improve SR-79 between Thompson Road and Domenigoni Parkway by extending slopes between Thompson Road and Abelia Street, widening an 8.7 km (5.4 mi) segment of SR-79 from two to four lanes between Abelia Street and Domenigoni Parkway, installing a painted center median, and constructing turn lanes at intersections.
- I-15/Magnolia Avenue Interchange Modifications: The City of Corona plans to reconfigure the existing interchange to add northbound/southbound loops and widen the existing northbound on-ramp.
- Widening of I-215: RCTC plans to widen I-215 to three lanes in each direction from I-15 in Temecula to Eucalyptus Avenue in Perris. This project is programmed in RCTC's Measure A Expenditure Plan. A construction schedule has not been established.
- Widening of I-215 from 60/91/215 Junction to San Bernardino County Line: In cooperation with San Bernardino Associated Governments, RCTC plans to add two lanes in each direction from 60/91/215 to the San Bernardino County line.
- I-15/Cajalco Road Interchange Project: The City of Corona, in cooperation with RCTC and Caltrans, plans to replace the existing two-lane Cajalco Road overcrossing of I-15 with a six-lane overcrossing between Temescal Canyon Road and Bedford Canyon Road and associated ramp modifications. The City of Corona has secured partial funding for this project, and construction is planned for January 2011.
- The Perris Valley Line (PVL): The RCTC Board has adopted an extension of a commuter service line from the city of Riverside to the city of Perris. The project proposes to extend operation of the Metrolink 91 Line, which currently provides commuter rail service from Riverside to downtown Los Angeles via Fullerton by 2011.
- The Perris Multimodal Facility: The Perris Multimodal Facility is intended to support operating rail and bus passenger services originating from the city of Perris. The facility will be located in downtown Perris off C Street and will include platforms, shelters, parking, and lighting to accommodate eight bus bays and additional facilities to serve future passenger train service.

- I-15 Measure A Improvements: Extension of the Measure A Expenditure Plan includes funding to add one lane in each direction on I-15 between SR-60 and the San Diego County line, and to make improvements to the SR-91/I-15 interchange by adding a new connector from I-15 North to SR-91 West.
- Widening of SR-60 from University Avenue to 60/215 Interchange: This project will add one lane in each direction (median) from University Avenue in Riverside easterly to 60/215 interchange in Moreno Valley, including a new interchange and bridges in Riverside. Construction is tentatively scheduled to be completed in 2009.
- **SR-60 Truck-Climbing Lane:** This project will add one truck-climbing lane in the Badlands area east of Moreno Valley.
- Widening of SR-91 from Adams to 60/91/215 Interchange: This project will add one lane in each direction from Adams to the 60/91/215 interchange in Riverside. Construction is tentatively scheduled to be completed in 2011.
- Widening of SR-91 from Pierce Street to Orange County: This project will add one lane in each direction from Pierce Street to the Orange County line.
- I-10/SR-60 Interchange: This project will construct a new interchange at I-10/SR-60.
- **I-10 Truck-Climbing Lane:** This project will add an eastbound truck-climbing lane from the San Bernardino County line to Banning.
- State Route 91/71 Interchange: Improve the connection between SR-91 and State Route 71 (SR-71) by replacing the existing single-lane connection between eastbound SR-91 and westbound SR-71 with a two-lane direct flyover ramp. The project will also build a new, separate eastbound road just north of and parallel to SR-91 to provide improved access between the Green River Road interchange and the SR-91/SR-71 interchange. Construction is planned to be completed in 2015.
- **State Route 74:** This project added one lane in each direction from I-15 to 7th Street.
- Riverside/Orange County Major Investment Study: The Orange County Transportation Authority (OCTA) and RCTC, in cooperation with the Transportation Corridor Agencies (TCA), completed a Major Investment Study

(MIS) under Southern California Association of Governments (SCAG) guidelines to identify and assess alternative ways to improve mobility between Orange and Riverside counties. Following SCAG's guidelines for Regionally Significant Transportation Investment Studies (RSTIS), the Riverside/Orange County MIS was a transportation planning study that concluded in early 2006. It included feasibility planning, travel demand forecasting, conceptual engineering, environmental evaluation, and public involvement. Caltrans Districts 8 and 12, in cooperation with FHWA, were advisory agencies in the study.

The MIS examined a comprehensive range of capital and operational improvement alternatives to SR-91 and other options for intercounty multimodal transportation corridors. The study analyzed the benefits, costs, and consequences (economic, social, and environmental) of alternative transportation investment strategies in the Riverside County-Orange County MIS corridor. Input received throughout the study from the Policy Committee, stakeholders, cities, and elected officials was included in considering recommendations for a Locally Preferred Strategy.

The OCTA Board of Directors met on December 12, 2005, to take action on the recommended Locally Preferred Strategy, and the RCTC Board of Commissioners met on December 14, 2005. Both Boards unanimously approved recommendations for the refined Locally Preferred Strategy. Key elements of the Board's decisions relevant to the MCP project are as follows:

- Establish SR-91 from State Route 55 (SR-55) to I-15 as a priority for improving transportation between Riverside and Orange counties. Emphasize SR-91 improvements between State Route 241 (SR-241) and the I-15 first, followed by improvements between SR-55 and SR-241.
- Continue to work with the Foothill/Eastern TCA in Orange County to develop a mutually acceptable plan to improve the connection between the SR-241 and SR-91 corridors and accelerate capacity improvements on State Route 133 (SR-133), SR-241, and State Route 261 (SR-261) to optimize utilization of the toll roads to improve transportation between Riverside and Orange counties.
- Continue to evaluate the costs and impacts of Corridor A (a new facility between I-15 and SR-241 with a connection at SR-71) in the SR-91 right of way or north of SR-91, parallel through a future preliminary engineering process in cooperation with other agencies.

- Continue to study the technical feasibility of the Corridor B concept (a new facility between Cajalco Road in Riverside County and SR-133 in Orange County through the Santa Ana Mountains), including costs, risks, joint-use opportunities, benefits, and funding options in cooperation with other interested agencies.
- Incorporate the following: components of the adopted Locally Preferred Strategy that encompass maximization of the MIS corridor transit network; widening of portions of SR-91 (14 to 16 lanes total plus baseline SR-91 improvements); possible managed lane modifications (including reversible lanes) for SR-91 or Corridor A; continued studies in support of a new highway facility in Corridor A; continued studies in support of a new highway (largely in tunnel sections) in Corridor B; and operational improvements (not major widening) of SR-74 (Ortega Highway) in Corridor D.
- Cajalco Road Improvements: While it is anticipated that much of the future travel demand on Cajalco Road would be met by the MCP project, there would be a continued need for Cajalco Road to provide local access and circulation for existing and planned residential uses in the vicinity of Lake Mathews and Mead Valley. For Cajalco Road to function safely and effectively in the short term and long term, safety, capacity, and operational improvements are being planned by the County of Riverside.

Safety and road repair projects that occurred between 2003 and 2005 included pavement projects for specific locations and the installation of street lights at the intersections of Alexander Street, Mead Street, Haines Street, Day Street, Seaton Avenue, and between Brown Street and Clark Street. In addition, the intersection of Harley John Road/Smith Road was resurfaced and widened. Pavement was added east of the intersection to receive a second eastbound through lane to reduce the traffic backup before the intersection. These projects have been completed.

Additional projects recently completed by the County of Riverside include:

- Left-turn lanes added between Harley John Road and 0.40 km (0.25 mi) east of Gustin Lane;
- Pavement reconstruction and intersection widenings between Kirkpatrick Road and La Sierra Avenue;
- Installation of guard rails at various locations east of La Sierra Avenue; and

- Installation of guard rails at various locations east of La Sierra Avenue; and
- Installation of traffic signals at Gavilan Road and Harley John Road/Smith Road.

The County of Riverside also plans to widen portions of Cajalco Road in three segments. The first segment is between Harley John Road on the west and Harvill Avenue on the east. As a result of the Boulder Springs development, Cajalco Road will be widened to four lanes from Wood Road to Alexander Street. The improvements to this segment are considered by the County to be the most needed in the near term and the most feasible to construct. The second segment is between La Sierra Avenue and Harley John Road. Western Riverside County Transportation Uniform Mitigation Fee funding (approximately \$22 million) has been programmed for the widening of approximately 11 km (7.0 mi) of roadway. Final environmental compliance is yet to be achieved for this segment. The third segment is between Temescal Canyon Road and La Sierra Avenue. Transportation Uniform Mitigation Fee funds are currently programmed (approximately \$10 million) to improve approximately 3 miles of Cajalco Road in this area. Topographical and Metropolitan Water District of Southern California (Metropolitan) reserve constraints are to be addressed through a conceptual design and environmental clearance process to be undertaken by the Riverside County Transportation Department.

In addition to the projects listed above that may provide a direct physical connection to the MCP project, additional improvements are also planned to the freeway system in western Riverside County. Implementation of the MCP project will complete an overall network that, absent this facility, would still be deficient. The need for the MCP project exists even with implementation of the improvements described above.

S.3 Proposed Action

S.3.1 Alternatives

The MCP Alternatives were developed through a multiple-agency coordination process, working as a collaborative group referred to as the Small Working Group. The Small Working Group includes representatives from the RCTC, FHWA, County



of Riverside, Caltrans District 8, United States Fish and Wildlife Service (USFWS)¹, United States Environmental Protection Agency (EPA), California Department of Fish and Game (CDFG), and the United States Army Corps of Engineers (USACE).

The range of alternatives is intended to meet the requirements for alternatives analysis under the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), Section 404 of the federal Clean Water Act (CWA), and Section 4(f) of the Department of Transportation Act (now codified at 49 United States Code [USC] 303). An initial set of eight alternatives was presented to the public in scoping meetings held in December 2004. This initial set of alternatives was refined in late 2005 after a Value Analysis Study, engineering studies, environmental studies, field work, public scoping meetings, and traffic modeling for the project were completed. The refinements included:

- Two parkway alternatives with alignments north of Lake Mathews (Alternatives 2 and 3) were eliminated as a result of engineering feasibility issues;
- A segment of Alternatives 4 and 6 was rerouted away from the Perris Dam due to dam safety concerns;
- Alternative 8 was renumbered to Alternative 1B (No Action/No Project General Plan Circulation Element Conditions); and
- Alternative 9, the Far South Alternative, which avoids the Metropolitan Habitat Conservation Plan Reserve, was added to the alternatives to be studied.

There is no traffic congestion expected on the Mid County Parkway through the horizon year of 2035. Because there is no congestion, there is no need for high-occupancy vehicle (HOV) lanes as they would not provide any travel benefits. If traffic congestion occurs, the project design does not preclude the addition of HOV lanes.

S.3.1.1 Alternative 1A: No Project/No Action—Existing Ground Conditions

Alternative 1A represents 2035 traffic on the planned street network except for future improvements to Cajalco Road and Ramona Expressway, which would remain as





The USFWS submitted a letter dated December 9, 2005, stating that it will participate in the MCP process informally (i.e., would not provide formal concurrence on the project purpose and need or project alternatives), with a focus on providing technical assistance.

they exist today. Construction of the MCP project would not be implemented with the No Project/No Action Alternative 1A. The future west-east traffic described in the MCP study area would be served by existing Cajalco Road and El Sobrante Road between I-15 and I-215 and by the existing Ramona Expressway between I-215 and SR-79. This alternative assumes 2035 land use conditions and implementation of planned improvements to the regional and local circulation system, as accounted for in the adopted Riverside County General Plan (2003), RCTC's Measure A program, and other adopted plans and policies.

S.3.1.2 Alternative 1B: No Project/No Action—General Plan Circulation Element Conditions

Alternative 1B represents 2035 traffic levels on the planned street network, according to the Circulation Element of the Riverside County General Plan. Construction of the MCP project would not be implemented with No Project/No Action Alternative 1B. This alternative is the same as Alternative 1A but includes implementation of Cajalco Road and Ramona Expressway consistent with the Riverside County General Plan Circulation Element.

Under this alternative, Cajalco Road and Ramona Expressway would be widened to a four- to six- lane arterial street as needed to meet expected traffic demand and provide local access and circulation for existing and planned residential uses in the vicinity of Lake Mathews and Mead Valley. These improvements would result in the construction of a four-lane roadway along Cajalco Road between Bedford Canyon Road and El Sobrante Road and a six-lane roadway along Cajalco Road and Ramona Expressway between El Sobrante Road and SR-79.

S.3.1.3 Alternative 4: South of Lake Mathews/North Perris (Drain)

Alternative 4 proposes a six- to eight-lane, controlled-access parkway with six mixed-flow lanes for most of its length and up to eight mixed-flow lanes near the I-215 interchange. Alternative 4 is located south of Lake Mathews and follows a northern alignment through the city of Perris (as shown later in Chapter 2, Figures 2.4.1a and 2.4.1b). The Alternative 4 alignment is south of existing Cajalco Road west of Lake Mathews Drive and located north of Ramona Expressway from I-215 to east of Redlands Boulevard, where it then follows the Perris Valley Storm Drain to Placentia Avenue. From that point, Alternative 4 continues easterly and parallel to Ramona Expressway to the point where it connects to SR-79.

System interchanges (interchange of traffic to or from controlled access facilities, with one or more grade separation) are proposed for all of the MCP Build Alternatives, including Alternative 4, at MCP/I-15, MCP/I-215, and MCP/SR-79. This alternative includes a realignment of the I-215 mainline to east of the existing location, from Placentia Avenue to just north of Strata Road, approximately 5.8 km (3.6 mi) in length.

Service interchanges (interchange of traffic to or from a local roadway to or from a freeway) are proposed for Alternative 4 at the following locations: (1) a location approximately 2,000 meters (m) (6,560 feet [ft]) east of Temescal Canyon Road (referred to as the Estelle Mountain interchange); (2) Lake Mathews Drive; (3) El Sobrante Road; (4) Wood Road; (5) Alexander Street; (6) Clark Street; (7) Perris Boulevard; (8) Evans Road; (9) Ramona Expressway; (10) Bernasconi Road; (11) Reservoir Road; (12) Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); (13) Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); and (14) Warren Road.

S.3.1.4 Alternative 5: South of Lake Mathews/South Perris (at Rider Street)

Alternative 5 is a six- to eight-lane, controlled-access parkway with six mixed-flow lanes for most of its length and up to eight mixed-flow lanes near the I-215 interchange. Alternative 5 is south of Lake Mathews and follows a southern alignment through the city of Perris along Rider Street (as shown later in Chapter 2 of this EIR/EIS, Figures 2.4.2a and 2.4.2b). The Alternative 5 alignment is south of existing Cajalco Road, west of Lake Mathews Drive, and located south of the Ramona Expressway from I-215 to just west of Antelope Road. From that point, Alternative 5 continues easterly and parallel to Ramona Expressway to the point where it connects to SR-79.

System interchanges proposed for Alternative 5 are the same as Alternative 4, with connections at MCP/I-15, MCP/I-215, and MCP/SR-79. This alternative includes a realignment of the I-215 mainline to east of the existing location, from Placentia Avenue to Ramona Expressway, that is approximately 3,300 m or 3.3 km (10,826 ft or 2.0 mi) in length.

Service interchanges for Alternative 5 are proposed at the following locations: (1) a location approximately 2,000 m (6,560 ft) east of Temescal Canyon Road (referred to



as the Estelle Mountain interchange); (2) Lake Mathews Drive; (3) El Sobrante Road; (4) Wood Road; (5) Alexander Street; (6) Clark Street; (7) Perris Boulevard; (8) Evans Road; (9) Ramona Expressway; (10) Bernasconi Road; (11) Reservoir Road; (12) Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); (13) Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); and (14) Warren Road.

S.3.1.5 Alternative 6: General Plan North and South of Lake Mathews/North Perris (Drain)

Alternative 6 involves the implementation of General Plan Circulation Element improvements between I-15 and El Sobrante Road and a new six- to eight-lane, controlled-access parkway east of El Sobrante Road to SR-79 (as shown later in Chapter 2, Figures 2.4.3a and 2.4.3b). Alternative 6 is the same as Alternative 4 (described above) east of El Sobrante Road and is located north of Ramona Expressway from I-215 to east of Perris Boulevard. West of El Sobrante Road to I-15, the MCP project includes a four-lane urban arterial north of Lake Mathews¹ and a four-lane, controlled-access expressway south of Lake Mathews. The proposed arterial street improvements north and south of Lake Mathews are consistent with the Riverside County General Plan Circulation Element. The facility south of Lake Mathews would be a controlled-access expressway that ties into the same system interchange configuration at I-15 as the other Build Alternatives.

System interchanges are proposed for all of the MCP Build Alternatives, including Alternative 6, at MCP/I-15, MCP/I-215, and MCP/SR-79.

Service interchanges for Alternative 6 are at the same locations as for Alternative 4, even though the location of the MCP alignment south of Lake Mathews is somewhat different than Alternative 4. These interchanges include: (1) Estelle Mountain; (2) Lake Mathews Drive; (3) El Sobrante Road; (4) Wood Road; (5) Alexander Street; (6) Clark Street; (7) Perris Boulevard; (8) Evans Road; (9) Ramona Expressway; (10) Bernasconi Road; (11) Reservoir Road; (12) Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); (13) Park Center Boulevard (new arterial proposed to

The Riverside County General Plan provides for up to six lanes in this location; however, traffic forecast modeling indicates that four lanes will meet projected demand.

be added to the Riverside County General Plan Circulation Element in 2008); and (14) Warren Road.

S.3.1.6 Alternative 7: General Plan North and South of Lake Mathews/South Perris (at Rider Street)

Alternative 7 involves the implementation of General Plan Circulation Element improvements between I-15 and El Sobrante Road and a new six- to eight-lane, controlled-access parkway east of El Sobrante Road to SR-79 (as shown later in Chapter 2 of this EIR/EIS, Figures 2.4.4a and 2.4.4b). Alternative 7 is the same as Alternative 5 (described above) east of El Sobrante Road and follows a southerly alignment through Perris. West of El Sobrante Road to I-15, the Riverside County General Plan includes a four-lane urban arterial north of Lake Mathews and a four-lane, controlled-access expressway south of Lake Mathews. The proposed arterial street improvements north and south of Lake Mathews are consistent with the Riverside County General Plan Circulation Element and are the same as described above for Alternative 6. The facility south of Lake Mathews would be a controlled-access expressway that ties into the same system interchange configuration at I-15 as the other Build Alternatives.

System interchanges are proposed for all of the MCP Build Alternatives, including Alternative 7, at MCP/I-15, MCP/I-215, and MCP/SR-79.

Service interchanges for Alternative 7 are at the same locations as for Alternative 5, even though the location of the MCP alignment south of Lake Mathews is somewhat different than Alternative 5. These interchanges include: (1) Estelle Mountain; (2) Lake Mathews Drive; (3) El Sobrante Road; (4) Wood Road; (5) Alexander Street; (6) Clark Street; (7) Perris Boulevard; (8) Evans Road; (9) Ramona Expressway; (10) Bernasconi Road; (11) Reservoir Road; (12) Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); (13) Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); and (14) Warren Road.

S.3.1.7 Alternative 9: Far South/Placentia Avenue

Alternative 9 is a four- to six-lane, controlled-access parkway south of both Lake Mathews and Mead Valley, a six- to eight-lane, controlled-access parkway between Old Elsinore Road and I-215, and a six- to eight-lane, controlled-access parkway between I-215 and SR-79, where it parallels existing Placentia Avenue and Ramona



Expressway. Alternative 9 is approximately 3.2 km (2.0 mi) south of Cajalco Road for much of its length but shares the same connection to I-15 as Alternatives 4 and 5. The alignment and proposed interchange locations for Alternative 9 are shown later in Chapter 2 of this EIR/EIS, Figures 2.4.5a and 2.4.5b.

System interchanges are proposed for all the MCP Build Alternatives, including Alternative 9, at MCP/I-15, MCP/I-215, and MCP/SR-79. System interchanges at I-15 and SR-79 are the same as proposed for Alternatives 4, 5, 6, and 7. The proposed I-215 system interchange differs from the other MCP Build Alternatives, as it connects the MCP project to I-215 approximately 45 m (150 ft) south of Placentia Avenue. This alternative also includes a realignment of the I-215 mainline to east of the existing location, from south of Orange Avenue to just north of Rider Street, that is approximately 3,000 m or 3.0 km (9,842 ft or 1.8 mi) in length.

Service interchanges for Alternative 9 are proposed: (1) at a location approximately 2,000 m (6,560 ft) east of Temescal Canyon Road (referenced as the Estelle Mountain interchange); (2) Lake Mathews Drive; (3) Old Elsinore Road; (4) Perris Boulevard; (5) Evans Road; (6) Ramona Expressway; (7) Bernasconi Road; (8) Reservoir Road; (9) Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); (10) Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); and (11) Warren Road.

S.3.1.8 Design Variations

The Temescal Wash Area and San Jacinto North design variations apply to all of the MCP Build Alternatives. The Rider Street and Placentia Avenue/Perris Boulevard Elevated Grade design variations only apply to Alternative 9.

Temescal Wash Area (TWS) Design Variation

This is a design variation for the MCP/I-15 interchange that partially removes access to I-15 from El Cerrito Road. In this variation, the I-15/El Cerrito Road interchange southbound on-ramp and northbound off-ramp would be closed. A collector-distributor road system is provided from Weirick Road to Cajalco Road with modifications to the existing Weirick Road, El Cerrito Road, and Ontario Avenue interchanges and the proposed Cajalco Road interchange. A collector-distributor road system would provide an intermediate road or segment that collects and feeds traffic between the MCP and local streets and that would be approximately \$29 million per

mile for the MCP project. This design variation would result in a reduction in cost of the MCP project by \$202.6 million.

San Jacinto North (SJN) Design Variation

The SJN Design Variation extends from 1.32 km (0.82 mi) west of Warren Road east to SR-79. It follows an alignment approximately 347.4 m (1,140 ft) north of the existing Ramona Expressway. This segment also extends approximately 1.48 km (0.92 mi) north of the Ramona Expressway along SR-79 and approximately 1.06 km (0.67 mi) south of the Ramona Expressway along SR-79. This design variation would result in a reduction in cost for the MCP project by approximately \$8.9 million.

Rider Street Design Variation

The Rider Street Design Variation begins approximately 125 m (410 ft) east of Haines Street (west of I-215) and terminates about 87 m (291 ft) west of Dawson Street (east of I-215). This design variation also includes the MCP/I-215 interchange similar to Alternatives 5 and 7, with it extending along I-215 north and south of Rider Street. Based on the cost estimates in the Draft Project Report (Jacobs, 2008), this design variation would result in an increase in cost for Alternative 9 by approximately \$9.6 million. However, during preparation of the Draft Section 4(f) Evaluation, it was found that the Rider Street Design Variation would result in additional construction costs of approximately \$300 million due to the cost to acquire and relocate several large intermodal warehouse facilities in the city of Perris that are planned for construction prior to construction of the MCP. Therefore, the Rider Street Design Variation would result in an increase in cost for Alternative 9 by \$309.6 million.

Placentia Avenue/Perris Boulevard Elevated Grade Design Variation (PP-E)

The Placentia Avenue/Perris Boulevard Elevated Grade (PP-E) Design Variation follows Placentia Avenue at a point approximately 272 m (895 ft) west of Patterson Avenue (west of I-215) and extends east to 87 m (291 ft) west of Dawson Street (east of I-215). This segment includes an MCP/I-215 interchange, extending along I-215, approximately 1,570 m (5,150 ft) north and 1,870 m (6,100 ft) south of Placentia Avenue. For this design variation, the road is elevated above grade approximately 8 m (26 ft) from Barrett Avenue to Wilson Avenue. This design variation would result in a reduction in cost for Alternative 9 by approximately \$63.6 million.

S.3.2 Identification of a Locally Preferred Alternative

As the NEPA lead agency, FHWA will identify a Preferred Alternative after comments are received from the public during release of the Draft EIR/EIS.

As the CEQA lead agency, RCTC believed that identifying a Locally Preferred Alternative in the Draft EIR/EIS allowed for better public disclosure and for the public to focus their review and comment on that alternative. After comparing and weighing the benefits and impacts of all of the MCP alternatives, at its regular meeting of September 12, 2007, the RCTC Commissioners approved identification of Alternative 9 TWS DV as the Locally Preferred Alternative in the Draft EIR/EIS since the technical studies completed for the project demonstrated, as described below, that Alternative 9 TWS DV is the least environmentally damaging alternative to both the natural and human environments.

- Alternative 9 TWS DV impacts the least total acres of least Bell's vireo habitat.
- Alternative 9 TWS DV impacts the least total acres of existing Habitat Conservation Plan lands.
- Alternative 9 TWS DV impacts the least amount of jurisdictional wetlands and nonwetland waters of the United States and CDFG riparian habitat.
- Alternative 9 TWS DV does not pass through the Lake Mathews MSHCP Plan Area.
- Alternative 9 TWS DV would have a benefit to parks and recreational facilities by creating a second park in Perris, resulting in 0.65 hectare (ha) (1.57 acres [ac]) more park acreage in Perris than exists today.
- Alternative 9 TWS DV converts the least amount of farmlands with special designations (i.e., Prime, Unique) to nonagricultural uses.
- Alternative 9 TWS DV has the fewest impacts to farmlands under Williamson Act Preserves.
- Alternative 9 TWS DV impacts the least amount of land, a total of 1,049.2 ha (2,592.7 ac). The other MCP Build Alternatives impact anywhere from 1,065.9 ha (2,634.0 ac) to 1,331.1 ha (3,289.1 ac) of land.
- Alternative 9 TWS DV results in one of the lower number of residential and business relocations. Alternative 9 TWS DV will acquire a total of 401 residential and business parcels; acquisitions required under the other MCP Build Alternatives range from 396 to 672 parcels.
- Alternative 9 TWS DV will impact fewer minority or low-income populations as defined under EO 12898 regarding environmental justice.



- Alternative 9 TWS DV is routed through less populated areas between I-15 and I-215, and therefore would not impact as many sensitive viewers as Alternatives 4 through 7.
- Alternative 9 TWS DV impacts one sacred cultural site as compared to the other MCP Build Alternatives that impact two sacred sites.
- Alternative 9 TWS DV would have the fewest floodplain encroachments of all of the MCP Build Alternatives.
- Alternative 9 TWS DV would be constructed over the fewest number of streams and therefore would have the lowest probability of pollutants entering the waters from bridge construction.
- Alternative 9 TWS DV is one of the lowest in adding new pavement; therefore, it would result in one of the lowest volumes of additional storm water runoff.
- Alternative 9 TWS DV impacts to existing hazardous waste/materials sites are less than the impacts of the other MCP Build Alternatives since a lesser number of hazardous waste/materials sites would be affected.
- Direct human exposure to Mobile Source Air Toxics (MSATs) generated by vehicles on the MCP would be lower for the Alternative 9 TWS DV than Alternatives 4 through 7 since Alternative 9 TWS DV is routed through less populated areas.
- The cost for Alternative 9 TWS DV is less than the other MCP Build Alternatives at \$2.98 billion dollars for construction and \$600 million dollars for engineering, for a total of \$3.58 billion dollars (the next lowest MCP Build Alternative is Alternative 9 base case at \$3.83 billion).

S.4 Joint CEQA/NEPA Document

The project is subject to federal as well as state environmental review requirements because the RCTC proposes the use of federal funds from the FHWA, and the project requires FHWA approval of new connections to the federal Interstate highway system at I-15 and I-215. Project documentation, therefore, has been prepared in compliance with both CEQA and NEPA. The RCTC is the project proponent and lead agency under CEQA and has adopted guidelines for implementing CEQA. FHWA is the lead agency under NEPA, with Caltrans acting as its agent and providing oversight for the NEPA process. The Notice of Intent (NOI) for the MCP project was published in November 2004 (prior to the August 10, 2005, effective date for the Safe, Accountable, Flexible, Efficient Transportation Equity Act [SAFETEA-LU]); therefore, the project is not required to follow the environmental review process required by Section 6002.



USACE is a Cooperating Agency under NEPA for the MCP project, while the County of Riverside, the Cities of Corona, Perris, and San Jacinto, and the CDFG are responsible agencies under CEQA. Following certification of the Final EIR by RCTC and approval of a Record of Decision by FHWA, these agencies intend to adopt the EIR/EIS for purposes of independent CEQA/NEPA compliance responsibilities related to the discretionary state and federal actions, including General Plan Amendments by the County of Riverside and the Cities of Corona, Perris, and San Jacinto or permit approvals by USACE or USFWS. After comments are received from the public and reviewing agencies, the RCTC and the FHWA may undertake additional environmental and/or engineering studies. A Final EIR/EIS will be made available to the public. The Final EIR/EIS will include responses to comments received on the Draft EIR/EIS and will again identify the Preferred Alternative. Following completion of the Final EIR/EIS, if the decision is made to approve the MCP project, a Notice of Determination will be filed with the State Clearinghouse for compliance with CEQA and a Record of Decision will be published in the Federal Register for compliance with NEPA.

S.5 Environmental Consequences

Table S.1 (provided at the end of this Executive Summary) summarizes the impacts documented in the environmental analysis contained in Chapter 3 of this EIR/EIS. The environmental commitments and measures to minimize harm are listed in the Environmental Commitments Record in Appendix F.

S.5.1 Land Use

S.5.1.1 Existing and Future Land Use Build Alternatives

The MCP Build Alternatives will permanently impact existing residential, commercial (retail/office), industrial, transportation (existing roadways), agricultural, and open space (habitat reserves/parklands/undeveloped lands) land uses. Alternative 9 and its design variations have the lowest impact to agricultural, residential, and commercial land uses due primarily to its routing south of Mead Valley through the Gavilan Hills area. Alternatives 4 and 6 have the highest impact to commercial land uses due primarily to the routing of the parkway alignment through some of the commercial areas in the northern portion of the city of Perris as well as Mead Valley. Alternative 9 and its design variations have the highest impact to industrial land uses due to its routing along Placentia Avenue.



In areas where the MCP Build Alternatives are now located off of the alignments of El Sobrante Road, Cajalco Road, or Ramona Expressway, there are some conflicts with land use compatibility (i.e., south of Lake Mathews [Alternatives 4, 5, and 9], Gavilan Hills [Alternative 9], and the Perris area [all Build Alternatives]).

Temporary construction impacts would include disruption of local traffic patterns and access to residences and businesses; increased traffic congestion; and increased noise, vibration, and dust. Although some businesses could close or relocate during a prolonged construction period, this impact would be localized and would not likely result in long-term changes in land use.

No Build Alternatives

Under the MCP No Build Alternatives, the temporary and permanent impacts discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but would occur for the other transportation improvement projects included in the No Build Alternatives.

S.5.1.2 Consistency with State, Regional, and Local Plans Build Alternatives

There are no temporary impacts related to consistency with state, regional, and local plans. Implementation of the MCP project would be consistent with the RTP, as the MCP project is designated as a future transportation corridor in the RTP. Implementation of the MCP project would be consistent with and help further the goals of the Regional Comprehensive Plan (RCP). All of the MCP Build Alternatives will require the County of Riverside and the Cities of Corona, Perris, and San Jacinto to amend their General Plan Land Use and Circulation Elements to reflect the final MCP alignment, interchange locations, and elimination of any land uses that may need to be acquired for the project.

No Build Alternatives

Planned improvements in the regional and local circulation system other than the MCP project are accounted for in the adopted Riverside County General Plan, the RCTC's Measure A program, and other adopted plans and policies, and would not impact any adopted state, regional, or local plans and policies.

S.5.1.3 Parks and Recreational Facilities

Build Alternatives

Under the MCP Build Alternatives, no indirect impacts to parks or recreational facilities would occur as a result of any of the MCP Build Alternatives; however,



direct impacts would occur to two parks: the proposed El Cerrito Sports Park and the existing Paragon Park. All MCP Build Alternatives would use 0.95 ha (2.36 ac) from the planned El Cerrito Sports Park. However, because this is a planned park and not yet constructed, it is anticipated that the sports fields used by the MCP Build Alternatives could be shifted to the east, outside the footprint/right of way of the project.

Paragon Park in Perris is only impacted by Alternative 9. Alternative 9 includes a project design feature to construct a detention basin on the north side of the MCP alignment, east of Redlands Avenue. One of the mitigation measures proposed for Alternative 9 is to develop part of the area occupied by that detention basin with active and passive recreation uses and landscaping to replace the impacted area and facilities at Paragon Park, therefore resulting in a benefit to parks and recreational facilities by creating additional park acreage (0.67 ha [1.57 ac]) in Perris. Pedestrian access between Paragon Park and the park facilities at the detention basin site will be provided across the MCP alignment east of Redlands Avenue to ensure that park users can safely walk or ride bicycles between the two facilities. Additional park space would be provided on the south side of the MCP project, east of Redlands Avenue, using remnants of existing residential parcels that would be acquired for the MCP project.

No Build Alternatives

The MCP No Build Alternatives would not result in adverse impacts on park or recreational resources.

S.5.2 Growth

S.5.2.1 Build Alternatives

Construction of a new transportation facility such as the MCP project could have growth-related effects by reducing or removing barriers to growth by creating conditions that attract additional residents or new economic activity or by providing a catalyst for future growth in the area. However, based on the review of land development trends within the MCP study area, implementation of the MCP project is expected to have little influence on the overall location, amount, rate, or type of growth in the area. The basis for this conclusion is that: (1) the area has been undergoing rapid development since well before the MCP planning (and prior CETAP corridor planning) had begun; (2) the MCP project has been integrated into the overall planning of the area based on the inclusion of the CETAP corridor overlay













in the Riverside County General Plan Circulation Element (the Draft Tier 1 EIS/EIR for the HCLE corridor concluded that Alternatives 1A and 1B, which parallel the MCP alignments, would remove a barrier to implementation of planned land use in the area, but would not result in unplanned growth in the area); and (3) based on RCTC's monthly meetings with the local land use authorities, there has been no indication of developers intensifying or substantially modifying their development proposals in response to the proposed MCP project.

Alternatives 4 through 7 share the same alignment for much of their length; therefore, the overall growth-related impacts are similar for all four alternatives. Land that is private and vacant or underutilized near the proposed MCP service interchanges (i.e., Alexander Street and Clark Street west of I-215 and Perris Boulevard [Alternative 5], Evans Road, Warren Road east of I-215 and Reservoir Road and Perris Boulevard [Alternative 4]) is the most likely area where future development might change in type as a result of interchange access (i.e., roadway commercial uses rather than residential).

Alternative 9 is unique compared to the other MCP Build Alternatives for the segments between the Lake Mathews Drive and Placentia/Rider Streets. While the possibility of growth-related effects is constrained by the topography of the Gavilan Hills, limited access (only two service interchanges in this area), existing land use patterns, and the overall rural character of the Gavilan Hills and Lake Mathews areas and existing reserves such as the Harford Springs Reserve, Motte-Rimrock Reserve, and Lake Mathews-Estelle Mountain Reserve, the Lake Mathews Drive and Old Elsinore Road interchanges could hasten the build out of these areas or result in the introduction of more intense uses than were considered in the adopted Riverside County General Plan.

S.5.2.2 No Build Alternatives

Under the MCP No Build Alternatives, the growth-related effects discussed above for the MCP Build Alternatives would not occur for the MCP project. However, the other transportation improvement projects included in the No Build Alternatives may result in growth-related effects already considered in the Riverside County General Plan. For example, Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway and would, therefore, not result in any unplanned growth-related effects.

S.5.3 Farmlands and Timberlands

S.5.3.1 Build Alternatives

Alternative 7 will result in the greatest conversion of Prime Farmland and Unique Farmland, while Alternative 6 will result in the greatest conversion of Farmland of Statewide Importance. Alternative 9 will result in the conversion of the least amount of Prime Farmland and Unique Farmland, while Alternative 5 will result in the conversion of the least amount of Farmland of Statewide Importance. Overall, Alternative 6 will result in the greatest conversion of designated Farmland, and Alternative 9 will result in the conversion of the least amount of designated Farmland. Alternative 9 impacts the fewest acres of Williamson Act Agricultural Preserves.

Temporary impacts to farmlands as a result of construction of any of the MCP Build Alternatives occur due to the proximity of construction activities to field crops or grazing lands. Fugitive dust emissions from grading and exhaust emissions from construction equipment could have an adverse impact on farmlands immediately adjacent to the construction areas. Noise from construction equipment could startle or otherwise disturb livestock. Agricultural operations could be adversely impacted where the MCP project would bisect existing agricultural parcels of land, impairing the ability of farm equipment to be easily transported from one parcel to another.

S.5.3.2 No Build Alternatives

Under the MCP Build Alternatives, the temporary and permanent impacts discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but impacts to farmlands could result from other transportation improvement projects included in the No Build Alternatives. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway and would therefore result in impacts to farmlands immediately adjacent to those roadways.

S.5.4 Community Impacts and Relocation

S.5.4.1 Community Character and Cohesion

Build Alternatives

The MCP Build Alternatives would result in a physical change that would permanently alter the character of the existing community. The MCP Build Alternatives would cause rerouting and/or closing of several roadways that would intersect the MCP project, which would have a slightly adverse effect on access and travel time for residents living within the vicinity of these improvements. The MCP





Build Alternatives would result in property relocations throughout the MCP study area that would change the affected communities' character by displacing and relocating existing residents and local businesses. Although a disruption of community character and cohesion would occur as a result of construction of the MCP project, the ultimate mobility improvements provided by the project would also benefit the communities by providing an improved connection to other parts of the MCP study area, western Riverside County, and the region as a whole.

Construction of any of the MCP Build Alternatives would temporarily affect local communities. Temporary construction impacts would include disruption of local traffic patterns (traffic diversions due to local road, temporary ramp, and mainline lane closures) and access to residences, businesses, and community facilities; increased traffic congestion; and increased noise, vibration, and dust.

No Build Alternatives

Under the MCP No Build Alternatives, the permanent impacts to community cohesion discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but impacts to communities could result from other transportation improvement projects included in the No Build Alternatives.

S.5.4.2 Relocations

Build Alternatives

The MCP Build Alternatives would result in the acquisition of nonresidential (dairies, agricultural, sod farms, open storage, big box distribution, manufacturing, and retail), residential (mobile homes, single-family, multifamily), and municipal (fire station, police station, school district offices, and high school) properties. Alternative 6 results in the highest number of residential and nonresidential displacements with implementation of the MCP project, and Alternative 9 results in the fewest number of displacements.

The MCP Build Alternatives also result in a loss of total property tax revenue associated with full parcels acquired for the MCP Build Alternatives. Alternative 4 (base case) would result in the greatest property tax revenue loss to the cities and unincorporated Riverside County, and Alternative 9 TWS DV would result in the least.

The MCP Build Alternatives also result in a loss of sales tax revenue. Alternative 7 (base case) results in the greatest estimated annual sales tax revenue loss to the cities,



county, RCTC, and state; and Alternatives 9 PPE DV results in the least, followed by Alternative 9 TWS DV.

No Build Alternatives

Under the MCP No Build Alternatives, the adverse effects resulting from property acquisitions discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but similar effects could occur for the other transportation improvement projects included in the No Build Alternatives.

S.5.4.3 Environmental Justice

Build Alternatives

All MCP Build Alternatives would benefit most study area residents, including minority and low-income populations, by improving mobility and circulation throughout the MCP study area and the western Riverside County region. However, the MCP Build Alternatives will involve the establishment of a parkway through the communities of Mead Valley and Perris. Some Census Tracts within these communities have a higher percentage of non-White persons, a higher percentage of Hispanic population, a higher percentage of persons below the poverty line, and a lower median income compared to the county as a whole and the cities within the MCP study area. Implementation of the MCP project would result in property acquisitions, temporary construction detours, temporary and permanent air and noise impacts, permanent aesthetic impacts, and temporary and permanent changes in travel patterns throughout the study area, including the Mead Valley and Perris areas. Alternatives 4 through 7 have a greater impact on Environmental Justice populations within the MCP study area than Alternative 9 due to their direct impact to low-income and minority populations along Cajalco Road in Mead Valley (within the Old Elsinore Road and Gavilan Hills communities). Alternative 9 does displace residences in the southern portion of Mead Valley, but the total number is lower than that for Alternatives 4 through 7.

Alternatives that would avoid or reduce adverse effects on the low-income and minority populations are not practicable for the MCP project as it is not possible to route the MCP alignments around these populations. That is, for the MCP project to meet its purpose of providing effective and efficient movement between and through Corona, Perris, and San Jacinto, it is not possible to completely avoid those Census Tracts with higher percentages of minority and low-income populations.



No Build Alternatives

Under the MCP No Build Alternatives, the adverse effects to minority and low-income populations discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but similar effects could occur for the other transportation improvement projects included in the No Build Alternatives.

S.5.5 Utilities and Emergency Services

S.5.5.1 Build Alternatives

The MCP Build Alternatives do not include the construction of any residential or commercial uses and therefore would not result in increased population or demand for public services or utilities in the MCP study area. However, the MCP Build Alternatives could have both beneficial and adverse impacts on fire, law enforcement, and emergency services. Beneficial effects include emergency response times, as the ability to move fire, law enforcement, and emergency service resources from one area to another would be enhanced by the improved transportation network. The project would also temporarily result in traffic delays that could affect the ability of fire, law enforcement, and emergency service providers to meet response time goals within a particular alternative. The MCP Build Alternatives could also increase the risk of wildfires in open space areas as a result of cigarette butts or other flammable items being thrown from cars, as well as car fires, and the temporary increase in risk of wildfires due to the use of combustion engines in construction equipment, welding equipment, and other sources of combustion. Non-fire-related medical emergencies could temporarily increase with the presence of construction workers and heavy machinery.

The following are public facilities that would be directly impacted by the MCP Build Alternatives:

- Riverside County Fire Department (RCOFD) Station No. 59, 21510

 Pinewood: This station would be directly impacted by Alternatives 4 through 7.

 The station would need to be relocated to maintain fire protection to the Mead Valley area.
- Corona Fire Department Temescal Public Safety Facility, 3777 Bedford Canyon Road: This facility would be directly impacted by all MCP Build Alternatives, including the TWS Design Variation. All MCP Build Alternatives would result in a direct physical impact to the Temescal Public Safety Facility due to the partial acquisition of the property, primarily the parking area and driveway.



• Station No. 90 (City of Perris/RCOFD/Police Substation), 333 Placentia Avenue: This station will be directly impacted by Alternative 9 (including the PP-E Design Variation). It is proposed to be relocated to the northeast corner of the Redlands Boulevard/Placentia Avenue intersection, only 200 m (650 ft) away from the existing location and would therefore not impact emergency response times within the station's service area.

In addition, there are temporary impacts, relocation, removal and protection in place of various utilities in the MCP study area that are common to all the MCP Build Alternatives and are described in detail in Table 3.5.A.

S.5.5.2 No Build Alternatives

Under the MCP No Build Alternatives, the temporary and permanent impacts to public services and utilities discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but similar impacts could occur for the other transportation improvement projects included in the No Build Alternatives.

S.5.6 Traffic and Transportation/Pedestrian and Bicycle Facilities

S.5.6.1 Build Alternatives

The MCP project would result in temporary and permanent impacts to traffic circulation due to traffic diversions resulting from local road closures and temporary ramp and mainline lane closures.

All MCP Build Alternatives would have a long-term beneficial effect on traffic circulation as most of the freeways, ramps, and intersections within the MCP study area are expected to operate at acceptable LOS in the horizon year of 2035 for all of the Build Alternatives and design variations with the following exception:

 I-15 and I-215 freeway mainlines are expected to experience traffic congestion throughout the entire study area (between SR-91 and Temescal Canyon Road) for all Build Alternatives and design variations.

In addition, all of the MCP Build Alternatives would have an adverse effect on local traffic circulation for residents living south of Lake Mathews in the immediate vicinity of where portions of Cajalco Road would be closed from Gavilan Road to La Sierra Avenue. This closure would result in increased travel times to and from I-15 for some residents in this area.





In addition, the closure of ramps at the I-15/El Cerrito Road interchange will also affect local circulation and travel time. For vehicles traveling northbound from I-15/Cajalco Road to I-15/El Cerrito Road, additional travel time due to these ramp closures is estimated at 1 minute under the full interchange condition and 4.6 minutes with implementation of the half diamond interchange. For vehicles traveling southbound along local streets from the I-15/El Cerrito Road interchange area to I-15/Cajalco Road interchange area, travel time would also be 1 minute under the full interchange condition but would increase to 2.6 minutes with implementation of the half diamond.

=

The MCP project will also provide facilities for bicycles and pedestrians in locations where local streets will cross the MCP, and these facilities will be designed to be consistent with the local General Plan Circulation Element. A Class I (off-road) trail is planned in the Riverside County General Plan Circulation Element for the entire length of Cajalco Road and Ramona Expressway, where the MCP Build Alternatives would remove portions of these two roads. The planned trail will need to be relocated either immediately adjacent to the MCP right of way or to a parallel west-east arterial highway, and mitigation has been identified in Section 3.6 of this EIR/EIS to maintain continuity and connectivity of the regional trail system.

Regional Travel Demand

In the regional travel forecasting model that was used in analyzing the traffic impacts of the MCP project, the future land use forecasts were the same with and without the project. SCAG develops its land use forecasts through analysis of regional trends that do not change when transportation facilities are added or subtracted from the roadway network. Therefore, the overall land use and trip generation at a regional level will remain the same, and no new vehicle trip generation will occur.

Information regarding vehicle miles traveled (VMT) in the MCP study area is shown later in Table 3.6.K in Section 3.6 of this EIR/EIS.

S.5.6.2 No Build Alternatives

Under the MCP No Build Alternatives, the beneficial traffic effects discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but similar effects could occur for the other transportation improvement projects included in the No Build Alternatives.



S.5.7 Visual and Aesthetics

S.5.7.1 Build Alternatives

For all MCP Build Alternatives, long-term impacts would result from the permanent alteration of the visual environment through construction of the highway and associated bridges, interchange structures, retaining walls, and soundwalls. Existing lighting on streets and freeways would be modified or relocated as part of the MCP project, and safety lighting would also be provided along the MCP roadway in existing developed areas and at interchanges. Light and glare would increase as a result of the MCP project in those areas that are currently open space or are rural in character. The MCP Build Alternatives would create new sources of shadow and shade associated with fill slopes, bridges, and other structures. These shade and shadow effects are considered minimal because very few, if any, sensitive viewers would be within shade or shadow footprints.

Short-term visual impacts would occur to sensitive viewers during the construction period, and include views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of the MCP roadway and structures, construction vehicles, and construction staging areas. Construction activities are temporary, and the adverse visual impacts related to construction activity would cease after completion of construction. The effects of vegetation clearing would gradually cease over time as landscaping for the MCP project matures.

S.5.7.2 No Build Alternatives

Alternative 1A would not change the existing visual setting and would, therefore, not create visual impacts to the MCP study area. Therefore, permanent visual impacts in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than for the MCP Build Alternatives.

Under Alternative 1B, the widening of Ramona Expressway between I-215 easterly to SR-79 would include some removal of agricultural land but would not include the construction of any interchange structures in this area. The effects of widening and realigning Cajalco Road and El Sobrante Road in the area from I-15 west to the existing Cajalco Road/El Sobrante Road intersection would result in the same visual effects as MCP Build Alternatives 6 and 7. Through Mead Valley, the widening of Cajalco Road to its General Plan Circulation Element width would result in the removal of mature ornamental vegetation as well as some existing residences and



businesses, but would not include the construction of any interchange structures in this area.

S.5.8 Cultural Resources

S.5.8.1 Build Alternatives

Impacts to cultural resources would result from construction of any of the MCP Build Alternatives. Four resources that are eligible for listing in the National Register of Historic Places (National Register) and California Register of Historical Resources (California Register) are at least partially within the Area of Potential Effect in Alternative 9 TWS DV. These resources and a description of impacts are listed below:

- Alternative 9 TWS DV would result in the physical destruction of the southern third of P-33-1512, with the exception of the southernmost tip. Therefore, there would be an adverse effect to this site (historic property) under Section 106 of the National Historic Preservation Act.
- Alternative 9 TWS DV would result in the physical destruction of roughly the eastern 60 percent of Site 33-1650/33-16687. Therefore, there would be an adverse effect to this site (historic property) under Section 106 of the National Historic Preservation Act.
- Alternative 9 TWS DV would result in the physical destruction of the northeastern 7 percent of P-33-16598. The area that would be impacted is highly disturbed and does not contribute to the overall site eligibility for the National or California Registers. Therefore, the direct effect would not be adverse to the site (historic property) under Section 106 of the National Historic Preservation Act.
- Alternative 9 TWS DV would result in the physical destruction of 95 percent of P-33-16679. Therefore, there would be an adverse effect to this site (historic property) under Section 106 of the National Historic Preservation Act.
- Three additional resources in Alternative 9 TWS DV are recommended for protection and avoidance through designation as ESAs: P-33-1649, P-33-12230, and LSA-JCV531-207. The project would have no adverse effect on properties that are protected by ESAs.

S.5.8.2 No Build Alternatives

While the MCP project would not be built under No Build Alternatives 1A and 1B, impacts to cultural resources could result from construction of the other transportation improvement projects included in the No Build Alternatives.





S.5.9 Hydrology and Floodplains

S.5.9.1 Build Alternatives

Alternative 6 would result in the greatest number of floodplain encroachments (five transverse and five longitudinal). Alternatives 5 and 9 would result in the least number of floodplain encroachments (two transverse and five longitudinal for Alternative 5, and three transverse and four longitudinal for Alternative 9). Floodplain encroachments include:

- Transverse encroachment of the Temescal Wash floodplain associated with the northern bridge over Temescal Wash (Alternatives 6 and 7).
- Transverse encroachment of the Perris Valley Storm Drain (Alternatives 4 and 6 at the Perris Drain (PD) segment, and Alternative 9 at the PP-E and Placentia Avenue/Perris Boulevard Depressed Grade (PP-D) segments.
- Transverse encroachment of the San Jacinto River floodplain west of Lakeview Avenue (all MCP Build Alternatives).
- Longitudinal encroachment of the floodplain of the San Jacinto River at the MCP/SR-79 interchange (all MCP Build Alternatives).
- Transverse encroachment of the Bedford Canyon Wash floodplain between I-15 and Temescal Wash (all MCP Build Alternatives).
- Longitudinal encroachment of the floodplain of Cajalco Creek (Alternatives 4 through 7).

In addition, the MCP project would improve the transportation network in the area and would alleviate existing service interruptions caused by flooding because the MCP facility would be elevated higher than the existing facilities. The MCP project would result in a minimal increase in flood heights and flood limits; however, this is a minimal increase and would not result in any substantial change in flood risks or damage to life or property.

S.5.9.2 No Build Alternatives

While the MCP project would not be built under No Build Alternatives 1A and 1B, impacts to floodplains could result from construction of the other transportation improvement projects included in the No Build Alternatives that could result in floodplain encroachment. New roadway projects such as the SR-79 Realignment project would likely result in similar impacts to existing floodplains as those identified for the MCP Build Alternatives, while projects that widen existing facilities



(e.g., I-15 Widening and I-215 Widening projects) are less likely to result in any floodplain encroachments.

The MCP No Build Alternatives would not have the beneficial effect of alleviating existing transportation service interruptions caused by flooding. Although some projects included in the MCP No Build Alternatives may enhance the ability to move fire protection and emergency service resources from one area to another, they would not provide the benefit of a regional transportation facility like the MCP project.

S.5.10 Water Quality and Storm Water Runoff

S.5.10.1 Build Alternatives

Within the project area, surface water either drains to the San Jacinto River, which discharges into Canyon Lake and ultimately into Lake Elsinore, or to Temescal Wash, which flows to the Santa Ana River (Reach 3) and ultimately the Pacific Ocean. The primary receiving waters for all MCP Build Alternatives (Temescal Wash and the San Jacinto River) are not listed as impaired on the 2002 or 2006 303(d) impaired waters list for California. However, storm water runoff from all MCP Build Alternatives would eventually reach waters listed on the 303(d) list or have a Total Maximum Daily Load (TMDL). Lake Elsinore, Reach 3 of the Santa Ana River, and Canyon Lake are all listed as impaired on the California 303(d) list. A TMDL has been adopted for Lake Elsinore and Canyon Lake for nitrogen and phosphorus. Development of a TMDL for bacteria in Reach 3 of the Santa Ana River is currently under way and is awaiting approval by the EPA. Alternatives 6 and 7 and their design variations would be constructed over the greatest number of streams and therefore would have the greatest opportunity for pollutants to enter the waters during bridge construction. Alternative 9 and its design variations cross the fewest number of streams and therefore would have the least opportunity for pollutants to enter the waters during bridge construction.

Total new pavement area varies from 152 to 180 ha (376 to 445 ac) in the San Jacinto Watershed and from 131 to 177 ha (324 to 437 ac) in the Santa Ana River Watershed, depending on the alternative. In the two watersheds combined, Alternatives 4 and 5 would add 311 ha (769 ac) of new pavement, Alternatives 6 and 7 would add 357 ha (882 ac) of new pavement, and Alternative 9 would add 299 ha (739 ac) of new pavement. The MCP project would not increase industrial discharges.

Implementation of the project would require new cut-and-fill slopes, which could increase erosion potential. When possible, new slopes would be 1:4 or flatter. In





mountainous areas, slopes would be 1:2 or flatter. Acreage of existing slopes that are 1:2 or greater, where erosion could be the greatest, is 18.6 ha (45.9 ac) for Alternative 4, 17.9 ha (44.2 ac) for Alternative 5, 22.5 ha (55.5 ac) for Alternative 6, 21.8 ha (53.9 ac) for Alternative 7, and 35.9 ha (88.7 ac) for Alternative 9.



Nitrate and total phosphorus loading are anticipated to increase post-project compared with existing conditions; however, nitrate and total phosphorus concentrations are anticipated to decrease. Copper, lead, and zinc loadings are anticipated to increase with implementation of the MCP project. With implementation of the mitigation measures presented in Section 3.10 of this EIR/EIS, no adverse impacts to water quality are anticipated to result from implementation of the MCP project.

S.5.10.2 No Build Alternatives

For Alternative 1A, Treatment and Design Pollution Prevention Best Management Practices (BMPs) would be constructed for other planned roadway improvement projects consistent with Caltrans and State Water Resources Control Board (SWRCB) policies and guidelines; however, because Cajalco Road and Ramona Expressway would remain as they are today, runoff from these roadways would remain untreated. Under Alternative 1B, water quality impacts would be expected to be similar for the MCP Build Alternatives because Treatment and Design Pollution Prevention BMPs would be implemented under both scenarios.

S.5.11 Geology, Soils, Seismic, and Topography

S.5.11.1 Build Alternatives



Each of the Build Alternatives would alter existing landforms due to grading and construction of various cut-and-fill slopes. The geologic and geotechnical impacts of Alternative 9 are greater than the impacts of the other MCP Build Alternatives due to the higher quantities of grading. More extensive landform alteration also occurs under Alternative 9 due to its alignment through the Gavilan Hills and the area south of Lake Mathews near Monument Peak.

The roadway, structures, slopes, and other features of the MCP Build Alternatives could be impacted by ground motion and liquefaction, and possibly ground rupture (deformation) to some degree. Design and construction of the proposed project to current highway and structure design standards would minimize the impact of these conditions to the MCP Build Alternatives.

Construction activities may also temporarily disturb soil outside the facility footprint, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased potential for soil erosion. Furthermore, the construction activities associated with the proposed Build Alternatives could be impacted by ground motion and liquefaction, and possibly ground rupture (deformation) to some degree if an earthquake were to occur during construction.

S.5.11.2 No Build Alternatives

For Alternatives 1A and 1B, the impacts discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but earthquake and seismic safety concerns would be issues that would be analyzed as part of the environmental and engineering studies for the other transportation improvement projects included in the No Build Alternatives. The grading and use of cut-and-fill slopes required for the MCP project would not occur under the No Build Alternatives.

S.5.12 Paleontology

S.5.12.1 Build Alternatives

Direct impacts to paleontological resources would result from construction of any of the MCP Build Alternatives, not from operation of the facility itself. Paleontological resource sensitivity is high for all MCP Build Alternatives. In addition, the MCP project increases human presence afforded by access, which creates opportunities for increased disturbance to paleontological resources.

S.5.12.2 No Build Alternatives

Although the MCP project would not be built under the No Build Alternatives, impacts to paleontological resources could result from construction of the other transportation improvement projects included in the No Build Alternatives.

S.5.13 Hazardous Waste and Materials

S.5.13.1 Build Alternatives

All MCP Build Alternatives would result in a potential for hazardous materials spills as a result of traffic accidents on the MCP roadway. In addition, vehicles traveling on the MCP roadway may transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources. However, transport of hazardous materials is subject to strict regulations. In addition, Caltrans, the California Highway Patrol, and local police and fire departments are trained in emergency response procedures

for safely responding to accidental spills of hazardous substances on public roads, which further reduces impacts. Also, the MCP project would be designed to current safety standards, which would reduce the possibility of accidents compared to older roadways that are not designed to current standards. Therefore, implementation of the MCP project would not result in a substantial permanent adverse impact related to hazardous waste and materials.

Hazardous materials may also be encountered during temporary activities (i.e. excavation and construction activities) for all MCP Build Alternatives. Based on the findings of the records search and the site survey when compared to other alternatives, Alternatives 6 and 7 have more sites within and immediately adjacent to the project footprint, and Alternative 9 has the fewest hazardous materials sites within and immediately adjacent to the project footprint.

S.5.13.2 No Build Alternatives

For Alternatives 1A and 1B, hazardous materials similar to those for the MCP Build Alternatives could be encountered during construction and improvement of the other transportation projects in the MCP study area.

S.5.14 Air Quality

S.5.14.1 Build Alternatives

Long-term mobile emissions associated with the MCP Build Alternatives would be lower than the MCP No Build Alternatives due to improved traffic flow in the project area under the MCP Build Alternatives. Direct human exposure to MSATs generated by vehicles on the MCP roadway would be lower for Alternative 9 than for Alternatives 4 through 7 since Alternative 9 is routed through less populated areas.

Short-term air pollutant emissions would occur as a result of construction activities and would include fugitive dust from grading/site preparation, equipment exhaust, and use of emulsified asphalt paving materials.

S.5.14.2 No Build Alternatives

Although the MCP project would not be built under the No Build Alternatives, construction-related air quality impacts could result from one of the other transportation improvement projects included in the No Build Alternatives.







S.5.15 Noise

S.5.15.1 Build Alternatives

All MCP Build Alternatives will result in increased traffic noise adjacent to the MCP project alignment. A total of 237 sensitive receptor locations were selected to represent the existing land uses in the MCP project area. Of the 237 receptor locations modeled, 88 receptor locations for Alternative 4, 85 receptor locations for Alternative 5, 81 receptor locations for Alternative 6, 79 receptor locations for Alternative 7, and 65 receptor locations for Alternative 9 would approach or exceed the Noise Abatement Criteria (NAC) under the future worst-case conditions.

Soundwalls were analyzed for all receptor locations that would be exposed to or would continue to be exposed to traffic noise levels that approach or exceed the NAC. Eighteen (18) soundwalls were analyzed and determined to be feasible (i.e., they could achieve a noise reduction of 5 decibels [dB] or more) for Alternative 4, as well as 17 soundwalls analyzed for Alternative 5, 17 soundwalls analyzed for Alternative 6, 16 soundwalls analyzed for Alternative 7, and 12 soundwalls analyzed for Alternative 9. Two (2) soundwalls were determined to be reasonable (i.e., they met Caltrans criteria for cost effectiveness) for Alternatives 4 through 7, and 3 soundwalls were determined to be reasonable for Alternative 9. A final decision to construct noise abatement will be made upon completion of the project design.

There is also short-term noise that would occur during construction of the MCP project that would be from construction crew commutes, the transport of construction equipment and materials to the project site, excavation, grading, pile driving, and roadway construction.

S.5.15.2 No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. As with the MCP project, noise abatement measures for sensitive receptors impacted by increases in traffic noise would be considered for all future projects.



S.5.16 Energy

S.5.16.1 Build Alternatives

Under the MCP Build Alternatives, there would be an irreversible impact from the consumption of diesel fuel (and other fuels) related to these construction activities. However, it is unlikely that the increased energy demands of construction of the proposed project would create a noticeable impact to regional energy consumption.

Implementation of the MCP Build Alternatives would result in an increase in fuel consumption (i.e., up to a 3.9 percent increase) within the MCP study area as a result of increased VMT. This VMT increase in the MCP study area would be almost entirely offset by VMT reductions in other parts of the SCAG region due to rerouting of vehicle trips from other highways. Within the SCAG region, the MCP project's increase in fuel consumption would be negligible (i.e., an increase of 0.04 percent or less depending upon the alternative). When balancing energy used during construction and operation against energy conserved by relieving congestion and other transportation efficiencies, the project would not have substantial energy impacts. Therefore, implementation of any of the MCP Build Alternatives would not result in a substantial increase in fuel consumption.

S.5.16.2 No Build Alternatives

For Alternatives 1A and 1B, the energy consumption discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but energy consumption would occur for the other transportation improvement projects included in the No Build Alternatives. Additionally, there would be increased energy consumption compared to the MCP Build Alternatives due to lack of energy savings from relieving congestion.

S.5.17 Natural Communities

S.5.17.1 Build Alternatives

Permanent direct impacts to MSHCP riparian/riverine areas by alternative are the greatest for Alternative 7 SJN DV (27.6 ha [67.6 ac]) and the least for Alternative 9 RD DV (12.4 ha [29.7 ac]).



Permanent direct impacts to other natural communities range between 158.5 ha (391.7 ac) and 185.3 ha (457.9 ac) with Alternative 6 as the most impacting and Alternative 5 the least impacting.

The least impact to the MSHCP Criteria Area would occur with Alternatives 4 and 5, 154.3 ha (381.4 ac) and 164.6 ha (406.8 ac), respectively. Greater impacts would occur with Alternatives 6, 7, or 9.

Alternative 9 would have the least impact to the MSHCP Cores and Linkages, followed by Alternatives 4 and 5. Alternatives 6 and 7 would have the greatest impact.

Alternative 9 would have the least impact to Public/Quasi-Public lands followed by Alternatives 4 and 5. Alternatives 6 and 7 would have the greatest impact to Public/Quasi-Public lands.

Alternative 9, located south of Lake Mathews, does not pass through the Lake Mathews MSHCP area; therefore, there would be no direct impacts to lands or species within the Lake Mathews MSHCP Plan Area by this alternative. However, there would still be indirect and cumulative impacts to the Lake Mathews MSHCP Plan Area. The proposed alignments of Alternatives 4 through 7 and their design variations pass through conserved lands within the Lake Mathews MSHCP Plan Area.

Alternatives 6 and 7 do not impact the El Sobrante Landfill MSHCP. Alternative 9 would impact 8.9 ha (22.1 ac) of the El Sobrante Landfill MSHCP Plan Area, and Alternatives 4 and 5 would each impact 9.1 ha (22.4 ac) of the El Sobrante Landfill MSHCP Plan Area.

The Lake Mathews-Estelle Mountain Stephens' Kangaroo Rat Reserve would be impacted by the project. Alternatives 6 and 7 would result in the greatest impact (221.3 ha [546.8 ac]), and Alternative 9 would result in the least impact (69.4 ha [171.5 ac]).

Temporary impacts to natural communities may occur during construction where habitats are temporarily disturbed during grading or other activities. Temporary impacts to MSHCP riparian/riverine areas range between 2.4 ha (6.0 ac) for Alternative 9 RD DV and 5.7 ha (14.1 ac) for Alternative 6 base case and TWS DV.

S.5.17.2 No Build Alternatives

Alternative 1A would generally result in fewer impacts to natural communities than any of the proposed Build Alternatives since the MCP project would not be built and no improvements would be made to Cajalco Road or Ramona Expressway.

Alternative 1B would generally result in fewer impacts than the Build Alternatives





since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as Build Alternatives 6 and 7 since these alternatives implement the General Plan roadway alignments in this area.

S.5.18 Wetlands and Other Waters of the United States



S.5.18.1 Build Alternatives

Alternative 9 would result in fewer permanent impacts to both CDFG riparian habitat and streambeds, and wetlands and nonwetland waters of the United States under USACE jurisdiction, followed by Alternatives 4 and 5, and then Alternatives 6 and 7. Alternative 9 RD DV would result in the fewest temporary impacts to CDFG riparian habitat and streambeds, and Alternative 6 would result in the greatest impacts. Alternative 5 SJN DV would result in the fewest temporary impacts to wetlands and nonwetland waters of the United States under USACE jurisdiction, and Alternative 6 would result in the greatest impacts.

S.5.18.2 No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, there would be no permanent impacts to jurisdictional waters along these roadways under Alternative 1A.



Under Alternative 1B, permanent impacts to wetlands and other waters would be expected to be less than the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway.

S.5.19 Plant Species

S.5.19.1 Build Alternatives

Alternatives 4, 5, and 9 would result in 3.07 ha (7.58 ac) of direct impacts to areas inferred to have long-term conservation value for many-stemmed dudleya (*Dudleya multicaulis*). This "worst case" conclusion may change upon completion of surveys scheduled for completion in late 2008. A shared portion of Alternatives 4, 5, and 9 has been realigned in order to avoid all currently known locations of many-stemmed dudleya. Alternatives 6 and 7 would result in 0.01 ha (0.02 ac) of direct impacts to areas inferred to have long-term conservation value for this species.



All MCP Build Alternatives would result in 0.84 ha (2.08 ac) of direct impacts to areas of long-term conservation value for smooth tarplant (*Centromadia pungens* ssp. *laevis*) and 0.63 ha (1.55 ac) of direct impacts to areas of long-term conservation value for Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) since the recorded populations of these species are within the SJ Segment, which is common to all five Build Alternatives.

Temporary impacts to plant species may occur during construction where habitats are temporarily disturbed during grading or other activities.

S.5.19.2 No Build Alternatives

Alternative 1A would generally result in fewer impacts to plant species than any of the proposed Build Alternatives since the MCP project would not be built and no improvements would be made to Cajalco Road or Ramona Expressway.

Alternative 1B would generally result in fewer impacts to plant species than the Build Alternatives since it would widen Cajalco Road and Ramona Expressway.

S.5.20 Animal Species

S.5.20.1 Build Alternatives

Burrowing owls (*Athene cunicularia hypugaea*) were not observed within Alternatives 4 through 7; therefore, direct and indirect impacts to burrowing owls along these alternatives are not anticipated. Impacts to occupied burrowing owl burrows from Alternative 9 (Far South Segment) were avoided by minimization of the project footprint. The Alternative 9 Rider Street Design Variation, however, would result in 1.6 ha (4.0 ac) of direct impacts to burrowing owl foraging habitat and burrows occupied by two pairs and six juveniles.

All of the MCP Build Alternatives and design variations would directly impact approximately 16.2 ha (40.0 ac) of Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) occupied habitat suitable for long-term conservation in the vicinity of the San Jacinto River just east of Lake Perris and the San Jacinto River area near the MCP/SR-79 interchange.

Temporary impacts to animal species may occur during construction where habitats are temporarily disturbed during grading or other activities.



S.5.20.2 No Build Alternatives

Because Cajalco Road and Ramona Expressway would remain as they are today, there would be no permanent impacts to special-status animal species along these roadways under Alternative 1A. Under Alternative 1B, permanent impacts to special-status animal species would be expected to be less for the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway.

S.5.21 Threatened and Endangered Species

S.5.21.1 Build Alternatives

All MCP Build Alternatives would directly impact 0.31 ha (0.77 ac) of area suitable for long-term conservation value for spreading navarretia (*Navarretia fossalis*).

Alternatives 4, 5, and 9 would result in 3.07 ha (7.58 ac) of direct impacts to areas inferred to be occupied by Munz's onion pending completion of survey reports in late 2008. Alternatives 6 and 7 would result in 0.01 ha (0.02 ac) of direct impacts to areas inferred to be occupied by Munz's onion.

Alternatives 6 and 7 do not impact Final Critical Habitat for the coastal California gnatcatcher (*Polioptila californica californica*). Alternatives 4 and 5 would result in 13.6 ha (33.5 ac) impacts to Final Critical Habitat for the coastal California gnatcatcher and Alternative 9 results in 16.2 ha (40.1 ac) impacts.

All MCP Build Alternatives will impact 1.2 ha (2.9 ac) of critical habitat for San Bernardino kangaroo rat. The MCP project will not result in any impact to the 2007 proposed critical habitat for San Bernardino kangaroo rat. In addition, within the MSHCP survey area for this species, the MCP project will directly impact 0.4 ha (1.0 ac) of San Bernardino kangaroo rat occupied habitat suitable for long-term conservation under all of the alternatives and design variations, except the SJN DV that will impact 0.3 ha (0.8 ac).

According to the MSHCP, the Quino checkerspot butterfly (*Euphydryas editha quino*) is determined to be extirpated from the Lake Mathews area; thus, direct impacts are not anticipated to this species. However, impacts to final designated Quino checkerspot butterfly critical habitat would consist of between 56.6 ha (140.0 ac) for Alternatives 6 and 7 and 132.6 ha (327.6 ac) for Alternative 9.

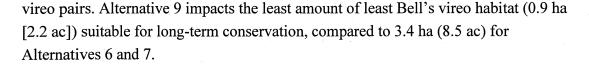
Alternatives 4 through 7 would each impact five nesting pairs/individual least Bell's vireo (*Vireo bellii pusillus*) and Alternative 9 would impact two nesting least Bell's













Impacts to the Stephens' Kangaroo Rat Reserve would range between 68.3 ha (168.7 ac) and 218.7 ha (540.3 ac) by impacting portions of the Lake Mathews MSHCP Plan Area and Lake Mathews-Estelle Mountain Reserve.

S.5.21.2 No Build Alternatives

No impacts to threatened and endangered species in the vicinity of Cajalco Road and Ramona Expressway would occur under Alternative 1A. Under Alternative 1B, permanent impacts to threatened and endangered species would be less than for the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway.

S.5.22 Invasive Species

S.5.22.1 Build Alternatives

The construction of the MCP Build Alternatives could spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway. During the operation of the MCP facility, vehicles using the facility also have the potential to spread invasive species; however, these impacts would be minimal since areas adjacent to the facility will be landscaped with native species that should outcompete the invasive species.

S.5.22.2 No Build Alternatives

The construction of other projects included in the No Build Alternatives would have similar potential to spread invasive species as described in the Build Alternatives above.

S.5.23 Cumulative Impacts

Cumulative impacts (both direct and indirect) were identified by comparing the impacts of the proposed MCP project and other past, current, or proposed actions in the area to establish whether, in the aggregate, they could result in cumulative environmental impacts. The analysis included review of adopted plans and related projects that may, in concert with the proposed MCP project, have a cumulative



adverse effect on sensitive resources in the MCP study area and western Riverside County. Adopted plans that will direct future growth, development, and open space preservation include the Riverside County General Plan, the General Plans of the three affected cities—Corona, Perris and San Jacinto—and the western Riverside County MSHCP. Historical land use trends were examined along with recent development proposals and transportation projects in the MCP study area.

The Riverside County General Plan EIR provides a comprehensive assessment of environmental impacts that would result from the build out of General Plan land uses and infrastructure. The MSHCP is a regional plan that serves to provide mitigation for cumulative impacts to biological resources. Cumulative impact conclusions for the MCP were based on the project's compliance and consistency with the General Plans and the MSHCP. Section 3.25 of this EIR/EIS contains a detailed cumulative impact analysis for the MCP project.

The MCP project would not contribute to cumulative adverse impacts related to growth, community impacts/relocations, and hydrology and floodplains.

The MCP project, when combined with the other anticipated cumulative projects, would contribute to a cumulative loss of farmlands, visual/aesthetics, cultural resources, paleontological resources, natural communities, wetlands and other waters, plant species, animal species, and threatened and endangered species.

S.5.24 Section 4(f) Properties

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

• There is no prudent and feasible alternative to using that land; and



• The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) properties used by one or more of the MCP Build Alternatives include:

- El Cerrito Sports Park
- Lake Mathews-Estelle Mountain Reserve
- El Sobrante Landfill MSHCP Plan Area
- Paragon Park
- Cajalco Tin Mine District (P-33-4759/H)
- Cajalco Creek Site (P-33-13791)
- Multi-Use Prehistoric Site (P-33-16598)

Table S.2 (provided at the end of this Executive Summary, following Table S.1) summarizes the use impacts of the MCP Alternatives on each Section 4(f) property. It identifies which alternatives result in use impacts at each Section 4(f) property, including the total area used by each alternative. Table S.3 describes the proposed measures to minimize harm for each Section 4(f) property.

S.6 Summary of Significant Impacts under CEQA after Mitigation

As discussed in detail in Chapter 4, California Environmental Quality Act (CEQA) Evaluation, the following impacts of the proposed MCP Build Alternatives were determined to be significant, adverse, and unavoidable after implementation of the identified avoidance, minimization, and mitigation measures, as well as project design features:

- Aesthetics
- Agricultural resources
- Archaeological resources
- Hydrology
- Consistency with applicable Habitat Conservation Plans and MSHCPs
- Long-term noise
- Long-term traffic on one segment of I-15 and at the I-215/Van Buren Boulevard interchange



The remaining impacts of the MCP Build Alternatives were determined to be either not significant or to be avoided or reduced to below a level of significance based on implementation of the project avoidance, minimization, and mitigation measures and project design features, as described in detail in Chapter 4.

S.7 Areas of Controversy and Unresolved Issues

During the scoping process, a number of individuals and at least one community group have raised objections to the MCP Build Alternatives due to their concerns regarding impacts related to residential and business displacements, community character (e.g., loss of rural qualities in areas such as Lake Mathews and Gavilan Hills), noise, air quality, and biological resources.

The MCP, as a CETAP corridor under the RCIP, involves consideration of a complex set of interrelated issues. Local and federal decision-makers (RCTC and FHWA, respectively) must balance the need to provide transportation infrastructure to serve a growing populace with the need to preserve natural resources and improve environmental quality. While no specific unresolved issues are noted at this time for the MCP project, there will likely be a number of specific issues identified through the public review of this Draft EIR/EIS that will require resolution prior to approval of the Final EIR/EIS.

S.8 Coordination with Public and Other Agencies

Early and continuing coordination with the general public and the MCP partner agencies (RCTC, FHWA, Caltrans, USACE, EPA, County of Riverside, City of Corona, City of Perris, and the City of San Jacinto) is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project has been accomplished through a variety of formal and informal methods, including: the MCP website (http://www.midcountyparkway.org/), public scoping meetings held in late 2004 and August 2005, continued coordination with MCP partner agencies, project development team meetings (involving RCTC, Caltrans, the County, and the affected cities), meetings with other agencies and interested parties, and ongoing consultation with Native American tribes. Chapter 5 summarizes the results of the FHWA, Caltrans, and RCTC's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

The permits, reviews, and approvals listed in Table S.4 are anticipated to be required for the proposed MCP project.

This page intentionally left blank

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
Land Use	No impact	Less impact than MCP	• 1,127.6 hectares	• 1,094.3 ha (2,704.1	• 1,331.1 ha (3,289.1	• 1,297.8 ha (3,206.9	• 1,067.1 ha (2,636.9	LU-1 During construction, the construction contractor shall
		Build Alternatives	(ha) (2,786.2 acres	ac) of land use	ac) of land use	ac) of land use	ac) of land use	be required by the Riverside County Transportation
			[ac]) of land use	impacts (base	impacts (base	impacts (base	impacts (base	Commission (RCTC) to maintain pedestrian access to
			impacts (base	case).	case).	case).	case).	adjacent land uses the construction area throughout
			case).	Inconsistent with	Inconsistent with	 Inconsistent with 	Inconsistent with	the construction period. If existing access points are
			Inconsistent with	Land Use Policy LU	Land Use Policy LU	Land Use Policy LU	Land Use Policy	disrupted, alternative access will be provided.
			Land Use Policy LU	16.4 of the Riverside	16.4 of the Riverside	16.4 of the Riverside	16.4 of the Riverside	Appropriate signage and temporary sidewalks will be
			16.4 of the Riverside	County General	County General	County General	County General	provided as needed throughout construction, and the
			County General	Plan, which	Plan, which	Plan, which	Plan, which	construction contractor shall provide and maintain
•			Plan, which	encourages	encourages	encourages	encourages	appropriate signage to direct both pedestrian and
			encourages	conservation of	conservation of	conservation of	conservation of	vehicular traffic to businesses via alternate routes.
			conservation of	agricultural lands.	agricultural lands.	agricultural lands.	agricultural lands.	Disabled access, consistent with the requirements of
			agricultural lands.	 Inconsistent with 	 Inconsistent with 	 Inconsistent with 	 Inconsistent with 	the Americans with Disabilities Act, shall also be
			 Inconsistent with 	Land Use Policy	Land Use Policy	Land Use Policy	both the Mead	maintained during construction.
a de la companya de l			Land Use Policy	MVAP 1.1 of the	MVAP 1.1 of the	MVAP 1.1 of the	Valley and Lake	LLL 2 During construction the Diverside Country
			MVAP 1.1 of the	Mead Valley Area	Mead Valley Area	Mead Valley Area	Mathews/Woodcrest	LU-2 During construction, the Riverside County Transportation Commission (RCTC) shall require one
			Mead Valley Area	Plan, which	Plan, which	Plan, which	Area Plans, as it	or more public information field office(s) near the
			Plan, which	promotes	promotes	promotes	traverses areas	construction site(s) be established. The field
			promotes	maintenance of a	maintenance of a	maintenance of a	designated for	office(s) will serve the following purposes:
			maintenance of a	minimum lot size of	minimum lot size of	minimum lot size of	very-low-density and	office(s) will serve the following purposes.
		. •	minimum lot size of	0.2 ha (0.5 ac).	0.2 ha (0.5 ac).	0.2 ha (0.5 ac).	rural residential	Provide the community and businesses with a
			0.2 ha (0.5 ac).	Conflicts with Policy	Conflicts with Policy	Conflicts with Policy	uses.	physical location where information pertaining to
			Conflicts with Policy	1.12.1 in City of	1.12.1 in City of	1.12.1 in City of	Conflicts with Policy	construction can be obtained in both English and
			1.12.1 in City of	Corona General	Corona General	Corona General	1.12.1 in City of	Spanish
			Corona General	Plan, which provides	Plan, which provides	Plan, which provides	Corona General	Enable RCTC staff to facilitate communication
			Plan, which provides	for the continuation	for the continuation	for the continuation	Plan, which provides for the continuation	between RCTC staff and residents and business
			for the continuation	of existing and development of new	of existing and	of existing and development of new	of existing and	operators
		e e e e e e e e e e e e e e e e e e e	of existing and development of new	manufacturing,	development of new manufacturing,	manufacturing,	development of new	 Notify property owners, residents, and businesses of
			manufacturing,	research and	research and	research and	manufacturing,	major construction activities (e.g., utility relocation/
			research and	development, and	development, and	development, and	research and	disruption, rerouting of delivery trucks) at least 14
			development, and	professional office	professional office	professional office	development, and	days prior to the disruption
			professional office	uses.	uses.	uses.	professional office	Respond to phone inquiries
			uses.	 Inconsistent with the 	 Inconsistent with the 	Inconsistent with the	uses.	Coordinate business outreach programs
			Inconsistent with the	designated	designated	designated	Inconsistent with the	The state of the s
			designated	roadways and land	roadways and land	roadways and land	designated	LU-3 Following approval of the Mid County Parkway
		•	roadways and land	uses (residential,	uses (residential,	uses (residential,	roadways and land	(MCP) project, the Riverside County Transportation
			uses (residential,	commercial, and	commercial, and	commercial, and	uses (residential,	Commission (RCTC) shall request that the County of
			commercial, and	industrial) shown in	industrial) shown in	industrial) shown in	commercial, and	Riverside and the Cities of Corona, Perris, and San
			industrial) shown in	the City of San	the City of San	the City of San	industrial) shown in	Jacinto amend their respective General Plans to reflect
			the City of San	Jacinto General	Jacinto General	Jacinto General	the City of San	the final MCP alignment, interchange locations, and
			Jacinto General	Plan and City of	Plan and City of	Plan and City of	Jacinto General	modification of land use designations for property that
			Plan and City of	Perris General Plan.	Perris General Plan.	Perris General Plan.	Plan and City of	will be acquired for the project.
			Perris General Plan.	El Cerrito Sports	El Cerrito Sports	El Cerrito Sports	Perris General Plan.	
			El Cerrito Sports	Park (TWS DV	Park (TWS DV	Park (TWS DV	Paragon Park	LU-4 Prior to completion of final design of the Mid County
			Park (TWS DV	eliminates use)	eliminates use)	eliminates use)	El Cerrito Sports	Parkway (MCP) project, the Riverside County
			eliminates use)		/		Park (TWS DV	Transportation Commission (RCTC) shall require
			· · · · · · · · · · · · · · · · · · ·		1 1		eliminates use)	replacement of the land used from Paragon Park,
							,	providing replacement park acreage and facilities east
								of Redlands Avenue and immediately north and south
								of the MCP alignment. Pedestrian access between
								Paragon Park and the new park facilities would be
		The second of th	l · · · · · · · · · · · · · · · · · · ·					provided across the MCP alignment east of Redlands





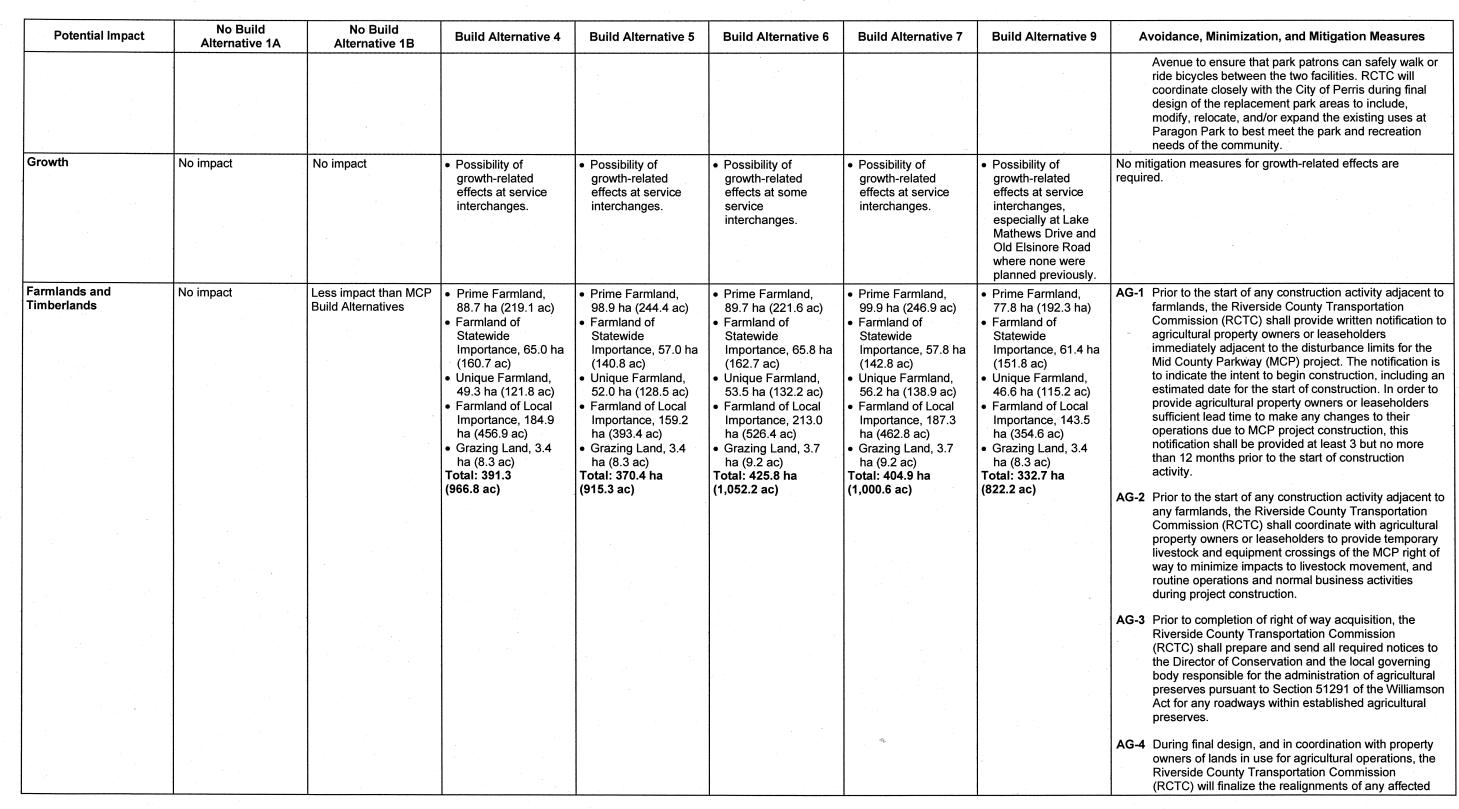


Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								access roads to provide equipment crossings to minimize impediments to routine agricultural operations and normal business activities that may result from long-term project operation.
Community Impacts and Relocation (including Environmental Justice)	No impact	Less impact than MCP Build Alternatives	Rerouting and/or closed portions of roadways that would intersect the MCP project. Impacts to rural residential communities: 292 non-residential property displacements 351 residential property displacements 1,799 occupants displaced Impacts 37% of non-White population, 36% Hispanic population, and 13% population below poverty line. Property tax revenue loss of \$1,094,340.	Rerouting and/or closed portions of roadways that would intersect the MCP project. Impacts to rural residential communities: 268 non-residential property displacements 305 residential displacements 1,580 occupants displaced Impacts 38% of non-White population, 37% Hispanic population, and 14% population below poverty line. Property tax revenue loss of \$1,037,102. Sales tax loss of	Rerouting and/or closed portions of roadways that would intersect the MCP project. Impacts to rural residential communities: 333 non-residential property displacements 36 residential displacements 1,753 occupants displaced Impacts 37% of non-White population, 36% Hispanic population, and 13% population below poverty line. Property tax revenue loss of \$1,090,846. Sales tax loss of	Rerouting and/or closed portions of roadways that would intersect the MCP project. Impacts to rural residential communities: 309 non-residential property displacements 290 residential property displacements 1,534 occupants displaced Impacts 38% of non-White population, 37% Hispanic population, and 14% population below poverty line. Property tax revenue loss of \$1,033,608.	Rerouting and/or closed portions of roadways that would intersect the MCP project. Impacts to rural residential communities: 268 non-residential property displacements 210 residential property displacements 1,329 occupants displaced Impacts 38% of non-White population, 37% Hispanic population, and 14% population below poverty line. Property tax revenue loss of \$1,006,698.	All property acquisition and relocation for the MCP Build Alternatives will be handled in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 (Public Law 91-646, 84 Stat. 1894).
Utilities and Emergency Services	No impact	Less impact than MCP Build Alternatives	Sales tax loss of \$10,454,339. Utilities that could be impacted at locations where lines and facilities are within and adjacent to the disturbance limits would be relocated or protected in place. Riverside County Fire Department (RCOFD) Station No. 59, 21510 Pinewood: relocated to maintain fire protection to the Mead Valley area. Corona City Fire	\$11,054,450. Utilities that could be impacted at locations where lines and facilities are within and adjacent to the disturbance limits would be relocated or protected in place. RCOFD Station No. 59, 21510 Pinewood: would need to be relocated to maintain fire protection to the Mead Valley area. Corona City Fire	• Utilities that could be impacted at locations where lines and facilities are within and adjacent to the disturbance limits would be relocated or protected in place. • RCOFD Station No. 59, 21510 Pinewood: would need to be relocated to maintain fire protection to the Mead Valley area. • Corona City Fire	Sales tax loss of \$14,705,072. Utilities that could be impacted at locations where lines and facilities are within and adjacent to the disturbance limits would be relocated or protected in place. RCOFD Station No. 59, 21510 Pinewood: would need to be relocated to maintain fire protection to the Mead Valley area. Corona City Fire	Sales tax loss of \$6,788,970. Utilities that could be impacted at locations where lines and facilities are within and adjacent to the disturbance limits would be relocated or protected in place. Corona City Fire Department Temescal Public Safety Facility, 3777 Bedford Canyon Road: partial acquisition of the property, primarily to the parking area and	
			Mead Valley area. Corona City Fire Department	Corona City Fire Department Temescal Public	Corona City Fire Department Temescal Public	Corona City Fire Department Temescal Public	property, primarily to the parking area and driveway	



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
			Temescal Public Safety Facility, 3777 Bedford Canyon Road: partial acquisition of the property, primarily to	Safety Facility, 3777 Bedford Canyon Road: partial acquisition of the property, primarily to the parking area and	Safety Facility, 3777 Bedford Canyon Road: partial acquisition of the property, primarily to the parking area and	Safety Facility, 3777 Bedford Canyon Road: partial acquisition of the property, primarily to the parking area and	Station No. 90 (City of Perris/RCOFD/ Police Substation), 333 Placentia Avenue: relocated to the northeast corner	finalize the relocation of the loss of parking area if it cannot be accommodated on site. The driveway and facility will remain operational after the partial acquisition. U&ES-2 Fire Protection. During construction in areas
			the parking area and driveway.	driveway.	driveway.	driveway.	of the Redlands Avenue/Placentia Avenue intersection.	subject to wildfires as determined by the Riverside County Fire Department (RCOFD), the Riverside County Transportation Commission (RCTC) shall require the contractor to install signs around construction sites warning of high fire risk and of area closings during the high fire season as declared by RCOFD.
								U&ES-3 Fire Protection. During construction, the construction contractor will be required to maintain access by emergency personnel to any existing fire roads as identified and used by the Riverside Cour Fire Department (RCOFD).
								U&ES-4 Fire Protection. During final design, the long-term preservation/provision of access to the existing fire road grid for the Riverside County Fire Department (RCOFD) will be incorporated by the Riverside County Transportation Commission (RCTC) in the facility design, in consultation with RCOFD, California Department of Transportation (Caltrans), and local jurisdictions.
								U&ES-5 Fire Protection. During construction, the contract will implement fuel modification techniques as required by the Riverside County Fire Department (RCOFD) in areas of fire hazard as determined by the RCOFD.
								U&ES-6 Fire Protection. To minimize the risk of wildfire during construction, the construction contractor sh ensure that all construction vehicles are equipped with fire extinguishers and shovels, and that all construction equipment is inspected to ensure that they are in compliance with minimum fire safety standards. Inspections by the construction contractor will be documented in weekly reports to the Riverside County Transportation Commission (RCTC).
		AM						U&ES-7 Fire Protection. Prior to completion of final design the Riverside County Transportation Commission (RCTC) shall provide brush management zones in areas adjacent to existing reserves, the Multiple Species Habitat Conservation Plan (MSHCP) Conservation Area, and other undeveloped lands in accordance with Section 6.4 the MSHCP.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								U&ES-8 Fire, Emergency Medical, and Law Enforcement. Prior to completion of final design, emergency call boxes will be identified on project plans and installed during construction along the Mid County Parkway (MCP) roadway in undeveloped areas of high and extreme fire hazard consistent with existing Riverside County Fire Department (RCOFD), California Department of Transportation (Caltrans), and/or local jurisdictions' policies on emergency call boxes.
								U&ES-9 Fire, Emergency Medical, and Law Enforcement. Prior to and during construction, the Riverside County Transportation Commission (RCTC) and the construction contractor will coordinate all temporary ramp closures and detour plans with fire, emergency medical, and law enforcement providers to minimize temporary delays in emergency response times as part of the Traffic Management Plan identified in Mitigation Measure TR-2, including the identification of alternative routes and routes across the construction areas for emergency vehicles developed in coordination with the affected agencies.
								U&ES-10 Utilities. During final design, the Riverside County Transportation Commission (RCTC) shall prepare utility relocations plans for utilities anticipated to be relocated, in consultation with the affected utility provider/owners. The Project Engineer will seek: (1) to avoid utility relocations; (2) if relocation is necessary, to relocate utilities across the MCP right of way or within other existing public right of ways and/or easements; (3) if relocation outside of existing or proposed public right of way and/or easements, to relocate in such a manner as to minimize environmental impacts as a result of construction and ongoing maintenance and repair activities.
Traffic and Transportation/ Pedestrian and Bicycle Facilities	No impact	While some intersections would improve in level of service (LOS), several intersections would still be below the acceptable LOS standard for the MCP project.	 Most of the freeways, ramps, and intersections within the study area are expected to operate at acceptable LOS in the horizon year of 2035. Interstate 15 (I-15) and Interstate 215 (I-215) freeway mainlines are expected to 	 Most of the freeways, ramps, and intersections within the study area are expected to operate at acceptable LOS in the horizon year of 2035. I-15 and I-215 freeway mainlines are expected to experience traffic congestion 	Most of the freeways, ramps, and intersections within the study area are expected to operate at acceptable LOS in the horizon year of 2035. I-15 and I-215 freeway mainlines are expected to experience traffic congestion	Most of the freeways, ramps, and intersections within the study area are expected to operate at acceptable LOS in the horizon year of 2035. I-15 and I-215 freeway mainlines are expected to experience traffic congestion	I-15 and I-215 freeway mainlines are expected to experience traffic congestion throughout the entire study area (between SR-91 and Temescal Canyon Road) for all Build Alternatives and design variations. I-15 will experience	TR-1 During final design, the Riverside County Transportation Commission (RCTC) shall conduct a study to determine the most beneficial and cost-effective transportation improvements that will mitigate the traffic impacts of the Mid County Parkway (MCP) project on Interstate 15 (I-15) and on the I-15/State Route 91 (SR-91) interchange. Prior to the



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
			experience traffic	throughout the	throughout the	throughout the	during a.m. and p.m.	for this mitigation measure is to achieve level of service
			congestion	entire study area	entire study area	entire study area	peak-hour traffic for	(LOS) D or better on this section of I-15.
		-	throughout the	(between SR-91 and	(between SR-91 and	(between SR-91 and	the Locally	
			entire study area	Temescal Canyon	Temescal Canyon	Temescal Canyon	Preferred Alternative	Potential improvements are listed below for the three
			(between State	Road) for all Build	Road) for all Build	Road) for all Build	(Alternative 9	separate facilities that would be substantially impacted
			Route 91 [SR-91]	Alternatives and	Alternatives and	Alternatives and	Temescal Wash	by the project, the I-15 mainline, the I-15 northbound to
			and Temescal	design variations.	design variations.	design variations.	Area Design	SR-91 westbound ramp, and the SR-91 eastbound to
a series			Canyon Road) for all	Closure of Cajalco	Closure of Cajalco	Closure of Cajalco	Variation [TWS	I-15 southbound ramp:
			Build Alternatives	Road from Gavilan	Road from Gavilan	Road from Gavilan	DV]).	
		•	and design	Road to La Sierra	Road to La Sierra	Road to La Sierra	Closure of Cajalco	 Potential I-15 Mainline Improvements
			variations.	Avenue. To reach	Avenue. To reach	Avenue. To reach	Road from Gavilan	 Provide an additional general purpose lane in each
	1		Closure of Cajalco	I-15, residents in	I-15, residents in	I-15, residents in	Road to La Sierra	direction of travel from the Ontario Avenue
			Road from Gavilan	Lake Mathews	Lake Mathews	Lake Mathews	Avenue. To reach	interchange to the SR-91 interchange. This
			Road to La Sierra	Estates near	Estates near	Estates near	I-15, residents in	improvement would provide level of service
			Avenue. To reach	Cajalco Road would	Cajalco Road would	Cajalco Road would	Lake Mathews	(LOS) F conditions in 2035 with a density of 57.6
			I-15, residents in	need to travel east	need to travel east	need to travel east	Estates near	vehicles per mile per lane (vpmpl) with the project
			Lake Mathews	to the MCP/Lake	to the MCP/Lake	to the MCP/Lake	existing Cajalco	and mitigation, as compared to the 2035 No Build
			Estates near	Mathews Drive	Mathews Drive	Mathews Drive	Road would need to	condition of LOS F and a density of 73.0 vpmpl.
			Cajalco Road would	interchange	interchange	interchange	travel either south to	 Provide an additional high occupancy toll
		-	need to travel east	(increase in travel	(increase in travel	(increase in travel	access the MCP	(HOT) lane in each direction of travel from the
			to the MCP/Lake	time by	time by	time by	project or north on	Ontario Avenue interchange to the SR-91
			Mathews Drive	approximately 5	approximately 5	approximately 5	El Sobrante Road to	interchange. This improvement would provide LOS
			interchange	minutes).	minutes).	minutes).	access Cajalco	F conditions in 2035 with a density of 68.3 vpmpl
			(increase in travel	 Closure of Ramps at 	Closure of Ramps at	 Closure of Ramps at 	Road to the west	with the project and mitigation, as compared to the
			time by	El Cerrito Road	El Cerrito Road	El Cerrito Road	(increase in travel	2035 No Build condition of LOS F and a density of
			approximately 5	interchange will	interchange will	interchange will	time by	73.0 vpmpl.
			minutes).	affect local	affect local	affect local	approximately 10	 Convert the planned high occupancy vehicle
		<u> </u>	Closure of Ramps at	circulation and	circulation and	circulation and	minutes).	(HOV) lanes proposed for the I-15 freeway to HOT
			El Cerrito Road	increase travel time	increase travel time	increase travel time	Closure of Ramps at	lanes, and add an additional HOT lane in each
			interchange will	both under the fill	both under the fill	both under the fill	El Cerrito Road	direction of travel from the Ontario Avenue
			affect local	and half diamond	and half diamond	and half diamond	interchange will	interchange to the SR-91 interchange. The overall
	1		circulation and	interchanges.	interchanges.	interchanges.	affect local	result would be to provide two HOT lanes in each
			increase travel time	Relocate Class I	Relocate Class I	Relocate Class I	circulation and	direction of travel. This improvement would provide
			both under the fill	(off-road) trail along	(off-road) trail along	(off-road) trail along	increase travel time	LOS F conditions in 2035 with a density of 65.4
			and half diamond	Cajalco	Cajalco	Cajalco	both under the fill	vpmpl with the project and mitigation, as compared
			interchanges.	Road/Ramona	Road/Ramona	Road/Ramona	and half diamond	to the 2035 No Build condition of LOS F and a
			Relocate Class I	Expressway where	Expressway where	Expressway where	interchanges.	density of 73.0 vpmpl.
			(off-road) trail along	Alternative removes	Alternative removes	Alternative removes	The Van Buren	
			Cajalco	portions.	portions.	portions.	Boulevard and I-215	Potential I-15 Northbound to SR-91 Westbound
			Road/Ramona				northbound ramp	Ramp Improvements
			Expressway where				intersection is	 Widen the ramp to provide a continuous two-lane
			Alternative removes				projected to operate	connection from I-15 northbound to SR-91
			portions.				at LOS E during	westbound. This improvement would provide
							p.m. peak-hour	LOS E conditions in 2035 with a density of
							2035 conditions	44.0 vpmpl with the project and mitigation, as
							under Alternative 9.	compared to the 2035 No Build condition of LOS F
							Relocate Class I (off road) trail class	and a density of 86.5 vpmpl.
					The state of the state of		(off-road) trail along	 Provide a direct HOV-to-HOV connector from I-15
							Cajalco	northbound to SR-91 westbound. This
							Road/Ramona	improvement would provide LOS F conditions in
							Expressway where	2035 with a density of 74.8 vpmpl with the project
							Alternative removes	and mitigation, as compared to the 2035 No Build
· · ·							portions.	condition of LOS F and a density of 86.5 vpmpl.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								 Provide a direct HOT-to-HOT connector from I-15 northbound to SR-91 westbound. This improvement would provide LOS F conditions in 2035 with a density of 70.4 vpmpl with the project and mitigation, as compared to the 2035 No Build condition of LOS F and a density of 86.5 vpmpl.
								 Potential SR-91 Eastbound to I-15 Southbound Ramp Improvements Widen the ramp to provide an additional general
								purpose lane. This improvement would provide LOS D conditions in 2035 with a density of 32.6 vpmpl with the project and mitigation, as
								compared to the 2035 No Build condition of LOS F and a density of 48.1 vpmpl. Provide a direct HOV-to-HOV connector from SR-91 eastbound to I-15 southbound. This
								improvement would provide LOS E conditions in 2035 with a density of 41.6 vpmpl with the project and mitigation, as compared to the 2035 No Build condition of LOS F and a density of 48.1 vpmpl.
								Provide a direct HOT-to-HOT connector from SR-91 eastbound to I-15 southbound. This improvement would provide LOS E conditions in 2035 with a density of 39.1 vpmpl with the project
								and mitigation, as compared to the 2035 No Build condition of LOS F and a density of 48,1 vpmpl.
								TR-2 Prior to construction, the Riverside County Transportation Commission (RCTC) will prepare a Traffic Management Plan (TMP) in consultation with the California Department of Transportation (Caltrans) and
								affected local jurisdictions that will consist of, but not be limited to, the following standard measures to alleviate traffic inconvenience caused by construction activities.
								 Traffic Control: This project will require traffic control elements such as lane/shoulder closures and temporary signing/striping on Interstate 15 (I-15) and Interstate 215 (I-215).
								Construction Zone Enhanced Enforcement Program (COZEEP): Through coordination with Caltrans and the California Highway Patrol (CHP), this program was developed to provide a safer work
								zone for both construction workers and the motoring public. The program uses two CHP officers who enforce lane closures and also provide a visual deterrent to errant/speeding vehicles.
								Public Awareness Campaign (PAC): Although the majority of the major closures will occur at night, vehicles traveling through the construction zone will likely experience longer than normal delays. To
								reduce these delays and confusion to the monitoring

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								public during construction activities, the RCTC will implement a PAC. The purpose of the PAC is to keep the surrounding community abreast of the project's progress and construction activities that
								could affect their travel plans. Mailers/flyers, local newspaper advertising, local radio information, public meetings, a project Web site, and e-mail, as appropriate, will be used to disseminate this information.
								Signing: Post information signing on I-15, I-215, and the local arterials prior to and during construction to inform motorists of delays, ramp or lane closures, and alternate travel routes.
								 Pedestrian Access: Provide a pedestrian detour plan to accommodate sidewalk closures. Business Access: Provide a plan to maintain access to businesses.
								 Haul Routes: Identification of designated haul routes in consultation with the affected local jurisdictions. Haul Routes: Limiting construction truck and haul
								traffic to designated routes only. Construction scheduling (start/stop times, major materials deliveries, export hauling, etc.): Shall be scheduled to avoid a.m. and p.m. peak traffic periods on adjacent streets so that the majority of
								construction-related traffic occurs outside of peak commuting times. • Signage: Coordinate with Caltrans and local agencies to ensure that signage for haul routes, detour routes, and public information is consistent.
								TR-3 Prior to completion of final design, the Riverside County Transportation Commission (RCTC) will coordinate with each affected local jurisdiction to determine an appropriate rerouting of any planned trail that would be impacted by the Mid County Parkway (MCP) project. Rerouting of trails shall be done to maintain continuity and connectivity of the regional trail system.
Visual and Aesthetics	No impact	No impact	Short-term visual impacts would occur to sensitive viewers during the construction period, and include views of	Short-term visual impacts would occur to sensitive viewers during the construction period, and include views of	Short-term visual impacts would occur to sensitive viewers during the construction period, and include views of	Short-term visual impacts would occur to sensitive viewers during the construction period, and include views of	Short-term visual impacts would occur to sensitive viewers during the construction period, and include views of	VIS-1 Prior to construction, the Riverside County Transportation Commission (RCTC) will locate construction and staging areas within public rights of way and within the maximum project disturbance footprint defined for the Mid County Parkway (MCP).
			and include views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of the MCP roadway and	and include views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of the MCP roadway and	and include views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of the MCP roadway and	and include views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of the MCP roadway and	and include views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of the MCP roadway and	VIS-2 Prior to construction, the Riverside County Transportation Commission (RCTC) will prepare a landscape plan that will be incorporated into the final design of the Mid County Parkway (MCP) project. RCTC or local entities will be responsible for long-term maintenance of the roadside landscaping until such time as California Department of Transportation

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
Potential Impact			structures, construction vehicles, and construction staging areas. • Long-term impacts resulting from the permanent alteration of the visual environment through construction of the highway and associated bridges, interchange structures, retaining walls, and sound walls.	structures, construction vehicles, and construction staging areas. Long-term impacts resulting from the permanent alteration of the visual environment through construction of the highway and associated bridges, interchange structures, retaining walls, and sound walls.	structures, construction vehicles, and construction staging areas. • Long-term impacts resulting from the permanent alteration of the visual environment through construction of the highway and associated bridges, interchange structures, retaining walls, and sound walls.	structures, construction vehicles, and construction staging areas. • Long-term impacts resulting from the permanent alteration of the visual environment through construction of the highway and associated bridges, interchange structures, retaining walls, and sound walls.	structures, construction vehicles, and construction staging areas. Long-term impacts resulting from the permanent alteration of the visual environment through construction of the highway and associated bridges, interchange structures, retaining walls, and sound walls. Greater adverse impact due to the higher grading quantities and amount of cut-and-fill slopes required to construct Fewer impacts to sensitive viewers than Alternatives 4 through 7.	(Caltrans) assumes responsibility for the MCP if it is designated as a State Highway. Highway planting is warranted on new highways where adjacent properties are developed at the time the highway is accepted. The Landscape Plan shall be submitted for review by the Caltrans District 8 Landscape Architect. The Caltrans District 8 Landscape Architect shall approve the parts of the Landscape Plan applicable to State Highway right of way. The landscape plan will include the following components: • Incorporation of applicable procedures and requirements as detailed in the publication Caltrans Highway Design Manual, Section 902.1, Planting Guidelines (November 2001), and any applicable local agency requirements. • Identification of areas within the project limits for revegetation, including landscaping for graded areas with plant species consistent with adjacent vegetation and enhancement of new project structures (ramps, sound walls, and retaining walls). • Planting of trees, shrubs, and groundcover along the MCP and at interchange locations to enhance the existing visual planting character of the area. • Planting of drought-resistant plants along the MCP so as to be consistent with Metropolitan Water District guidelines, which promote the use of xeric (adapted to arid conditions) landscaping techniques. The irrigation design and implementation practices will also conform to the water conservation measures established in Assembly Bill 325, the Water Conservation in Landscaping Act of 1990 (in effect January 1, 1993). Plants shall also be durable in relation to urban pollutants such as smog. • Incorporate soil erosion control planting (groundcover, native grasses, wildflowers) into the embankments and within the areas of steeper slopes. Vegetation planted adjacent to walls will not be highly sensitive to shadow and shade. All plantings will be drought-resistant and, in areas where shade occurs for most of the day, shadow-resistant to ensure plant longevity and the
								sustainable use of water resources. Incorporate slope rounding and contour grading to minimize the slopes and visually soften grade changes.
								VIS-3 Prior to completion of the final design, the Riverside County Transportation Commission (RCTC) will require that the Project Engineer minimize removal of existing mature trees. If removal of mature trees cannot be



Table S.1 Summary of Impacts

incoprorated rint the final design. The nation of any trees removed shall be detected consultation with the California Department Architect. VISA Plant to completion of the final design, the California Califo	Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
County Transportation Commission (RK that the Project Engineer incorporate at medians, and other visually pleasing he project design. VIS-8 Prior to completion of the final design, I. County Transportation Commission (RK easthetic enhancements for soundwalls design. The design of soundwalls requirements, and other pertinent stand and caller of the completion of the pertinent stand of Caltrans is plantage of the county and a caller of the county and called the county and county a									avoided, additional landscape improvements will be incorporated into the final design. The replacement ratio of any trees removed shall be determined in consultation with the California Department of Transportation (Caltrans) District 8 Landscape Architect.
County Transportation Commission (R aesthetic enhancements for soundwalls design. The design of soundwalls require with California Department of Transport (Califans) standards for sound attenuat requirements, and other perfinent stand design of soundwalls requires complian Caltrans Highway Design Manual stand aesthetic treatments shall be reviewed District & Landscape Architect shall approve the soundwalls within State Highway right coundwalls within State Highway right coundwalls while State Highway right coundwalls shall include the following for a strate of the provide an expression of the regions place. Attractive, decorative elements such shall be incorporated into soundwalls to increase the visual quality of the a provide an expression of the regions place. Where landscaping can be accommended to the provide and expression of the regions place. Where landscaping can be accommended to the provide and the supperare coundwalls, and deter graffit. WIS-6 Prior to completion of the final design, to County Transportation Commission (R caesthetic enhancements for retaining we project design, Attractive, decorative elements and treatment wall design, active and the provide an expression of the area and to provide an expression of the farea and to provide an expression of the area and the provide an expression of the area and the provide an expression of the area and the provide an expression of the area and									VIS-4 Prior to completion of the final design, the Riverside County Transportation Commission (RCTC) will require that the Project Engineer incorporate attractive walls, medians, and other visually pleasing hardscape in the project design.
requirements, and other pertinent stand design of soundwalls requires complian Caltrans Highway Dissipn Manual state the treatment shall and astehetic treatment shall an use reviewed District Teatments Anchitect. The All Eandscape Architect Archi									VIS-5 Prior to completion of the final design, the Riverside County Transportation Commission (RCTC) will include aesthetic enhancements for soundwalls in the final design. The design of soundwalls requires compliance with California Department of Transportation (Caltrans) standards for sound attenuation, safety
soundwalls within State Highway right of soundwalls shall include the following fe Attractive, decorative elements such shall be incorporated into soundwall to increase the visual quality of the a provide an expression of the region a provide an expression of the region a place." • Where landscaping can be accomme public right of way, areas in front of so be landscaped, including trees, shrull (depending upon the space available visual monotony, soften the appeara soundwalls, and deter graffiti. VIS-6 Prior to completion of the final design, it County Transportation Commission (RG aesthetic enhancements for retaining we project design. Attractive, decorative elected in card at shall be incorporated into archite treatment wall design to increase the vient area and to provide an expression of the appearance of the provide an expression of the provide a									requirements, and other pertinent standards. The design of soundwalls requires compliance with the Caltrans <i>Highway Design Manual</i> standards and aesthetic treatments shall be reviewed by the Caltrans District 8 Landscape Architect. The Caltrans District 8
provide an expression of the regiona place." • Where landscaping can be accommon public right of way, areas in front of some be landscaping upon including trees, shrull (depending upon in the space available visual monotony, soften the appearance soundwalls, and deter graffiti. VIS-6 Prior to completion of the final design, the County Transportation Commission (RC) aeesthetic design. Attractive, decorative elevational project design. Attractive decorative elevational project design attractive decorative elevation decorative elevation de attractive decor									soundwalls within State Highway right of way. The soundwalls shall include the following features: • Attractive, decorative elements such as local art shall be incorporated into soundwall design in order
VIS-6 Prior to completion of the final design, to County Transportation Commission (RC aesthetic enhancements for retaining we project design. Attractive, decorative electrocal art shall be incorporated into archite treatment wall design to increase the victory the area and to provide an expression of									provide an expression of the regional "sense of
treatment wall design to increase the vi									soundwalls, and deter graffiti. VIS-6 Prior to completion of the final design, the Riverside County Transportation Commission (RCTC) will include aesthetic enhancements for retaining walls in the project design. Attractive, decorative elements such as local art shall be incorporated into architectural
County Parkway (MCP) or interchange on-ramps will require compliance with C									treatment wall design to increase the visual quality of the area and to provide an expression of the regional "sense of place." The retaining walls along the Mid County Parkway (MCP) or interchange off- and on-ramps will require compliance with California Department of Transportation (Caltrans) standards for

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								VIS-7 Prior to completion of final design, a lighting plan will be prepared by the Riverside County Transportation Commission (RCTC) for approval by California Department of Transportation (Caltrans) District 8 in areas under state jurisdiction and for approval by the County or the affected Cities within their jurisdictions. The lighting fixtures will be designed to minimize glare on adjacent properties and into the night sky. Lighting will be shielded with nonglare hoods and focused within the Mid County Parkway (MCP) project right of way.
								VIS-8 Prior to completion of final design, a Mid County Parkway (MCP) Corridor Master Plan will be prepared by the Riverside County Transportation Commission (RCTC). In preparing the MCP Corridor Master Plan, RCTC shall coordinate with the County and affected Cities for the portions of the project within their
								respective jurisdictions. RCTC shall also involve the California Department of Transportation (Caltrans) in the Context Sensitive design process for the MCP Corridor Master Plan. The MCP Corridor Master Plan will include a design template for aesthetic features applied to any structures throughout the MCP corridor.
Cultural Resources	No import	L coo impost then	Number	Number				The purpose of the MCP Corridor Master Plan is to create consistency in aesthetic design throughout the length of the MCP corridor. The Master Plan will be designed in conjunction with the landscape plan for the MCP.
Outural Resources	No impact	Less impact than MCP Building Alternatives	Number of Historic Properties/Historical Resources: 2 Built Environment Resources significant under CEQA 2 National Register eligible archeological resources that are also sacred	Number of Historic Properties/Historical Resources: 1 Built Environment Resource significant under CEQA 2 National Register eligible archeological resources that are also sacred	Number of Historic Properties/Historical Resources: 2 Built Environment Resources significant under CEQA 3 National Register eligible archeological resources 2 sacred sites	Number of Historic Properties/Historical Resources: 1 Built Environment Resource significant under CEQA 3 National Register eligible archeological resources 2 sacred sites	Number of Historic Properties/Historical Resources: Tesources in Alternative 9 TWS DV are assumed eligible for National Register and are recommended for protection and avoidance through	 AR-1 During final design, the Riverside County Transportation Commission (RCTC), in consultation with California Department of Transportation (Caltrans), State Historic Preservation Officer (SHPO), and interested Native American tribes shall prepare an Archaeological Monitoring Plan (AMP). The AMP shall establish procedures for archaeological resource surveillance, and procedures for temporarily halting or redirecting work to permit identification, sampling, and evaluation of archaeological resources. At a minimum, the AMP shall: Require an archaeologist to be present during
			sites	sites.			designation of Environmentally Sensitive Areas (ESAs). 4 resources are eligible for the National Register. 1 Built Environment Resource significant under CEQA	 construction activities in native soils; Require a Native American representative to be present during construction activities in native soils; Require the archaeologist and tribal representative to be present at the pre-grading conference to explain the established procedures in the AMP; Establish a protocol for the discovery of new archaeological resources; Requires that the protocol for the unanticipated discovery of human remains is followed. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
							1 sacred site	and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner shall be contacted. Pursuant to PRC Section 5097.98 and California Code of Regulations
								Section 15064.5, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendant (MLD). At
								this time, the person who discovered the remains will contact the District Environmental Branch Chief or the District Native American Coordinator (Gwyn Alcock, 909/383-4045) 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;
								 Require monthly archaeological monitoring status reports; Require a final archaeological monitoring report; Establish a curation facility for collected
								 archaeological material; and Maintain Environmentally Sensitive Areas (ESAs) during construction near three sites (P-33-1649, P-33-12230, and LSA-JCV531-S-207) as detailed in the ESA Action Plan.
								P-33-1512. The ability and nature of avoidance and minimization of adverse effects to Site P-33-1512 are not known at this time; therefore, mitigation measures
								are proposed based on current Alternative 9 Temescal Wash Area Design Variation (TWS DV) plans.
								 Prior to the start of construction at this location, data recovery shall be conducted at this site for all portions of the site within the area of potential effects (APE). Although the southern tip of the site is south of, and not within, the right of way, data recovery
								shall be conducted here because of the loss of physical and legal continuity between the northern (66 percent of the total site area) and southern (10 percent of the total site area) portions of the site. The
								data recovery shall attempt to exhaust all research potential that Site P-33-1512 has to offer. Methods shall include, but not be limited to, 1-square-meter units, surface collection grids, extensive research
								into site function, settlement patterns, etc. Nondestructive, noncollection, and nonexcavation mapping and analysis shall be conducted in the northern 66 percent of the site in order to adequately
								characterize the entire site in data recovery. Native American tribes shall be consulted throughout the data recovery process. Disposition arrangements shall be agreed to prior to initiating any data
								recovery efforts.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								The portion of the site that is adjacent and north of
	A Company of the Company							the proposed Alternative 9 right of way shall be
•								further protected with the designation of an ESA in accordance with the Caltrans Section 106
•		,						Programmatic Agreement. The northern 66 percent
								of the site shall be protected from any possible
								project impacts via the use of fencing during project
						,		construction and the presence of an archaeological
								monitor and a Native American monitor. No
								collection or excavation shall be conducted here
					· .			unless plans change to include disturbance of this area.
			<i>#</i>					aica.
								P-33-1650/P-33-16687. The ability and nature of
							2	avoidance and minimization of adverse effects to Site
								P-33-1650/P-33-16687 are not known at this time.
							1	Therefore, mitigation measures are proposed based of
			,					current Alternative 9 TWS DV plans.
								Driver to the start of construction at this leasting date
								 Prior to the start of construction at this location, data recovery shall be conducted at this site for all
		W Company						portions of the site within the right of way (the
	. " , " ,							eastern 60 percent of the total site area). The data
								recovery shall attempt to exhaust all research
								potential that Site P-33-1650/P-33-16687 has to
								offer. Methods shall include, but not be limited to,
								1-square-meter units, surface collection grids,
								extensive research into site function, settlement
								patterns, etc. Nondestructive, noncollection, and nonexcavation mapping and analysis shall be
								conducted in the western 40 percent of the site in
								order to adequately characterize the entire site in
								data recovery. Native American tribes shall be
								consulted throughout the data recovery process.
								Disposition arrangements shall be agreed to prior to
								initiating any data recovery efforts.
								The portion of the site that is adjacent to the proposed Alternative Origint of way shall be further. The portion of the site that is adjacent to the site of the site
	a comment							proposed Alternative 9 right of way shall be further protected with the designation of an ESA in
		the state of the s						accordance with the Caltrans Section 106
								Programmatic Agreement. The western half of the
								site shall be protected from any possible project
			la de la martina de la companya della companya della companya de la companya della companya dell					impacts via the use of fencing during project
								construction and the presence of an archaeological
								monitor and a Native American monitor. No
								collection or excavation shall be conducted here
								unless plans change to include disturbance of this area.
								alca.
								P-33-16598. The following mitigation is proposed for
								Site P-33-16598 based on direct effects to the portion
				100				of the site that is in Alternative 9 TWS DV.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
						•		The portion of the site that is adjacent to the proposed Alternative 9 right of way shall be further protected with the designation of an ESA in accordance with the Caltrans Section 106 Programmatic Agreement. The site shall be protected from any possible project impacts via the use of fencing during project construction and the presence of an archaeological monitor and a Native
								American monitor during all ground disturbing activities in the area of Site P-33-16598.
								P-33-16679. The ability and nature of avoidance and minimization of adverse effects to Site P-33-16679 are not known at this time. Therefore, mitigation measures are proposed based on current Alternative 9 plans.
								 Prior to the start of construction at this location, data recovery shall be conducted for all portions of this site, including the small portion of the southern tip of Locus A, which is outside of the right of way. Although the southern tip of the site is south of and not within the right of way, data recovery shall be conducted here because of the loss of association with the larger portion of the site. The data recovery shall attempt to exhaust all research potential that Site P-33-16679 has to offer. Methods shall include, but not be limited to, 1-square-meter units, trench-and-block excavation, and extensive research into site function, settlement patterns, etc. Native American tribes shall be consulted throughout the data recovery process. Disposition arrangements shall be agreed to prior to initiating any data recovery efforts.
Hydrology and Floodplain	No impact	Temescal Wash: Transverse Encroachment (TE) Cajalco Creek: TE, Longitudinal Encroachment (LE)	Temescal Wash: TE Cajalco Creek: TE, LE Perris Valley Storm Drain: TE San Jacinto River:	Temescal Wash: TE Cajalco Creek: TE, LE San Jacinto River: TE, LE	Temescal Wash: TE Cajalco Creek: TE, LE Perris Valley Storm Drain: TE San Jacinto River:	Temescal Wash: TE Cajalco Creek: TE, LE San Jacinto River: TE, LE	Temescal Wash: TE Perris Valley Storm Drain: TE San Jacinto River: TE, LE	Measures to minimize floodplain impacts were included in the design of the project and are described in detail in Chapter 2.0, Project Description.
		Perris Valley Storm Drain: TESan Jacinto River: TE, LE	TE, LE		TE, LE			
Water Quality and Stormwater Runoff	No impact	No impact	 910 ha (2,249 ac) of disturbed soil 68 stream crossings 311 ha (769 ac) of new pavement 18.6 ha (45.9 ac) of steep slopes 	 944 ha (2,333 ac) of disturbed soil 68 stream crossings 311 ha (769 ac) of new pavement 17.9 ha (44.2 ac) of steep slopes 	 958 ha (2,368 ac) of disturbed soil 74 stream crossings 357 ha (882 ac) of new pavement 22.5 ha (55.5 ac) of steep slopes 	 992 ha (2,452 ac) of disturbed soil 74 stream crossings 357 ha (882 ac) of new pavement 21.8 ha (53.9 ac) of steep slopes 	 923 ha (2,281 ac) of disturbed soil 51 stream crossings 299 ha (739 ac) of new pavement 35.9 ha (88.7 ac) of steep slopes 	WQ-1 Prior to and during construction, the Riverside County Transportation Commission (RCTC) will comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) Order No. 99-08-DWQ, NPDES No. CAS000002, and any subsequent permit or individual



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
			-17,857 pounds per year (lbs/yr) change in total suspended solids loading 113.1 lbs/yr change in total phosphate loading 566.0 lbs/yr change in total nitrate loading 8.4 lbs/yr change in total copper loading 14.0 lbs/yr change in total lead loading 31.0 lbs/yr change in total zinc loading	-15,300 lbs/yr change in total suspended solids loading 110.2 lbs/yr change in total phosphate loading 565.0 lbs/yr change in total nitrate loading 8.8 lbs/yr change in total copper loading 14.0 lbs/yr change in total lead loading 33.0 lbs/yr change in total zinc loading	 -21,199 lbs/yr change in total suspended solids loading 155.4 lbs/yr change in total phosphate loading 717.1 lbs/yr change in total nitrate loading 9.9 lbs/yr change in total copper loading 13.8 lbs/yr change in total lead loading 34.4 lbs/yr change in total zinc loading 	 -18,642 lbs/yr change in total suspended solids loading 152.51 lbs/yr change in total phosphate loading 715.8 lbs/yr change in total nitrate loading 10.3 lbs/yr change in total copper loading 13.8 lbs/yr change in total lead loading 36 lbs/yr change in total zinc loading 	-16,870 lbs/yr change in total suspended solids loading 112.3 lbs/yr change in total phosphate loading 624.0 lbs/yr change in total nitrate loading 8.0 lbs/yr change in total copper loading 13.0 lbs/yr change in total lead loading 24.0 lbs/yr change in total lead loading 13.0 lbs/yr change in total lead loading 13.0 lbs/yr change in total zinc loading	permit if required by the Regional Water Quality Control Board (RWQCB) as they relate to construction activities for the project, including dewatering. This will include submitting a Notice of Intent (NOI) to the State Water Resources Control Board (SWRCB) at least 30 days prior to the start of construction; preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP); and submitting a Notice of Termination to the Santa Ana Regional Water Quality Control Board (RWQCB) upon completion of construction and stabilization of the site. WQ-2 Prior to and during construction, the Riverside County Transportation Commission (RCTC) will comply with the provisions of the General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality, Order No. R8-2003-0061 National Pollutant Discharge Elimination System (NPDES) No. CAG998001, as they relate to discharge of non-storm water dewatering wastes for the project. This will include submitting to the Santa Ana Regional Water Quality Control Board (RWQCB) a Notice of Intent (NOI) at least 60 days prior to the start of construction, notification of discharge at least 5 days prior to any planned discharges, and monitoring reports by the 30th day of each month following the monitoring period.
								WQ-3 Prior to completion of final design, the Riverside County Transportation Commission (RCTC) will follow the procedures outlined in the California Department of Transportation's (Caltrans) Storm Water Quality Handbooks, Project Planning and Design Guide for implementing Design Pollution Prevention and Treatment Best Management Practices (BMPs) for the project. This will include coordination with the Santa Ana Regional Water Quality Control Board (RWQCB) with respect to feasibility, maintenance, and monitoring of Treatment BMPs as set forth in Caltrans Statewide Storm Water Management Plan.
								WQ-4 Prior to completion of final design, the Riverside County Transportation Commission (RCTC) will identify opportunities where infiltration basins and biostrips can be used in lieu of detention basins and bioswales. As a part of final design, opportunities to convey storm water runoff to bioswales or biostrips before conveying it to infiltration basins, detention basins, or sand filters will be identified and included in project plans.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
Geology, Soils, Seismic, and Topography	The impacts discussed for the MCP Build Alternatives would not occur for Alternative 1A, but would occur for the other transportation improvement projects included in this No Build Alternative.	The impacts discussed for the MCP Build Alternatives would not occur for Alternative 1B, but would occur for the other transportation improvement projects included in this No Build Alternative.	Alter existing landforms due to grading and construction of various cut-and-fill slopes. Construction activities may also temporarily disturb soil outside the facility footprint, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased potential for soil erosion. Construction activities could be impacted by ground motion and liquefaction, and possibly ground rupture (deformation) if an earthquake occurred during construction.	Alter existing landforms due to grading and construction of various cut-and-fill slopes. Construction activities may also temporarily disturb soil outside the facility footprint, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased potential for soil erosion. Construction activities could be impacted by ground motion and liquefaction, and possibly ground rupture (deformation) if an earthquake occurred during construction.	Alter existing landforms due to grading and construction of various cut-and-fill slopes. Construction activities may also temporarily disturb soil outside the facility footprint, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased potential for soil erosion. Construction activities could be impacted by ground motion and liquefaction, and possibly ground rupture (deformation) if an earthquake occurred during construction.	Alter existing landforms due to grading and construction of various cut-and-fill slopes. Construction activities may also temporarily disturb soil outside the facility footprint, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased potential for soil erosion. Construction activities could be impacted by ground motion and liquefaction, and possibly ground rupture (deformation) if an earthquake occurred during construction.	 Alter existing landforms due to grading and construction of various cut-and-fill slopes. Construction activities may also temporarily disturb soil outside the facility footprint, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased potential for soil erosion. Construction activities could be impacted by ground motion and liquefaction, and possibly ground rupture (deformation) if an earthquake occurred during construction. Greater impacts than Alternatives 4 through 7 because of higher quantities of grading. More extensive landform alteration occurs than with Alternatives 4 through 7 due to alignment through the Gavilan Hills and the area south of Lake Mathews near Monument Peak. 	GEO-1 Prior to completion of final design, the Riverside County Transportation Commission (RCTC) will prepare a design-level geotechnical report. It is not feasible to prepare such a study at this time because the design is at a preliminary/conceptual stage. This report will document soil-related constraints and hazards such as slope instability, settlement, liquefaction, or related secondary seismic impacts that may be present. Acceptance of this report will be subject to the local agencies with jurisdiction over the MCP project right of way and the California Departmen of Transportation (Caltrans) for portions of the MCP project within State highway right of way. The performance standard for this report will be the geotechnical design standards of the State of California, Caltrans, and the affected local jurisdictions. The report shall also include: • Evaluation of expansive soils and recommendations regarding construction procedures and/or design criteria to minimize the effect of these soils on the development of the project. • Design-level geotechnical studies will identify potential liquefiable areas within the project limits an provide recommendations for mitigation. Any areas that require mitigation would be within the disturbed areas, and no additional impacts would result. • Identification of potential liquefiable areas within the project limits and recommendations for mitigation. Any areas that require mitigation would be within the disturbed areas, and no additional impacts would result. • Demonstration that side slopes can be designed and graded so that surface erosion of the engineered fill is not increased compared to existing, natural conditions GEO-2 During construction, and as included on project plant during final design, the Riverside County Transportation Commission (RCTC) will require planting of native vegetation with good soil-binding characteristics and low water requirements on engineered slopes to reduce erosion and slope instability. These types of plants include species that ar



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								GEO-3 The Riverside County Transportation Commission (RCTC) will maintain a quality assurance/quality control plan during construction. The plan will include observing, monitoring, and testing by a geotechnical engineer and/or geologist during construction to confirm that geotechnical/geologic recommendations are fulfilled, or if different site conditions are encountered, appropriate changes are made to accommodate such issues. The geotechnical engineer will submit weekly reports to RCTC while grading, excavation, and construction activities are underway.
								GEO-4 Prior to completion of final design, the Riverside County Transportation Commission (RCTC) will undertake a detailed review of available well information to locate all groundwater wells within the MCP project right of way. Any groundwater wells that occur within the MCP project right of way will be identified on a well management plan and abandoned properly during project construction in accordance with California Department of Water Resources Standards (Bulletin 74-90). Any water supply provided by active wells will be replaced. Replacement water may be provided by a variety of means, such as installing a new well or by creating a connection to a municipal supply. The project engineer will document the location of existing wells, the abandonment approval by the agencies with jurisdiction for those wells within the MCP project right of way, and the replacement water supply as needed for active wells in a report submitted to RCTC for review and approval prior to initiation of construction activities.
Paleontology	No impact	No impact	MCP Build Alternates have functionally the same impacts. Alternative 4 impacts 256 ha (632 ac) of Low Sensitivity and 872 ha (2,155 ac) total of High Sensitivity that may contain paleontological resources.	MCP Build Alternates have functionally the same impacts. Alternative 5 impacts 269 ha (664 ac) of Low Sensitivity and 825 ha (2,041 ac) total of High Sensitivity that may contain paleontological resources.	MCP Build Alternates have functionally the same impacts. Alternative 6 impacts 427 ha (1,056 ac) of Low Sensitivity and 904 ha (2,234 ac) total of High Sensitivity that may contain paleontological resources.	MCP Build Alternates have functionally the same impacts. Alternative 7 impacts 440 ha (1,087 ac) of Low Sensitivity and 857 ha (2,120 ac) total of High Sensitivity that may contain paleontological resources.	MCP Build Alternates have functionally the same impacts. Alternative 9 impacts 353 ha (873 ac) of Low Sensitivity and 714 ha (1,764 ac) total of High Sensitivity that may contain paleontological resources.	PAL-1 Prior to the beginning of construction, the Riverside County Transportation Commission (RCTC), in accordance with the guidelines on the California Department of Transportation (Caltrans) Standard Environmental Reference Web site, the County of Riverside guidelines, guidelines of the Bureau of Land Management (BLM), and the guidelines of the Society of Vertebrate Paleontology, shall develop a Paleontological Mitigation Plan (PMP) for implementation during the excavation phase of the MCP project. The PMP shall include the following steps: • Prior to the start of construction activity, RCTC shall retain a qualified vertebrate paleontologist. The paleontologist shall establish procedures (monitoring plan) for paleontological resource monitoring and procedures for temporarily



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								halting or redirecting work to permit the
								sampling, identification, and evaluation of the
	·		·					paleontological resources as appropriate. The
					·			paleontologist shall also be present at the
								pregrading conferences to explain the
			•		V 4	5.0		established procedures based on a preapproved monitoring plan. If paleontological resources are
								discovered, a qualified project paleontologist
		1			1 10	The second secon		shall determine appropriate actions, in
	-							cooperation with RCTC, for testing and/or data
								recovery, plans for which may be developed in
			·			l e e		advance to avoid construction delays. The
								paleontologist shall submit a follow-up report to
								RCTC that shall include the period of inspection,
								an analysis of any fossils found, the results of
								any testing or data recovery, and the present
								repository of the fossil specimens.
								Paleontological monitoring reports shall be submitted to RCTC on a monthly or more
		*						frequent basis during grading and excavation
		The state of the s		***	en e			activities of the construction phase of the MCP
					× 1			project.
							·	
								 A qualified paleontological monitor will be present
					\$ ·			during ground-disturbing activities within the
	14			*				project disturbance limits in potentially fossiliferous
			1					formations crossed by the MCP project. These
						4-		sediments are likely to contain paleontological resources. The monitoring for paleontological
								resources will be conducted on a full-time basis
								where fossiliferous sediments are exposed at the
								surface (High A) and at elevations where
					·		1	excavation is 0.9 meter (3 feet) below the surface
			A STATE OF THE STA					where paleontological resources are anticipated at
								depth (High B). The monitor will be empowered to
				• • •				temporarily halt or redirect construction activities to
								ensure avoidance of adverse impacts to
								paleontological resources. The monitor will be
								equipped to rapidly remove any large fossil
								specimens encountered during excavation. During
								monitoring, samples will be collected and processed to recover microvertebrate fossils.
								Processing will include wet screen washing and
								microscopic examination of the residual materials
					1			to identify small vertebrate remains.
								On encountering a large deposit of fossils, the
								monitor will salvage all fossils in the area using
								additional field staff and in accordance with
								modern paleontological techniques.
					*			All fossils collected will be prepared to a
								reasonable point of identification. Excess sediment
					401			or matrix will be removed from the specimens to
								reduce the bulk of the material and the storage
			The state of the s					cost. Itemized catalogs of all material collected and

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								identified will be provided to the repository along with the specimens. • A compliance report addressing Caltrans and Riverside County guidelines that document the results of the monitoring and salvage activities and the significance of the fossils will be prepared and submitted for filing at RCTC within 4 months of the end of project construction. Consideration shall be
								given to budgeting for tasks of wet screen matrix processing, fossil preparation, and identification to start while excavation monitoring is ongoing. • All fossils collected during this work, along with the itemized inventory of these specimens and the compliance report, will be deposited for permanent curation and storage into an established repository
								 (Society of Vertebrate Paleontology [SVP], 1995 and 1996) such as the Riverside Metropolitan Museum. There are two federal land (Bureau of Land Management [BLM]) parcels traversed by the Locally Preferred Alternative. If the qualified paleontologist determines that the formations in these areas have paleontological sensitivity and
Hazardous Waste and	No impact	No impact	359 hazardous	362 hazardous	394 hazardous	397 hazardous	298 hazardous	construction activities will occur that may disturb these formations, an appropriate BLM paleontological resource use permit will be obtained. HW-1 Prior to completion of right of way acquisition, the
Materials			material/waste sites within 0.4 kilometer (km) (0.25 mile [mi]) of the alternative alignment. Potential for hazardous materials spills as a result of traffic accidents on the MCP. Potential for	material/waste sites within 0.4 km (0.25 mi) of the alternative alignment. Potential for hazardous materials spills as a result of traffic accidents on the MCP. Potential for vehicles traveling on the MCP to	material/waste sites within 0.4 km (0.25 mi) of the alternative alignment. Potential for hazardous materials spills as a result of traffic accidents on the MCP. Potential for vehicles traveling on the MCP to	material/waste sites within 0.4 km (0.25 mi) of the alternative alignment. • Potential for hazardous materials spills as a result of traffic accidents on the MCP. • Potential for vehicles traveling on the MCP to	material/waste sites within 0.4 km (0.25 mi) of the alternative alignment Potential for hazardous materials spills as a result of traffic accidents on the MCP. Potential for vehicles traveling on the MCP to	Riverside County Transportation Commission (RCTC) will conduct a Site Investigation for hazardous materials sites identified in the Initial Site Assessment that are within the right of way of the approved alternative. It is not feasible to conduct these site investigations prior to completion of the Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) because new contamination may occur if the investigations are completed too far in advance of right of way acquisition. The performance standard for this measure is compliance with applicable federal, state, and local regulations. The Site Investigation will meet
			vehicles traveling on the MCP to transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources.	transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources.	transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources.	transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources.	transport hazardous substances that could spill and impact the roadway, adjacent properties, or resources.	or exceed the requirements of the United States Environmental Protection Agency's (EPA) Standards and Practices for All Appropriate Inquiries (FR 66070, Vol. 70, No. 210, November 1, 2005). If contaminants are determined to be present during the Site Investigation, one or more of the following specialized reports may be necessary: Remedial Actions Options Report, Sensitive Receptor Survey, Human Health/Ecological Risk Assessment, and/or Quarterly Monitoring Report. Site Investigations for any active leaking underground storage tank (LUST) cases will be coordinated with the Riverside



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
	Alternative IA	Alternative ID						County Department of Environmental Health (RCDEH), and if groundwater has been impacted, the Regional Water Quality Control Board (RWQCI Santa Ana Region. Site Investigations for any automotive or industrial uses will be coordinated with RCDEH. Site Investigations for any clandestine drug lab locations will be coordinated with RCDEH. Department of Toxic Substances Control (DTSC), and law enforcement agencies. Prior to completion final design, RCTC shall provide a Hazardous Substances Disclosure Document (HSDD) that clears affected right of way for acquisition to the California Department of Transportation (Caltrans) District Hazardous Waste Coordinator for review at
								approval. HW-2 During final design, the Riverside County Transportation Commission (RCTC) will conduct so
								sampling for aerially deposited lead in unpaved locations adjacent to existing state highway right o way within the project limits, if not previously tester It is not feasible to conduct these site investigation prior to completion of the Final Environmental Impa
								Report/Environmental Impact Statement (EIR/EIS because new contamination may occur if the investigations are completed too far in advance oright of way acquisition. The performance standa
								for this measure is compliance with applicable federal, state, and local regulations. The analytic results of the soil sampling will determine the appropriate handling of the soil in those areas a disposal of surplus materials. Soil will be reused
								within the California Department of Transportation (Caltrans) right of way in accordance with the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC)
								Variance No. 00-H-VAR-04, September 22, 200 a subsequent applicable variance. If it is not feast to reuse soils, then the excavated hazardous so will require off-site disposal as hazardous waste
								permitted facility (Class I or II). Refer to Standar Special Provision XE 19-900 for additional information on the disposal of soils impacted wit aerially deposited lead.
								HW-3 Prior to construction, the Riverside County Transportation Commission (RCTC) will retain a certified consultant to conduct predemolition asbestos, lead-based paint, and polychlorinated biphenyl (PCB) surveys of any structures that wi
								renovated or demolished. Building materials tha exceed California Health and Safety Code criter hazardous waste will be disposed of at the appropriate Class I or II facility.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								HW-4 Prior to construction, the Riverside County Transportation Commission (RCTC) will conduct inspections of utility pole-mounted transformers that will be relocated or removed as part of the project. Leaking transformers will be considered a polychlorinated biphenyl (PCB) hazard unless tested and confirmed otherwise, and will be handled accordingly.
								HW-5 Prior to construction, the Riverside County Transportation Commission (RCTC) will test and remove any yellow traffic striping and pavement- marking material in accordance with Standard Special Provision XE 15-300.
								HW-6 Prior to construction, the Riverside County Transportation Commission (RCTC) will determine whether groundwater removal will be required during construction of the project. The need for dewatering cannot be determined until the final design phase. Any dewatering will require compliance with the State General Permit or an individual permit from the Regional Water Quality Control Board (RWQCB), Santa Ana Region, consistent with National Pollutant Discharge Elimination System (NPDES) requirements. The RWQCB will decide which permit is applicable and whether sampling is required once it receives and reviews the Notice of Intent (NOI). Additional coordination with the Riverside County Department of Environmental Health (RCDEH), Department of Toxic Substances Control (DTSC), and the Department of Defense may be necessary, and will be conducted by RCTC, if groundwater dewatering occurs in the vicinity of the March Air Reserve Base. RCTC will provide the Resident Engineer with the Waste Discharge Identification Number or a copy of an individual permit (as applicable) issued by the RWQCB prior to construction.
								HW-7 During final design, the Riverside County Transportation Commission (RCTC) will sample soils adjacent to the Burlington Northern Santa Fe railroad tracks that will be disturbed during construction of the project for petroleum hydrocarbons, metals, solvents and other potential contaminants to determine whether they require special handling and disposal. Soils exceeding California Health and Safety Code criteria for hazardous waste will be disposed of at the appropriate Class I or II facility.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								HW-8 Prior to completion of right of way acquisition, the Riverside County Transportation Commission (RCTC) will conduct soil sampling for pesticides in former or current agricultural properties that will be disturbed by the project where soil has not been
								disturbed (through grading, etc.). It is not feasible to conduct these site investigations prior to completion of the Final Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) because new contamination may occur if the investigations are completed too far in advance of right of way
				*				acquisition. The performance standard for this measure is compliance with applicable federal, state, and local regulations. The analytical results of the soil sampling will determine the appropriate handling and disposal of the soil. Sampling will be conducted
								in general accordance with Department of Toxic Substances Control (DTSC) Interim Guidance for Sampling Agricultural Fields for School Sites (August 26, 2002). HW-9 The Riverside County Transportation Commission
								(RCTC) will notify and submit fees to the South Coast Air Quality Management District (SCAQMD) at least 10 days prior to proceeding with any demolition or renovation of a structure (refer to SCAQMD Rule 1403). Contractors will adhere to the requirements of SCAQMD Rule 1403 during renovation/demolition activities.
								HW-10 If suspect hazardous waste or underground tanks are encountered during construction, the contractor will stop work and follow the procedures outlined in Appendix E, Caltrans Unknown Hazards Procedures for Construction.
Air Quality	No impact	No impact	Short-term air pollutant emissions would occur as a result of construction activities and would include fugitive dust from grading/site	Short-term air pollutant emissions would occur as a result of construction activities and would include fugitive dust from grading/site	Short-term air pollutant emissions would occur as a result of construction activities and would include fugitive dust from grading/site	Short-term air pollutant emissions would occur as a result of construction activities and would include fugitive dust from grading/site	Short-term air pollutant emissions would occur as a result of construction activities and would include fugitive dust from grading/site	SC-1 During construction, the Riverside County Transportation Commission (RCTC) shall ensure that the construction contractor shall adhere to the requirements of South Coast Air Quality Management District (SCAQMD) rules and regulations on cutback and emulsified asphalt paving materials.
			preparation, equipment exhaust, and use of emulsified asphalt paving materials. • Long-term mobile emissions associated with the MCP Build Alternatives would	preparation, equipment exhaust, and use of emulsified asphalt paving materials. Long-term mobile emissions associated with the MCP Build Alternatives would	preparation, equipment exhaust, and use of emulsified asphalt paving materials. • Long-term mobile emissions associated with the MCP Build Alternatives would	preparation, equipment exhaust, and use of emulsified asphalt paving materials. • Long-term mobile emissions associated with the MCP Build Alternatives would	preparation, equipment exhaust, and use of emulsified asphalt paving materials. • Long-term mobile emissions associated with the MCP Build Alternatives would	SC-2 To reduce fugitive dust emissions during construction, the Riverside County Transportation Commission (RCTC) shall ensure that the construction contractor shall adhere to the requirements of South Coast Air Quality Management District (SCAQMD) Rule 403. The Best Available Control Measures (BACMs) specified in SCAQMD's Rule 403 will be incorporated into the project construction.



Table S.1 Summary of Impacts

ſ	Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
				be less than the No Build Alternatives due to improved traffic flow in the project area.	be less than the No Build Alternatives due to improved traffic flow in the project area.	be less than the No Build Alternatives due to improved traffic flow in the project area.	be less than the No Build Alternatives due to improved traffic flow in the project area.	be less than the No Build Alternatives due to improved traffic flow in the project area.	SC-3 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that all disturbed areas, including storage piles, not being actively utilized for construction purposes shall be effectively stabilized for dust emissions using water, chemical stabilizers/suppressants, or vegetative ground cover, as appropriate.
									SC-4 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that all on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized for dust emissions using water or chemical stabilizers/suppressants.
:									SC-5 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that all land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled for fugitive dust emissions by utilizing applications of water or by presoaking.
									SC-6 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that when materials are transported off site, all material shall be covered or effectively wetted to limit visible dust emissions, or at least 15.2 centimeters (6 inches) of freeboard space from the top of the container will be maintained.
									SC-7 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that all operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. The use of blower devices is expressly prohibited.
									SC-8 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that, following the addition of materials to or the removal of materials from the surface of outdoor storage piles, those piles shall be effectively stabilized for fugitive dust emissions utilizing sufficient water or chemical stabilizers/suppressants.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								SC-9 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that traffic speeds on unpaved roads shall be limited to 24 kilometers per hour (kph) (15 miles per hour [mph]).
								SC-10 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.
								SC-11 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that wheel washers for all exiting trucks shall be installed, or all trucks and equipment shall be washed off before leaving the site.
								SC-12 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that wind breaks shall be installed at windward side(s) of construction areas.
								SC-13 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that excavation and grading activities shall be suspended when winds exceed 32 kilometers per hour (kph) (20 miles per hour [mph]).
								SC-14 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that areas subject to excavation, grading, and other construction activity shall be limited consistent with other construction activities underway.
								AQ-1 During construction activity, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative. This applies to both inactive and active sites during workdays, weekends, holidays, and windy conditions
								AQ-2 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall install wind fencing and phase grading operations and operate water trucks for stabilization of surfaces under windy conditions.

Table S.1 Summary of Impacts

Potentia	al Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
									AQ-3 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall, when hauling material and operating nonearthmoving equipment, prevent spillage and limit speeds to 24 kilometers per hour (kph) (15 miles per hour [mph]). Limit speed of earthmoving equipment to 16 kph (10 mph).
									AQ-4 During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor reduce use, trips, and unnecessary idling from heavy equipment.
									AQ-5 During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor maintain and tune engines per manufacturers' specifications to perform at United States Environmental Protection Agency (EPA) certification levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
									AQ-6 During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
									AQ-7 During construction, the Riverside County Transportation Commission (RCTC) shall require that leased equipment be 1996 model or newer unless cost exceeds 110 percent or average lease cost, and require that 75 percent or more of total horsepower of owned equipment to be used be 1996 or newer models.
									AQ-8 During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor utilize United States Environmental Protection Agency (EPA) registered particulate traps and other appropriate controls to reduce emissions of diesel particulate matter (DPM) and other pollutants at the construction site.
									AQ-9 During construction, the Riverside County Transportation Commission (RCTC) and its contractors shall identify where implementation of mitigation measures for short-term air quality is rejected based on economic infeasibility.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								AQ-10 Prior to construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be damage caused to the construction equipment engine, or whether there may be a risk to nearby workers or the public.)
								 AQ-11 During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor utilize the cleanest available fuel engines in construction equipment and identify opportunities for electrification, and use low sulfur fuel (diesel with 15 parts per million [ppm] or less) in engines where alternative fuels such as biodiesel and natural gas are not possible. AQ-12 Prior to construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow. AQ-13 Prior to construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor identify sensitive receptors in the project area, such as children, the elderly, and the infirm, and specify the means by which impacts to these populations will be minimized. For example, construction equipment and staging zones shall be located away from sensitive receptors and away from fresh air intakes to building and air conditioners.
Noise	No impact	Less impact than for MCP Build Alternatives	88 receptor locations would approach or exceed the Noise Abatement Criteria (NAC). 18 soundwalls analyzed; 2 soundwalls meet both reasonable and feasible criteria.	85 receptor locations would approach or exceed the NAC. 17 soundwalls analyzed; 2 soundwalls meet both reasonable and feasible criteria.	 81 receptor locations would approach or exceed the NAC. 17 soundwalls analyzed; 2 soundwalls meet both reasonable and feasible criteria. 	79 receptor locations would approach or exceed the NAC. 16 soundwalls analyzed; 2 soundwalls meet both reasonable and feasible criteria.	65 receptor locations would approach or exceed the NAC. 13 soundwalls analyzed; 3 soundwalls meet both reasonable and feasible criteria.	Feasible and reasonable soundwalls have been identified for all MCP Build Alternatives. During final design of the selected alternative, the precise locations and heights for soundwalls at locations where walls are determined to be feasible and reasonable will be identified and included in the project plan. To minimize the construction noise impact for sensitive land uses adjacent to the project site, construction noise is regulated by Caltrans' Standard Specifications, Section 5-1, "Sound Control Requirements," in the Standard Special Provisions. These provisions are: "Sound control shall conform to the provisions in Section 7-1.01I (Sound Control Requirements) of the Standard Specifications and these special

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								provisions. The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dBA at a distance of 15 m (50 ft). This requirement in no way relieves the contractor from responsibility for complying with local ordinances regulating nose level. The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixer or transient equipment that may or may not be owned by the contractor. The use of loud signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel. Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional cost will be allowed therefore."
Energy	No impact	No impact	Irreversible impact from the consumption of diesel fuel (and other fuels) related to these construction activities Implementation of the Build Alternatives would result in a slight increase in fuel consumption; however, within the SCAG region, the proposed MCP project's increase in fuel consumption	Irreversible impact from the consumption of diesel fuel (and other fuels) related to these construction activities Implementation of the Build Alternatives would result in a slight increase in fuel consumption; however, within the SCAG region, the proposed MCP project's increase in fuel consumption	Irreversible impact from the consumption of diesel fuel (and other fuels) related to these construction activities Implementation of the Build Alternatives would result in a slight increase in fuel consumption; however, within the SCAG region, the proposed MCP project's increase in fuel consumption	Irreversible impact from the consumption of diesel fuel (and other fuels) related to these construction activities Implementation of the Build Alternatives would result in a slight increase in fuel consumption; however, within the SCAG region, the proposed MCP project's increase in fuel consumption	Irreversible impact from the consumption of diesel fuel (and other fuels) related to these construction activities Implementation of the Build Alternatives would result in a slight increase in fuel consumption; however, within the SCAG region, the proposed MCP project's increase in fuel consumption	The Mid County Parkway (MCP) project will result in a nominal (maximum of 0.03 percent) increase in regional energy consumption compared to the No Build Alternatives due to project operation as a result of increased vehicle miles traveled. Mitigation Measures AQ-1 through AQ-8, AQ-11, and AQ-12 discussed in Section 3.14 will reduce impacts related to increased energy consumption and global climate change.
Natural Communities	No impact	Less impact than MCP Build Alternatives	would be negligible. Temporarily impacts 4.5 ha (11.2 ac) MSHCP Riparian/Riverine Areas. Permanently impacts 22.5 ha (55.3 ac) MSHCP Riparian/Riverine Areas. Permanent impacts 159.5 ha (394.2 ac) of Other Natural Communities of Special Concern.	would be negligible. Temporarily impacts 4.0 ha (9.8 ac) MSHCP Riparian/Riverine Areas. Permanently impacts 22.7 ha (55.2 ac) MSHCP Riparian/Riverine Areas. Permanent impacts 158.5 ha (391.7 ac) of Other Natural Communities of Special Concern.	would be negligible. Temporarily impacts 5.7 ha (14.2 ac) MSHCP Riparian/Riverine Areas. Permanently impacts 26.8 ha (65.5 ac) MSHCP Riparian/Riverine Areas. Permanent impacts 185.3 ha (457.9 ac) of Other Natural Communities of Special Concern.	would be negligible. Temporarily impacts 5.2 ha (12.7 ac) MSHCP Riparian/Riverine Areas. Permanently impacts 27.0 ha (66.1 ac) MSHCP Riparian/Riverine Areas. Permanent impacts 184.2 ha (455.3 ac) of Other Natural Communities of Special Concern.	would be negligible. Temporarily impacts 3.6 ha (8.8 ac) MSHCP Riparian/Riverine Areas. Permanently impacts 13.8 ha (34.1 ac) MSHCP Riparian/Riverine Areas. Permanent impacts 175.6 ha (434.0 ac) of Other Natural Communities of Special Concern.	HCP-1 Prior to and during construction, the Riverside County Transportation Commission (RCTC) will adhere to the guidelines in the Multiple Species Habitat Conservation Plan (MSHCP) Section 6.1.4, Section 6.4, Section 7.5.3, and Appendix C to reduce edge effects on the MSHCP Conservation Area. HCP-2 During final design, the Riverside County Transportation Commission (RCTC) will coordinate with USA Waste of California, Inc. to amend the El Sobrante Landfill Multiple Species Habitat Conservation Plan (El Sobrante Landfill MSHCP) to address the Mid County Parkway (MCP) project and its effects on the Plan's easterly conservation area. The amendment will address the addition of mitigation lands to the Plan that would offset the loss



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
			Permanent impacts 154.3 ha (381.4 ac) of MSHCP Criteria Area. Permanent impacts 9.1 ha (22.4 ac) of El Sobrante Landfill Multiple Species Habitat Conservation Plan Permanent impacts 172.6 ha (426.6 ac) of Lake Mathews-Estelle Mountain Reserve.	Permanent impacts 164.6 ha (406.8 ac) of MSHCP Criteria Area. Permanent impacts 9.1 ha (22.4 ac) of El Sobrante Landfill Multiple Species Habitat Conservation Plan Permanent impacts172.6ha (426.6 ac) of Lake Mathews-Estelle Mountain Reserve.	Permanent impacts 258.2 ha (638.0 ac) of MSHCP Criteria Area. Permanent impacts 221.3 ha (546.8 ac) of Lake Mathews-Estelle Mountain Reserve.	Permanent impacts 268.5 ha (663.4 ac) of MSHCP Criteria Area. Permanent impacts 221.3 ha (546.8 ac) of Lake Mathews-Estelle Mountain Reserve.	Permanent impacts 256.8 ha (634.5 ac) of MSHCP Criteria Area. Permanent impacts 8.9 ha (22.0 ac) of El Sobrante Landfill Multiple Species Habitat Conservation Plan Permanent impacts 69.4 ha (171.5 ac) of Lake Mathews-Estelle Mountain Reserve.	of functions, values, and species covered under the Plan. HCP-3 During final design, the Riverside County Transportation Commission (RCTC) will coordinate with the Riverside County Habitat Conservation Authority (RCHCA) to amend the Habitat Conservation Plan for the Stephens' Kangaroo Rat address the Mid County Parkway (MCP) project an its effects on the Habitat Conservation Plan Conservation Area. The amendment will address the addition of mitigation lands to the Habitat Conservation Plan on a 1:1 basis per the Habitat Conservation Plan to offset the loss of functions, values, and species covered under this Habitat Conservation Plan. The replacement habitat for the Habitat Conservation Plan for the Stephens' Kangaroo Rat must be approved by the wildlife agencies and must be contiguous to the current Stephens' Kangaroo Rat Reserve lands. In addition replacement lands for lands impacted in the Stephens' Kangaroo Rat Reserve lands that are managed by the federal Bureau of Land Management (BLM) shall also require BLM approvement to the stephens are great to the stephens
								These lands would be managed by the RCHCA through an agreement with RCTC. BIO-1 During construction, the Riverside County Transportation Commission (RCTC) will ensure the impacts to areas that provide long-term conservativalue for species identified in the Multiple Species Habitat Conservation Plan (MSHCP) as Narrow Endemic Plant Species, Criteria Area Plant Species
								and Additional Survey Species are avoided and minimized, as defined in the MSHCP. Avoidance minimization will be achieved by confining disturbance to areas not identified as having long term conservation value, and not exceeding the identified in this Environmental Impact Report/Environmental Impact Statement (EIR/Ell Disturbance will be controlled by erecting barrier fencing or other appropriate means of demarcati construction limits.
								BIO-2 During final design, the Riverside County Transportation Commission (RCTC) will ensure to notes are placed on project construction plans, informing contractors that areas designated with long-term conservation value outside the project footprint are environmentally sensitive and that construction activity is excluded from those areas

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								BIO-3 During construction, the Riverside County Transportation Commission (RCTC) will contract a qualified/authorized biological monitor to ensure that disturbance outside the footprint is avoided and seasonal restrictions are observed.
Wetlands and Other Waters of the United States	No impact	Less impact than MCP Build Alternatives	 6.0 ha (14.9 ac) of permanent impacts to United States Army Corps of Engineers (USACE) jurisdiction al areas. 3.9 ha (9.8) of temporary impacts to USACE jurisdictional areas. 11.3 ha (27.8 ac) of permanent impacts to California Department of Fish and Game (CDFG) jurisdictiona I areas. 4.0 ha (10.0 ac) of temporary impacts to CDFG jurisdictional areas. 	6.0 ha (14.8 ac) of permanent impacts to USACE jurisdictional areas. 3.3 ha (8.2 ac) of temporary impacts to USACE jurisdictional areas. 11.2 ha (27.6 ac) of permanent impacts to CDFG jurisdictional areas. 3.5 ha (8.6 ac) of temporary impacts to CDFG jurisdictional areas. The component impacts to CDFG jurisdictional areas.	6.9 ha (17.2 ac) of permanent impacts to USACE jurisdictional areas. 4.2 ha (10.4 ac) of temporary impacts to USACE jurisdictional areas. 14.6 ha (36.1 ac) of permanent impacts to CDFG jurisdictional areas. 4.8 ha (11.9 ac) of temporary impacts to CDFG jurisdictional areas.	6.9 ha (17.0 ac) of permanent impacts to USACE jurisdictional areas. 3.6 ha (8.9 ac) of temporary impacts to USACE jurisdictional areas. 14.5 ha (35.9 ac) of permanent impacts to CDFG jurisdictional areas. 4.2 ha (10.5 ac) of temporary impacts to CDFG jurisdictional areas.	4.2 ha (10.5 ac) of permanent impacts to USACE jurisdictional areas. 3.5 ha (8.6 ac) of temporary impacts to USACE jurisdictional areas. 6.4 ha (15.9 ac) of permanent impacts to CDFG jurisdictional areas. 3.5 ha (8.6 ac) of temporary impacts to CDFG jurisdictional areas.	WET-1 Prior to construction, the Riverside County Transportation Commission (RCTC) shall obtain a Section 404 permit from the United States Army Corps of Engineers (USACE), a Section 1602 Agreement for Streambed Alteration from the California Department of Fish and Game (CDFG), and a Section 401 water quality certification or waiver from the Santa Ana Regional Water Quality Control Board (RWQCB). Specific mitigation requirements shall be negotiated with each agency during the permit process and shall incorporate approaches and measures identified in the Conceptual Mitigation Plan (Appendix Q) and those described below. WET-2 Prior to and during construction, the Riverside County Transportation Commission (RCTC) will mitigate permanent impacts to wetlands at a minimum ratio of 1.5:1 in order to achieve no net loss of wetlands. Mitigation will occur through habitat restoration and/or enhancement of on-site areas along the length of the Mid County Parkway (MCP) to the extent practical. If it is infeasible to mitigate entirely on site, in accordance with the Conceptual Mitigation Plan, alternative off-site mitigation would occur. Off-site mitigation such as enhancement, creation, and restoration would occur. Mitigation for temporal loss of habitat value and other compensatory mitigation beyond the basic 1.5:1 replacement ratio could then occur through purchase of mitigation bank credits for removal of giant reed (Arundo donax) from a location approved by the United States Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) under guidelines described by the resource and regulatory agencies through the permitting process, or through participation in another approved habitat mitigation bank. The actual amount of mitigation will be determined in coordination with the resource and regulatory agencies based on the quality and quantity of jurisdictional resources to be affected with consideration of the results from the study entitled Potential Impacts of Alternative Corridor Alignments to W

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								Temporary impacts to USACE jurisdictional areas will be mitigated at a 1:1 replacement ratio on site through revegetation efforts or through an approved mitigation bank.
								WET-3 Prior to and during construction, the Riverside County Transportation Commission (RCTC) will mitigate impacts to aquatic resources (i.e., nonwetland aquatic habitat such as deep streams
								and ponds without hydrophytic vegetation) at a minimum ratio of 3:1. Mitigation will occur through habitat restoration and/or enhancement of on-site areas along the length of the Mid County Parkway
								(MCP) to the extent practical. If it is infeasible to mitigate entirely on site, in accordance with the Conceptual Mitigation Plan, alternative off-site mitigation would occur. Off-site mitigation such as enhancement, creation, and restoration would occur.
								Mitigation for temporal loss of habitat value and other compensatory mitigation beyond the basic 1:1 replacement ratio could then occur through purchase of mitigation bank credits for removal of giant reed
								(Arundo donax) from a location approved by the United States Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) under guidelines described by the resource and regulatory agencies through the permitting
					™			process, or through participation in another approved habitat mitigation bank. The actual amount of mitigation will be determined in coordination with the resource and regulatory agencies based on the
								quality and quantity of jurisdictional resources to be affected with consideration of the results from the study entitled Potential Impacts of Alternative Corridor Alignments to Waters of the United States,
								Riparian Ecosystems, and Threatened and Endangered Species: Mid County Parkway Project, Riverside County, California (ERDC 2008). Temporary impacts to aquatic areas will be mitigated
								at a 1:1 replacement ratio on site through revegetation efforts or through an approved mitigation bank.
					*************************************			WET-4 During final design, the Riverside County Transportation Commission (RCTC) will develop a Habitat Mitigation Monitoring Plan (HMMP) to restore impacted riparian habitats and shall incorporate the applicable approaches and measures identified in the Conceptual Mitigation Plan (Appendix Q). The
								HMMP will be subject to United States Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) approval. The HMMP will, at a minimum, meet the following requirements:

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								A habitat replacement and/or enhancement ratio of at least 1:1 for temporary impacts, 1.5:1 for permanent impacts to wetlands, and 3:1 for permanent impacts to nonwetland aquatic resources;
								 A success criterion of at least 80 percent cover of native riparian vegetation for replaced habitat; and
								 Additional requirements, including a 3-year establishment period for the replacement habitat, regular trash removal, and regular maintenance and monitoring activities to ensure the success of the mitigation plan.
Plant Species	No impact	Less impact than MCP Build Alternatives.	3.07 ha (7.58 ac) of many-stemmed dudleya 0.84 ha (2.08 ac) smooth tarplant 0.63 ha (1.55 ac) Coulter's goldfields	3.07 ha (7.58 ac) of many-stemmed dudleya 0.84 ha (2.08 ac) smooth tarplant 0.63 ha (1.55 ac) Coulter's goldfields	0.01 ha (0.02 ac) of many-stemmed dudleya 0.84 ha (2.08 ac) smooth tarplant 0.63 ha (1.55 ac) Coulter's goldfields	0.01 ha (0.02 ac) of many-stemmed dudleya 0.84 ha (2.08 ac) smooth tarplant 0.63 ha (1.55 ac) Coulter's goldfields	3.07 ha (7.58 ac) of many-stemmed dudleya 0.84 ha (2.08 ac) smooth tarplant 0.63 ha (1.55 ac) Coulter's goldfields	PS-1 Prior to construction, the Riverside County Transportation Commission (RCTC) will obtain a Determination of Biologically Equivalent or Superior Preservation (DBESP) for impacts to smooth tarplant and Coulter's goldfields pursuant to Section 6.1.3 of the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), where 10 percent or more of those portions of the site that provide for the long-term conservation value of smooth tarplant or Coulter's goldfields are impacted. A DBESP may also be required for any impacts to areas that are occupied by many-stemmed dudleya (based on the results of the 2008 focused surveys in the area north of the El Sobrante Landfill MSHCP Plan Area). Mitigation provided in the DBESP will demonstrate that equivalent or superior conservation for the species will be achieved through either location and preservation of populations that are not already proposed for conservation in the MSHCP, and/or restoration or enhancement of existing populations within the proposed conservation area.
Animal Species	No impact	Less impact than MCP Build Alternatives.	Impacts 16.2 ha (40.0 ac) of Los Angeles pocket mouse occupied habitat suitable for long-term conservation	Impacts 16.2 ha (40.0 ac) of Los Angeles pocket mouse occupied habitat suitable for long-term conservation	Impacts 16.2 ha (40.0 ac) of Los Angeles pocket mouse occupied habitat suitable for long-term conservation	Impacts 16.2 ha (40.0 ac) of Los Angeles pocket mouse occupied habitat suitable for long-term conservation	Alternative 9 Rider Street Design Variation (RD DV) would result in 1.6 ha (3.9 ac) of direct impacts to burrowing owl foraging habitat and burrows occupied by two pairs and six juveniles. Impacts 16.2 ha (40.0 ac) of Los Angeles pocket mouse occupied habitat suitable for long-term	AS-1 Within 30 days prior to ground disturbance, the Riverside County Transportation Commission (RCTC) will conduct focused burrowing owl surveys in accordance with the Riverside County Environmental Programs Department Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan (dated Oct 24, 2005), where suitable habitat occurs within



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
							conservation	burrows) will take place when owls are present outside of the nesting season.
								AS-3 Prior to construction, the Riverside County Transportation Commission (RCTC) will obtain a Determination of Biologically Equivalent or Superior Preservation (DBESP) for impacts to Los Angeles pocket mouse near Lake Perris, where 90 percent or more of those portions of the site that provide for the long-term conservation value of Los Angeles pocket mouse cannot be avoided. As part of the DBESP, the
								RCTC will determine appropriate mitigation that will consist of acquisition of occupied or other suitable habitat off site or participation in an approved habitat mitigation bank. Land to be acquired could be either habitat that is occupied by the Los Angeles pocket mouse and/or could be habitat that is restored or enhanced in order to provide suitable habitat for the Los Angeles pocket mouse.
								AS-4 During construction, the Riverside County Transportation Commission (RCTC) will ensure that vegetation clearing is conducted outside nesting season (March 1–September 15). If suitable habitat is present for species protected by the Migratory Bird Treaty Act (MBTA), clearing within nesting season shall be preceded by surveys to ensure that non- listed nesting birds are not taken.
Threatened and Endangered Species	No impact.	Less impact than MCP Build Alternatives	 2.5 ha (6.1 ac) of least Bell's vireo habitat 13.6 ha (33.5 ac) of final California gnatcatcher critical habitat 63.8 ha (157.6 ac) of Quino checkerspot butterfly critical habitat 1.2 ha (2.9 ac) of San Bernardino kangaroo rat critical habitat 0.31 ha (0.77 ac) of spreading Navarretia 3.07 ha (7.58 ac) of Munz's Onion 168.0 ha (415.1 ac) of Stephen's Kangaroo Rat 	2.5 ha (6.1 ac) of least Bell's vireo habitat 13.6 ha (33.5 ac) of final California gnatcatcher critical habitat 63.8 ha (157.6 ac) of Quino checkerspot butterfly critical habitat 1.2 ha (2.9 ac) of San Bernardino kangaroo rat critical habitat 0.31 ha (0.77 ac) of spreading Navarretia 3.07 ha (7.58 ac) of Munz's Onion 168.0 ha (415.1 ac) of Stephen's Kangaroo Rat	3.4 ha (8.5 ac) of least Bell's vireo habitat 56.6 ha (140.0 ac) of Quino checkerspot butterfly critical habitat 1.2 ha (2.9 ac) of San Bernardino kangaroo rat critical habitat 0.31 ha (0.77 ac) of spreading Navarretia 0.01 ha (0.02 ac) of Munz's Onion 218.7 ha (540.3 ac) of Stephen's Kangaroo Rat	3.4 ha (8.5 ac) of least Bell's vireo habitat 56.6 ha (140.0 ac) of Quino checkerspot butterfly critical habitat 1.2 ha (2.9 ac) of San Bernardino kangaroo rat critical habitat 0.31 ha (0.77 ac) of spreading Navarretia 0.01 ha (0.02 ac) of Munz's Onion 218.7 ha (540.3 ac) of Stephen's Kangaroo Rat	 0.9 ha (2.2 ac) of least Bell's vireo habitat 16.2 ha (40.1 ac) of final California gnatcatcher critical habitat; 132.6 ha (327.6 ac) of Quino checkerspot butterfly critical habitat 1.2 ha (2.9 ac) San Bernardino kangaroo rat critical habitat 0.31 ha (0.77 ac) of spreading Navarretia 3.07 ha (7.58 ac) of Munz's Onion 68.3 ha (168.7 ac) of Stephen's Kangaroo Rat 	TE-1 Prior to construction, the Riverside County Transportation Commission (RCTC) will obtain a Determination of Biologically Equivalent or Superior Preservation (DBESP) for impacts to habitat suitable for long-term conservation for spreading navarretia, least Bell's vireo, and San Bernardino kangaroo rat where 10 percent or more of those portions of the site that provide for the long-term conservation value are impacted, pursuant to Section 6.1.2 and Section 6.1.3 of the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). A DBESP may also be required for any impacts to habitat suitable for long-term conservation for Munz's onion (pending the results of the focused surveys in the area north of the El Sobrante Landfill MSHCP Area in late 2008). Mitigation provided in the DBESP will demonstrate that equivalent or superior conservation for the species will be achieved through either location and preservation of populations that are not already proposed for conservation in the MSHCP, and/or restoration or enhancement of existing populations within the proposed conservation area.



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								TE-2 During construction, the Riverside County Transportation Commission (RCTC) will adhere to the Guidelines for the Siting and Design of Planned Roads Within the Criteria Area and Public/Quasi- Public Lands (Multiple Species Habitat Conservation Plan, Sections 7.5.1, 7.5.3, and Appendix C) for avoiding take of active nests.
								TE-3 Prior to construction, the Riverside County Transportation Commission (RCTC) will mitigate for impacts to the Habitat Conservation Plan for the Stephens' Kangaroo Rat Reserve lands through replacement mitigation lands pursuant to the requirements of the Habitat Conservation Plan for the Stephens' kangaroo rat (replacement of occupied habitat at a ratio of 1:1). This mitigation will occur through RCTC's purchase of mitigation lands that are known to be occupied by Stephens' kangaroo rat (surveys to confirm presence of Stephens' kangaroo rat will be conducted prior to acquisition of these mitigation lands). These lands would then be managed by the Riverside County Habitat Conservation Agency through an agreement with RCTC. The 1:1 replacement of occupied habitat will also provide replacement of Public/Quasi-Public Lands at a 1:1 ratio, consistent with the Multiple Species Habitat Conservation Plan (MSHCP)
								requirements. The 1:1 replacement of occupied habitat will also meet the requirements for the 14 parcels managed by the federal Bureau of Land Management.
Invasive Species	No impact.	Less impact than MCP Build Alternatives	Potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway.	Potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway.	Potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway.	Potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway.	Potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway.	Prior to and during construction, the Riverside County Transportation Commission (RCTC) will ensure that bare soil will be landscaped with California Department of Transportation (Caltrans) recommended seed mix and container plants from locally adapted species to preclude the invasion of noxious weeds. Seed mixtures for portions of the project under Caltrans jurisdiction shall be approved by a Caltrans District Landscape Architect. The use of site-specific materials adapted to local conditions increases the likelihood that revegetation will be successful and maintains the genetic integrity of the local ecosystem. Prior to construction, RCTC will require the Project Biologist to make arrangements well in advance of planting (at least 9 months prior) to ensure that plant materials are located and available for the scheduled planting time. Sufficient time shall be allocated for a professional seed company to visit the project site during the appropriate season and collect the native plant seed. If local propagules are not available or cannot be collected in sufficient quantities, materials collected



Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
								or grown from other sources within southern California shall be substituted. For widespread native herbaceous species that are more likely to be genetically homogeneous, site specificity is a less important consideration, and seed and container plants from commercial sources may be used.
								IS-2 Prior to construction, the Riverside County Transportation Commission (RCTC) will require that the Project Biologist certify seed purity by planting seed labeled under the California Food and Agricultural Code or that has been tested within a year by a seed laboratory certified by the Association of Official Seed Analysts or by a seed technologist certified by the Society of Commercial Seed Technologists.
								IS-3 During construction, the Riverside County Transportation Commission (RCTC) will require that the Construction Contractor ensure that construction equipment is will be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds both before mobilizing to arrive at the site and before leaving the site. Construction equipment will be cleaned at established truck wash facilities within the project vicinity.
								IS-4 During construction, the Riverside County Transportation Commission (RCTC) will require that the Construction Contractor ensure that trucks carrying vegetation shall be covered and that vegetative materials removed from the site shall be disposed of in accordance with all applicable laws and regulations.
								IS-5 During construction, prior to the initiation of grading, the Riverside County Transportation Commission (RCTC) will require that the Construction Contractor ensure that if material is obtained from a borrow site, the material will be inspected for the presence of noxious weeds and invasive plants to ensure that the material does not contain noxious weeds or invasive plants.
								IS-6 The Riverside County Transportation Commission (RCTC) will require that, during construction, the Construction Contractor control, kill, and remove noxious weeds and invasive plants from the project site, subject to verification by the Project Biologist.

Table S.1 Summary of Impacts

Potential Impact	No Build Alternative 1A	No Build Alternative 1B	Build Alternative 4	Build Alternative 5	Build Alternative 6	Build Alternative 7	Build Alternative 9	Avoidance, Minimization, and Mitigation Measures
Cumulative Impacts	No impact	Less impact than MCP	The MCP project,	Cumulative impacts to natural communities, plant species,				
		Build Alternatives	when combined with	animal species, and threatened and endangered species will				
			the other anticipated	be mitigated through compliance by RCTC and other				
			cumulative projects,	permittees with the MSHCP. Cumulative impacts to wetlands				
			would contribute to a	and other waters will be mitigated through compliance by				
			cumulative loss of	RCTC and other agencies with the provisions of the SAMP for				
			farmlands,	farmlands,	farmlands,	farmlands,	farmlands,	the San Jacinto River watershed, once it is approved. For
			visual/aesthetics,	visual/aesthetics,	visual/aesthetics,	visual/aesthetics,	visual/aesthetics,	cultural and paleontological resources, RCTC will work with
			cultural resources,	those agencies responsible for approval of the cumulative				
			paleontological	paleontological	paleontological	paleontological	paleontological	projects to provide information on these resources from the
			resources, natural	MCP project that may be useful to those agencies in				
			communities, wetlands	mitigating impacts to those resources. The cumulative loss of				
	**************************************		and other waters, plant	farmlands has been previously acknowledged by the County				
			species, animal	and the Cities of Corona, Perris, and San Jacinto as an				
			species, and	unavoidable adverse impact resulting from the planned				
			threatened and	growth within western Riverside County.				
			endangered species.					



Executive Summary

This page intentionally left blank

Table S.2 Summary of Use Impacts to Section 4(f) Properties by Alternative

Section 4(f) Property	Use Impacts By Alternative
El Cerrito Sports Park	Alternatives 4, 5, 6, 7, and 9: 0.95 ha (2.36 ac)
	Alternatives 4, 5, 6, 7, and 9 with the Temescal Wash Area
	Design Variation: No use
	Alternatives 1A and 1B: No use
Lake Mathews/Estelle Mountain	Alternatives 4 and 5: 168.0 ha (415.1 ac)
Reserve	Alternatives 6 and 7: 218.7 ha (540.3 ac)
	Alternative 9: 68.3 ha (168.7 ac)
	Alternatives 1A and 1B: No use
El Sobrante Landfill Multiple	Alternatives 4 and 5: 9.1 ha (22.4 ac)
Species Habitat Conservation Plan	Alternatives 1A, 1B, 6, and 7: No use
Area	Alternative 9: 8.9 ha (22.0 ac)
Paragon Park	Alternatives 1A, 1B, 4, 5, 6, 7, and Alternative 9 with Rider
	Street Design Variation: No use
	Alternative 9: 3.62 ha (8.95 ac)
	Alternative 9 with the elevated grade design variation: 3.73
	ha (9.21 ac)
P-33-4759/H (CA-RIV-4759/H)	Alternatives 1A, 1B, 4, 5, and 9: No use
Cajalco Tin Mine District	Alternatives 6 and 7: 25.2 ha (62.5 ac)
P-33-13791 (CA-RIV-7843)	Alternatives 4, 5, 6, and 7: 8.3 ha (20.5 ac)
Cajalco Creek Site	Alternatives 1A, 1B, and 9: No use
P-33-16598 (CA-RIV-8712) Multi-	Alternatives 4, 5, 6, 7, and 9: 2.1 ha (5.2 ac)
Use Prehistoric Site	Alternatives 1A and 1B: No use

Source: LSA Associates, Inc. (2008).



Table S.3 Section 4(f) Properties – Evaluation of Net Harm after Mitigation

Net Harm After Mitigation	Alternatives 4, 5, 6, 7, and 9 would include continuation of existing coordination and consultation with the County of Riverside, including ongoing discussions with the County regarding minor modifications to the planned layout of this park, to accommodate the minor use of land on the west side of the park for Alternatives 4, 5, 6, 7, and 9; this would fully mitigate the impacts of the use related to the three sports fields. In summary, the harm to this park under Alternatives 4, 5, 6, 7, and 9 can be substantially reduced. The alternatives with the Temescal Wash Area Design Variation would not use property from this park.		Alternatives 4 and 5 would pass through the Lake Mathews-Estelle Mountain Reserve south of Lake Mathews and would use approximately 3.5 percent of the total area of this reserve. These impacts would be mitigated through replacement of impacted lands at a minimum ratio of 1:1, designating the remaining portions of this reserve as ESAs, biological monitoring, and provision of wildlife crossings across the MCP facility to facilitate wildlife movement.	Alternatives 6 and 7 would pass through the Lake Mathews-Estelle Mountain Reserve north and south of Lake Mathews and would use approximately 4.5 percent of the total area of this reserve. These impacts would be mitigated through replacement of impacted lands at a minimum ratio of 1:1, designating the remaining portions of this reserve as ESAs, biological monitoring, and provision of wildlife crossings across the MCP facility to facilitate wildlife movement.	Alternative 9 would pass through the Lake Mathews-Estelle Mountain Reserve south of Lake Mathews and would use approximately 1.4 percent of this reserve. These impacts would be mitigated through replacement of impacted lands at a minimum ratio of 1:1, designating the remaining portions of this reserve as ESAs, biological monitoring, and provision of wildlife crossings across the MCP facility to facilitate wildlife movement.
Use Impacts by Alternative and Areas Used	Alternatives 4, 5, 6, 7, and 9: 0.95 ha (2.36 ac) The area used by these Alternatives is on the west side of the site for this proposed park. These Alternatives would remove landscaping, and the westernmost edges of three sports fields; the area used under all five Alternatives represents approximately	o.9 percent of the total site for this planned park. Alternatives 4, 5, 6, 7, and 9 with the Temescal Wash Area Design Variation would result in no use of this Section 4(f) property	Alternatives 4 and 5: 168.0 ha (415.1 ac) Alternatives 6 and 7: 218.7 ha (540.3 ac) Alternative 9: 68.3 ha (168.7 ac) The parts of the Lake Mathews-Estelle Mountain Reserve used under these Alternatives contain biological and water	resources that provide habitat for wildlife species.	
Section 4(f) Property	El Cerrito Sports Park (planned park)		Lake Mathews- Estelle Mountain Reserve		

Table S.3 Section 4(f) Properties – Evaluation of Net Harm after Mitigation

Net Harm After Mitigation	Alternatives 4 and 5 would pass along the north side of the El Sobrante Landfill MSHCP area and would use approximately 3 percent of the total area of the El Sobrante Landfill MSHCP area. These impacts would be mitigated through replacement of impacted lands at a minimum ratio of 1:1, designating the remaining portions of the El Sobrante Landfill MSHCP area as ESAs, biological monitoring, and provision of wildlife crossings across the MCP facility to facilitate wildlife movement.	Alternative 9 would pass along the north side of the El Sobrante Landfill MSHCP area and would use approximately 1.4 percent of the total area of the El Sobrante Landfill MSHCP area. These impacts would be mitigated through replacement of impacted lands at a minimum ratio of 1:1, designating the remaining portions of the El Sobrante Landfill MSHCP area as ESAs, biological monitoring, and provision of wildlife crossings across the MCP facility to facilitate wildlife movement.	Alternatives 6 and 7 would not use property from the El Sobrante Landfill MSHCP area.	Alternative 9 and Alternative 9 with the elevated grade design variation pass through the northern part of this park and would use approximately 58.9 and 60.1 percent, respectively, of the total area of this park. The areas used by these Alternatives include tennis courts, a basketball court, four handball courts, and a playground. Replacement park land including these types of sports and play functions would be provided north and east of the existing park, as shown on Figure 4.6. The design of the replacement park areas would be developed in consultation with the City of Perris. Appropriate pedestrian access from the remaining part of the existing park and the two replacement park areas would be provided.	Alternatives 4, 5, 6, 7, and Alternative 9 with Rider Street Design Variation would not use property from this park.	Alternatives 6 and 7 would cross the northerly portion of this site and would use approximately 11.1 percent of the total area of this historic site. If these alternatives were selected for implementation, mitigation measures would include preparing and	implementing a data recovery plan to collect, analyze, and curate any artifacts from this site prior to construction. During construction, ESA fencing would be provided, and	the site were not harmed. These measures would substantially mitigate the effects of the use of this part of the historic district by Alternatives 6 and 7. In summary, the net harm of	the use of this historic district by Alternatives 6 and 7 can be minimized.
Use Impacts by Alternative and Areas Used	Alternatives 4 and 5: 9.1 ha (22.4 ac) Alternatives 6 and 7: No use Alternative 9: 8.9 ha (22.0 ac) The parts of the El Sobrante Landfill MSHCP area used by Alternatives 4, 5, and 9 contain biological and water resources	that provide habitat for wildlife species.		Alternative 9: 3.62 ha (8.95 ac) Alternative 9 with the elevated grade design variation: 3.73 ha (9.21 ac) Alternatives 4, 5, 6, 7, and Alternative 9 with Rider Street Design Variation: No use		Alternatives 6 and 7: 25.2 ha (62.5 ac) Alternatives 4, 5, and 9: No use	Alternatives 6 and 7 would use the part of this historic site that has the main	Concentration of resources in the District. Specifically, Alternatives 6 and 7 pass through the part of this District that once	contained a well-developed intrastructure of buildings and roads dating to the Civil War
Section 4(f) Property	El Sobrante Landfill Multiple Species Habitat Conservation Plan (MSHCP) Area			Paragon Park		P-33-4759/H (CA-RIV-4759/H) Cajalco Tin Mine	District		



Table S.3 Section 4(f) Properties - Evaluation of Net Harm after Mitigation

	Use Impacts by Alternative and Areas	Net Harm After Mitigation
	Used	
era. None o standing.	era. None of those structures is still standing.	Alternatives 4, 5, and 9 would not use property from this historic site.
Alternative Alternative	Alternatives 4, 5, 6, and 7: 8.3 ha (20.5 ac) Alternative 9: No use	Alternatives 4, 5, 6, and 7 would cross the central portion of the site and would use approximately 3.9 percent of the total area of this historic site. Three loci of the site, 33-816, 33-817, and 33-818, will be at least partially impracted by Alternatives 4, 5, 6, and 7
Alternative	Alternatives 4, 5, 6, and 7 cross the three	although the cupule boulder rock art feature at 33-816 will be avoided by bridging the
at these Ic	loci at this site and would partially use land at these loci. At Locus 33-816, the cupules	area. If these alternatives were selected for implementation, mitigation measures would include preparing and implementing a data recovery plan to collect, analyze, and curate
would be part of this	would be avoided, but the southernmost part of this locus would be used; at Locus	any artifacts from this site prior to construction. During construction, ESA fencing would be provided and archaeological monitoring would be conducted to ensure that the
33-817, tl	33-817, the southernmost part of this locus	remaining portions of the site were not harmed. These measures would substantially
would be	would be used; and at Locus 33-818, the northern internal locus would be used. but	mitigate the effects of the use of part of the site by Alternatives 4, 5, 6, and 7. In summary, the net harm of the use of this site by Alternatives 4. 5. 6, and 7 can be minimized
the south	the southern internal locus would be	
avoided.	avoided. No important parts of this site,	Alternative 9 would result in no use of this historic site.
such as	such as rock art, would be used by	
Alternati	- 1	
Alternati	Alternatives 4, 5, 6, 7, and 9: 2.1 ha (5.2	Alternatives 4, 5, 6, 7, and 9 would all cross the northerly edge of this site and would use
ac)		approximately 6.6 percent of the total area of this historic site. Although this part of this
		nistoric site was determined to nave limited data potential, the Native American Tribes indicated in their consultations that the site as a whole is important and significant. No
		important parts of this site, such as rock art, would be used by these alternatives. If these
		alternatives were selected for implementation, mitigation measures would include
		preparing and implementing a data recovery plan to collect, analyze, and curate any
		artifacts from this site prior to construction. During construction, ESA fencing would be
		provided and archaeological monitoring would be conducted to ensure that the remaining
		portions of the site were not harmed. These measures would substantially mitigate the
		effects of the use of part of the site by Alternatives 4, 5, 6, 7, and 9. In summary, the net
		harm of the use of this site by Alternatives 4, 5, 6 , 7, and 9 can be minimized.

Source: LSA Associates, Inc. (2008).
ac = acres
ESAs = Environmentally Sensitive Areas
ha = hectares
MCP = Mid County Parkway



Table S.4 Permits and Approvals Needed

A		
Agency	PermitApproval	limeline
United States Fish and Wildlife	 Section 7 consultation for Threatened and Endangered 	1. Section 7 consultations are to be conducted following
Service (USFWS)	Species	identification of a Preferred Alternative and preparation
	 Section 7 consultation with USACE on Section 404 	of the MSHCP Consistency Determination, which will
	permit	serve as the Biological Assessment (BA).
	 Concur on RCTC's MSHCP Consistency Determination 	2. The MSHCP Consistency Determination and DBESP
	 Concurrence on Determination of Biologically Equivalent 	will be prepared and submitted for USFWS concurrence
	or Superior Preservation (DBESP)	following identification of a Locally Preferred Alternative
	 Approval of amendment to western Riverside County 	
	MSHCP	3. The amendment to the MSHCP will be requested by
	 Approval of amendment to El Sobrante Landfill MSHCP 	RCTC after the Record of Decision is approved for the
	(USA Waste is permittee)	
	 Approval of any replacement lands pursuant to the 	4. Approval of replacement lands pursuant to the Habitat
	Habitat Conservation Plan for the Stephens' kangaroo	Conservation Plan for the Stephens' kangaroo rat and
	rat	amendments to other Habitat Conservation Plans will be
	 Approval of any amendments to the Lake Mathews 	requested by RCTC after the Record of Decision is
	MSHCP and Natural Communities Conservation Plan.	approved for the MCP EIS.
		2 17 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
United States Army Corps of	 Section 404 Permit for filling or dredging waters of the 	Application to be submitted following identification of a
Engineers (USACE)	United States	Preferred Alternative
United States Department of	 Approval of replacement lands pursuant to the Habitat 	Approval of replacement lands pursuant to the Habitat
the Interior-Bureau of Land	Conservation Plan for the Stephens' kangaroo rat;	Conservation Plan for the Stephens' kangaroo rat will be
Management (BLM)	applicable only to BLM-managed lands	requested by RCTC after certification of the Final EIR.
California Department of Fish	 Section 1602 Lake and Streambed Alteration 	1. Section 1602 Notification is to be submitted and
and Game (CDFG)	Agreement	
	 Concur on RCTC's MSHCP Consistency Determination 	2. The MSHCP Consistency Determination and DBESP
	 Approval of MSHCP Amendment 	will be prepared and submitted for CDFG concurrence
		following identification of a Preferred Alternative and
	 Approval of replacement lands pursuant to the Habitat 	3. The amendment to the MSHCP will be requested by
	Conservation Plan for the Stephens' kangaroo rat	
	Concurrence on DBESP	4. Approval of replacement lattice pulsuant to the Habitat
	 Approval of any amendments to the Lake Mathews MSHCP and Natural Communities Conservation Plan. 	conservation Plan for the Stephens Kangaroo lat and amendments to other Habitat Conservation Plans will be
		requested by RCTC after certification of the Final EIR.
State Water Resources Control	Water Discharge Permit, approval of Notice of Intent to comply with General Construction Activity	Application to be submitted prior to construction
	NPDES Permit.	

Table S.4 Permits and Approvals Needed

Timeline	To be conducted following approval of a Preferred Alternative	Approval of replacement lands pursuant to the Habitat Conservation Plan for the Stephens' kangaroo rat will be requested by RCTC after certification of the Final EIR. Section 4(f) consultation will be completed prior to completion of the Final EIR/EIS.	Application to be submitted following approval of a Preferred Alternative	Actions/permits would be issued prior to start of construction. Section 4(f) consultation will be completed prior to completion of the Final EIR/EIS.	Application(s) to be submitted prior to construction To be determined after the approval of a Preferred Alternative To be determined after the approval of a Preferred Alternative	SHPO has given a preliminary concurrence on the agencies' preliminary determinations of eligibility and for the preliminary findings of effect. Final concurrence will occur after submittal of the final Historic Properties Survey Report (which will occur prior to completion of the Final EIR/EIS).
Permit/Approval	Concur on RCTC's MSHCP Consistency Determination	 Approval of replacement lands pursuant to the Habitat Conservation Plan for the Stephens' kangaroo rat Section 4(f) consultation 	Section 401 Water Quality certification	 Freeway Agreement with Caltrans should the MCP project be adopted as a State Highway by the California Transportation Commission Approval of encroachment permits and street construction permits, street closures and re-routing, and associated improvements in the public right of way Section 4(f) consultation for El Cerrito Sports Park (County) and Paragon Park (City of Perris) 	 Encroachment permits for improvements affecting RCFCD facilities For Alternatives 4, 5, 6, or 7, Lake Mathews Habitat Conservation Plan amendment and Section 4(f) consultation For Alternatives 4, 5, or 9, El Sobrante Landfill MSHCP standard amendment 	 Concurrence with the agencies' determinations of eligibility and on the findings of effect.
Agency	Western Riverside County Regional Conservation Authority (RCA)	County of Riverside, Riverside County Habitat Conservation Agency (RCHCA)	Regional Water Quality Control Board 8, Santa Ana Region (RWQCB)	County of Riverside, Cities of Corona, Perris, and San Jacinto	Riverside County Flood Control District (RCFCD) Metropolitan Water District of Southern California USA Waste	State Historic Preservation Officer



Draft Mid County Parkway EIR/EIS and Section 4(f) Evaluation

Table S.4 Permits and Approvals Needed

•		
Agency	Permit/Approval	Timeline
Interested Native American	Required consultation under Section 106 of the National	consultation under Section 106 of the National Native American Consultation for the MCP is ongoing.
Tribes	Historic Preservation Act on the overall project cultural	
	work completed to date, including (but not limited to)	
	determinations of eligibility, findings of effect, and future	
	work that includes involvement with the memorandum of	
	Agreement, Archaeological Monitoring Plan, and Data	
	Recovery Plan.	

Caltrans = California Department of Transportation EIR = Environmental Impact Report EIS = Environmental Impact Statement MCP = Mid County Parkway MSHCP = Multiple Species Habitat Conservation Plan NPDES = National Pollutant Discharge Elimination System RCTC = Riverside County Transportation Commission

This page intentionally left blank

TABLE OF CONTENTS

The Draft EIS/EIR is provided in three separately bound volumes as noted in this Table of Contents

THIS VOLUME IS VOLUME I

EXE	CUTIV	E SUM	MARY	S-1
	S.1	OVER	VIEW OF THE PROJECT AREA	S-1
	S.2	PURPO	OSE AND NEED	S-2
		S.2.1	Project Purpose	S-2
		S.2.2	Project Need	S-3
	S.3	PROPO	OSED ACTION	S-12
1		S.3.1	Alternatives	S-12
		S.3.2	Identification of a Locally Preferred Alternative	S-20
	S.4	JOINT	CEQA/NEPA DOCUMENT	S-21
	S.5	ENVIR	ONMENTAL CONSEQUENCES	S-22
		S.5.1	Land Use	
		S.5.2	Growth	S-24
		S.5.3	Farmlands and Timberlands	S-26
		S.5.4	Community Impacts and Relocation	S-26
		S.5.5	Utilities and Emergency Services	
		S.5.6	Traffic and Transportation/Pedestrian and Bicycle Facilities	
		S.5.7	Visual and Aesthetics	S-32
		S.5.8	Cultural Resources	S-33
		S.5.9	Hydrology and Floodplains	S-34
		S.5.10	Water Quality and Storm Water Runoff	S-35
		S.5.11	Geology, Soils, Seismic, and Topography	
		S.5.12	Paleontology	S-37
		S.5.13	Hazardous Waste and Materials	
		S.5.14	Air Quality	
		S.5.15	Noise	
		S.5.16	Energy	S-40
		S.5.17	Natural Communities	S-40
		S.5.18	Wetlands and Other Waters of the United States	
		S.5.19	Plant Species	
		S.5.20	Animal Species	
		S.5.21	Threatened and Endangered Species	S-4
		S.5.22	Invasive Species	S-45
		S.5.23	Cumulative Impacts	S-45
		S.5.24	Section 4(f) Properties	S-46
	S.6	SUMM	ARY OF SIGNIFICANT IMPACTS UNDER CEQA AFTER	
			ATION	
	S.7	AREAS	S OF CONTROVERSY AND UNRESOLVED ISSUES	S-48
	S.8	COORI	DINATION WITH PUBLIC AND OTHER AGENCIES	S-48
CHA	PTEF	1 Pl	ROPOSED PROJECT	1-1
	1.1		DUCTION	
	-			

	1.2	PROJE	CCT PURPOSE AND NEED	1-10
		1.2.1	Project Purpose	1-10
		1.2.2	Project Need	1-11
CHA	PTE	R 2 P	PROJECT DESCRIPTION AND ALTERNATIVES	2-1
	2.1		CCT DESCRIPTION SUMMARY	
	2.2		RNATIVES DEVELOPMENT PROCESS	
		2.2.1	Development of Initial MCP Alternatives	
		2.2.2	Alternatives Refinement Process	
	2.3		EGMENT DESCRIPTIONS	
		2.3.1	Temescal Wash Area with Collector-Distributor Roads	
			Segment	2-26
		2.3.2	Lake Mathews South Segment	2-26
		2.3.3	Lake Mathews North General Plan Segment	
		2.3.4	Lake Mathews South General Plan Segment	
		2.3.5	Mead Valley Segment	
		2.3.6	Far South Segment	
		2.3.7	Connector Perris 1 Segment	
		2.3.8	Connector Perris 3 Segment.	
		2.3.9	Perris Drain Segment	
		2.3.10	Rider Street Segment.	
		2.3.11	Placentia Avenue/Perris Boulevard Depressed Grade Segment	
		2.3.12	San Jacinto Segment	
		2.3.13	San Jacinto South Segment	
		2.3.14	Temescal Wash Area Segment Design Variation	
		2.3.15	Connector Perris 2 Segment Design Variation	
		2.3.16	Placentia Avenue/Perris Boulevard Elevated Grade Segment	
			Design Variation	2-30
		2.3.17	San Jacinto North Segment Design Variation	2-31
	2.4	ALTER	RNATIVES	2-31
		2.4.1	Alternative 1A: No Project/No Action—Existing Ground	
			Conditions	2-33
		2.4.2	Alternative 1B: No Project/No Action—General Plan	
			Circulation Element Conditions	
		2.4.3	Alternative 4: South of Lake Mathews/North Perris (Drain)	2-33
		2.4.4	Alternative 5: South of Lake Mathews/South Perris (at	
			Rider Street)	2-39
		2.4.5	Alternative 6: General Plan North and South of Lake	
			Mathews/North Perris (Drain)	2-45
		2.4.6	Alternative 7: General Plan North and South of Lake	
		4.5	Mathews/South Perris (at Rider Street)	
		2.4.7	Alternative 9: Far South/Placentia Avenue	
		2.4.8	Design Variations	2-63
	2.5		ON DESIGN FEATURES OF MCP BUILD	
			RNATIVES (ALTERNATIVES 4, 5, 6, 7, AND 9)	
		2.5.1	Design	
		2.5.2	Typical Sections	
		2.5.3	Interchanges	
		2.5.4	Truck-Climbing Lanes	
		2.5.5	Bridges	2-71
		2.5.6	HOV Lanes and Park-and-Ride Facilities	
		2.5.7	Retaining Walls	2-79

		2.5.8	Sound Walls	2-79
		2.5.9	Lighting	
		2.5.10	Landscaping	
		2.5.11	Fencing and Median Barriers	
		2.5.12	Runoff Management/Water Quality Best Management	
			Practices (BMPs)	2-91
		2.5.13	Grading	
		2.5.14	Changes to Local Circulation	
		2.5.15	Borrow Areas/Haul Routes	
		2.5.16	Project Design Features to Minimize Environmental Impacts	
		2.5.17	Phasing	
		2.5.18	Railroad Involvement	
	2.6		JE FEATURES OF MCP BUILD ALTERNATIVES	
	2.0	2.6.1	Alternatives 4 and 6	
		2.6.2	Alternative 9	
		2.6.3	Cajalco Road Closure Pursuant to MSHCP Section 7.2.3	2-103
		2.0.3	(Alternatives 4, 6, and 9)	2 102
	2.7	COMD	ARISON OF ALTERNATIVES	
	2.7		IFICATION OF A LOCALLY PREFERRED	2-103
	2.0			2 105
		2.8.1	RNATIVE	
	2.0		Local Governments and Organizations	2-10/
	2.9		RNATIVES CONSIDERED AND WITHDRAWN FROM	2 107
			HER STUDY	
		2.9.1	Alternatives Formally Considered and Withdrawn	
	0.10	2.9.2	Other Alternatives Considered	
				2-109
CHA	APTE	R3 A	FFECTED ENVIRONMENT, ENVIRONMENTAL	
		C	CONSEQUENCES, AND AVOIDANCE, MINIMIZATION	
		C A	ND/OR MITIGATION MEASURES	
		A A AN ENV	ND/OR MITIGATION MEASURESIRONMENT	3.1-1
	<i>HUM</i> 3.1	C A IAN ENV LAND	ND/OR MITIGATION MEASURESURONMENTUSE	3.1-1 3.1-1
		A AAN ENV LAND 3.1.1	NND/OR MITIGATION MEASURES WIRONMENT USE Existing and Future Land Use	3.1-1 3.1-1 3.1-1
		AMAN ENV LAND 3.1.1 3.1.2	AND/OR MITIGATION MEASURES	3.1-1 3.1-1 3.1-1 3.1-21
	3.1	AAN ENV LAND 3.1.1 3.1.2 3.1.3	AND/OR MITIGATION MEASURES IRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities	3.1-1 3.1-1 3.1-21 3.1-35
		AAN ENV LAND 3.1.1 3.1.2 3.1.3	AND/OR MITIGATION MEASURES IRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH	3.1-1 3.1-1 3.1-21 3.1-35 3.2-1
	3.1	AAN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting	3.1-1 3.1-1 3.1-21 3.1-35 3.2-1 3.2-1
	3.1	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH	3.1-1 3.1-1 3.1-21 3.1-35 3.2-1 3.2-1
	3.1	AAN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3	AND/OR MITIGATION MEASURES IRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences	3.1-1 3.1-1 3.1-21 3.1-35 3.2-1 3.2-1 3.2-1
	3.1	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH	3.1-1 3.1-21 3.1-35 3.1-35 3.2-1 3.2-1 3.2-3 3.2-1
	3.1	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures LANDS/TIMBERLANDS	3.1-1 3.1-1 3.1-21 3.1-35 3.2-1 3.2-1 3.2-1 3.2-18 3.3-18
	3.1	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures LANDS/TIMBERLANDS Regulatory Setting	3.1-13.1-13.1-213.1-253.2-13.2-13.2-13.2-183.3-1
	3.1	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1 3.3.2	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures ANDS/TIMBERLANDS Regulatory Setting Affected Environment	3.1-13.1-13.1-213.1-353.2-13.2-13.2-183.3-13.3-1
	3.1	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH	3.1-13.1-13.1-213.1-253.2-13.2-13.2-13.3-13.3-13.3-1
	3.1	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1 3.3.2 3.3.3 3.3.4	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures Affected Environment Environmental Consequences Aregulatory Setting Affected Environment Environmental Consequences Aregulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures	3.1-13.1-13.1-213.1-353.2-13.2-13.2-183.3-13.3-133.3-13
	3.1	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1 3.3.2 3.3.3 3.3.4	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures ANDS/TIMBERLANDS Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures UNITY IMPACTS	3.1-13.1-13.1-213.1-353.2-13.2-13.2-183.3-13.3-13.3-13.3-133.3-13
	3.2	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1 3.3.2 3.3.3 3.3.4	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures LANDS/TIMBERLANDS Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures UNITY IMPACTS Community Character and Cohesion	3.1-13.1-13.1-213.1-353.2-13.2-13.2-183.3-13.3-13.3-13.3-13.3-13.3-13.3-1
	3.2	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1 3.3.2 3.3.3 3.3.4 COMM 3.4.1 3.4.2	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures LANDS/TIMBERLANDS Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures UNITY IMPACTS Community Character and Cohesion Relocations	3.1-13.1-13.1-213.1-353.2-13.2-13.2-13.3-13.3-13.3-13.3-13.3-13.4-13.4-34
	3.2	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1 3.3.2 3.3.3 3.3.4 COMM 3.4.1 3.4.2 3.4.3	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures ANDS/TIMBERLANDS Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures UNITY IMPACTS Community Character and Cohesion Relocations Environmental Justice	3.1-13.1-13.1-213.1-353.2-13.2-13.2-13.3-13.3-13.3-13.3-13.4-13.4-343.4-34
	3.2	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1 3.3.2 3.3.3 3.3.4 COMM 3.4.1 3.4.2 3.4.3	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures LANDS/TIMBERLANDS Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures UNITY IMPACTS Community Character and Cohesion Relocations	3.1-13.1-13.1-213.1-353.2-13.2-13.2-13.3-13.3-13.3-13.3-13.4-13.4-343.4-34
	3.1 3.2 3.3	AMN ENV LAND 3.1.1 3.1.2 3.1.3 GROW 3.2.1 3.2.2 3.2.3 3.2.4 FARMI 3.3.1 3.3.2 3.3.3 3.3.4 COMM 3.4.1 3.4.2 3.4.3	AND/OR MITIGATION MEASURES TRONMENT USE Existing and Future Land Use Consistency with State, Regional, and Local Plans Parks and Recreational Facilities TH Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures ANDS/TIMBERLANDS Regulatory Setting Affected Environment Environmental Consequences Avoidance, Minimization, and/or Mitigation Measures UNITY IMPACTS Community Character and Cohesion Relocations Environmental Justice	3.1-13.1-13.1-213.1-253.2-13.2-13.2-183.3-13.3-133.3-133.3-133.4-13.4-13.4-343.5-1

	3.5.3	Avoidance, Minimization, and/or Mitigation Measures	3.5-14
3.6		FIC AND TRANSPORTATION/PEDESTRIAN AND	
	BICYC	CLE FACILITIES	
	3.6.1	Regulatory Setting	
	3.6.2	Affected Environment	
	3.6.3	Environmental Consequences	3.6-19
	3.6.4	Avoidance, Minimization, and/or Mitigation Measures	3.6-31
3.7	VISUA	L/AESTHETICS	
	3.7.1	Regulatory Setting	3.7-1
	3.7.2	Affected Environment	3.7-1
	3.7.3	Environmental Consequences	3.7-51
	3.7.4	Avoidance, Minimization, and/or Mitigation Measures	3.7-76
3.8	CULTU	URAL RESOURCES	3.8-1
	3.8.1	Regulatory Setting	3.8-1
	3.8.2	Affected Environment	3.8-2
	3.8.3	Environmental Consequences	3.8-11
	3.8.4	Avoidance, Minimization and/or Mitigation Measures	3.8-16
PHY	SICAL E	ENVIRONMENT	3.9-1
3.9	HYDR	OLOGY AND FLOODPLAINS	3.9-1
	3.9.1	Regulatory Setting	3.9-1
	3.9.2	Affected Environment	
	3.9.3	Environmental Consequences	3.9-12
	3.9.4	Avoidance, Minimization, and/or Mitigation Measures	3.9-36
3.10	WATE	R QUALITY AND STORM WATER RUNOFF	3.10-1
	3.10.1	Regulatory Setting	3.10-1
	3.10.2	Affected Environment	
	3.10.3	Environmental Consequences	
	3.10.4	Avoidance, Minimization, and/or Mitigation Measures	
3.11		OGY/SOILS/SEISMIC/TOPOGRAPHY	
	3.11.1	Regulatory Setting	
	3.11.2	Affected Environment	
	3.11.3	Environmental Consequences	
	3.11.4	Avoidance, Minimization, and/or Mitigation Measures	
3.12		ONTOLOGY	
	3.12.1	Regulatory Setting	
		Affected Environment	
	3.12.3	Fossil Localities	
	3.12.4	Environmental Consequences	
	3.12.5	Avoidance, Minimization, and/or Mitigation Measures	
3.13		RDOUS WASTE/MATERIALS	
	3.13.1	Regulatory Setting	
	3.13.2	Affected Environment	
	3.13.3	Environmental Consequences	
	3.13.4	Avoidance, Minimization and/or Mitigation Measures	
3.14		JALITY	
	3.14.1	Regulatory Setting	
	3.14.2	Affected Environment	
	3.14.3	Environmental Consequences	
0 1 -	3.14.4	Avoidance, Minimization, and/or Mitigation Measures	
3.15	NOISE		
	3.15.1	Regulatory Setting	3.15-1

	3.15.2	Affected Environment	3.15-5
	3.15.3	Impacts	3.15-51
	3.15.4	Avoidance, Minimization, and/or Mitigation Measures	
3.16	ENERG		
	3.16.1	Regulatory Setting	3.16-1
	3.16.2	Affected Environment	
	3.16.3	Environmental Consequences	
	3.16.4	Global Climate Change	
	3.16.5	Avoidance, Minimization, and/or Mitigation Measures	
BIOL		L ENVIRONMENT	
3.17		RAL COMMUNITIES	
	3.17.1	Regulatory Setting	
	3.17.2	Affected Environment	3.17-10
	3.17.3	Environmental Consequences.	
	3.17.4	MSHCP Equivalency Analysis – Summary	
	3.17.5	Avoidance, Minimization, and/or Mitigation Measures	
3.18		ANDS AND OTHER WATERS	3.18-1
	3.18.1	Regulatory Setting	
	3.18.2	Affected Environment	
	3.18.3	Environmental Consequences	
	3.18.4	Avoidance, Minimization, and/or Mitigation Measures	
3.19		SPECIES	3.19-1
	3.19.1	Regulatory Setting	
	3.19.2	Affected Environment	
	3.19.3	Environmental Consequences	
	3.19.4	Avoidance, Minimization, and/or Mitigation Measures	
3.20	ANIMA	AL SPECIES	
	3.20.1	Regulatory Setting	
	3.20.2	Affected Environment	
	3.20.3	Environmental Consequences	3.20-3
	3.20.4	Avoidance, Minimization, and/or Mitigation Measures	
3.21	THREA	TENED AND ENDANGERED SPECIES	
	3.21.1	Regulatory Setting	3.21-1
	3.21.2	Affected Environment	
	3.21.3	Environmental Consequences	
	3.21.4	Avoidance, Minimization, and/or Mitigation Measures	3.21-21
3.22	INVAS	IVE SPECIES	3.22-1
	3.22.1	Regulatory Setting	3.22-1
	3.22.2	Affected Environment	3.22-1
	3.22.3	Environmental Consequences	3.22-2
	3.22.4	Avoidance, Minimization, and/or Mitigation Measures	3.22-3
3.23	RELAT	TONSHIP BETWEEN LOCAL SHORT-TERM USES OF	
		UMAN ENVIRONMENT AND THE MAINTENANCE AND	
	ENHAN	NCEMENT OF LONG-TERM PRODUCTIVITY	3.23-1
	3.23.1	Introduction	3.23-1
	3.23.2	Environmental Consequences	3.23-1
	3.23.3	Conclusions	
3.24	IRREVI	ERSIBLE AND IRRETRIEVABLE COMMITMENTS OF	
	RESOU	RCES THAT WOULD BE INVOLVED IN THE	
	PROPO	SED PROJECT	3.24-1
	3.24.1	Build Alternative	3.24-1

		3.24.2	No Build	3 24-2
	3.25		ATIVE IMPACTS	
	3.23		Regulatory Setting	
		3.25.2 I	Methodology	3 25-1
			dentification of Resources/Issues to Consider for Cumulative	5.25-1
			Impacts	3 25-3
			dentification of Cumulative Plans and Projects	
			Environmental Consequences	
			Summary	
		J.25.0 L	Juliinar y	. 5.25-50
VIC	\	/C II		
VC	DLUN			
CH	APTE		LIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)	
			ALUATION	
	4.1		MINING SIGNIFICANCE UNDER CEQA	
	4.2		SION OF SIGNIFICANCE OF IMPACTS	
			No Impact	
		4.2.2 I	Less than Significant Effects of the Proposed Project	4-5
		4.2.3	Significant Environmental Effects of the Proposed Project	
		1	that Can be Mitigated to Below a Level of Significance	4-17
		4.2.4 U	Unavoidable Significant Environmental Effects	4-28
		4.2.5	Significant Irreversible Environmental Changes	4-37
			Climate Change/Global Warming	
	4.3		CONSERVATION (CEQA GUIDELINES, APPENDIX F)	
	4.4		ΓΙΟΝ MEASURES FOR SIGNIFICANT IMPACTS	
		UNDER	CEQA	4-47
	4.5	ENVIRO	NMENTALLY SUPERIOR ALTERNATIVE	4-48
СН	APTE	R 5 CO	MMENTS AND COORDINATION	5-1
· · · ·	5.1		G PROCESS	
	3.1		Prescoping Meetings	
			Scoping Meetings	
	5.2		TATION AND COORDINATION WITH PUBLIC	
	3.2		ES	5-4
	5.3		SES TO THE NOTICE OF PREPARATION	
	3.3		Summary of Major Issues/Comments in Response to the	
			Notice of Preparation	
	5.4	RESPON	SES TO THE SUPPLEMENTAL NOTICE OF	5 10
	J. 1		ATION	5-16
			Summary of Major Issues/Comments Received in Response	10
			to the Supplemental Notice of Preparation	5-16
	5.5		SES TO THE NOTICE OF INTENT	
	3.3		Summary of Major Issues/Comments Received in Response	5 21
			to the Notice of Intent	5-22
	5.6		PARTICIPATION	
	5.0		Public Participation	
			Meetings	
			Veb Site	
			Vewsletter	
	5.7		COORDINATION	
	5.1			
		J.1.1 E	Extended Phase I Survey	೨-∠७

	5.7.2 Phase II Evaluation	5-28
	5.7.3 Senate Bill 18	5-33
CHAPTER	CALC LIST OF PREPARERS	6-1
CHAPTER	7 DISTRIBUTION LIST	7-1
7.1	FEDERAL AGENCIES	7-2
	STATE AGENCIES	
	REGIONAL/COUNTY/CITY AGENCIES	
	TRIBAL GOVERNMENTS	
	SCHOOL DISTRICTSSPECIAL DISTRICTS/UTILITIES	
	INTERESTED PARTIES	
	X A CEQA CHECKLIST	
APPENDIX		
APPENDIX		
APPENDI		
APPENDIX		
APPENDIX		
APPENDIX		7
APPENDIX		
APPENDI		
APPENDIX	▼ J SUPPLEMENTAL CHAPTER 5 ATTACHMENTS	J-1
VOLUM	E III	
· · · · · · · · · · · · · · · · · · ·		
APPENDIX	K K REGIONAL TRANSPORTATION IMPROVEMENT	· ·
	PROGRAM (RTIP)	K-1
APPENDI		T 1
	(USFWS) LETTER	
	K M FLOOD INSURANCE RATE MAPS (FIRMS)	
	K N 404(B)(1) ALTERNATIVES ANALYSIS	N-1
APPENDIX	REGIONAL SPECIES OF CONCERN AND COVERAGE	
	UNDER HABITAT CONSERVATION PLANS	
	P PARCEL ACQUISITIONS	P-1
APPENDI	CONCEPTUAL MITIGATION PLAN FOR IMPACTS TO	
	WETLANDS AND OTHER WATERS OF THE UNITED	0.1
ADDENISI	STATES	
	R REFERENCES	
~ PULBINIY		1

This page intentionally left blank

List of Figures

Figure 1.1.1 Regional Location	
Figure 1.1.2 Hemet to Corona/Lake Elsinore Study Area	
Figure 1.2.1 Circulation Element	
Figure 1.2.2 Freeways and Other State Highways	
Figure 1.2.3 Jurisdictional Boundaries	
Figure 1.2.4 Related Transportation Improvement Projects	
Figure 2.1.1 Project Vicinity and Study Area	2-3
Figure 2.2.1 Engineering and Environmental Constraints	2-9
Figure 2.3.1a Study Area Segments	2-21
Figure 2.3.1b Study Area Segments	
Figure 2.4.1a Alternative 4	
Figure 2.4.1b Alternative 4	
Figure 2.4.2a Alternative 5	
Figure 2.4.2b Alternative 5	
Figure 2.4.3a Alternative 6	
Figure 2.4.3b Alternative 6	
Figure 2.4.4a Alternative 7	
Figure 2.4.4b Alternative 7	
Figure 2.4.5a Alternative 9	
Figure 2.4.5b Alternative 9	
Figure 2.5.1 Typical Cross Sections: Parkway Alternatives	
Figure 2.5.2 Typical Cross Sections: General Plan	
Figure 2.5.3 Typical Local Street Interchanges	
Figure 2.5.4a Cut, Fill and Retaining Wall	
Figure 2.5.4b Cut, Fill and Retaining Wall	
Figure 2.5.4c Cut, Fill and Retaining Wall	
Figure 2.5.4d Cut, Fill and Retaining Wall	
Figure 2.5.5 Local Borrow and Disposal Sites	
Figure 3.1.1 Existing Land Uses	
Figure 3.1.2 Section 4(f) Properties and Recreation Resources	
Figure 3.1.3 Alternative 9 with the Depressed Grade Design at Paragon Park	
Figure 3.1.4 Alternative 9 With Elevated Grade Design at Paragon Park	
Figure 3.2.1 Areas Targeted for Growth in the MCP Study Area	
Figure 3.3.1 Designated Farmlands in MCF Study Area	
Figure 3.4.1a Study Area Census Tracts 1990	
Figure 3.4.1a Study Area Census Tracts 1990	
Figure 3.4.2 Non-White Population 1990 and 2000	
Figure 3.4.2 Hispanic Population 1990 and 2000	2 / 12
Figure 3.4.4a I-15/El Cerrito Interchange 2035 in Average Daily Traffic with	3.4-13
Closure of Southbound On-Ramp and Northbound Off-Ramp	3 1-27
Figure 3.4.4b Commute Patterns of I-15/El Cerrito Road	
Figure 3.4.5 Poverty 1990 and 2000	
Figure 3.4.6 Median Household Income 1990 and 2000	7 1-49
Figure 3.5.1a Utilities/Emergency Services Facilities	
Figure 3.5.1a Utilities/Emergency Services Facilities	
Figure 3.6.1 LOS for Freeway Facilities	
Figure 3.6.2 LOS for Signalized Intersections	
1 iguit 5.0.2 100 foi dignanzed intersections	

Figure 3.6.3 General Plan Trails	3.6-17
Figure 3.7.1 Mid County Parkway Visual Impact Assessment Key View 2	
Figure 3.7.2 Mid County Parkway Visual Impact Assessment Key View 3	3.7-9
1 iguic 5.7.2 Wild County I arkway v isual impact 183033mont Roy v iow 5	3.7-11
Figure 3.7.3 Mid County Parkway Visual Impact Assessment Key View 4	3.7-15
Figure 3.7.4 Mid County Parkway Visual Impact Assessment Key View 7	
Figure 3.7.5 Mid County Parkway Visual Impact Assessment Key View 10	
Figure 3.7.6 Mid County Parkway Visual Impact Assessment Key View 14	
Figure 3.7.7 Mid County Parkway Visual Impact Assessment Key View 17	
Figure 3.7.8 Mid County Parkway Visual Impact Assessment Key View 18	
Figure 3.7.9 Mid County Parkway Visual Impact Assessment Key View 19	
Figure 3.7.10 Mid County Parkway Visual Impact Assessment Key View 22	
Figure 3.7.11 Mid County Parkway Visual Impact Assessment Key View 23b	
Figure 3.7.12 Mid County Parkway Visual Impact Assessment Key View 24	
Figure 3.7.13 Mid County Parkway Visual Impact Assessment Key View 25	
Figure 3.7.14 Mid County Parkway Visual Impact Assessment Key View 26	3.7-47
Figure 3.7.15 Mid County Parkway Visual Impact Assessment Key View 27	
Figure 3.7.16 Mid County Parkway Visual Impact Assessment Key View 28	
Figure 3.7.17 Mid County Parkway Visual Impact Assessment Key View 29	
Figure 3.9.1 Watershed Boundaries	
Figure 3.9.2a FEMA 100-Year Floodplain Overview Map	
Figure 3.9.2b FEMA 100-Year Floodplain Overview Map	
Figure 3.9.3 Temescal Wash	
Figure 3.9.4 Cajalco Creek	
Figure 3.9.5 Perris Valley Storm Drain	
Figure 3.9.6 San Jacinto River Floodplain West of Lakeview Avenue	3.9-25
Figure 3.9.7 San Jacinto River at Mid County Parkway/State Route 79 Interchange	
Figure 3.10.1 Surface Waters	
Figure 3.10.2 Groundwater Basins	
Figure 3.10.3a Proposed BMP Locations	
Figure 3.10.3b Proposed BMP Locations	
Figure 3.11.1 Landforms and Topographic Features	
Figure 3.11.2 Fault Zones	
Figure 3.12.1 Paleontological Resource Sensitivity Map	
Figure 3.12.1 Paleontological Resource Sensitivity Map	3.13-17
Figure 3.12.1 Paleontological Resource Sensitivity Map	3.13-17
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57 3.16-9
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57 3.16-9
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57 3.16-9 3.17-5
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57 3.16-9 3.17-5
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57 3.16-9 3.17-7 3.17-11
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57 3.16-9 3.17-7 3.17-11
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57 3.16-9 3.17-7 3.17-13 3.17-13
Figure 3.13.1 Hazardous Release Sites	3.13-17 3.14-7 3.15-7 3.15-57 3.16-9 3.17-7 3.17-13 3.17-13 3.18-5

Figure 3.21.1b Critical Habitat and L	Listed Species Occurrences	3.21-1
Figure 3.25.1 Cumulative Projects	•	

List of Tables

Table S.1 Summary of Impacts	S-49
Table S.2 Summary of Use Impacts to Section 4(f) Properties by Alternative	S-85
Table S.3 Evaluation of Net Harm after Mitigation	S-86
Table S.4 Permits and Approvals Needed	S-89
Table 1.1.A Preliminary Project Cost Estimate	1-9
Table 1.2.A Service Levels for Existing and Proposed Conditions	1-15
Table 1.2.B Accident Data on I-15 Mainline and Ramps	1-23
Table 1.2.C Accident Data on I-215 - Oleander Avenue to Nuevo Road	1-24
Table 1.2.D Summary of Accident History, Cajalco/Ramona Corridor, 2001	
through 2003	
Table 2.4.A Mid County Parkway Segments Representing Each Build Alternative	2-32
Table 2.5.A Mainline MCP Service Interchange Configuration Types	2-72
Table 2.5.B Retaining Wall Summary by Alternative	
Table 2.5.C Sound Walls by Alternative	
Table 2.5.D Quantities of Potential BMPs to be Implemented in the Project Area	2-94
Table 2.5.E Earthwork by Alternative	2-95
Table 2.5.F Earthwork Truck Hours by Alternative	
Table 2.7.A Cost Breakdown for the MCP Build Alternatives	
Table 2.9.A Summary of Alternatives Withdrawn from Further Study	
Table 2.10.A Permits and Approvals Needed	2-111
Table 3.1.A Existing Land Use Impacts by Alternative per Hectare (Acre)	3.1-17
Table 3.1.B Park and Recreational Facility Use Impacts and Consideration of Net	
Harm after Mitigation	
Table 3.3.A MCP Study Area Farmland Acreages by Category	3.3-11
Table 3.3.B Form NRCS-CPA-106 Final Scoring	
Table 3.3.C Impacts to Farmland per Hectare (Acre)	3.3-19
Table 3.3.D Williamson Act Preserves	3.3-20
Table 3.4.A Ethnic Composition	3.4-10
Table 3.4.B Housing Profile	
Table 3.4.C Employment in the Study Area Cities and the County Overall	3.4-19
Table 3.4.D Travel Patterns (2000)	3.4-19
Table 3.4.E Full and Partial Displacements by Alternative	
Table 3.4.F Number of Displaced Employees by Alternative and Jurisdiction	3.4-37
Table 3.4.G Property Tax Revenue Losses by Alternative and Jurisdiction	3.4-40
Table 3.4.H Revenue Losses by Alternative and Jurisdiction	3.4-42
Table 3.4.I Environmental Justice Considerations by Alternative	3.4-55
Table 3.5.A Utility Impacts	3.5-10
Table 3.6.A Existing (2005) and Design Year (2035) Freeway and Ramp Capacity	
Analysis: Interstate 15	3.6-9
Table 3.6.B Existing (2005) and Design Year (2035) Intersection Capacity	
Analysis: Interstate 15 Area	3.6-10
Table 3.6.C Existing (2005) and Design Year (2035) Freeway and Ramp Capacity	
Analysis: Interstate 215	3.6-11
Table 3.6.D Existing (2005) and Design Year (2035) Intersection Capacity	
Analysis: Interstate 215 Area	3.6-12
Table 3.6.E Existing (2005) and Design Year (2035) Intersection Capacity	
Analysis: Interstate 15 to Interstate 215 Area	3.6-13

Table 3.6.F Existing (2005) and Design Year (2035) Intersection Capacity	
Analysis: Interstate 215 to State Route 79 Area	3.6-15
Table 3.6.G 2035 MCP Mainline Eastbound Traffic Condition	
Table 3.6.H 2035 MCP Mainline Westbound Traffic Condition	
Table 3.6.I 2035 MCP Intersection Traffic Condition: Interstate 15 to Interstate	
	3.6-23
Table 3.6.J 2035 MCP Intersection Traffic Condition: Interstate 215 to State Route	
79	3.6-24
Table 3.6.K Vehicle Miles Traveled within the MCP Study Area	3.6-27
Table 3.6.L Alternative 1B Intersection Capacity Analysis: Interstate 15 to	
Interstate 215 Area	3.6-28
Table 3.7.A Key View Summary	
Table 3.7.B Existing and Future Visual Quality	
Table 3.8.A Eligible Cultural Resources in the Area of Potential Effects	
Table 3.9.A Summary of Proposed Transverse and Longitudinal Floodplain	
Encroachments by Segment and Build Alternative	3.9-13
Table 3.10.A Beneficial Uses in the Santa Ana River, San Jacinto River, and	
Associated Tributaries and Lakes	3.10-9
Table 3.10.B Surface Water Quality Objectives for All Inland Waters	
Table 3.10.C Maximum Concentrations (mg/L) Applicable to the Santa Ana and	
San Jacinto Rivers, Lake Mathews, and Lake Perris	. 3.10-11
Table 3.10.D Groundwater Quality Objectives (mg/L)	
Table 3.10.E Change in Pollutant Concentration (mg/L) Compared to Existing	. 5 . 1 0 1 5
Conditions	3 10-24
Table 3.10.F Change in Pollutant Loading (lbs/yr) Compared to	.3.10 2.
Existing Conditions	3.10-24
Table 3.10.G Anticipated Total Metals Concentrations Compared with Water	
Quality Criteria	.3.10-26
Table 3.11.A Active Faults in the Mid County Parkway Study Area	
Table 3.11.B Cut-and-Fill Material by Alternative	
Table 3.12.A Fossil Localities within the Mid County Parkway Study Area by	
Formation	3.12-4
Table 3.12.B MCP Build Alternatives in Relation to Sensitive Formations	
Table 3.13.A Hazardous Substance Releases within the Proposed Right of Way	
	3.13-3
Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25	
mi) of the Proposed Right of Way (All Alternatives)	3.13-5
Table 3.13.C Number of Hazardous Release/Use/Storage/Generators for Each	
MCP Build Alternative within 0.4 km (0.25 mi)	.3.13-39
Table 3.14.A Ambient Air Quality Standards	
Table 3.14.B Ambient Air Quality Monitored at the Perris Air Monitoring Station	
Table 3.14.C Ambient Air Quality Monitored at the Lake Elsinore Air Monitoring	
Station	. 3.14-10
Table 3.14.D Ambient Air Quality Monitored at the Riverside-Rubidoux Air	
Monitoring Station	3 14-11
Table 3.14.E Attainment Status of Criteria Pollutants in the South Coast Air Basin	
Table 3.14.F Daily PM _{2.5} Emissions	
Table 3.14.G Daily PM ₁₀ Emissions	
Table 3.14.H Vehicle Miles Traveled within MCP Study Area	
Table 3.14.1 Vehicle Miles Traveled within SCAG Region	
Table 3.14.1 MSAT Emissions for the MCP Study Area (lbs/day)	
Lactor of the contract and the first of the contract of the co	

Table 3.14.K MSAT Emissions for the SCAG Region (lbs/day)	3.14-25
Table 3.15.A Noise Abatement Criteria	
Table 3.15.B Typical Noise Levels	
Table 3.15.C Measured Existing Noise Levels	
Table 3.15.D Existing and Predicted Future Noise and Wall Analysis	
Table 3.15.E Noise Monitoring Results	
Table 3.15.F Typical Construction Equipment Noise Levels	
Table 3.15.G Summary of Abatement Key Information	
Table 3.15.H Feasible and Reasonable Sound Barriers	
Table 3.16.A Annual Transportation Energy Consumption in the SCAG Region	0.10 120
for Base (Years as Indicated)	3.16-2
Table 3.16.B MCP Study Area Daily Fuel Consumption Comparison	
Table 3.16.C SCAG Region Daily Fuel Consumption Comparison	
Table 3.17.A Land Cover within the BSA	
Table 3.17.B Permanent Impacts to Land Cover Categories	
Table 3.17.C Permanent Impacts to Riparian/Riverine Areas	
Table 3.17.D Permanent Impacts to Other Natural Communities of Special	
	3.17-29
Table 3.17.E Impacts to Least Bell's Vireo Habitat Suitable for Long-Term	
	3.17-33
Table 3.17.F Impacts to Habitat Suitable for Long-Term Conservation of Narrow	
Endemic Plant Species.	3 17-35
Table 3.17.G Impacts to Habitat Suitable for Long-Term Conservation of	
Additional Survey Species	3.17-37
Table 3.17.H Impacts to MSHCP Criteria Area	3 17-39
Table 3.17.I Impacts to MSHCP Cores and Linkages, ha (ac)	
Table 3.17.J Impacts to MSHCP Public/Quasi-Public Lands, ha (ac)	
Table 3.17.K Total Impacts to Land Cover Categories within Lake Mathews	
MSHCP, ha (ac)	3 17-44
Table 3.17.L Total Impacts to Land Cover Categories within the El Sobrante	
Landfill MSHCP, ha (ac)	3 17-46
Table 3.17.M Total Impacts to Land Cover Categories within Stephens' Kangaroo	5.17 10
Rat Reserve, ha (ac)	3 17-49
Table 3.17.N Temporary Impacts to MSHCP Riparian/Riverine Areas	
Table 3.17.0 Habitat Effects by MSHCP Vegetation Community, ha (ac)	
Table 3.17.9 Impacts from Alternative 9 TWS DV on Reserve Features, ha (ac)	
Table 3.17.Q FRAGSTATS Comparison Table	
Table 3.17.R Ecotones within the Mid County Parkway Study Area	3.17-71 3 17 - 74
Table 3.18.A Summary of CDFG and USACE Jurisdictional Areas	3 18-7
Table 3.18.B Wetlands Functions and Values	
Table 3.18.C Permanent Impacts to USACE Jurisdictional Areas	
Table 3.18.D Area of Direct Impacts to CDFG Jurisdictional Areas per Land Use	5.10-11
Type	3 18 13
Table 3.18.E Potential Direct Impacts to Waters of the United States and Riparian	5.10-15
Ecosystems	3 18 16
Table 3.18.F Sum of Normalized Rank Scores of All 15 Criteria	
Table 3.18.G Temporary Impacts to USACE Jurisdictional Areas	
Table 3.18.H Temporary Impacts to CDFG Jurisdictional Areas by Land Use	5.10-21
Category	3 18 22
Table 3.21.A Impacts to Threatened and Endangered Species	
Table 3.25.A Cultural Resources Cumulative Impacts	
TADIC 3.7.3.A. VIIIIIIAI INGSOULCES VIIIIIIIIAHVE HIIDACIS	…ວ.∠ວ−.າຕ

Table 4.2.A	SCREEN3 Input Parameters	4-8
	Results of Health Risk Assessment Modeling	
Table 4.2.C	Summary of Historical Resources	. 4-12
Table 4.2.D	Vehicle Miles Traveled within the SCAG Region	. 4-43
Table 4.2.E	CO ₂ Emissions within the SCAG Region	. 4-44

Chapter 1 Proposed Project

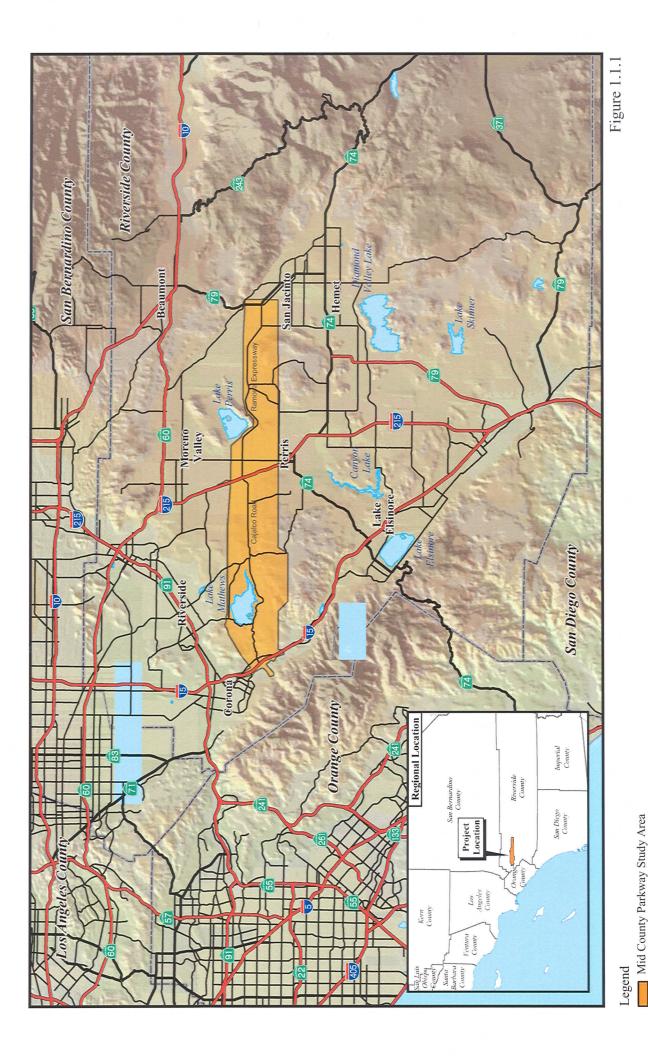
1.1 Introduction

The Riverside County Transportation Commission (RCTC), California Department of Transportation (Caltrans), and the Federal Highway Administration (FHWA) propose to improve west-east transportation in western Riverside County between Interstate 15 (I-15) in the west and State Route 79 (SR-79) in the east. The proposed project will construct a new parkway¹, known as the Mid County Parkway (MCP), which will provide a direct and continuous route connecting major population/employment centers as identified in the Land Use Element of the County of Riverside General Plan and the plans of the cities of Corona, Perris, and San Jacinto, a distance of approximately 51 kilometers (km) (32 miles [mi]). The MCP project's regional location is shown in Figure 1.1.1.

The MCP project was identified as a key west-east regional transportation corridor as a result of several years of comprehensive land use and transportation planning in Riverside County through the Riverside County Integrated Project (RCIP). The RCIP was an unprecedented, multiyear planning effort to simultaneously prepare environmental, transportation, housing, and development guidelines for Riverside County for the first half of the 21st century. Riverside County is one of the fastest



The use of the term "parkway" in this document is intended solely as an abbreviated reference to the Mid County Parkway project and should not be construed so as to define the type of roadway anticipated should the project be constructed. It is used because the public has become accustomed to the term during the history of the project; the project proposes "above standard" landscape mitigation, including the planting of native vegetation A parkway is defined as a divided arterial highway with full control of access and with grade separations at local interchanges with major local arterials. It should be noted that even though the project title is "Mid County Parkway," not all of the alternatives consist of a "parkway" for its entire length. Some of the alternatives include segments that are "expressways and arterials," as defined in the Riverside County General Plan, and are designed to freeway/expressway standards as defined in the Caltrans Highway Design Manual (HDM). The term "parkway" is not used per the definition of parkway in the Caltrans HDM.



KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200 Regional Location

SOURCE: ESRI (2006); TBM (2006), Jacobs Engineering (2/07)



10 Miles

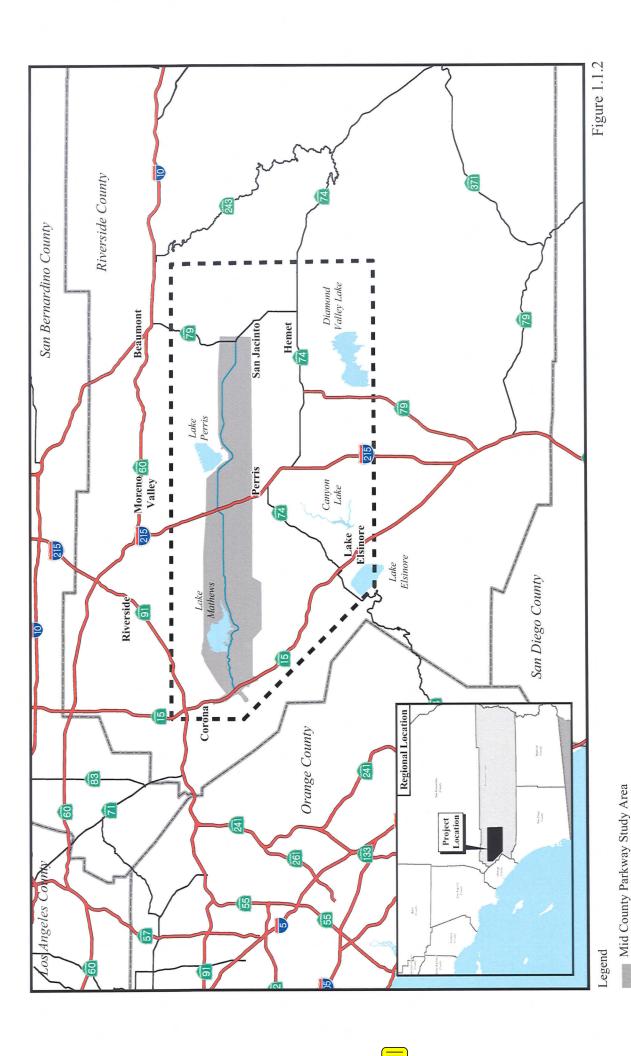
16 Kilometers

growing counties in the United States. The purpose of the RCIP was to address the planning, environmental, and transportation issues that would result from the anticipated doubling of population in Riverside County, from 1.5 million residents currently to approximately 3.0 million by 2020. The RCIP included three components: (1) a new General Plan for Riverside County, adopted in October 2003; (2) a Multiple Species Habitat Conservation Plan (MSHCP) for western Riverside County (approved in June 2004); and (3) the Community and Environmental Transportation Acceptability Process (CETAP).

CETAP study efforts were jointly undertaken by the RCTC and the County of Riverside as a part of the RCIP. CETAP included the study of two intercounty corridors (Riverside County to Orange County and Riverside County to San Bernardino County) and two intracounty transportation corridors (a north-south and a west-east corridor in western Riverside County). Tier 1 analyses and environmental documents were initiated for the two intracounty corridors in fall 2000: a north-south corridor referred to as Winchester to Temecula, and a west-east corridor known as the Hemet to Corona/Lake Elsinore (HCLE) Corridor. The purpose of the Tier 1 efforts was to select preferred alternatives in order to preserve needed right of way.

The west-east corridor was known as the HCLE Corridor (Figure 1.1.2). The agencies that participated in the HCLE Corridor study process developed the following purpose of the proposed action in the HCLE Corridor: "to provide multimodal transportation improvements that will help alleviate future traffic demands and congestion and improve the east-west movement of people and goods across western Riverside County." After a Draft Tier 1 Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) was completed for the HCLE Corridor and circulated for public review in 2002 with a suite of 14 "build" alternatives, the RCTC Board accepted a staff recommendation in June 2003 to proceed with the accelerated preparation of a project-level environmental document for a west-east

Draft Environmental Impact Statement/Environmental Impact Report for the Riverside County Integrated Project, Hemet to Corona/Lake Elsinore Corridor, July 2002.



Hemet to Corona/Lake Elsinore Study Area RP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200







Hemet to Corona/Lake Elsinore Study Area

SOURCE: ESRI (2006); TBM (2006), Jacobs Engineering (2/07)

I:\\]\CV531\\GIS_Fina\\EIR_EIS\\20080402_EIR_EIS_Fina\\\HCLE_Study\Area_062107.mxd (4/18/2008)

alternative that would follow the existing alignment of Cajalco Road and Ramona Expressway, known as the MCP project.¹

Cajalco Road and Ramona Expressway exist today as two- to six-lane arterial highways with numerous intersections and driveways for local property access. The MCP study area is an existing mix of rural, semirural, and urban land uses;

however, substantial residential and commercial development is under construction, fully entitled for future development, or undergoing review of applications for future land development.

Table 1.1.A provides the preliminary cost estimate for the proposed MCP project.



Cost Breakdown ¹	Estimated Costs ² (\$ billion)
Engineering	0.60
Construction	2.98
Right of Way	0.62
Construction	2.21
Environmental Mitigation	0.15
Total Cost	3.58

Source: Jacobs, 2008.

See Chapter 2 of this EIR/EIS for a cost breakdown by alternative.

Cost provided for Locally Preferred Alternative (Alternative 9 TWS DV). EIR/EIS = Environmental Impact Report/Environmental Impact Statement

TWS DV = Temescal Wash Area Design Variation

Detailed figures of the MCP Build Alternatives are provided later in Chapter 2, Project Description and Alternatives.

The Project Approval/Environmental Document (PA/ED) phase of the MCP project, including the preparation of the Draft EIR/EIS, was funded with Riverside County Transportation Uniform Mitigation Fee funds and a federal streamlining funding allocation. No funding has been programmed for design, right of way acquisition, or





Although the document prepared for the HCLE Corridor was a Tier 1 EIS/EIR, this Draft EIR/EIS for the MCP project does not "tier off" the HCLE Draft Tier 1 EIS/EIR pursuant to Section 15152 of the California Environmental Quality Act (CEQA) Guidelines. This is because a Final Tier 1 EIS/EIR was not completed, and all of the data and analysis contained in the HCLE Draft Tier 1 EIS/EIR needed to be updated for the analysis of the MCP Alternatives.



construction; although, it is anticipated that a combination of the state Interregional Transportation Improvement Program (ITIP), Regional Transportation Improvement Program (RTIP), local Measure "A" 0.5-cent sales tax, local Transportation Uniform Mitigation Fee fees, and federal dollars would be pursued. The project is currently included in the 2008 Regional Transportation Plan (RTP) adopted May 8, 2008, listed as CETAP Mid County Parkway Corridor (RIV031218). The following description is listed for the project: "Construct a 4–8 lane limited access parkway from Corona (slightly west of I-15) to San Jacinto (to SR-79) and construct local interchanges in the corridor at 15 locations."

The 2008 RTIP (adopted in August 2008) includes the following programming description:

Mid County Pkwy: Construct 4 to 8 through lane (2 to 4 lanes in each direction) approximately 32 mile Mid County Pkwy corridor in western Riverside County between west of I-15 (south of Cajalco Rd) east to SR79 in San Jacinto including construction/reconstruction of approximately 15 interchanges with collector distributor lane/mainline system improvements. (CETAP-Alternative 9)

1.2 Project Purpose and Need

1.2.1 Project Purpose

The purpose of the proposed action is to provide a transportation parkway that would effectively and efficiently accommodate regional west-east movement of people and goods between and through Corona, Perris, and San Jacinto. More specifically, the selected Alternative would:



- Provide increased capacity to support the forecast travel demand for the 2035 design year;
- Provide a limited access parkway;
- Provide roadway geometrics to meet state highway design standards;
- Accommodate Surface Transportation Assistance Act (STAA) National Network trucks¹; and



These are larger trucks that are permitted on the federal Interstate system and the non-Interstate Federal-aid Primary System.

 Provide a parkway that is compatible with a future multimodal transportation system.

The MCP project provides logical termini since it connects to two major north-south transportation facilities (I-15 and SR-79) with the I-215 in the middle, has independent utility since the project is usable and a reasonable expenditure even if no additional transportation improvements in the area are made, and it does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

1.2.2 Project Need

The MCP project is located in an area of western Riverside County that is currently undergoing substantial population and employment growth. Population in Riverside County overall is expected to double between 2000 and 2020 from 1.5 million to 3.1 million. The population in western Riverside County is expected to increase by over 1 million people between 2000 and 2025, an increase of more than 85 percent. Growth in employment is expected to occur at an even higher rate, with an increase of over 115 percent in the number of jobs. Although currently funded transportation improvements will address some of the projected future demand, additional transportation improvements are needed to provide for the efficient movement of people and goods in the future.

1.2.2.1 Capacity, Transportation Demand and Safety Existing Capacity

The existing major west-east facilities in western Riverside County consist of State Routes 60, 91, and 74 (SR-60, SR-91, and SR-74, respectively). These facilities provide linkages between the major north-south facilities of SR-79, I-215, and I-15. In 2035, SR-60 and SR-91, as well as several segments of SR-74, are projected to operate at level of service (LOS) F. The previous HCLE CETAP studies evaluated several parkway alternatives along Ramona Expressway, Cajalco Road, and El Sobrante Road, as well as other alternatives to the south along portions of SR-74, Domenigoni Parkway, Ethanac Road, and Newport Road. While the Riverside County General Plan (2003) identifies several major west-east arterials south of SR-74 that provide alternative west-east routes, Ramona Expressway and Cajalco





Source: 2004 Regional Transportation Plan, Southern California Association of Governments.

² Ibid.



Road comprise the only existing and proposed major continuous transportation corridor between SR-74 and SR-60/SR-91 (see Figure 1.2.1, Circulation Element). Cajalco Road is a two- to four-lane arterial with no access control, and Ramona Expressway is a two- to six-lane expressway with partial access control. Therefore, discussion of capacity, transportation demand, and safety focuses on Ramona Expressway and Cajalco Road.

Level of Service

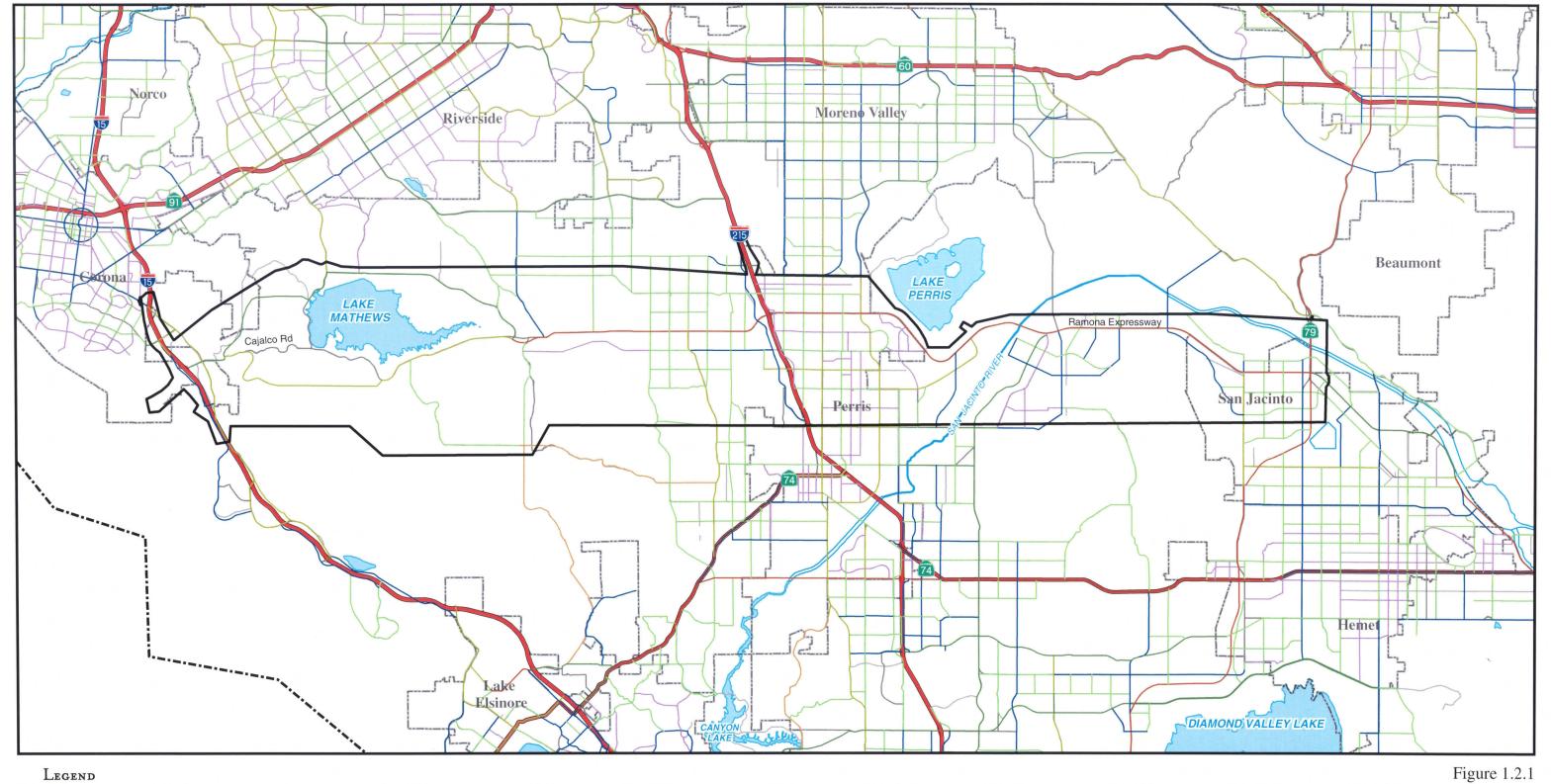


Cajalco Road already operates at an unacceptable LOS (LOS E/F) through many segments. By 2035, the roadway will experience further delay if additional capacity is not provided. This is illustrated in Table 1.2.A. The 2035 projections show a more than 100 percent increase in traffic demand through the corridor. Existing capacity is inadequate to meet the future traffic demand. LOS can be improved by providing more capacity, as shown in Table 1.2.A, for 2035 conditions with project.

Travel Time

A Travel Time Analysis (VRPA Technologies, 2008) was conducted for the MCP project. The following assumptions were used to estimate existing and 2035 future travel times along the MCP corridor between I-15 and SR-79:

- Average speed on the MCP would be 98.9 kilometers per hour (kph) (61.5 miles per hour [mph]), corresponding to LOS D conditions and a 112 kph (70 mph) free flow speed.
- For Alternatives 6 and 7, a reduced speed of 80 kph (50 mph) was assumed for the area west of Lake Mathews with lower-speed curves.
- For Alternatives 1A and 1B, an average travel speed of 16 kph (10 mph) was assumed based on LOS F conditions for an arterial street (Class II), using the Urban Streets methodology of the Highway Capacity Manual. If no roadway improvements are made in this corridor, LOS F is the expected operating condition in 2035.
- For Alternative 1B, an average travel speed of 33 kph (21 mph) was assumed based on LOS D conditions for an arterial street (Class I), using the Urban Streets methodology of the Highway Capacity Manual. The assumption is that Riverside County (and cities along the corridor) will provide necessary widening to achieve LOS D operating conditions in order to meet the goals of their General Plan Circulation Elements.



Study Area Circulation Element Roadways — Major (118' ROW)

County Boundary — Expressway (220' ROW) — Mountain Arterial (110' ROW)

City Limits — Urban Arterial (152' ROW) — Secondary (100' ROW)

Highways — Arterial (128' ROW) — Collector (74' ROW)

SOURCE: County of Riverside, 2003; Jacobs Engineering (2/2007)



Circulation Element

KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Cha	nter	1	Pro	posed	Project
Ul la	ULUI	,	1 10	poseu	1 10101

This	page	intention	ally l	eft b	lank





Existing Route	Location	Facility Type (2035 with	Existing 2005		Design Yea	r 2035	MCP Pro 2035	ject
Segment		Project)	ADT	LOS	ADT	LOS	ADT	LOS
Cajalco Road	I-15 to I-215	6–8 Lane Limited Access	9,210 to 19,050	C–F	14,300 to 45,900	C–F	52,200 to 66,000	B–D
Ramona Expressway	East of I-215	6–8 Lane Limited Access	10,430 to 24,450	C-F	23,200 to 62,900	C–F	26,800 to 86,600	B–D

Source: Traffic Technical Report, VRPA, 2008.

ADT = average daily traffic

I-15 = Interstate 15

I-215 = Interstate 215

LOS = level of service

MCP = Mid County Parkway

The Travel Time Analysis concluded that under Alternatives 1A (No Project/No Action – Existing Ground Conditions) and Alternative 1B (No Project/No Action – General Plan Circulation Element Conditions), the travel time between I-15 and SR-79 in 2035 would be 193.4 minutes and 92.1 minutes, respectively. Under the MCP Build Alternatives (Alternatives 4, 5, 6, 7 and 9), the travel time would range between 31.1 minutes and 32.5 minutes.

Population/Traffic Forecast

The MCP project would link the existing and growing population centers of the city of Corona on the west, city of Perris in the central portion of the MCP study area, and the city of San Jacinto on the east. The city of Corona is served by SR-91 for west-east traffic and I-15 for north-south traffic. The city of Perris is currently served by I-215 in a north-south direction but is not served by a major west-east facility. Similarly, the community of San Jacinto is served by SR-79 in a north-south direction but is not served by a major west-east facility. In addition to linking communities in western Riverside County, the MCP project would link I-15, I-215, and SR-79, thereby facilitating regional traffic movement by providing a west-east connection to these major north-south transportation facilities.

Traffic modeling for the MCP studies is based on full implementation of the adopted Riverside County General Plan (2003), as well as implementation of the General Plans for the surrounding cities, including planned land uses identified in the Land Use Element and planned transportation facilities identified in the Circulation Element. Transportation modeling based on the adopted Riverside County General



Plan (2003) land uses indicates that the LOS on west-east arterials will be degraded without implementation of the MCP project.

There is no established standard for the desirable distance between major transportation facilities, and there is currently a broad range of distances between the major west-east freeways as they intersect with I-15 in this area. For example, SR-91 and SR-60 are approximately 16 km (10 mi) apart, SR-60 and Interstate 10 (I-10) are approximately 4.8 km (3.0 mi) apart, and I-10 and State Route 210 (SR-210) are approximately 9.6 km (6.0 mi) apart. SR-91 and State Route 78 (SR-78) (the closest west-east freeway south of SR-91 in northern San Diego County) are separated by approximately 100 km (62 mi). While SR-74 and State Route 76 (SR-76) (conventional highways) provide some of the needed west-east capacity, they are limited by topographic and other constraints and will accommodate only limited additional growth in traffic. The MCP project is located approximately half-way between SR-74 and SR-91, or roughly 13 km (8 mi) from each facility (see Figure 1.2.2, Freeways and Other State Highways).

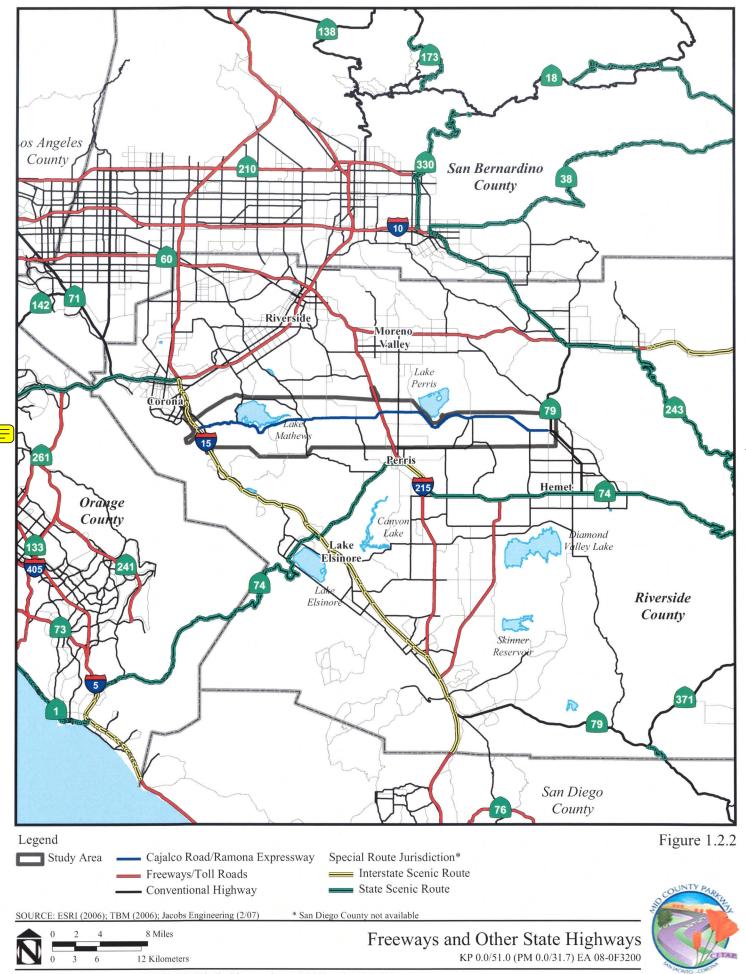
The future transportation modeling for 2035 conducted for the MCP project included a base network that assumed the following: (1) implementation of the improvements included in the 2004 RTP for western Riverside County and Coachella Valley; (2) implementation of the arterial roadway improvements included in the adopted Circulation Element of the Riverside County General Plan; and (3) implementation of an west-east freeway and a north-south freeway consistent with the internal CETAP corridors included in the Riverside County General Plan. The land use assumptions in the transportation demand model reflected the land use types and intensities included in the Land Use Element of the Riverside County General Plan. It was assumed that nearly 75 percent of the households in the Land Use Element would be built by 2035.

Traffic demand forecasts and modeling indicate a majority of west-east trips will be made to the west out of Riverside County using SR-91. The ability to expand capacity on SR-91 is severely restricted by existing development. Future capacity on parallel routes is also limited. Existing SR-74 is predominantly four lanes for its entire length, two in each direction from Hemet to the I-15. SR-60 has three lanes (two mixed-flow lanes and one High-Occupancy Vehicle [HOV]) in each direction from I-10 in the east to the I-215/SR-60 junction. The model assumes that SR-74 will be widened to eight lanes west of Ethanac Road. Even with planned expansion of both of these facilities, they will not be able to meet future west-east travel demand.









As shown in Table 1.2.A, Cajalco Road and Ramona Expressway operate at unacceptable LOS both in 2005 and 2035. In addition, projected traffic indicates 14,300 to 62,900 average daily trips on the same corridor in the future. Future traffic projections indicate all existing freeways will be operating at LOS F even with implementation of planned improvements as identified in the RTIP, Riverside County General Plan Circulation Element, the Measure A Expenditure Plan, and the implementation of transit "oases" as identified in the Riverside County General Plan. Traffic demand forecasts and modeling indicate that approximately 20 percent of the trips on the MCP project would be traveling the entire length of the corridor. Based on this percentage of through trips, the MCP project is not only serving as a major arterial within the communities through which it passes, but also provides a vital regional transportation role by serving longer trip lengths.

Capacity Needs

Travel patterns in western Riverside County are characterized by large numbers of commuters traveling from western Riverside County to jobs in Los Angeles and Orange counties. Intercounty commuter traffic is expected to grow substantially in the future as Riverside County doubles its population and housing stock between 2000 and 2020. In addition, the growth of employment opportunities within western Riverside County is expected to result in substantial increases in traffic through and connecting with intracounty employment and population centers. The MCP project would serve as a major west-east connection within western Riverside County and would also provide for regional movement of people and goods to eastern Riverside County, Los Angeles County, and Orange County.

To serve the projected travel demand in this area, there is a need to maximize the capacity of the MCP project by limiting access. Access limitation is used to restrict entry onto through traffic facilities to manage traffic congestion and improve traffic operational conditions. Access on Cajalco Road and Ramona Expressway is not restricted, with intersections (both signalized and unsignalized) and driveways providing multiple points of access along these existing roadways.







The transit oases concept is based on a system of locally served rubber-tired transit service (i.e., bus) to concentrations of employment, community activity, and residences in a manner that is linked with regional transportation opportunities.



There is also a need for the MCP project to accommodate truck traffic, which will be integral to future job growth in the area. The 1982 STAA allows large trucks to operate on the Interstate system, the non-Interstate Federal-aid Primary System, and certain primary routes (collectively referred to as the National Network). Caltrans has identified roadway design standards to provide for safe transportation of regional truck traffic, including STAA vehicles. Roadway design to accommodate these trucks must accommodate turning movements characterized by the rear tires following a shorter tracking path than the front tires. Currently, I-15, I-215, and SR-79 north of the MCP study area and south of SR-74 are included in the STAA National Network. Existing Cajalco Road and Ramona Expressway currently do not meet STAA standards. A climbing lane is warranted along Cajalco Road (or on a parallel facility), since the running speed of STAA vehicles falls 48 kph (30 mph) or more below the running speed of remaining traffic (2001 Caltrans Highway Design Manual, pages 200–21, Figure 204.5). The MCP project would provide another west-east link for goods movement if it is designed to meet STAA standards.

Safety

Summaries of the existing accident information for I-15, I-215, and Cajalco Road and Ramona Expressway are shown in Tables 1.2.B, 1.2.C, and 1.2.D, respectively. At some locations, accident rates on I-15, I-215, and Cajalco Road and Ramona Expressway exceed statewide averages. Some of the higher than expected accident rates are due to congestion and/or unsignalized intersections. It is expected that accident rates at these locations would be reduced with implementation of the MCP project. SR-79 accidents are not reviewed as that two-lane highway will be replaced by a six-lane expressway or freeway in roughly the same time frame as the MCP.

Accident rates on I-15 are expected to improve in connection with the proposed MCP project as many roadway features are upgraded to current design standards and capacity is increased. Additionally, signalized intersections at the ramps, improved lane geometry at the ramp intersections, and prohibiting left-turn movements at local street intersections in close proximity to adjacent ramp intersections are expected to reduce accident rates at the above locations.

Table 1.2.B Accident Data on I-15 Mainline and Ramps (April 1, 2002 to March 31, 2005)

Location	Facility	ity KP (PM)		Actual Accident Rates ¹			Average Accident Rates ¹		
		13. (1.11.)	Fatal	Fatal + Injuries	Total	Fatal	Fatal + Injuries	Total	
	Mainline	61.85–62.68 (38.43–38.95)	0.000	0.08	0.46	0.012	0.46	1.29	
I-15/	SB Off-Ramp	62.68 (38.95)	0.000	0.27	0.41	0.005	0.61	1.50	
Ontario Avenue	SB On-Ramp	62.06 (38.56)	0.000	0.13	0.27	0.002	0.32	0.80	
Avenue	NB Off-Ramp	61.85 (38.43)	0.000	0.14	0.84	0.005	0.61	1.50	
	NB On-Ramp	62.66 (38.93)	0.000	0.21	0.85	0.002	0.32	0.80	
	Mainline	60.59–61.18 (37.65–38.02)	0.000	0.15	0.46	0.015	0.36	1.01	
I-15/	SB Off-Ramp	61.18 (38.02)	0.000	1.04	2.94	0.005	0.61	1.50	
El Cerrito Road	SB On-Ramp	60.64 (37.68)	0.000	0.39	1.94	0.002	0.32	0.80	
Roau	NB Off-Ramp	60.60 (37.66)	0.000	1.07	4.29	0.005	0.61	1.50	
	NB On-Ramp	61.18 (38.02)	0.000	0.19	0.76	0.002	0.32	0.80	
	Mainline	58.95–59.85 (36.63–37.19)	0.011	0.22	0.58	0.020	0.38	0.90	
 I-15/	SB Off-Ramp	58.95 (37.82)	0.000	0.24	0.36	0.007	0.24	0.70	
Cajalco Road	SB On-Ramp	59.48 (36.96)	0.000	0.83	1.67	0.009	0.35	0.85	
Roau	NB Off-Ramp	58.96 (36.64)	0.000	0.89	0.89	0.006	0.19	0.60	
	NB On-Ramp	59.44 (36.93)	0.000	0.00	0.12	0.005	0.16	0.45	
	Mainline	57.04–57.73 (35.44–35.87)	0.015	0.24	0.95	0.019	0.36	0.85	
I-15/	SB Off-Ramp	57.70 (35.85)	0.000	0.13	0.39	0.014	0.43	1.15	
Weirick	SB On-Ramp	57.13 (35.50)	0.000	0.00	0.00	0.007	0.21	0.55	
Road	NB Off-Ramp	57.05 (35.45)	0.000	0.00	1.89	0.014	0.43	1.15	
	NB On-Ramp	57.73 (35.87)	0.000	0.13	0.66	0.007	0.21	0.55	

Source: Draft Project Report, Jacobs, 2008; and Caltrans TASAS Table B.

Caltrans = California Department of Transportation

KP = kilometer post

NB = northbound

PM = post mile

SB = southbound

TASAS = Traffic Accident Surveillance and Analysis System

Accident rates based on total number of fatal and injury accidents, as reported in Caltrans accident reports. Accident rates for mainline segments are expressed in accidents per million vehicle miles. Accident rates for ramps are expressed in accidents per million vehicles. **Bold type** indicates locations where the accident rates exceed statewide averages.

Table 1.2.C Accident Data on I-215 – Oleander Avenue to Nuevo Road (April 1, 2002 to March 31, 2005)

Location	Facility	KP (PM)	Actual Accident Rates ¹			Average Accident Rates ¹		
Location			Fatal	Fatal + Injuries	Total	Fatal	Fatal + Injuries	Total
I-215 – Oleander Avenue to Nuevo Road	Mainline	43.86–53.27 (27.25–33.10)	0.005	0.15	0.43	0.001	0.28	0.83
I-215 / Oleander Avenue	SB Off-Ramp	52.38 (32.55)	0.000	0.00	0.00	0.005	0.61	1.50
	SB On-Ramp	51.82 (32.20)	0.000	0.00	0.00	0.002	0.32	0.80
	NB Off-Ramp	51.73 (32.14)	0.000	0.00	2.30	0.005	0.61	1.50
	NB On-Ramp	52.28 (32.49)	0.000	0.34	1.02	0.002	0.32	0.80
I-215 / Cajalco Expressway / Ramona Expressway	SB Off-Ramp	50.07 (31.11)	0.000	0.75	2.24	0.005	0.61	1.50
	SB On-Ramp	49.50 (30.76)	0.000	0.00	0.63	0.002	0.32	0.80
	NB Off-Ramp	49.50 (30.77)	0.000	0.31	1.41	0.005	0.61	1.50
	NB On-Ramp	50.01 (31.08)	0.000	0.00	0.28	0.002	0.32	0.80
I-215 / Nuevo Road	SB Off-Ramp	45.18 (28.08)	0.000	0.27	1.10	0.005	0.61	1.50
	SB On-Ramp	44.58 (27.70)	0.000	0.00	0.00	0.002	0.32	0.80
	NB Off-Ramp	44.55 (27.68)	0.000	0.17	0.34	0.005	0.61	1.50
	NB On-Ramp	45.10 (28.02)	0.000	0.15	0.30	0.002	0.32	0.80

Source: Draft Project Report, Jacobs, 2008.

KP = kilometer post

NB = northbound

PM = post mile

SB = southbound



Table 1.2.D Summary of Accident History, Cajalco/Ramona Corridor, 2001 through 2003

Roadway Accident Category		Location	Fatality	Injury	Property Damage Only	Total	
Cajalco Road	Roadway Segment	I-15 to I-215	9	151	207	367	
Ramona Expressway	Roadway Segment	I-215 to SR-79	8	138	208	354	

Source: Draft Project Report, Jacobs, 2008.

I-15 = Interstate 15 I-215 = Interstate 215 SR-79 = State Route 79

Accident rates based on total number of fatal and injury accidents, as reported in Caltrans accident reports. Accident rates for mainline segments are expressed in accidents per million vehicle miles. Accident rates for ramps are expressed in accidents per million vehicles. Bold type indicates locations where the accident rates exceed statewide averages.

I-215 accident rates were compared to statewide averages for similar types of facilities. Ten of the locations show actual accident rates below the average accident rates for similar facilities while three locations show actual accident rates above the average accident rates for similar facilities. Analysis of accidents for the three locations with higher than average accident experience showed no obvious accident pattern (i.e., the accident rate was the result of low traffic levels combined with a few random accidents). The accidents would expect to be reduced with implementation of the MCP project.

For Cajalco Road and Ramona Expressway, Table 1.2.D indicates that the accident experience is typical of suburban and rural arterial roadways.

Overall, while accident rates are not appreciably different from other similar facilities, there are locations along the existing route (Cajalco Road and Ramona Expressway) where design features (such as curves and/or steep grades) and land use conflicts (including direct driveway access to the roadway) represent conditions that could contribute to higher accident rates with the growth in traffic volumes on these two roadways. Further, it is not feasible to convert existing Cajalco Road or Ramona Expressway to a facility that meets Caltrans standards due to the roadway deficiencies discussed below and the terrain. By limiting access and designing a transportation facility that is consistent with current State highway standards, the MCP project would provide an alternative route and relieve regional congestion, thus resulting in an improvement in safety and a reduction in accidents.

1.2.2.2 Roadway Deficiencies (Cajalco Road/Ramona Expressway)

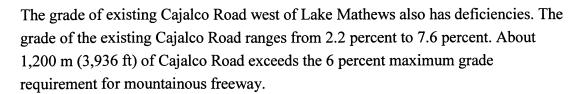
Existing Cajalco Road and Ramona Expressway combine to form the only existing, continuous west-east facility in the MCP study area. There are limitations related to design and capacity that restrict the ability of the existing roadways to meet future travel demand.

Operational

The Cajalco Road and Ramona Expressway roadway geometric sections do not meet current Caltrans or Riverside County standards for major roadways. The 2001 Caltrans Highway Design Manual identifies key design standards that will be applied in the design of the MCP project. Application of the Caltrans design standards represents a conservative approach, since these standards meet or exceed the design standards for Riverside County roads. Also, even if the MCP project is not designated a State highway in the future, compliance with Caltrans design standards will be



required at the interchanges with I-15, I-215, and SR-79. These standards include a design speed of 120 kph (75 mph), a minimum curve radius of 900 meters (m) (2,950 feet [ft]), and a maximum vertical grade of 6 percent. The existing roadway geometry does not meet Caltrans standards for 120 kph (75 mph) in several areas; therefore, widening the existing facility in these areas without redesign is not feasible. All of the curves on existing Cajalco Road do not meet the Caltrans minimum of 900 m (2,950 ft). Similarly, curve radii for the realigned Cajalco Road, as designated in the existing Riverside County General Plan Circulation Element, are also below the standard of 900 m (2,950 ft). Existing Ramona Expressway includes six horizontal curves that do not meet Caltrans standards.



Currently, there are numerous direct access points (driveways and local roadways) onto Cajalco Road and Ramona Expressway. There are as many as 20 access points within a distance of 1.6 km (1.0 mi) These numerous access points result in opportunities for conflict that impede traffic flow. Uncontrolled access points reduce the overall capacity of the roadways and increase the possibility of accidents. Planning for the MCP project offers an opportunity to identify appropriate access points from the federal and State highway system, as well as from local streets, and to provide local access to existing and future development through the use of frontage roads or other solutions.

1.2.2.3 Social Demands or Economic Development

The MCP project was identified as a key west-east regional transportation corridor as a result of several years of comprehensive land use, habitat conservation, and transportation planning in Riverside County through the RCIP.

Initiated in 1999, the RCIP was an unprecedented, multiyear planning effort to simultaneously prepare environmental, transportation, housing, and development guidelines for Riverside County for the first half of the 21st century. The purpose of the RCIP was to address the planning, environmental, and transportation issues that would result from the anticipated doubling of population in Riverside County from 1.5 million residents in 2000 to approximately 3.0 million by 2020. The RCIP included three components: (1) a new General Plan for Riverside County, adopted on







October 2003; (2) a MSHCP for western Riverside County (approved by the County in June 2003 and by the United States Fish and Wildlife Service [USFWS] in June 2004); and (3) the CETAP through which the planning of four major transportation corridors was initiated, including what is now the MCP project. In addition, the RCIP Partnership Action Plan (September 2000) committed participating federal, State, and county governments to incorporate the western Riverside County Special Area Management Plan (SAMP) into all three RCIP planning efforts. The purpose of the SAMP is to provide for comprehensive aquatic resource protection and reasonable economic growth.



The Circulation Element of the 2003 Riverside County General Plan acknowledges the concurrent CETAP planning efforts to identify preferred west-east and north-south alternatives and preserve future right of way. The Circulation Element identifies Ramona Expressway and Cajalco Road as future expressways of four to eight lanes and proposes to realign the portion of Cajalco Road south of Lake Mathews.

The MCP project executes the intent of the prior RCTC and County of Riverside actions with regard to the planning of the HCLE CETAP Corridor and is consistent with the intent of the Riverside County Circulation Element, which recognizes that the specific alignment decisions regarding the CETAP corridors may result in appropriate amendments to the General Plan. The MCP project provides a west-east transportation parkway to support the planned land use envisioned in the Riverside County General Plan, and is being planned and designed in a way to further the conservation goals of the western Riverside County MSHCP.

The MCP project is also consistent with the 2008 RTP (Southern California Association of Governments [SCAG]), which states:

"CETAP-Mid County Parkway: Construct a 4–8 lane limited access parkway from Corona (slightly west of I-15) to San Jacinto (to SR-79) and construct local interchanges in the corridor at 15 locations."

The MCP project is also consistent with the goals of the Riverside County General Plan (2003), which sets forth the need to incorporate future growth with transportation and multipurpose open space systems in areas that are well served by public facilities and services and preserve significant environmental features. The Riverside County General Plan also specifies the need to connect whole communities, which the MCP project would do by providing a linkage between the cities of Corona, Perris, and San Jacinto with one west-east transportation facility.

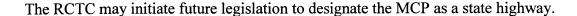
1.2.2.4 Legislation

Executive Order

On September 18, 2002, President George W. Bush signed Executive Order (EO) 13274 for environmental stewardship and streamlining. This order required transportation and natural, cultural, and historical resource agencies to establish realistic timeframes on environmental transportation documents, and required the agencies to work together to provide efficient review of the documents while protecting the environment. CETAP, of which the MCP project is a part, was one of the first seven projects to be placed on the national priority list for review under EO 13274.

County

Riverside County voters approved Measure A in 1988. Measure A permits a half-cent sales tax program to be implemented to collect funding for transportation improvement projects in Riverside County. Measure A was set to expire in 2009; however, voters approved a 30-year extension for the sales tax program in 2002. The MCP project is one transportation project being considered by the RCTC that may receive partial funding from Measure A.



1.2.2.5 Modal Interrelationships and System Linkages *Modal Interrelationships*

In addition to the rapid population growth in western Riverside County, the employment base is also increasing, particularly in intermodal goods distribution. Land planning and economic projections indicate that the Perris/Moreno Valley/March Air Reserve Base area will serve as a major distribution hub for goods in the Inland Empire. This employment center will result in increased travel demand by commuters, as well as by trucks carrying goods in and out of the area. The MCP project is located between and through the future population and employment centers it would serve for planned developments including Corona, the Perris/Moreno Valley/former March Air Reserve Base area, and San Jacinto (Figure 1.2.3, Jurisdictional Boundaries).





The March Air Reserve Base Land Use Plan in the Riverside County General Plan (adopted 2003) provides for 2.9 million square meters (9.7 million square feet) of industrial build-out capacity and 1.5 million square meters (5.1 million square feet) of commercial build-out capacity.

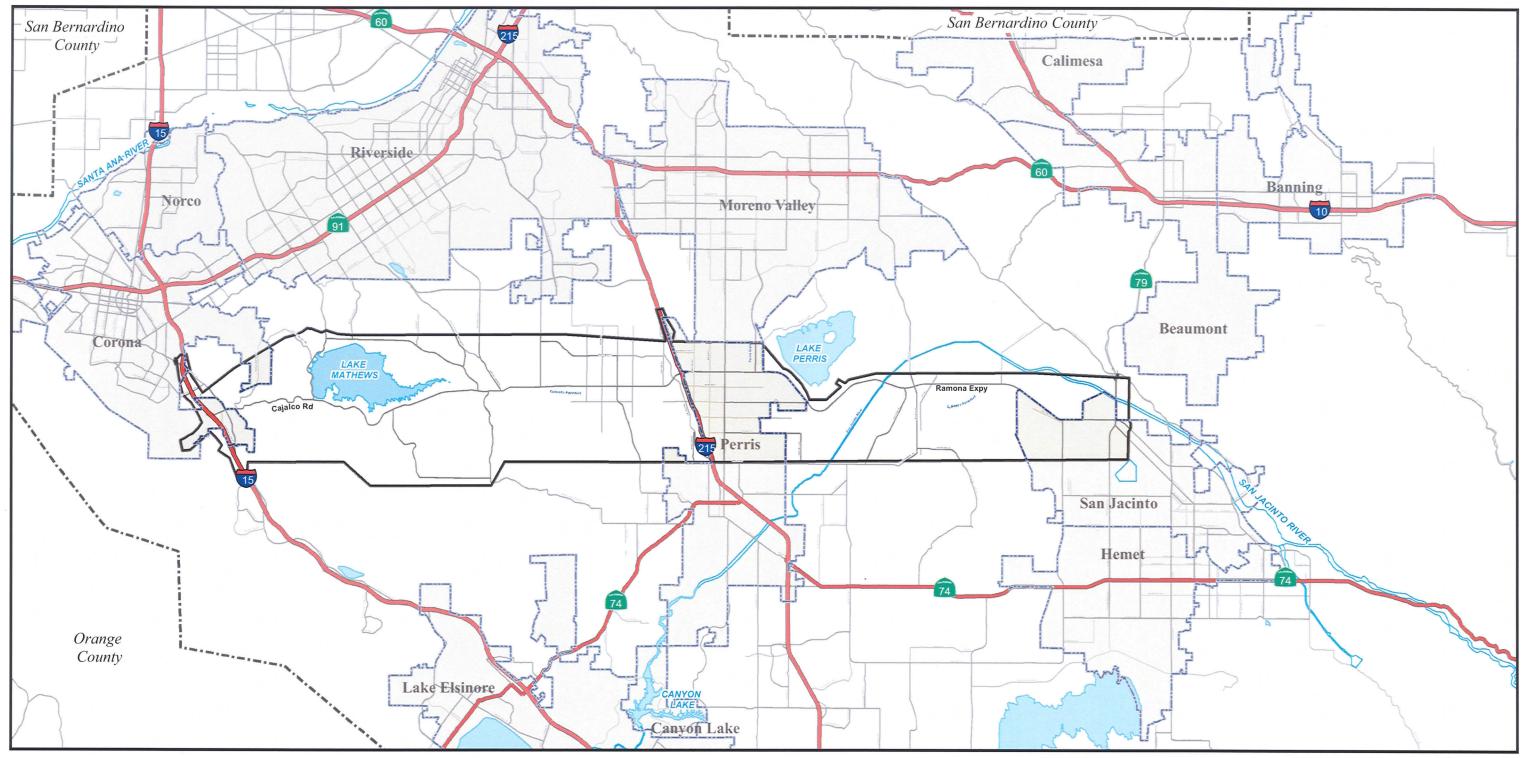
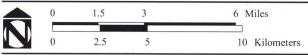


Figure 1.2.3



SOURCE: TBM (2006), Jacobs Engineering (2/2007)



Jurisdictional Boundaries KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter	1	Proposed	Projec
---------	---	----------	--------

This page	intentionally	y left blank
-----------	---------------	--------------

The location of the MCP project through the city of Perris offers an opportunity to create a linkage between the MCP project and two major planned transit projects (the Perris Valley Line [PVL] and Perris Multimodal Facility). The proposed PVL would provide commuter rail service from the city of Riverside to the city of Perris by extending existing service (Metrolink 91 Line) that links the city of Riverside with downtown Los Angeles via Fullerton. It is anticipated that the proposed PVL would connect with a new Perris Multimodal Facility to be located in downtown Perris off C Street and would provide for connecting bus (including the Riverside Transit Agency) and rail (including Metrolink) service. The Perris Multimodal Facility is in close proximity to the MCP project. Seven new stations have been identified for construction along the PVL, including one adjacent to the MCP study area. By reducing travel time and traffic congestion in the MCP study area, the MCP project would help improve accessibility to stations serving the PVL.

System Linkages

For the last several decades, western Riverside County has served as a population center for commuters to jobs in Orange and Los Angeles counties, resulting in high levels of west-east travel demand. The major north-south transportation facilities in western Riverside County are I-15, I-215, and SR-79, and the major west-east transportation facilities are SR-91, SR-60, and SR-74. The SR-91/SR-60 corridor and SR-74 are 25 km (16 mi) apart, with no other major west-east highway in between. The MCP project is located between the SR-91/SR-60 corridor and SR-74, and would provide another needed west-east corridor/connection to improve the regional transportation network and to meet future west-east travel demand.

Related Projects

Information concerning related projects provides contextual information for the MCP project and identifies how the transportation agencies have coordinated transportation planning efforts. The MCP project will be implemented in a manner that is consistent with the programmed and planned improvements listed below. These related improvements are on facilities that represent future connections or are complementary to the MCP project.



The related transportation projects to the MCP project are depicted on Figure 1.2.4 and include:

- Constructing SR-79 as a Four-Lane Expressway: Constructing SR-79 as a four-lane expressway on a new alignment from the SR-79/Sanderson Avenue junction to SR-79/Domenigoni Parkway, generally following an alignment west of Warren Road. This study is in progress by RCTC and Caltrans. Construction of initial phases is tentatively scheduled to begin in 2012.
- **SR-79 Widening:** SR-79 Interim Widening Project will improve SR-79 between Thompson Road and Domenigoni Parkway by extending slopes between Thompson Road and Abelia Street, widening an 8.7 km (5.4 mi) segment of SR-79 from two to four lanes between Abelia Street and Domenigoni Parkway, installing a painted center median, and constructing turn lanes at intersections.
- I-15/Magnolia Avenue Interchange Modifications: The City of Corona plans to reconfigure the existing interchange to add northbound/southbound loops and widen the existing northbound on-ramp.
- Widening of I-215: RCTC plans to widen I-215 to three lanes in each direction from I-15 in Temecula to Eucalyptus Avenue in Perris. This project is programmed in RCTC's Measure A Expenditure Plan. A construction schedule has not been established.
- Widening of I-215 from 60/91/215 Junction to San Bernardino County Line: Add two lanes in each direction from 60/91/215 to San Bernardino County line
- I-15/Cajalco Road Interchange Project: Replace the existing two-lane Cajalco Road overcrossing of I-15 with a six-lane overcrossing between Temescal Canyon Road and Bedford Canyon Road and associated ramp modifications. The City of Corona has secured partial funding for this project, and construction is planned for January 2011.
- The Perris Valley Line (PVL): The RCTC Board has adopted an extension of a commuter service line from the city of Riverside to the city of Perris. The project is fully funded in the 2008 RTP through construction. The project proposes to extend operation of the Metrolink 91 Line, which currently provides commuter rail service from Riverside to downtown Los Angeles via Fullerton by 2011.

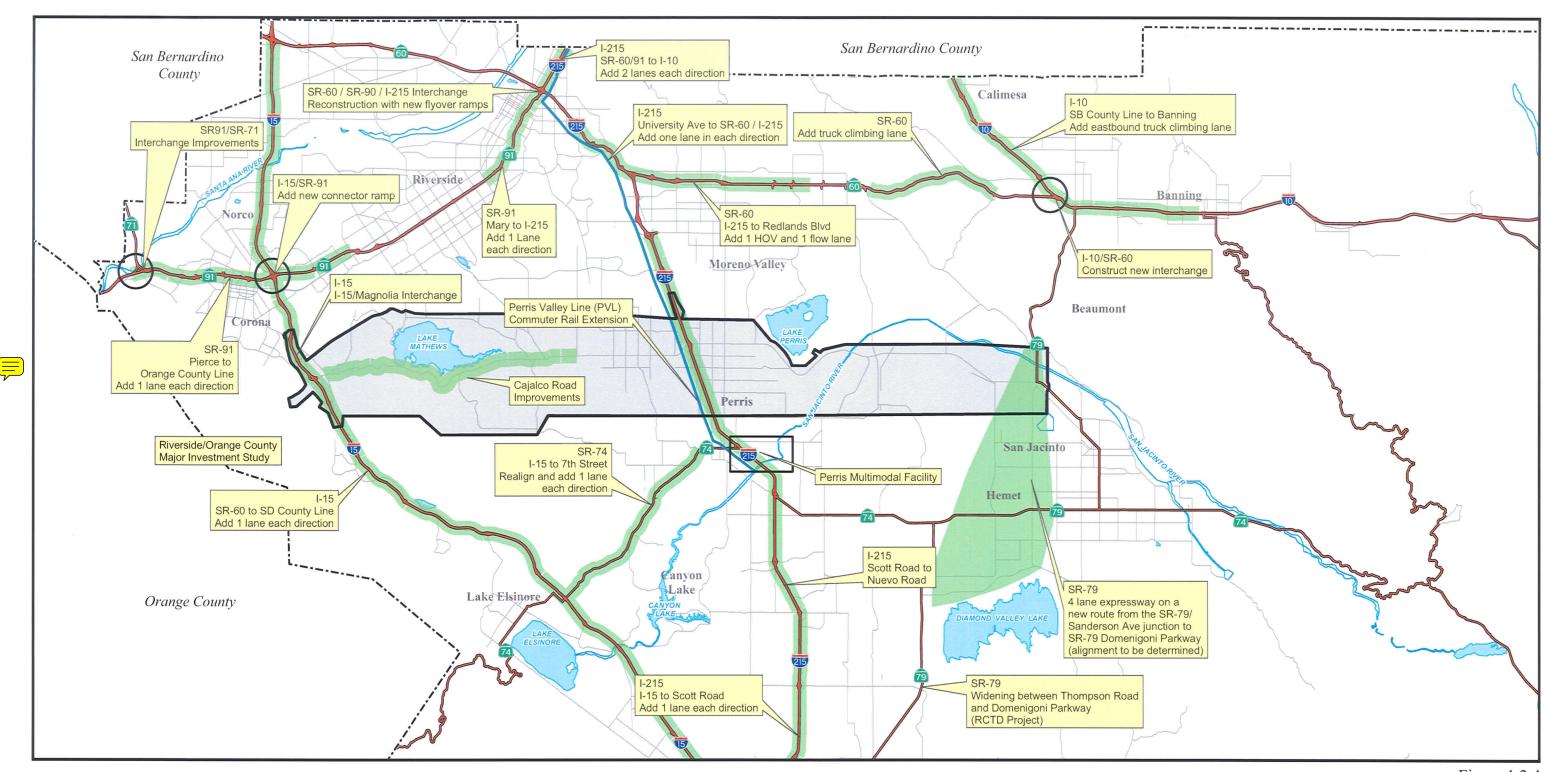


Figure 1.2.4

— Major Roads

SOURCE: County of Riverside (1999); TBM (2006); Jacobs Engineering (2/07)

Legend

City Limits

Highways

	0	2.5	5	10 Miles
N				
	0	4	8	16 Kilometers

[County Boundary Mid County Parkway Study Area

Related Projects

Related Transportation Improvement Projects
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



This page	intentionally	y left b	lank
-----------	---------------	----------	------

- The Perris Multimodal Facility: The Perris Multimodal Facility is intended to support operating rail and bus passenger services originating from the city of Perris. The facility will be located in downtown Perris off C Street and will include platforms, shelters, parking, and lighting to accommodate eight bus bays and additional facilities to serve future passenger train service.
- I-15 Measure A Improvements: Extension of the Measure A Expenditure Plan includes funding to add one lane in each direction on I-15 between SR-60 and the San Diego County line, and to make improvements to the SR-91/I-15 interchange by adding a new connector from I-15 North to SR-91 West.
- Widening of SR-60 from University Avenue to 60/215 Interchange: Add one lane in each direction (median) from University Avenue in Riverside easterly to 60/215 interchange in Moreno Valley, including a new interchange and bridges in Riverside. Construction is tentatively scheduled to be completed in 2009.
- **SR-60 Truck-Climbing Lane:** Add one truck-climbing lane in the Badlands area east of Moreno Valley.
- Widening of SR-91 from Adams to 60/91/215 Interchange: Add one lane in each direction from Adams to the 60/91/215 interchange in Riverside.

 Construction is tentatively scheduled to be completed in 2011.
- Widening of SR-91 from Pierce Street to Orange County: Add one lane in each direction from Pierce Street to the Orange County line.
- I-10/SR-60 Interchange: Construct a new interchange at I-16/SR-60.
- I-10 Truck-Climbing Lane: Add an eastbound truck-climbing lane from the San Bernardino County line to Banning.
- State Route 91/71 Interchange: Improve the connection between SR-91 and State Route 71 (SR-71) by replacing the existing single-lane connection between eastbound SR-91 and northbound SR-71 with a new, two-lane, direct flyover ramp, in addition to building a new, separate eastbound road just south of and parallel to SR-91 to provide improved access between the Green River Road interchange and the SR-91/SR-71 interchange. Construction is planned to be completed by 2015.
- State Route 74: One lane added in each direction from I-15 to 7th Street.



Transportation Authority (OCTA) and RCTC, in cooperation with the Transportation Corridor Agencies (TCA), completed a Major Investment Study (MIS) under SCAG guidelines to identify and assess alternative ways to improve mobility between Orange and Riverside counties. Following SCAG's guidelines for Regionally Significant Transportation Investment Studies (RSTIS), the Riverside/Orange County MIS was a transportation planning study that concluded in early 2006. It included feasibility planning, travel demand forecasting, conceptual engineering, environmental evaluation, and public involvement. Caltrans Districts 8 and 12, in cooperation with FHWA, were advisory agencies in the study.

The MIS examined a comprehensive range of capital and operational improvement alternatives to SR-91 and other options for intercounty multimodal transportation corridors. The study analyzed the benefits, costs, and consequences (economic, social, and environmental) of alternative transportation investment strategies in the Riverside County-Orange County MIS corridor. Input received throughout the study from the Policy Committee, stakeholders, cities, and elected officials was included in considering recommendations for a Locally Preferred Strategy.

The OCTA Board of Directors met on December 12, 2005, to take action on the recommended Locally Preferred Strategy, and the RCTC Board of Commissioners met on December 14, 2005. Both Boards unanimously approved recommendations for the refined Locally Preferred Strategy. Key elements of the Board's decisions relevant to the MCP project are as follows:

- Establish SR-91 from SR-55 to I-15 as a priority for improving transportation between Riverside and Orange counties. Emphasize SR-91 improvements between State Route 241 (SR-241) and the I-15 first, followed by improvements between State Route 55 (SR-55) and SR-241.
- Continue to work with the Foothill/Eastern TCA in Orange County to develop a mutually acceptable plan to improve the connection between the SR-241 and SR-91 corridors and accelerate capacity improvements on State Route 133 (SR-133), SR-241, and State Route 261 (SR-261) to optimize utilization of the toll roads to improve transportation between Riverside and Orange counties.
- Continue to evaluate the costs and impacts of Corridor A (a new facility between I-15 and SR-241 with a connection at SR-71) in the SR-91 right of

- way or north of SR-91, parallel through a future preliminary engineering process in cooperation with other agencies.
- Continue to study the technical feasibility of the Corridor B concept (a new facility between Cajalco Road in Riverside County and SR-133 in Orange County through the Santa Ana Mountains), including costs, risks, joint-use opportunities, benefits, and funding options in cooperation with other interested agencies.
- Incorporate the following: components of the adopted Locally Preferred Strategy encompass maximization of the MIS corridor transit network; widen portions of SR-91 (14 to 16 lanes total plus baseline SR-91 improvements); possible managed lane modifications (including reversible lanes) for SR-91 or Corridor A; continue studies in support of a new highway facility in Corridor A; continue studies in support of a new highway (largely in tunnel sections) in Corridor B; and operational improvements (not major widening) of SR-74 (Ortega Highway) in Corridor D.
- Cajalco Road Improvements: While it is anticipated that much of the future travel demand on Cajalco Road would be met by the MCP project, there would be a continued need for Cajalco Road to provide local access and circulation for existing and planned residential uses in the vicinity of Lake Mathews and Mead Valley. For Cajalco Road to function safely and effectively in the short term and long term, safety, capacity, and operational improvements are being planned by the County of Riverside.

Safety and road repair projects that occurred between 2003 and 2005 included pavement projects for specific locations and the installation of street lights at the intersections of Alexander Street, Mead Street, Haines Street, Day Street, Seaton Avenue, and between Brown Street and Clark Street. In addition, the intersection of Harley John Road/Smith Road was resurfaced and widened. Pavement was added east of the intersection to receive a second eastbound through lane to reduce the traffic backup before the intersection. These projects have been completed.

Additional projects recently completed by the County of Riverside include:

• Left-turn lanes added between Harley John Road and 0.40 km (0.25 mi) east of Gustin Lane;

- Pavement reconstruction and intersection widenings between Kirkpatrick Road and La Sierra Avenue;
- Installation of guard rails at various locations east of La Sierra Avenue; and
- Installation of traffic signals at Gavilan Road and Harley John Road/Smith Road.

The County of Riverside plans to widen portions of Cajalco Road in three segments. The first segment is between Harley John Road on the west and Harvill Avenue on the east. As a result of the Boulder Springs development, Cajalco Road will be widened to four lanes from Wood Road to Alexander Street. The improvements to this segment are considered by the County to be the most needed in the near term and the most feasible to construct. The second segment is between La Sierra Avenue and Harley John Road. Western Riverside County Transportation Uniform Mitigation Fee funding (approximately \$22 million) has been programmed for the widening of approximately 11 km (7.0 mi) of roadway. Final environmental compliance is yet to be achieved for this segment. The third segment is between Temescal Canyon Road and La Sierra Avenue. Transportation Uniform Mitigation Fee funds are currently programmed (approximately \$10 million) to improve approximately 5 km (3 mi) of Cajalco Road in this area. Topographical and Metropolitan Water District (Metropolitan) reserve constraints are to be addressed through a conceptual design and environmental clearance process to be undertaken by the Riverside County Transportation Department.

In addition to the projects listed above that may provide a direct physical connection to the MCP project, additional improvements are also planned to the freeway system in western Riverside County. As shown on Figure 1.2.4, these planned improvements are identified in the 2008 RTP as prepared by SCAG and in RCTC's Measure A Expenditure Plan. These projects represent planned and programmed improvements to the freeway system and are assumed to be implemented in the transportation modeling for the MCP project. Even with all of the proposed roadway improvements identified in the RTP, there will still be inadequate west-east roadway capacity to meet future demand. The need for the MCP project as described above exists even with implementation of the improvements reflected in the traffic model.



Chapter 2 Project Description and Alternatives

2.1 Project Description Summary

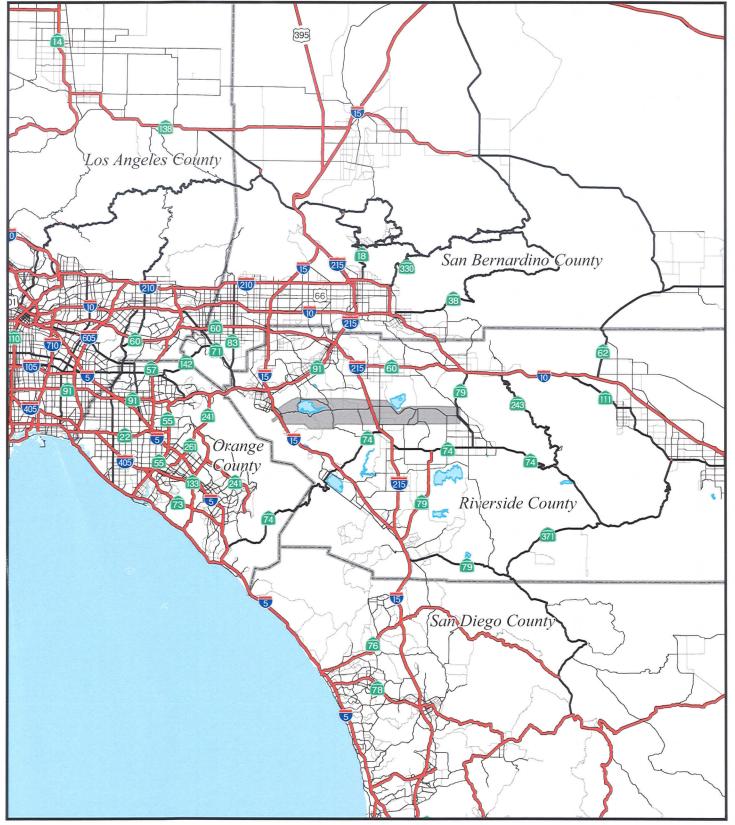
The Mid County Parkway (MCP) is a proposed new highway project located in western Riverside County, California. Figure 2.1.1 depicts the study area for the MCP project and the regional location of the proposed project. The MCP study area is approximately 51 kilometers (km) (32 miles [mi]) long and ranges from 1.7 to 8.3 km (1 to 5 mi) wide.

The MCP project will serve as a major east-west connection within western Riverside County and will also provide for regional movement to eastern Riverside County, Los Angeles County, and Orange County. As stated in Chapter 1.0, the purpose of the proposed action is to provide a transportation facility that will effectively and efficiently accommodate regional east-west movement of people and goods between and through San Jacinto, Perris, and Corona. The proposed action would adopt a MCP project alignment and construct a major, limited-access transportation parkway to meet current and projected 2035 travel demand from Interstate 15 (I-15) on the west to State Route 79 (SR-79) on the east.

2.2 Alternatives Development Process

The alternatives development process for the MCP project began with the Hemet to Corona/Lake Elsinore (HCLE) Corridor studies conducted for the Community and Environmental Transportation Acceptability Process (CETAP). The MCP (originally named the Cajalco Ramona Corridor) project was identified as a key east-west regional transportation corridor as a result of several years of comprehensive land use and transportation planning in Riverside County through the Riverside County Integrated Project (RCIP). The RCIP was an unprecedented, multi-year planning effort to simultaneously prepare environmental, transportation, housing, and development guidelines for Riverside County for the first half of the twenty-first century. The purpose of the RCIP is to address the planning, environmental, and transportation issues that would result from the anticipated doubling of population in Riverside County, from 1.5 million residents currently to approximately 3.1 million by 2020. The RCIP included three components: (1) a new General Plan for Riverside

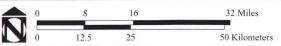
This page intentionally left blank



Legend Figure 2.1.1

Mid County Parkway Study Area

SOURCE: TBM (2006), Jacobs Engineering (2007)



Project Vicinity and Study Area $_{\rm KP~0.0/51.0~(PM~0.0/31.7)~EA~08-0F3200}$



This page intentionally left blank

County, adopted on October 7, 2003; (2) a Multiple Species Habitat Conservation Plan (MSHCP) for western Riverside County; and (3) the CETAP.

CETAP study efforts were jointly undertaken by the Riverside County Transportation Commission (RCTC) and the County of Riverside. As part of the CETAP process, a Draft Tier 1 EIS/EIR was prepared for the HCLE Corridor and circulated for public review in July 2002. The Draft EIS/EIR considered 14 "Build" alternatives that extended from San Jacinto/Hemet on the east to Corona/Lake Elsinore on the west. These alternatives included highway alternatives, as well as transit options such as expanded bus and commuter rail service. Several alternatives were variations of routes along Ramona Expressway and Cajalco/El Sobrante Road, at the northwestern portion of the HCLE study area. Transportation analyses were conducted for these and other alternatives to the south, along portions of State Route 74 (SR-74), Domenigoni Parkway, Ethanac Road, and Newport Road. The analyses indicated the alternative with the greatest transportation benefit was located along Ramona Expressway, Cajalco Road, and El Sobrante Road, with a connection to Interstate 15 (I-15). This alternative demonstrated it best met traffic needs by providing the greatest benefits in terms of increases in speed, reductions in travel time, and congestion relief. The HCLE alternatives in this area (Alternatives 1a/1b and H1/H3) demonstrated more than twice the traffic benefit as measured in travel hours saved per year compared with the other HCLE alternatives. In addition, public comments identified concerns regarding adverse impacts to existing communities for the portion of the alternatives located north of Lake Mathews. As a result of the information contained in the Draft Tier 1 Environmental Impact Report/Environmental Impact Statement (EIS/EIR) regarding transportation benefits, and the community input received on the HCLE alternatives, the RCTC Board accepted a staff recommendation in June 2003 to proceed with the accelerated preparation of a project level environmental document for an east-west alternative that included the Ramona Expressway/Cajalco Road alignment located south of Lake Mathews. This action by RCTC terminated the Tier 1 study efforts and began a focused, project-level study effort for the Cajalco Ramona Corridor, which was later renamed the Mid County Parkway.

2.2.1 Development of Initial MCP Alternatives

The MCP Alternatives were developed through a multiple agency coordination process, working as a collaborative group referred to as the Small Working Group.



The Small Working Group includes representatives from the Riverside County Transportation Commission (RCTC), Federal Highway Administration (FHWA), County of Riverside, California Department of Transportation (Caltrans) District 8, United States Fish and Wildlife Service (USFWS), United States Environmental Protection Agency (EPA), California Department of Fish and Game (CDFG), and the United States Army Corps of Engineers (USACE). The alternatives development process as undertaken by the Small Working Group originally resulted in eight alternatives that were intended to provide a reasonable range of alternatives to satisfy the Purpose and Need for the project. The range of alternatives is intended to meet the requirements for alternatives analysis under the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), Section 404 of the federal Clean Water Act (CWA), and Section 4(f) of the Department of Transportation Act (now codified at 49 United States Code [USC] 303).

An initial set of eight alternatives was presented to the public in scoping meetings held in December 2004. The initial set of alternatives included two parkway alternatives with alignments north of Lake Mathews that have since been eliminated as a result of engineering feasibility issues. See Section 2.2.2 for more information regarding the alternatives refinement process. See Section 2.9 for a description of alternatives considered and withdrawn from further study.

2.2.1.1 Constraints

A number of constraints were considered in the development of the initial project alternatives, including engineering requirements, the existing built environment, natural resources such as habitat reserves and drainages, and cultural resources such as previously recorded archaeological sites. Engineering constraints included the ability of alternatives to meet Caltrans design requirements (such as for curves, grade, and interchange spacing) and design standards for the STAA² National Network for large trucks. Alternatives were also sited to avoid or minimize impacts to existing and approved (but not yet built) communities and public facilities/infrastructure to the



The USFWS submitted a letter dated December 9, 2005 (included in Appendix J of this EIR/EIS), stating that it will participate in the MCP process informally (i.e., would not provide formal concurrence on the project purpose and need or project alternatives), with a focus on providing technical assistance.

STAA is the Surface Transportation Assistance Act of 1982. STAA allows large trucks to operate on the Interstate and certain primary routes called collectively the National Network.



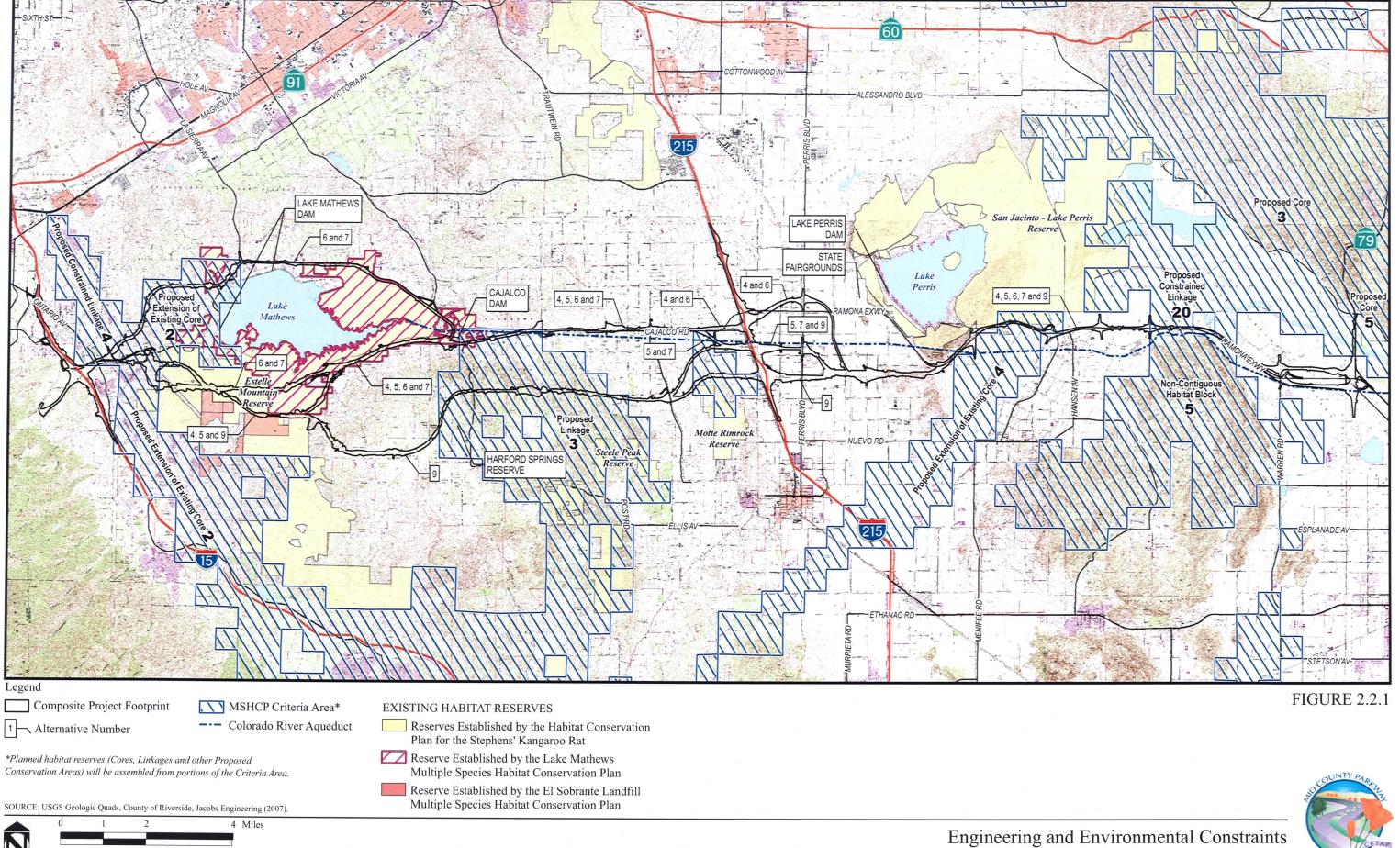
extent feasible. Land use constraints include the Lake Mathews, Mead Valley, Gavilan Hills, and Perris communities; habitat reserves; other existing residential areas; dams at Lake Mathews and Lake Perris; approved/entitled land development projects; existing railroad facilities; the Perris State Fairgrounds; existing commercial, industrial, and agricultural facilities; the Lake Perris State Recreation Area; and public facilities such as the City of Corona Water Treatment Plant, Perris Continuation High School, the Federal Records Center, the proposed Ramona Metrolink Rail Station, and others (see Figure 2.2.1, Engineering and Environmental Constraints).

2.2.1.2 Scoping Process

A series of "prescoping" public meetings were held in September 2004 to obtain public input on factors that should be considered in developing the MCP Alternatives. In November 2004, a Notice of Intent (NOI) and a Notice of Preparation (NOP) for the MCP project were published (see Chapter 5). The NOI and NOP described eight project alternatives, including a No Action/No Project alternative, six MCP Build Alternatives that were either full parkway alternatives or a combination of proposed parkway and General Plan arterial improvements, and a General Plan Circulation Element alternative. The NOI and NOP initiated the formal scoping process for the MCP project to identify issues and alternatives to be studied in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Three public scoping meetings were held in December 2004.

Input received from the public and public agencies during the prescoping and scoping meetings was integrated into the alternative development and evaluation processes for the project. As a result of the comments received during the scoping period and of a multiagency Value Analysis Study on the original eight alternatives, two new alignments were developed in 2005 as possible new alternatives for the project: the Far South (now Alternative 9) and the Perris Valley Storm Drain (Perris Drain) (now incorporated into Alternatives 4 and 6). The RCTC held a community meeting on August 3, 2005, to present the two new alignments under consideration. At the meeting, RCTC also included: (1) a review of the project's purpose and need, (2) the history of the alternatives, and (3) a review of the comments received during the original scoping process. A Supplemental NOP soliciting input from public agencies and other interested parties regarding the revised suite of alternatives prior to the release of the Draft EIR/EIS for public review was circulated to public agencies and

This page intentionally left blank



3.2

6.4 Kilometers

This page intentionally left blank



interested parties on July 31, 2007. Additional details regarding the scoping process is provided in the *Mid County Parkway Scoping Summary Report* (2008).

2.2.2 Alternatives Refinement Process

After the NOI and NOP were published in 2004, Caltrans conducted a Value Analysis Study in April 2005 to determine whether there were additional alignment refinements that could more effectively and efficiently meet the project Purpose and Need. As a result of the Value Analysis Study, new information became available with regard to the practicability of some of the alternative alignments, as well as opportunities to further avoid or minimize adverse environmental impacts to existing habitat reserves, Section 404 aquatic resources, Section 4(f) properties, and existing communities (see below for additional information regarding the Value Analysis Study process). In addition, during this same period, the MCP engineering and environmental project team conducted engineering studies, environmental studies, field work, public scoping meetings, and traffic modeling for the MCP project. Based on these studies and analyses, the Small Working Group considered and approved the refined set of alternatives to be evaluated in the Draft EIR/EIS. As described in detail later in Section 2.4, the revised set of alternatives:

- Eliminated the two alternatives (Alternatives 2 and 3) that included a parkway north of Lake Mathews due to engineering feasibility issues;
- Rerouted a segment of Alternatives 4 and 6 away from the Perris Dam;
- Renumbered Alternative 8 to Alternative 1B (No Action/No Project General Plan Circulation Element Conditions); and
- Added Alternative 9, the Far South Alternative, which avoids the Metropolitan Water District of Southern California (Metropolitan) reserve lands established by the Lake Mathews Multiple Species Habitat Conservation Plan (MSHCP).

Specific considerations in the alternatives refinement process are discussed below.

2.2.2.1 Value Analysis Process

The National Highway System Act of 1995 included a value engineering provision (later implemented by regulations codified in Subchapter G Part 627 of Title 23, Code of Federal Regulations [CFR]) requiring the Secretary of the Department of Transportation to ". . . establish a program to require states to carry out a value engineering analysis for all projects on the National Highway System with an

estimated total cost of \$25 million or more." In California, Caltrans coordinates with FHWA to apply the Value Analysis Study process to:

- 1. Maintain federal funding for proposed projects.
- 2. Build consensus with transportation partners (FHWA, Caltrans, RCTC, the County of Riverside, and the Cities of Corona, Perris, and San Jacinto, specifically for the MCP project).
- 3. Solve difficult transportation problems.
- 4. Reduce costs while maintaining or improving project quality.
- 5. Eliminate detrimental design influences.

The Value Analysis Study for the MCP Alternatives was conducted by Caltrans District 8 and a consultant facilitator in April 2005. The Value Analysis Study objectives were to identify alternatives that would maintain or improve MCP project performance, reduce costs if possible, and minimize impacts to local agency land use plans, including local circulation access. The MCP mainline Value Analysis Study conducted in April 2005 complemented earlier value analysis studies that focused on the configuration of the MCP project connections at SR-79, I-15, and Interstate 215 (I-215).

2.2.2.2 Engineering, Traffic, and Environmental Constraints

The Value Analysis Study process resulted in the generation of multiple alternative alignments. Some of these alternative alignments offered advantages with regard to transportation and safety concerns, as well as avoidance and/or minimization of impacts to the natural and built environments. Also, during the value analysis process, it became apparent that the alignments near the dams at Lake Perris (Perris Dam) and Lake Mathews (Lake Mathews Dam and Cajalco Dam) may be constrained by engineering considerations associated with those dams. Specific resources and constraints that were addressed through the Value Analysis Study process are discussed below and shown in Figure 2.2.1, Engineering and Environmental Constraints.

Engineering Constraints (Dams)

Two of the initial alternatives (Alternatives 2 and 3) included a parkway north of Lake Mathews in close proximity to Lake Mathews and Cajalco Dams, and three of the initial alternatives (Alternatives 2, 4, and 6) included a parkway along the existing Ramona Expressway in close proximity to Perris Dam. Lake Mathews and Cajalco Dam are owned and operated by Metropolitan. Perris Dam is owned and operated by

the State Department of Water Resources (DWR), and Metropolitan is the principal user of water from Lake Perris. DWR, Division of Safety and Dams, regulates the safety and integrity of dams in California.

The parkway alternative north of Lake Mathews was included in the initial set of MCP Alternatives, in part to ensure evaluation of an alternative that minimized impacts to the Lake Mathews MSHCP area compared with the alignment south of Lake Mathews. Given the engineering and safety constraints related to Lake Mathews and Cajalco Dams, the value analysis team determined that it was prudent to consider other alternatives that would both avoid close proximity to the dam and fully avoid the Metropolitan Habitat Conservation Plan Reserve. These efforts resulted in the proposed Far South Alternative, now known as Alternative 9.

There are several constraints in the area adjacent to Perris Dam, including Metropolitan facilities (pipeline, tunnels, and power plant), reserves established by the Habitat Conservation Plan for the Stephens' kangaroo rat (Stephens' kangaroo Rat reserve), State Fairgrounds, DWR emergency facilities, and the potential for large, seismically induced earthquake deformations in the area. Both the Stephens' Kangaroo Rat Reserve area and the State Fairgrounds would qualify for protection as Section 4(f) properties. The value analysis team developed a revised alignment to avoid the area adjacent to Perris Dam that also attempted to minimize community impacts in the city of Perris. The alignment proposed by the value analysis team would extend west from Antelope Road, west along the South Perris alignment to the Perris Drain, north past Evans Road, and parallel to and west of the Perris Drain, then turn west and join the North Perris alignment before Perris Boulevard (at Perry Street). The advantages of this alignment include full avoidance of Perris Dam, reserves established by the Habitat Conservation Plan for the Stephens' kangaroo rat, and the State Fairgrounds. One disadvantage of the Perris Drain alignment is that it would require flood control improvements as part of the MCP project to locate the parkway outside the Perris Drain floodway or place the facility on a structure to avoid impacts to the floodway. As a result of consultation with the Riverside County Flood Control District (RCFCD) regarding the feasibility of a flood control project, it was decided to design the Perris Drain alignment on an elevated structure to avoid the floodway.

RCTC and the MCP project team consulted with the Metropolitan engineering staff and the DWR preceding and concurrent with the Value Analysis Study process. The discussion focused on safety issues with regard to excavation, construction activities, and ultimate operation of a major transportation facility in proximity to the two major dam structures, Cajalco Dam and Perris Dam.

In a letter dated May 13, 2005 (included in Appendix J; also see Chapter 5), Metropolitan specified that excavation for the MCP project would involve the removal of a hill that is acting as a buttress for Lake Mathews Dike No. 1 at McAllister Street, which is unacceptable. In a Small Working Group meeting on August 17, 2005, regarding Alternatives 2 and 3, Metropolitan stated the alignment must be 305 m (1,000 ft) from the buttress and dikes. Alternatives 6 and 7 also propose an alignment north of Lake Mathews in the vicinity of Dike No. 1. Alternatives 6 and 7 propose a typical roadway section and alignment as shown in the Riverside County General Plan for north of Lake Mathews. Alternatives 6 and 7 show a four-lane urban arterial highway 46 m (152 ft) right of way, as designated in the Riverside County General Plan and that meets the General Plan roadway standards. The typical section without the grading is 20 m (66 ft) wide, which includes a 4 m (14 ft) median and four lanes that equal 16 m (52 ft). The MCP Build Alternative north of Lake Mathews is a six-lane facility, which meets Caltrans standards. The typical section without grading is 34 m (113 ft), which includes a 19 m (61 ft) median, six lanes that equal 22 m (72 ft), and two 3 m (10 ft) shoulders for 6 m (20 ft). This substantial difference in width is why an MCP facility impacts the Metropolitan natural buttress for Lake Mathews Dike No. 1 at McAllister Street in a way that a four-lane arterial would not impact this natural buttress. Metropolitan also specified concerns regarding impacts to the following: Lake Mathews MSHCP reserve lands, Lake Mathews watershed, Metropolitan's existing facilities (Colorado Aqueduct, Perris Valley Siphon Numbers 1 and 2, Lakeview pipeline, etc), homeland security, and access issues to Metropolitan facilities.

In letters dated June 8, 2005, and August 19, 2005 (included in Appendix J; also see Chapter 5), DWR also expressed similar concerns regarding the potential impacts of a major transportation facility adjacent to Perris Dam, with specific concerns regarding the recent DWR seismic stability analysis, adjacent wildlife areas, and the need to maintain access to emergency outlet structures and a seepage collection system at the base of the dam. DWR requested that RCTC not move forward with the North Perris alignment in this location due to impacts to existing facilities and the need to maintain right of way for possible repair operations. As discussed in Section 2.7, Alternatives 4 and 6 were modified to eliminate the segment by the Perris Dam.



Traffic Constraints

The value analysis team evaluated the need to maintain parallel west-east access through the MCP study area to accommodate local west-east traffic movement, especially through the Mead Valley area. The specific traffic concern identified by the value analysis team was that a parkway alternative on Cajalco Road would eliminate Cajalco Road as a major west-east thoroughfare for local traffic in Mead Valley. Although the County of Riverside Transportation staff identified long-term opportunities for the development of parallel access as provided for in the General Plan Circulation Element, the value analysis team also considered this concern in the development of other possible MCP Alternatives.

Environmental Constraints

Key environmental constraints considered by the Small Working Group in developing the initial MCP Alternatives included the need to avoid or minimize impacts to a number of existing and planned habitat reserve areas, including those reserves established as part of the Lake Mathews MSHCP for the Stephens' kangaroo rat (which includes reserve lands adjacent to both Lake Mathews and Lake Perris), the El Sobrante Landfill MSHCP, and criteria areas identified for conservation in the western Riverside County Multispecies Habitat Conservation Plan (MSHCP). The locations of these existing and planned reserves are shown in Figure 2.2.1. The reserves established as part of the Lake Mathews MSHCP and Habitat Conservation Plan for the Stephens' kangaroo rat are existing reserves. The MSHCP is an approved plan, largely consisting of future reserves that will be created through the conservation of specific lands to be acquired over a period of time. These Habitat Conservation Plan reserve areas were considered important constraints in the alternatives development process since they represent habitat conservation commitments made in exchange for development entitlements. (See Section 3.17 for additional information regarding these reserves and Habitat Conservation Plans.)

The value analysis team considered the constraints presented by each of these reserves relative to the successful implementation of a MCP Build Alternative. To allow for new or expanded roads within the reserves established through the Lake Mathews MSHCP, Habitat Conservation Plan for the Stephens' kangaroo rat, and El Sobrante Landfill MSHCP, an amendment to the respective Habitat Conservation Plans for those reserves would be required. The lead agencies for the MCP project (RCTC and FHWA) do not have the ability to amend the existing Habitat Conservation Plans, and these areas present a potential constraint to the implementation of a MCP Alternative. For example, since Metropolitan is the



permittee for the Lake Mathews MSHCP, an amendment to the Lake Mathews MSHCP to permit construction of the MCP project through this area would need to be initiated by Metropolitan. The timing and successful approval of such an amendment would be outside the jurisdiction and control of RCTC, FHWA, and Caltrans, as they are not signatories to the permit. Similarly, an amendment to the Habitat Conservation Plan for the Stephens' Kangaroo Rat Reserve would require action on the part of the Riverside County Habitat Conservation Agency (RCHCA). Although amending the Habitat Conservation Plan for the Stephens' Kangaroo Rat Reserve would still be outside the jurisdiction and control of RCTC, FHWA, and Caltrans, that Habitat Conservation Plan is written to allow for future amendments and, therefore, is not as restrictive as the Lake Mathews MSHCP.

The MSHCP is also a constraint to locating a major transportation facility such as the MCP project because a consistency finding is required and an amendment to the MSHCP may be needed to adopt a MCP Build Alternative. However, the MSHCP identifies approximately 129,500 hectares (ha) (320,000 acres [ac]) of potential reserve area (Criteria Area) in the form of criteria cells, of which 61,900 ha (approximately 153,000 ac) are to be acquired for conservation purposes. The MCP Build Alternatives were sited in a manner intended to minimize impacts to the MSHCP Criteria Areas to the greatest extent feasible. There are a variety of ways to implement the MSHCP, and most of the acquisition of specific MSHCP lands (through dedications and purchases from willing sellers) will be undertaken in the future. The MSHCP Criteria Cells were considered a constraint in the Value Analysis Study, but to a lesser degree than the areas within the three existing reserves.

The initial MCP Build Alternatives north and south of Lake Mathews (Alternatives 2 through 5) traverse parts of the reserve areas established as part of the Lake Mathews MSHCP. While the alternatives north of Lake Mathews avoid habitat fragmentation south of Lake Mathews, they did not accomplish a full avoidance of these reserve areas because the reserve areas extend east and north of Lake Mathews. Given the constraints related to the amendment process for the Lake Mathews MSHCP and the previously mentioned engineering constraints associated with Cajalco Dam that could possibly render the alignment north of Lake Mathews not practicable, the value analysis team determined it was prudent to consider alternatives that provided full avoidance of the reserve areas established as part of the Lake Mathews MSHCP and the Dam facilities, resulting in the proposed Far South Alternative (Alternative 9).

2.2.2.3 Refinement to San Jacinto Alignment in the Area East of Warren Road to SR-79

The initially proposed alignment located the MCP project just north of the existing Ramona Expressway. Through the Value Analysis Study process a second alignment was proposed in this area where the MCP project alignment parallels the Colorado River Aqueduct and is sited between Ramona Expressway and adjacent to the Colorado River Aqueduct. This south of Ramona Expressway alignment was proposed to better fit with planned land uses, improve the interchange configuration at SR-79, and move the alignment farther from the San Jacinto River and floodplain. The San Jacinto South alignment is now the proposed project, and the north alignment (San Jacinto North) is being evaluated as a design variation.

2.2.2.4 Reorganization of the No Project/No Action Alternatives

Two No Project/No Action Alternatives were described in the November 2004 NOI and NOP. Alternative 1 was represented by projected 2035 traffic on the planned street network with the exception of Cajalco Road and the Ramona Expressway, which would remain as they exist today. Alternative 8 was described as full implementation of the Riverside County General Plan Circulation Element street network, including the planned improvements to Cajalco Road and the Ramona Expressway. Both of these alternatives are considered "No Action" Alternatives for RCTC, FHWA, and Caltrans, as they reflect conditions that would occur without the MCP project. Therefore, to clarify the status of these alternatives as No Action alternatives, they were renumbered as Alternatives 1A and 1B and titled "No Action/No Project—Existing Conditions" and "No Action/No Project—General Plan Circulation Element Conditions," respectively, as follows:

- Alternative 1A (originally Alternative 1): No Project/No Action—Existing Conditions. Alternative 1A is the CEQA No Project Alternative comparing the MCP project to existing conditions ("plan to ground" comparison) and 2035 traffic on the planned street network except for Cajalco Road and Ramona Expressway, which would remain as they exist today.
- Alternative 1B (originally Alternative 8): No Project/No Action—General Plan Circulation Element Conditions. Alternative 1B is the NEPA No Action Alternative, including foreseeable future actions and 2035 traffic on the planned





The planned street network includes improvements in the 2003 Riverside County General Plan Circulation Element.

street network according to the Circulation Element of the Riverside County General Plan.

In addition to the above No Project/No Action alternatives, a specific Section 404 No Action Alternative (avoidance alternative) was developed for purposes of compliance with the Section 404(b)(1) Guidelines and Corps regulations (33 CFR 325, Appendix B). The Section 404 No Action Alternative includes measures needed (e.g., bridges) to fully avoid the placement of dredge or fill within waters of the United States. That is, the Section 404 No Action Alternative will represent the one alternative that results in no construction requiring a USACE permit. It may be brought by the applicant electing to modify the proposal to eliminate work under the jurisdiction of the USACE or by the denial of the permit. The discussion of the Section 404 No Action Alternative (avoidance alternative) is provided below and is also included in the Section 404(b)(1) Alternative Analysis in Appendix N.

Several alignments were analyzed for the Section 404 No Action Alternative, and it was determined that no feasible alignment exists within the project study area that would completely avoid waters of the United States. As a result, the Section 404 No Action Alternative follows the proposed alignment for Alternative 9, but provides for bridge structures to be built over all water crossings in order to fully avoid dredge or fill within waters of the United States. Alternative 9 was chosen as the base for the Section 404 No Action Alternative because it is the Build Alternative with the least impact to waters of the United States. The alignment and proposed interchange locations for the Section 404 No Action Alternative are identical to those of Alternative 9. Implementation of the Section 404 No Action Alternative would necessitate revisions to 10 planned bridge structures that would require longer spans and the placement of 89 additional bridge structures to completely avoid waters of the United States. However, the Section 404(b)(1) Alternatives Analysis concludes that the Section 404 No Action Alternative cannot be considered practicable because it would add an additional cost of \$979 million (approximately one-third more than Alternative 9) and has thus been determined to be unreasonably expensive.

2.2.2.5 Agency Concurrence on the Current MCP Alternatives

The NEPA and the CWA Section 404 Integration Process Memorandum of Understanding (MOU) outlines procedures for transportation agencies and responsible agencies during the process of developing and adopting an EIS. There are three checkpoints identified in the MOU for the transportation agency to coordinate with responsible agencies for agreement, concurrence and/or comment: Purpose and



Need; Identification of the Range of Alternatives to be studied in the Draft EIS; and Preliminary Least Environmentally Damaging Practicable Alternative (LEDPA) Determination and Conceptual Mitigation Plan.

In accordance with the NEPA and CWA Section 404 Integration Process MOU, RCTC and FHWA coordinated with USACE, EPA, and USFWS. In December 2005, the USACE and the EPA sent letters to FHWA indicating their preliminary agreement on the addition of Alternative 9, the Far South Alternative, and the elimination of Alternatives 2 and 3, the parkway alternatives north of Lake Mathews. These agencies also agreed to modify the portion of Alternatives 4 and 6 in the north Perris area to replace the Perris Dam alignment with the Perris Drain alignment. In July 2007, final refinements were made to a portion of Alternatives 4, 6, and 9 south of Lake Mathews to minimize effects to the El Sobrante Landfill MSHCP reserve areas.

In September 2007, FHWA sent letters to USACE, EPA, and USFWS requesting final agreement on the suite of alternatives to be evaluated in this EIR/EIS. In November 2007, the USFWS sent a letter stating that because they were not involved in developing the Purpose and Need for the MCP project, their agency would not be able to participate in a formal concurrence on the suite of alternatives. In December 2007, the USACE and EPA sent letters to FHWA indicating their final agreement on the suite of alternatives evaluated in this EIR/EIS.

See Chapter 5, Comments and Coordination, of this EIR/EIS for additional details pertaining to agency coordination, alternatives concurrence, and the NEPA and CWA Section 404 Integration Process MOU. Copies of the letters discussed above are included in Appendix J.

2.3 MCP Segment Descriptions

The MCP project will be a new highway constructed generally along and/or parallel to segments of existing Cajalco Road and Ramona Expressway. All the MCP Build Alternatives would meet future travel demand between and through the cities of Corona, Perris, and San Jacinto and connect with I-15, I-215, and the proposed realignment of SR-79. Many of the alternatives share common segments (see Figures 2.3.1a and 2.3.1b and Table 2.4.A later in this chapter). To organize data collection and analysis for the MCP Alternatives and to reduce redundancy in reporting given the many common segments, data were collected and tabulated for the project technical reports by segment. The 13 MCP Study Segments specific to the



This page intentionally left blank

Temescal Wash Area

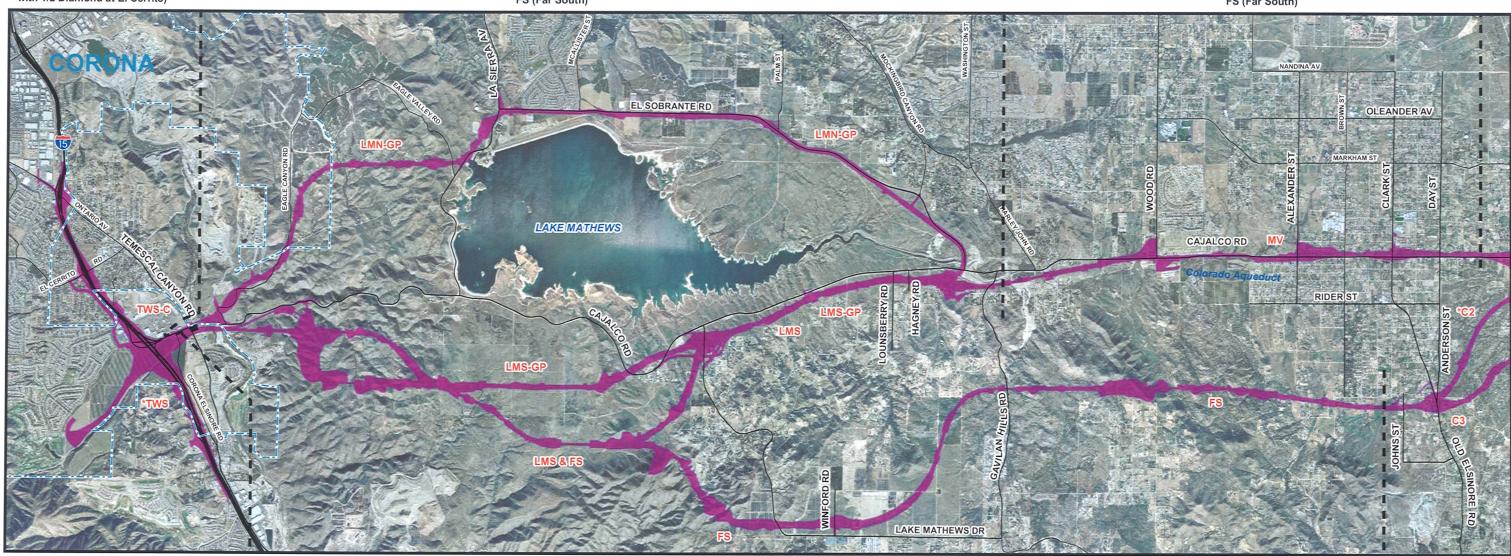
----- SEGMENTS ----TWS-C (Temescal Wash Area
with Collector Distributor)
*TWS (Temescal Wash Area
with 1/2 Diamond at El Cerrito)

Lake Mathews Area

----- SEGMENTS ----LMS (Lake Mathews South)
LMN-GP (Lake Mathews North General Plan)
LMS-GP (Lake Mathews South General Plan)
FS (Far South)

Mead Valley Far South Area

----- SEGMENTS -----MV (Mead Valley) FS (Far South)



Legend

City Limits

- Alternative Segment

Alternative Alignment

SOURCE: Airphoto USA (2006), TBM (2006), Jacobs Engineering (02/2007)

* = Design variation.



Study Area Segments
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

FIGURE 2.3.1a

Perris Area

San Jacinto
Design Variation Area

---- SEGMENTS ---C1 (Connector Perris 1)
*C2 (Connector Perris 2)
C3 (Connector Perris 3)

----- SEGMENTS ----PD (Perris Drain)
RD (Rider)
PP-D (Placentia Perris Depressed)
*PP-E (Placentia Perris Elevated)

---- SEGMENT -----SJ (San Jacinto)

San Jacinto

Area

*SJN (San Jacinto North)
SJS (San Jacinto South)



Legend

- Alternative Segment Alternative Alignment

===: Planned Roads

SOURCE: Airphoto USA (2006), TBM (2006), Jacobs Engineering (02/2007)

* = Design variation.





FIGURE 2.3.1b

This page intentionally left blank

baseline alternatives shown in Figures 2.3.1a and 2.3.1b are listed below, generally from west to east, and are described in more detail below.

- Temescal Wash Area with Collector-Distributor Roads (TWS-C): begins at the
 western terminus of the MCP project and ends near the Temescal Canyon
 Road/Cajalco Road intersection; includes collector-distributor roads from Weirick
 Road to Ontario Avenue
- 2. Lake Mathews South (LMS): begins at eastern terminus of TWS-C and proceeds east from TWS-C, south of Lake Mathews, to east of El Sobrante Road to Mead Valley (MV)
- 3. Lake Mathews North General Plan (**LMN-GP**): from near the Temescal Canyon Road/Cajalco Road intersection to MV
- 4. Lake Mathews South General Plan (**LMS-GP**): from near the Temescal Canyon Road/Cajalco Road intersection to MV
- 5. Mead Valley (MV): from LMS to east of Day Street
- 6. Far South (FS): from TWS-C to east of Brown Street
- 7. Connector Perris 1 (C1): from MV to Patterson Avenue
- 8. Connector Perris 3 (C3): from FS to Patterson Avenue
- 9. Perris Drain (PD): from MV to San Jacinto (SJ)
- 10. Rider Street (RD): from C1 to SJ
- 11. Placentia Avenue/Perris Boulevard Depressed Grade (PP-D): from C3 to SJ
- 12. San Jacinto (SJ): from PD, RD, or PP-D to San Jacinto South (SJS)
- 13. San Jacinto South (SJS): from west of Warren Road to SR-79

In addition to these baseline alternative segments, there are four other segments that are specific only to design variations, and are also shown in Figures 2.3.1a and 2.3.1b and discussed further in Section 2.4.8:

- 1. Temescal Wash Area (**TWS**): begins at the western terminus of the MCP and ends near Temescal Canyon Road/Cajalco Road Intersection; includes elimination of the southbound on-ramp and northbound off-ramp at the I-15/El Cerrito Road interchange
- 2. Connector Perris 2 (C2): from FS to Patterson Avenue
- 3. Placentia Avenue/Perris Boulevard Elevated Grade (PP-E): from C3 to SJ
- 4. San Jacinto North (SJN): from west of Warren Road to SR-79

A more detailed description of each segment, including the beginning and end points (in a west-to-east direction), is also provided below. All distances provided are approximate.



2.3.1 Temescal Wash Area with Collector-Distributor Roads Segment

The Temescal Wash Area with Collector-Distributor Roads (TWS-C) Segment begins at the western terminus of the MCP project and ends 250 m (840 ft) east of the Temescal Canyon Road/Cajalco Road intersection. This segment includes portions of I-15 north and south of the existing I-15 interchange at Cajalco Road and east and west of I-15 in the vicinity of existing Cajalco Road. This segment extends: approximately 3,140 m (10,300 ft) or approximately 3.14 km (1.95 mi) south of the existing Cajalco Road; approximately 3,500 m (11,600 ft) or approximately 3.50 km (2.17 mi) north of existing Cajalco Road; approximately 2,150 m (7,050 ft) or approximately 2.15 km (1.34 mi) west of I-15; and approximately 975 m (3,200 ft) or approximately 0.97 km (0.61 mi) east of I-15. The alignment remains south of the existing Cajalco Road to 250 m (840 ft) east of the Temescal Canyon Road and the Cajalco Road Intersection. The collector-distributor roads will extend from Weirick Road to Ontario Avenue. The collector-distributor roads are one-way roads next to a freeway used for the ramps that would otherwise merge into or split from the main lanes of the freeway. The collector-distributor roads are similar to frontage roads and are used to eliminate or move weaving away from the main lanes of the freeway. The preliminary cost estimates for the collector-distributor roads system for the MCP project are \$29 million per mile.

The MCP project mainline crosses over the I-15. Other circulation improvements include increases in capacity for Ontario Avenue and the Ontario Avenue/I-15 interchange, and a modified I-15 interchange at Cajalco Road.



2.3.2 Lake Mathews South Segment

The Lake Mathews South (LMS) Segment begins at the eastern terminus of the TWS-C Segment, south of existing Cajalco Road, and at the Temescal Canyon Road/Cajalco Road intersection and proceeds east through predominantly vacant land (primarily habitat reserve lands owned by the RCHCA, USA Waste, or Metropolitan) remaining south of existing Cajalco Road. It connects with the MV Segment approximately 789 m (2,590 ft) east of El Sobrante Road. A two-way

frontage road is proposed adjacent to the south side of the new facility to accommodate local traffic approaching from the south. This frontage road starts west of Lake Mathews Drive and ends at the proposed El Sobrante Road interchange.

2.3.3 Lake Mathews North General Plan Segment

The Riverside County General Plan Circulation Element proposes an urban arterial north of Lake Mathews. The Lake Mathews North General Plan (LMN-GP) Segment proceeds from the Temescal Canyon Road/Cajalco Road intersection along a new alignment north to where it connects to El Sobrante Road at its intersection with La Sierra Avenue. From La Sierra Avenue, the LMN-GP Segment follows the existing alignment of El Sobrante Road north of Lake Mathews, connecting to the MV Segment, 789 m (2,590 ft) east of the El Sobrante Road and Cajalco Road intersection. This segment is a four-lane urban arterial with intersections throughout its entire length. Changes to existing conditions within this segment include realignment of a portion of existing Cajalco Road from 1,038 m (3,407 ft) west of Mockingbird Canyon Road to 682 m (2,240 ft) east of Mockingbird Canyon Road.

2.3.4 Lake Mathews South General Plan Segment

The Riverside County General Plan Circulation Element proposes to realign existing Cajalco Road as a four-lane access-controlled expressway² within a 40 m (128 ft) right of way. The Lake Mathews South General Plan (LMS-GP) Segment proceeds from the Temescal Canyon Road/Cajalco Road intersection to 789 m (2,590 ft) east of El Sobrante Road at the western terminus of the MV Segment. The segment climbs the hills on an alignment that initially parallels existing Cajalco Road and then traverses the hills to the south of Cajalco Road to minimize the grade changes on the proposed road. A two-way frontage road is proposed adjacent to the south side of the new facility to accommodate local traffic approaching from the



An urban arterial is a highway primarily for through traffic where anticipated traffic volumes exceed four-lane capacity. Access from other streets or highways shall be limited to approximately 0.40 km (0.25 mi) intervals. (Source: County of Riverside General Plan, Circulation Element)

An expressway is a multimodal highway corridor for through traffic to which access from abutting property is restricted. Intersections with other streets or highways are limited to approximately 0.8 km (0.5 mi) intervals. (Source: County of Riverside General Plan, Circulation Element)

south. This frontage road starts west of Lake Mathews Drive and ends at the proposed El Sobrante Road interchange.

2.3.5 Mead Valley Segment

The Mead Valley (MV) Segment extends east from the terminus of the LMS Segment, 789 m (2,590 ft) east of El Sobrante Road, and extends to 696 m (2,285 ft) east of Day Street. The alignment of the MV Segment is sited generally parallel to and just north of existing Cajalco Road.

2.3.6 Far South Segment

The Far South Segment (FS) begins at the eastern terminus of the TWS-C Segment, south of existing Cajalco Road, at the Temescal Canyon Road/Cajalco Road intersection and proceeds east through predominantly vacant land (primarily habitat reserve lands owned by the RCHCA, USA Waste, or Metropolitan) remaining south of existing Cajalco Road, approximately 3.2 km (2.0 mi) south of existing Cajalco Road, and extends to Connector Perris 3, 125 m (410 ft) east of Haines Street. The FS Segment traverses a portion of the Gavilan Hills. This segment only applies to Alternative 9.

2.3.7 Connector Perris 1 Segment

The Connector Perris 1 (C1) Segment begins 790 m (2,600 ft) east of Day Street at the eastern terminus of the MV Segment and ends at Patterson Avenue, a distance of approximately 1.6 km (1.0 mi). The C1 Segment connects the MV Segment to the RD Segment.

2.3.8 Connector Perris 3 Segment

The Connector Perris 3 (C3) Segment begins 125 m (410 ft) east of Haines Street at the east terminus of the FS Segment and extends east to approximately 272 m (895 ft) west of Patterson Avenue to Segments PP-E or PP-D.

2.3.9 Perris Drain Segment

The Perris Drain (PD) Segment provides a connection between the MV and SJ Segments along the Perris Drain. This segment begins 696 m (2,285 ft) east of Day Street on the west and ends at 87 m (291 ft) west of Dawson Street. In this segment, approximately 1.6 km (1.0 mi) of the MCP project would be elevated approximately 4.5–7.6 m (15–25 ft) above grade on a viaduct structure. This segment also includes an MCP/I-215 interchange extending along I-215, approximately 3,200 m (11,500 ft) north and 3,100 m (10,250 ft) south of the existing Ramona Expressway/I-215 interchange. The MCP mainline crosses over the I-215.

2.3.10 Rider Street Segment

The Rider Street (RD) Segment connects I-215 with the SJ alignment. It extends from 21 m (71 ft) east of Patterson Avenue on the west to 87 m (291 ft) west of Dawson Street. This segment also includes an MCP/I-215 interchange extending along I-215 2,530 m (8,300 ft) north and 1,845 m (6,050 ft) south of Rider Street. The MCP project mainline crosses over the I-215.

2.3.11 Placentia Avenue/Perris Boulevard Depressed Grade Segment

The Placentia Avenue/Perris Boulevard Depressed Grade (PP-D) Segment follows Placentia Avenue at the eastern terminus of the C3 Segment at a point approximately 272 m (895 ft) west of Patterson Avenue and extends east to 87 m (291 ft) west of Dawson Street. This segment includes an MCP/I-215 interchange, extending along I-215, 1,585 m (5,200 ft) north and 1,860 m (6,100 ft) south of Placentia Avenue. The MCP project mainline crosses over the I-215. For this segment, the road is approximately 9 m (30 ft) depressed below the existing grade from Barrett Avenue to Wilson Avenue. This segment only applies to Alternative 9.

2.3.12 San Jacinto Segment

The San Jacinto (SJ) Segment extends along existing Ramona Expressway from the eastern terminus of the PD, RD, and PP-D Segments to 1.0 km (0.6 mi) west of Warren Road on the east. The SJ Segment terminates at the SJN and SJS Segments and measures a total distance of approximately 12.3 km (7.63 mi).

2.3.13 San Jacinto South Segment

The San Jacinto South (SJS) Segment extends from the eastern terminus of the SJ Segment 1.32 km (0.82 mi) west of Warren Road east to SR-79. It follows an alignment approximately 300 m (990 ft) south of the existing Ramona Expressway adjacent to the Colorado River Aqueduct. This segment also extends approximately 1,080 m (3,550 ft) north of the Ramona Expressway along SR-79 and approximately 2,560 m (8,400 ft) south of the Ramona Expressway along SR-79.

2.3.14 Temescal Wash Area Segment Design Variation

This is a design variation for the TWS-C Segment (TWS-DV) that the southbound on-ramp and northbound off-ramp at the I-15/El Cerrito Road interchange. Changes to existing conditions included within this segment include closing the existing southbound on-ramp and northbound off-ramp at El Cerrito Road that connect to I-15. The El Cerrito Road overcrossing will remain open, connecting local streets from one side of I-15 to the other side, and the collector-distributor roads will extend from Weirick Road to just north of Cajalco Road. The MCP crosses over the I-15. Other circulation improvements include capacity enhancement for Ontario Avenue and the Ontario Avenue/I-15 interchange and a modified I-15 interchange at Cajalco Road. This design variation applies to all of the MCP Build Alternatives.

2.3.15 Connector Perris 2 Segment Design Variation

The Connector Perris 2 (C2) Segment begins at the eastern terminus of the FS Segment, 125 m (410 ft) east of Haines Street. This segment veers northward at Anderson Street, follows north of Rider Street, and connects to the RD Segment 21 m (71 ft) east of Patterson Avenue. This design variation only applies to Alternative 9.

2.3.16 Placentia Avenue/Perris Boulevard Elevated Grade Segment Design Variation

The Placentia Avenue/Perris Boulevard Elevated Grade (PP-E) Segment design variation is an elevated design variation of the PP-D Segment. The PP-E Segment follows Placentia Avenue at the eastern terminus of the C3 Segment at a point approximately 272 m (895 ft) west of Patterson Avenue and extends east to 87 m (291 ft) west of Dawson Street. This segment includes an MCP/I-215 interchange

extending along I-215, 1,585 m (5,200 ft) north and 1,860 m (6,100 ft) south of Placentia Avenue. The MCP project mainline crosses over the I-215. For this design variation, the road is approximately 8.0 m (26.2 ft) elevated above grade from Barrett Avenue to Wilson Avenue. This design variation only applies to Alternative 9.

2.3.17 San Jacinto North Segment Design Variation

The San Jacinto North (SJN) Segment design variation extends from the eastern terminus of the SJ Segment 1.32 km (0.82 mi) west of Warren Road east to SR-79. It follows an alignment approximately 300 m (990 ft) north of the existing Ramona Expressway. This segment also extends approximately 2,160 m (7,090 ft) north of the Ramona Expressway along SR-79 and 1,520 m (4,990 ft) south of the Ramona Expressway along SR-79. The SJN Segment is a design variation of the SJS Segment for all of the MCP Build Alternatives.

2.4 Alternatives

Descriptions of the two No Project/No Action Alternatives (Alternatives 1A and 1B) and the five Build Alternatives (Alternatives 4, 5, 6, 7, and 9) that are evaluated in this EIR/EIS are provided below. High-occupancy vehicle (HOV) lanes would not be provided with implementation of the MCP project for any of the MCP Build Alternatives since traffic congestion is not expected through the horizon year of 2035; however, the project design does not preclude the addition of HOV lanes later if traffic congestion does occur. Alternatives 2 and 3 (North Lake Mathews/North Perris Alternative and North Lake Mathews/South Perris Alternative) were considered but eliminated from further analysis in this EIR/EIS (see Section 2.9, Alternatives Considered and Withdrawn from Further Study, for more information). The No Project/No Action General Plan Circulation Element Conditions Alternative, originally identified as Alternative 8, was redesignated Alternative 1B.

The alignments of the MCP Build Alternatives are shown on detailed figures in this section. Table 2.4.A lists the MCP Segments and identifies which segments apply to each of the MCP Build Alternatives.



Table 2.4.A Mid County Parkway Segments Representing Each Build Alternative

_	_	Т		_				_						_					
	SIS	Yes		Yes				Yes					Yes					Yes	
	SJN	≧		≧				≥					Δ					Δ	
	S	Yes		Yes				Yes					Yes					Yes	
	PP-E	N/A		N/A				N/A					N/A					ΛΟ	
	O-dd	N V		ΑN				A/A					N/A					Yes	
	RD	Α Α	Yes			A/A			Yes			2							
	PD	Yes	N/A			Yes			N/A			N/A							
ıts	ខ	A/N	N/A			N/A			AN A				Yes						
MCP Segments	22	A A	N/A			Α/N			Υ V				2						
MCP	ပ	Υ V		Yes				ΑN					Yes					Α×	
	FS	ĕ V		ΑN				A/A					N/A					Yes	
	≥₩	Yes		Yes				Yes					Yes					Α×	
	LMS-GP	A/N		A/A				Yes					Yes					N/A	
	LMN-GP LMS-GP	N/A		ΑN				Yes					Yes					N/A	
	LMS	Yes		Yes				N/A					A/A					A/N	
	TWS	ΛΟ		M				DV					DΛ					20	
	TWS-C TWS	Yes		Yes				Yes					Yes					Yes	
Alternative Name	AIRCHIIGHAC INGILIC	South of Lake Mathews/	North Perris (Drain)	South of Lake	Mathews/	South Perris (at	Rider Street)	General Plan	North and South	of Lake	Mathews/North	Perris (Drain)	General Plan	North and South	of Lake Mathews/	South Perris (at	Rider Street)	Far South/	Placentia Avenue
Alternative Alternative Name -		4		2				9					7					0	

Source: Jacobs, 2008.

Yes = Segment applies to the Alternative

N/A = Segment not applicable to the Alternative

	PP-E Placentia Avenue/Perris Boulevard Elevated Grade (Design Variation)			S San Jacinto South Design Variation
		S	5	SJS PV
	Connector Perris 1 Connector Perris 2 (Design Variation)		RD Rider Street (Design Variation)	 Placentia Avenue/Perris Boulevard Depressed
	ნ მ	ខេត	2 &	PP-D
	Lake Mathews North General Plan	Lake Mathews South General	Flan Mead Valley	Far South
	LMN-GP	LMS-GP	₩	FS.
ACP Segment Abbreviations:	WS-C Temescal Wash Area with Collector-Distributor Roads	Temescal Wash Area (Design	variation) Lake Mathews South Segment	
MCP Se	TWS-C	SWL	LMS	



2.4.1 Alternative 1A: No Project/No Action—Existing Ground Conditions

Alternative 1A represents 2035 traffic on the planned street network without for future improvements to Cajalco Road and Ramona Expressway, which would remain as they exist today. Construction of the MCP project would not be implemented with the No Project/No Action Alternative 1A. The future west-east traffic in the study area would be served by existing Cajalco Road and El Sobrante Road between I-15 and I-215 and by the existing Ramona Expressway between I-215 and SR-79. This alternative assumes 2035 land use conditions and implementation of planned improvements to the regional and local circulation system, as accounted for in the adopted Riverside County General Plan (2003), RCTC's Measure A program, and other adopted plans and policies.

2.4.2 Alternative 1B: No Project/No Action—General Plan Circulation Element Conditions

Alternative 1B represents 2035 traffic levels on the planned street network, according to the Circulation Element of the Riverside County General Plan. Construction of the MCP project would not be implemented with No Project/No Action Alternative 1B. This alternative is the same as Alternative 1A but includes implementation of Cajalco Road and Ramona Expressway consistent with the Riverside County General Plan Circulation Element.

Under Alternative 1B, Cajalco Road and Ramona Expressway would be widened to a four-to-six lane arterial street as needed to meet expected traffic demand and provide local access and circulation for existing and planned residential uses in the vicinity of Lake Mathews and Mead Valley. These improvements would result in the construction of a four-lane roadway along Cajalco Road between Bedford Canyon Road and El Sobrante Road and a six-lane roadway along Cajalco Road and Ramona Expressway between El Sobrante Road and SR-79.

2.4.3 Alternative 4: South of Lake Mathews/North Perris (Drain)



Alternative 4 proposes a six- to eight-lane controlled-access parkway with six mixed-flow lanes for most of its length, and up to eight mixed-flow lanes near the I-215 interchange. Alternative 4 is located south of Lake Mathews and follows a northern

alignment through the city of Perris (as shown in Figures 2.4.1a and 2.4.1b). The Alternative 4 alignment is south of existing Cajalco Road west of Lake Mathews Drive and located north of Ramona Expressway from I-215 to east of Redlands Avenue. Alternative 4 extends from the TWS-C Segment on the west to the SJS Segment on the east and includes the LMS, MV, PD, SJ, and SJS Segments.

System interchanges¹ are proposed for all MCP Build Alternatives at I-15, I-215, and SR-79. The MCP project mainline would cross over the I-15 and I-215 at the respective system interchanges. The MCP/I-15 interchange is proposed at four levels and would be approximately 30.5 to 38.1 m (100 to 125 ft) in height. The proposed four-level design will not preclude possible future HOV direct connectors at the system interchange at I-15. A collector-distributor road is proposed to run north-south to provide local access to I-15 from local interchanges at Weirick Road, Cajalco Road, El Cerrito Road, and Ontario Avenue. Similarly, the MCP/I-215 system interchange is proposed as a three-level interchange that will not preclude possible future HOV direct connectors. At its highest point, the interchange would be approximately 23 to 30 m (75 to 100 ft) above ground level. A collector-distributor road is proposed to run north-south to provide local access to I-215 from the local interchanges at Placentia Avenue, Ramona Expressway, and Oleander Avenue. This alternative includes a realignment of the I-215 mainline to east of the existing location, from Placentia Avenue to just north of Strata Road, a distance of approximately 5,800 m (19,030 ft) or approximately 5.8 km (3.6 mi). The existing railroad tracks west of I-215, which are owned by RCTC and operated by Burlington Northern Santa Fe (BNSF), are proposed to remain in place. Collector-distributor roads are needed and are to be located on the west side of I-215, and will be approximately 5,300 m (17,400 ft) or approximately 5.3 km (3.3 mi) in length. A three-level interchange is proposed at MCP/SR-79 at an approximate height of 15 m (50 ft). Rights of way at the proposed MCP/I-15, MCP/I-215, and MCP/SR-79 interchanges allow for a possible maintenance station with a yard.

Service interchanges for Alternative 4 are proposed at:

System interchanges are interchanges connecting two controlled access facilities (e.g., freeways) with one or more grade separation.

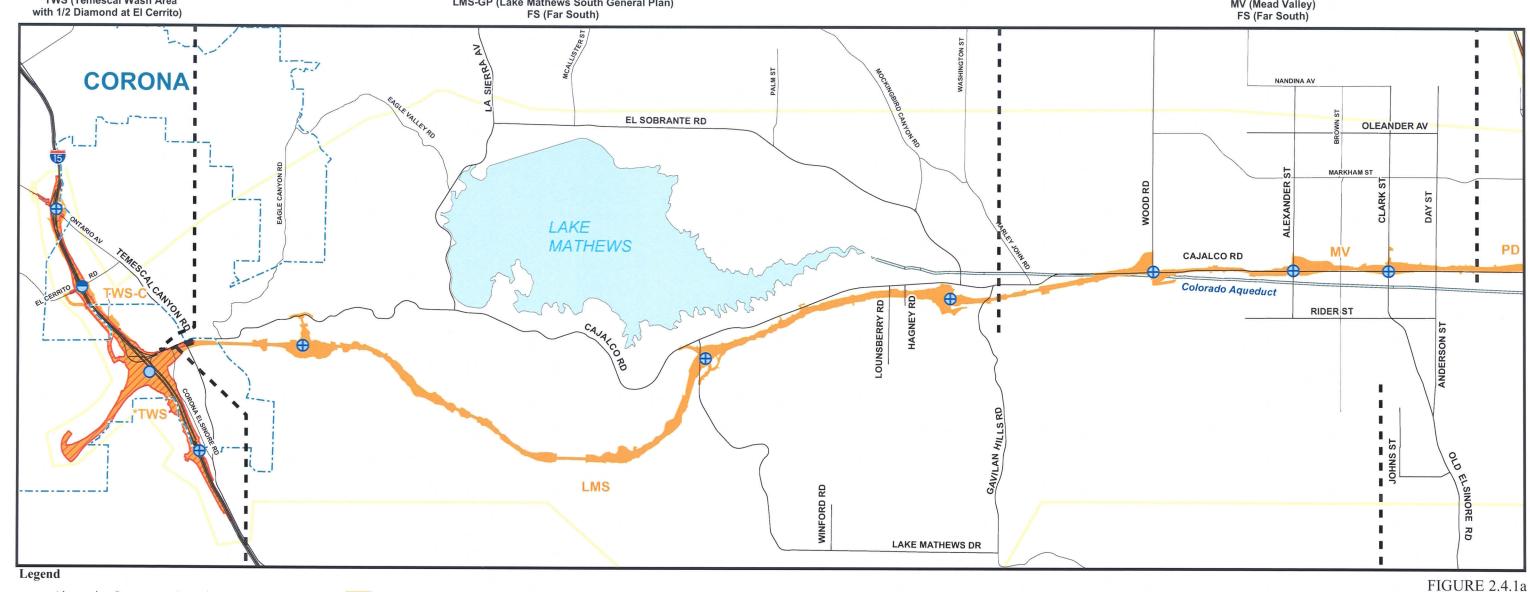
Temescal Wash Area ---- SEGMENTS ----TWS-C (Temescal Wash Area with Collector Distributor) *TWS (Temescal Wash Area

Lake Mathews Area

---- SEGMENTS -----LMS (Lake Mathews South) LMN-GP (Lake Mathews North General Plan) LMS-GP (Lake Mathews South General Plan)

Mead Valley Far South Area

---- SEGMENTS ----MV (Mead Valley) FS (Far South)



- Alternative Segment

Interchanges Study Area

Service

Service (1/2 Diamond) System

* = Design variation.

Alternative 4 (South Lake Mathews/Perris North (Drain))

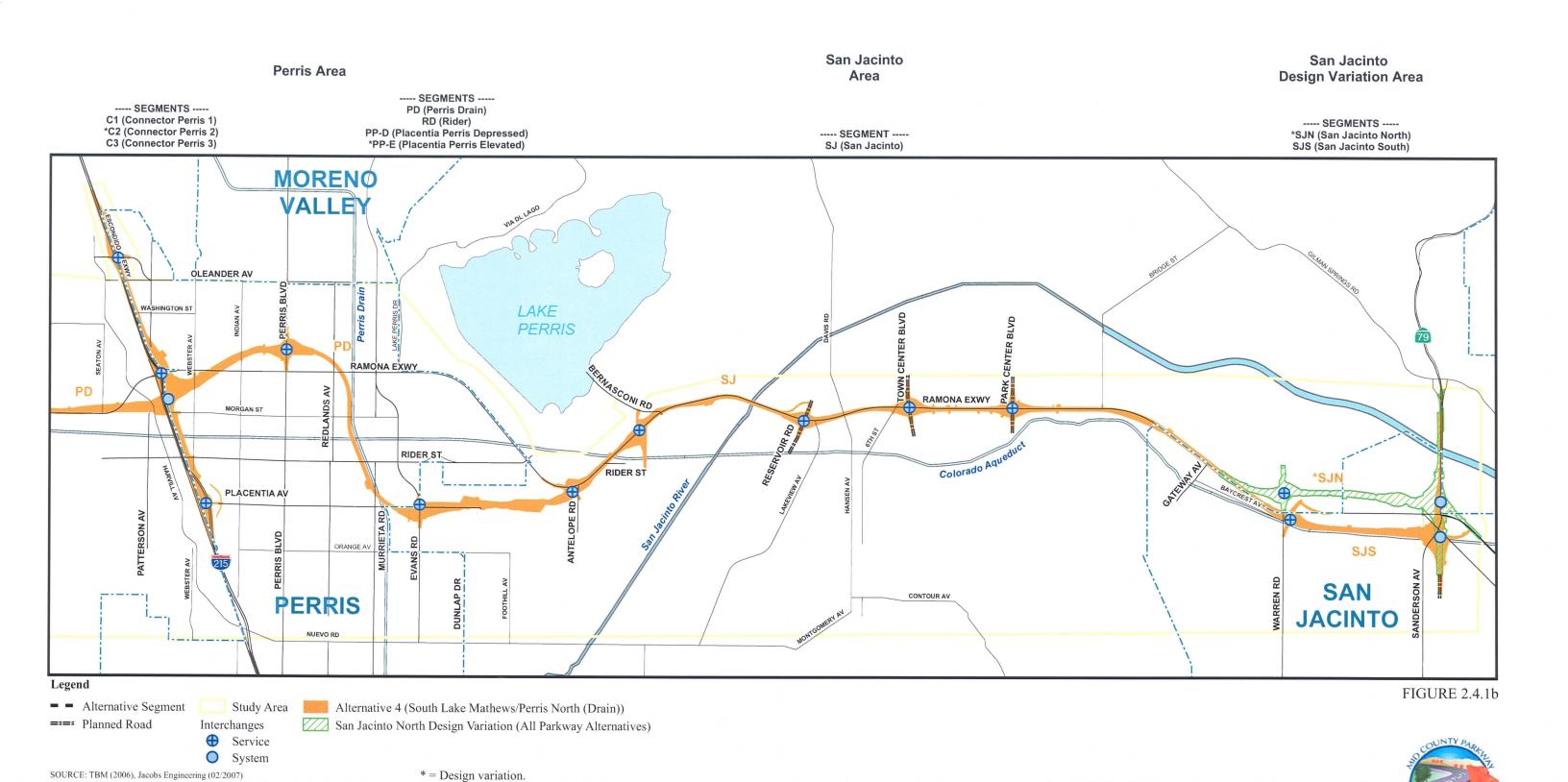
Temescal Wash Design Variation (1/2 Diamond at El Cerrito) (All Parkway Alternatives)

SOURCE: TBM (2006), Jacobs Engineering (02/2007) 0.805 3.22 Kilometers 2 Miles

Alternative 4 KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



This page intentionally left blank



Alternative 4

KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

3.22 Kilometers

2 Miles



- 1. A location approximately 2,000 m (6,560 ft) east of Temescal Canyon Road (referred to as the Estelle Mountain interchange);
- 2. Lake Mathews Drive;
- 3. El Sobrante Road;
- 4. Wood Road;
- 5. Alexander Street;
- 6. Clark Street;
- 7. Perris Boulevard;
- 8. Evans Road;
- 9. Ramona Expressway;
- 10. Bernasconi Road;
- 11. Reservoir Road;
- 12. Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008);
- 13. Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); and
- 14. Warren Road.¹

The alignment between El Sobrante Road and Wood Road is south of existing Cajalco Road, which would continue to be used as a two-way frontage road after the MCP project is constructed. Portions of existing Cajalco Road in Mead Valley would be incorporated into the local street network.

Alternative 4 includes two design variations at the western and eastern termini of the alternative that use: (1) a lesser system of collector-distributor roads at the MCP/I-15 interchange and includes the removal of the existing southbound on-ramp and northbound off-ramp from I-15 to El Cerrito Road, and (2) the SJN Segment instead of the SJS Segment to connect with SR-79.



2.4.4 Alternative 5: South of Lake Mathews/South Perris (at Rider Street)

Alternative 5 is a six- to eight-lane controlled-access parkway with six mixed-flow lanes for most of its length and up to eight mixed-flow lanes near the I-215 interchange. Alternative 5 is south of Lake Mathews and follows a southern

Service interchanges are interchanges connecting noncontrolled access highways (local roadways) to controlled access highways.

alignment through the city of Perris along Rider Street (as shown in Figures 2.4.2a and 2.4.2b). The Alternative 5 alignment is south of existing Cajalco Road, west of Lake Mathews Drive, and south of the Ramona Expressway from I-215 to just west of Antelope Road. Like Alternative 4, Alternative 5 extends from the TWS-C Segment on the west to the SJS Segment on the east. Alternative 5 also coincides with Alternative 4 for the LMS and MV Segments. Alternative 5 differs from Alternative 4 in the Perris Segments. Where Alternative 4 includes the PD Segment, Alternative 5 follows a connector from Mead Valley, the C1 Segment, to the RD, SJ, and SJS Segments.

System interchanges proposed for Alternative 5 are the same as Alternative 4, with connections at MCP/I-15, MCP/I-215, and MCP/SR-79. The I-215 system interchange differs from Alternative 4, as it connects the MCP project to I-215 near Rider Street. As with Alternative 4, it is proposed as a three-level interchange that will not preclude possible future HOV direct connectors. The interchange will be approximately 23 to 30 m (75 to 100 ft) above ground level. A collector-distributor road is proposed to run north-south to provide local access to I-215 from the local interchanges at Placentia Avenue, Ramona Expressway, and Oleander Avenue. This alternative includes a realignment of the I-215 mainline to east of the existing location, from Placentia Avenue to Ramona Expressway, a distance of approximately 3,300 m (10,826 ft) or approximately 3.3 km (2.0 mi). The existing railroad tracks (owned by RCTC and operated by BNSF) located west of I-215 are proposed to remain in place. Collector-distributor roads are needed and are to be located on the west side of I-215 for approximately 4,050 m (13,200 ft) or approximately 4.0 km (2.5 mi). Rights of way at the proposed MCP/I-15, MCP/I-215, and MCP/SR-79 interchanges allow for a possible maintenance station with a yard.

Service interchanges for Alternative 5 are proposed at:

- 1. A location approximately 2,000 m (6,560 ft) east of Temescal Canyon Road (referred to as the Estelle Mountain interchange);
- 2. Lake Mathews Drive;
- 3. El Sobrante Road:
- 4. Wood Road;
- 5. Alexander Street;
- 6. Clark Street;
- 7. Perris Boulevard;

Temescal Wash Mead Valley Lake Mathews Area Far South Area Area ----- SEGMENTS ---TWS-C (Temescal Wash Area with Collector Distributor) ---- SEGMENTS ----LMS (Lake Mathews South) LMN-GP (Lake Mathews North General Plan) LMS-GP (Lake Mathews South General Plan) FS (Far South) ----- SEGMENTS -----MV (Mead Valley) FS (Far South) *TWS (Temescal Wash Area with 1/2 Diamond at El Cerrito) **CORONA** EL SOBRANTE RD OLEANDER AV LAKE MATHEWS **CAJALCO RD** Colorado Aqueduct 0 HAGNEY RD RIDER ST LMS LAKE MATHEWS DR

Alternative 5 (South Lake Mathews/Perris South (at Rider Street))

* = Design variation.

Temescal Wash Design Variation (1/2 Diamond at El Cerrito) (All Alternatives)

0 0.5 1 2 Miles

Legend

Study Area

- Alternative Segment Interchanges

SOURCE: TBM (2006), Jacobs Engineering (02/2007)

0.805

Alternative 5

FIGURE 2.4.2a

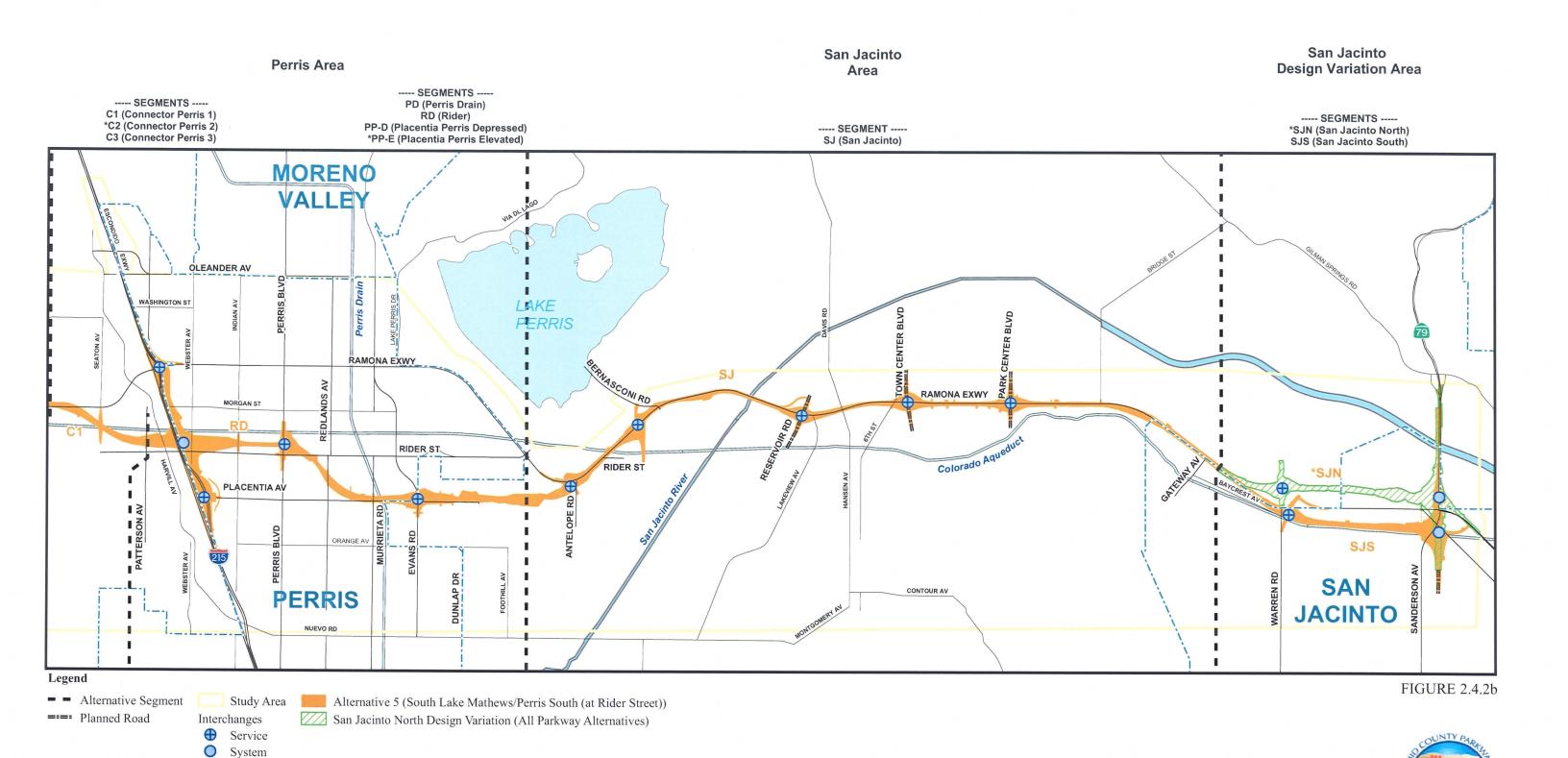
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Service

System

Service (1/2 Diamond)

3.22 Kilometers



Alternative 5

KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

0 0.5 1 2 Miles

I:\JCV531\GIS_Final\ProjectDescription\EIR_EIS\mcp_proj_desc_alt5_S2_030707.mxd(4/9/2008)

3.22 Kilometers

* = Design variation.

SOURCE: TBM (2006), Jacobs Engineering (02/2007)

- 8. Evans Road;
- 9. Ramona Expressway;
- 10. Bernasconi Road;
- 11. Reservoir Road;
- 12. Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008);
- 13. Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); and
- 14. Warren Road.

The alignment between El Sobrante Road and Wood Road is south of existing Cajalco Road, which would continue to be used as a two-way frontage road after the MCP project is constructed. Portions of existing Cajalco Road in Mead Valley would be incorporated into the local street network.

Alternative 5 includes two design variations at the western and eastern termini of the alternative that use: (1) a lesser system of collector-distributor roads at the MCP/I-15 interchange and includes the removal of the existing southbound on-ramp and northbound off-ramp from I-15 to El Cerrito Road; and (2) the SJN Segment instead of the SJS Segment to connect with SR-79.

2.4.5 Alternative 6: General Plan North and South of Lake Mathews/ North Perris (Drain)

Alternative 6 involves the implementation of General Plan Circulation Element improvements between I-15 and El Sobrante Road and a new six- to eight-lane controlled-access parkway east of El Sobrante Road to SR-79 (as shown in Figures 2.4.3a and 2.4.3b). Alternative 6 is the same as Alternative 4 (described above) east of El Sobrante Road and is located north of Ramona Expressway from I-215 to east of Perris Boulevard. West of El Sobrante Road to I-15, the project includes a four-lane urban arterial north of Lake Mathews¹ and a four-lane controlled-access expressway south of Lake Mathews. The proposed arterial street improvements north and south of Lake Mathews are consistent with the Riverside County General Plan Circulation Element. The facility south of Lake Mathews would

The Riverside County General Plan provides for up to six lanes in this location; however, traffic forecast modeling for the MCP project indicates that four lanes will meet projected demand in 2035.

This page intentionally left blank

Temescal Wash Area

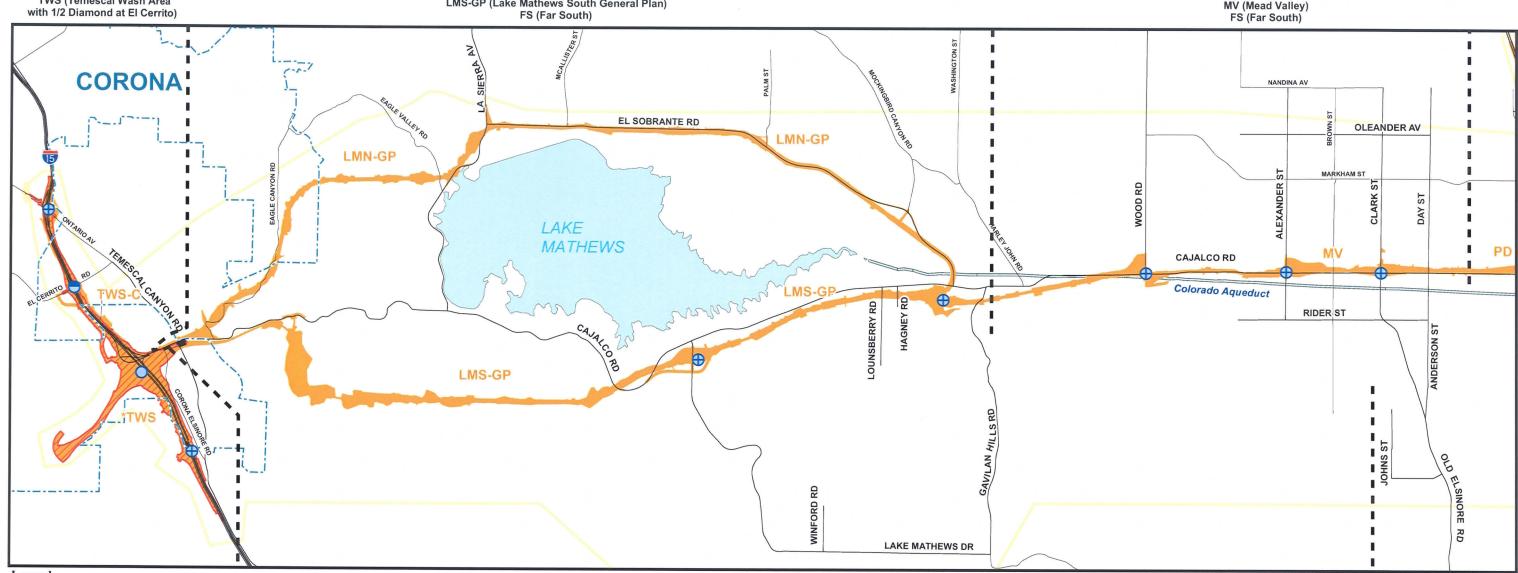
----- SEGMENTS ----TWS-C (Temescal Wash Area with Collector Distributor) *TWS (Temescal Wash Area

Lake Mathews Area

---- SEGMENTS ----LMS (Lake Mathews South) LMN-GP (Lake Mathews North General Plan) LMS-GP (Lake Mathews South General Plan) FS (Far South)

Mead Valley Far South Area

----- SEGMENTS -----MV (Mead Valley) FS (Far South)



– – Alternative Segment Interchanges

Study Area

Service

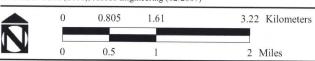
Service (1/2 Diamond) System

Alternative 6 (General Plan North and General Plan South of Lake Mathews/Perris North (Drain))

Temescal Wash Design Variation (1/2 Diamond at El Cerrito) (All Parkway Alternatives)

SOURCE: TBM (2006), Jacobs Engineering (02/2007)

* = Design variation.

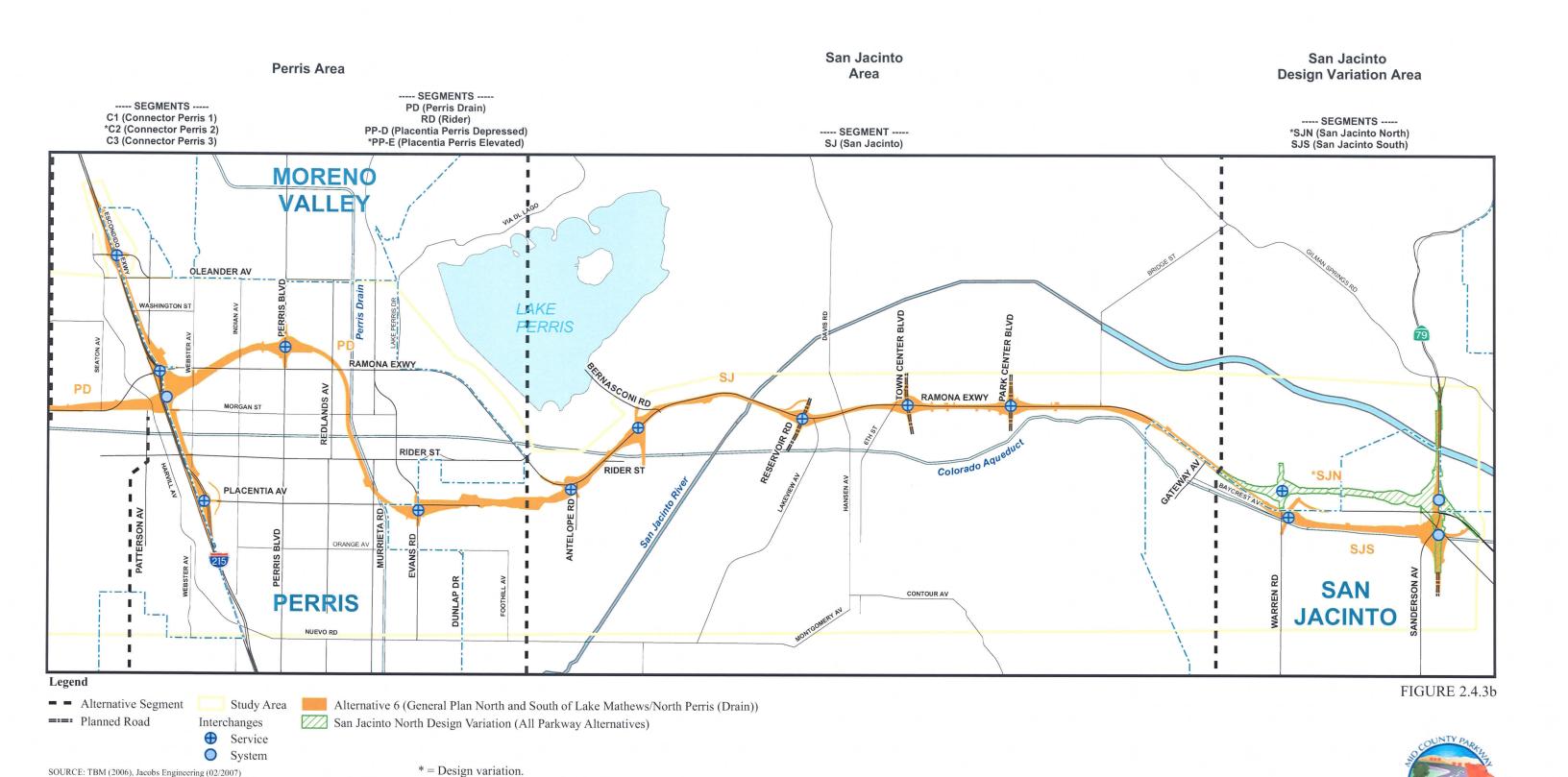


Alternative 6 KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

FIGURE 2.4.3a

Chapter 2 Project Description and Alternatives

This page intentionally left blank



Alternative 6

KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

3.22 Kilometers

2 Miles

This page intentionally left blank

be a controlled-access expressway that ties into the same system interchange configuration at I-15 as the other MCP Build Alternatives.

System interchanges are proposed for all of the MCP Build Alternatives, including Alternative 6, at MCP/I-15, MCP/I-215, and MCP/SR-79. Please see the description of system interchanges for Alternative 4 above. Similar to Alternative 4, right of way at the proposed MCP/I-15, MCP/I-215, and MCP/SR-79 interchanges allows for a possible maintenance station with yard.

Service interchanges for Alternative 6 are at the same locations as for Alternative 4, even though the location of the MCP alignment south of Lake Mathews is somewhat different than Alternative 4. These interchanges include:

- 1. Estelle Mountain;
- 2. Lake Mathews Drive;
- 3. El Sobrante Road;
- 4. Wood Road;
- 5. Alexander Street;
- 6. Clark Street;
- 7. Perris Boulevard:
- 8. Evans Road;
- 9. Ramona Expressway;
- 10. Bernasconi Road;
- 11. Reservoir Road;
- 12. Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008);
- 13. Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); and
- 14. Warren Road.

The General Plan arterial north of Lake Mathews included in Alternative 6 would modify the existing intersection of El Sobrante Road at La Sierra Avenue and result in a new arterial road extension from La Sierra Avenue southwesterly to connect with Cajalco Road. The alignment between El Sobrante Road and Wood Road is south of existing Cajalco Road, which would continue to be used as a two-way frontage road after the project is constructed. Portions of existing Cajalco Road in Mead Valley would be incorporated into the local street network.



The segments for the General Plan north and south of the Lake Mathews area include the TWS-C, LMN-GP, and LMS-GP Segments. The LMS-GP Segment provides a four-lane, access-controlled expressway that connects into I-15. The LMN-GP Segment provides a four-lane arterial that connects into Cajalco Road. The segments from the MV Segment to the SJS Segment are the same as Alternative 4.

Alternative 6 includes two design variations at the western and eastern termini of the alternative that use: (1) a lesser system of collector-distributor roads at the MCP/ I-15 interchange and includes the removal of the existing southbound on-ramp and northbound off-ramp from I-15 to El Cerrito Road, and (2) the SJN Segment instead of the SJS Segment to connect with SR-79.

2.4.6 Alternative 7: General Plan North and South of Lake Mathews/ South Perris (at Rider Street)

Alternative 7 involves the implementation of General Plan Circulation Element improvements between I-15 and El Sobrante Road and a new six- to eight-lane controlled-access parkway east of El Sobrante Road to SR-79 (as shown on Figures 2.4.4a and 2.4.4b). Alternative 7 is the same as Alternative 5 (described above) east of El Sobrante Road and follows a southerly alignment through Perris.

West of El Sobrante Road to I-15, the Riverside County General Plan includes a four-lane urban arterial north of Lake Mathews¹ and a four-lane controlled-access expressway south of Lake Mathews. The proposed arterial street improvements north and south of Lake Mathews are consistent with the Riverside County General Plan Circulation Element and are the same as described above for Alternative 6. The facility south of Lake Mathews would be a controlled-access expressway that ties into the same system interchange configuration at I-15 as the other MCP Build Alternatives.

The Riverside County General Plan provides for up to six lanes in this location; however, traffic forecast modeling for the MCP project indicates that four lanes will meet projected demand in 2035.

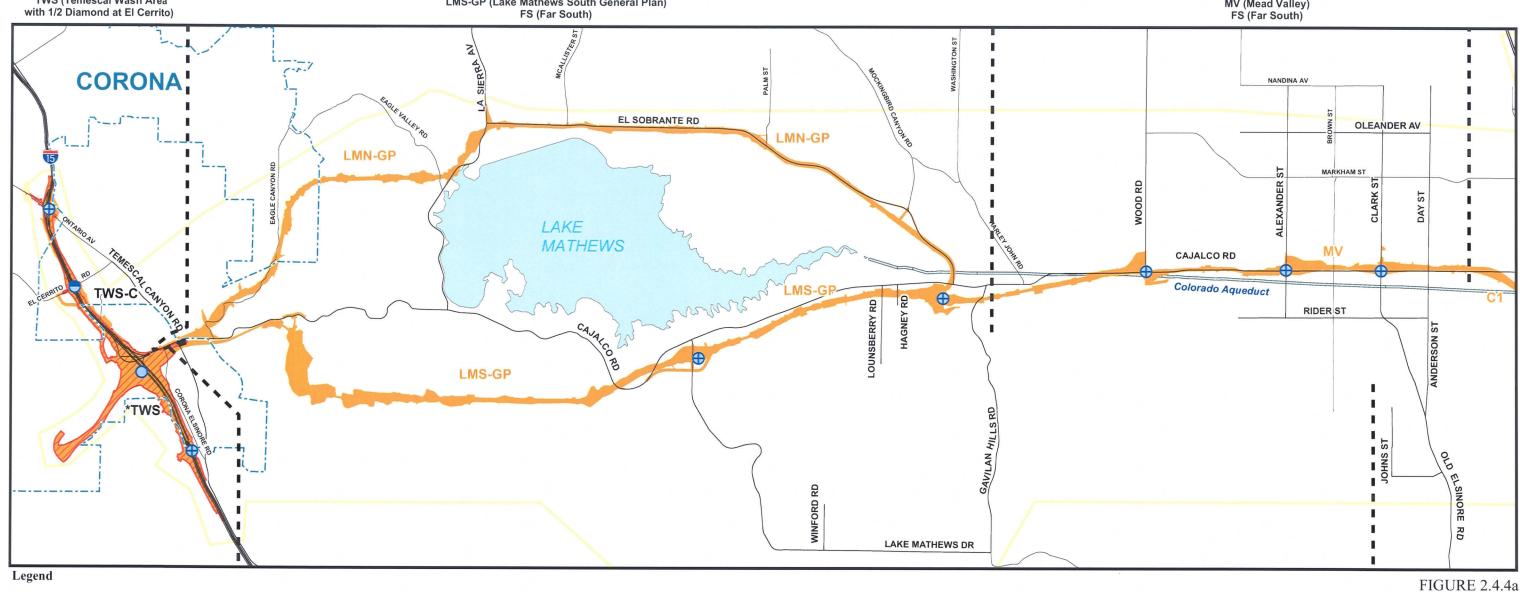
Temescal Wash Area ---- SEGMENTS ----TWS-C (Temescal Wash Area with Collector Distributor) *TWS (Temescal Wash Area

Lake Mathews Area

---- SEGMENTS ----LMS (Lake Mathews South) LMN-GP (Lake Mathews North General Plan)
LMS-GP (Lake Mathews South General Plan)
FS (Far South)

Mead Valley Far South Area

---- SEGMENTS ----MV (Mead Valley) FS (Far South)



Legend

– – Alternative Segment Interchanges Study Area

Service Service (1/2 Diamond)

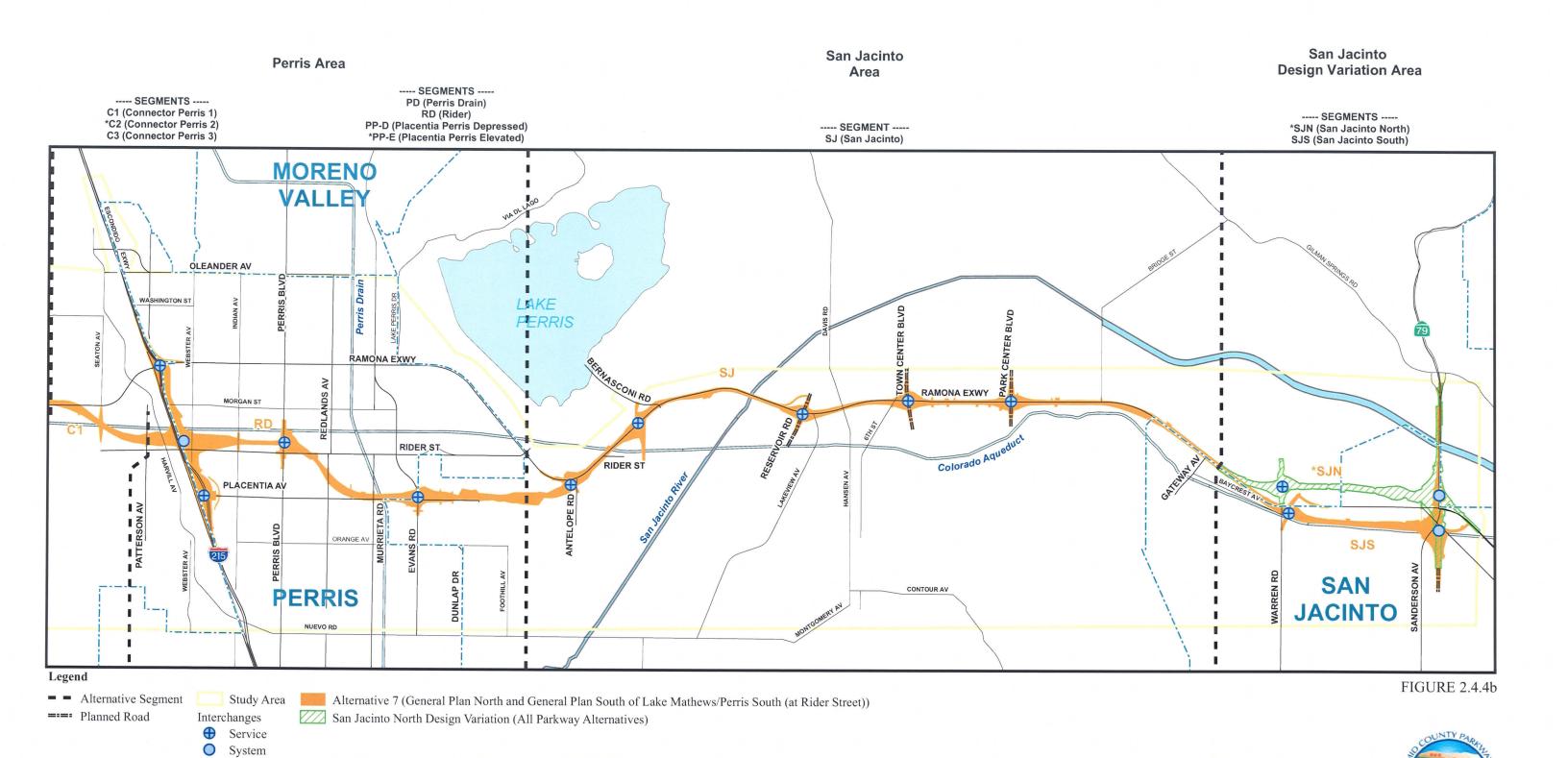
Alternative 7 (General Plan North and General Plan South of Lake Mathews / Perris South - Rider) Temescal Wash Design Variation (1/2 Diamond at El Cerrito) (All Parkway Alternatives)

System

* = Design variation.

SOURCE: TBM (2006), Jacobs Engineering (02/2007) 1.61 3.22 Kilometers 2 Miles

Alternative 7 KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



Alternative 7

KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

I:\JCV531\GIS_Final\ProjectDescription\EIR_EIS\mcp_proj_desc_alt7_S2_030707.mxd (4/9/2008)

3.22 Kilometers

2 Miles

* = Design variation.

SOURCE: TBM (2006), Jacobs Engineering (02/2007)

0.5

This	page	inten	tionally	left	blank
11113	paye	1111611	uviiaiiv	ICIL	DIGITA

System interchanges are proposed for all of the MCP Build Alternatives, including Alternative 7, at MCP/I-15, MCP/I-215, and MCP/SR-79. Please see the description of system interchanges for Alternative 5 above. Similar to Alternative 5, rights of way at the proposed MCP/I-15, MCP/I-215, and MCP/SR-79 interchanges allow for a possible maintenance station with a yard.

Service interchanges for Alternative 7 are at the same locations as for Alternative 5, even though the location of the MCP alignment south of Lake Mathews is somewhat different than Alternative 5. These interchanges include:

- 1. Estelle Mountain;
- 2. Lake Mathews Drive;
- 3. El Sobrante Road;
- 4. Wood Road;
- 5. Alexander Street;
- 6. Clark Street;
- 7. Perris Boulevard;
- 8. Evans Road;
- 9. Ramona Expressway;
- 10. Bernasconi Road;
- 11. Reservoir Road;
- 12. Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008);
- 13. Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); and
- 14. Warren Road.

The General Plan arterial north of Lake Mathews included in Alternative 7 would modify the existing intersection at La Sierra Avenue and result in a new arterial road extension from La Sierra Avenue in a southwesterly direction to connect with Cajalco Road. The alignment between El Sobrante Road and Wood Road is south of existing Cajalco Road, which would continue to be used as a two-way frontage road after the project is constructed. Portions of existing Cajalco Road in Mead Valley would be incorporated into the local street network.

The segments for the General Plan north and south of the Lake Mathews area include the TWS-C, LMN-GP, and LMS-GP Segments. The LMS-GP Segment provides a four-lane, access-controlled expressway that connects into I-15. The LMN-GP

Segment provides a four-lane arterial that connects into Cajalco Road. The segments from the MV Segment to the SJS Segment are the same as Alternative 5.

Alternative 7 includes two design variations at the western and eastern termini of the alternative that use: (1) a lesser system of collector-distributor roads at the MCP/I-15 interchange and includes the removal of the existing southbound on- and northbound off-ramps from I-15 to El Cerrito Road, and (2) the SJN Segment instead of the SJS Segment to connect with SR-79.

2.4.7 Alternative 9: Far South/Placentia Avenue



Alternative 9 is a four- to six-lane, controlled-access parkway south of both Lake Mathews and Mead Valley and a six- to eight-lane controlled-access parkway between Old Elsinore Road and I-215 and a six- to eight-lane, controlled-access parkway between I-215 and SR-79. Alternative 9 is approximately 3.2 km (2.0 mi) south of Cajalco Road for much of its length but shares the same connection to I-15 as Alternatives 4 and 5 (TWS-C Segment). The alignment and proposed interchange locations for Alternative 9 are shown in Figures 2.4.5a and 2.4.5b.

Alternative 9 is comprised of the following segments: TWS-C, FS, C3, PP-D, SJ, and SJS. Alternative 9 is unique compared to the other MCP Build Alternatives for the portion of the FS Segment between Lake Mathews Drive and Placentia/Rider Streets. The segments unique to Alternative 9 include the FS, C3, and PP-D Segments.

System interchanges are proposed for all the MCP Build Alternatives, including Alternative 9, at MCP/I-15, MCP/I-215, and MCP/SR-79. System interchanges at I-15 and SR-79 are the same as proposed for Alternatives 4, 5, 6, and 7. The proposed I-215 system interchange differs from the other MCP Build Alternatives, as it connects the MCP project to I-215 approximately 45 m (150 ft) south of Placentia Avenue. The MCP project mainline crosses over I-215 at this interchange. The system interchange is proposed as a three-level interchange, and the proposed design will not preclude possible future HOV direct connectors. At its highest point, the interchange would be approximately 23 to 30 m (75 to 100 ft) above ground level.



2. This alternative includes a realignment of the I-215 mainline to east of the existing location, from south of Orange Avenue to just north of Rider Street, that is approximately 3,000 m (9,842 ft) or approximately 3.0 km (1.8 mi) in length. This alternative does not require a collector-distributor road system at the I-215

Temescal Wash Area

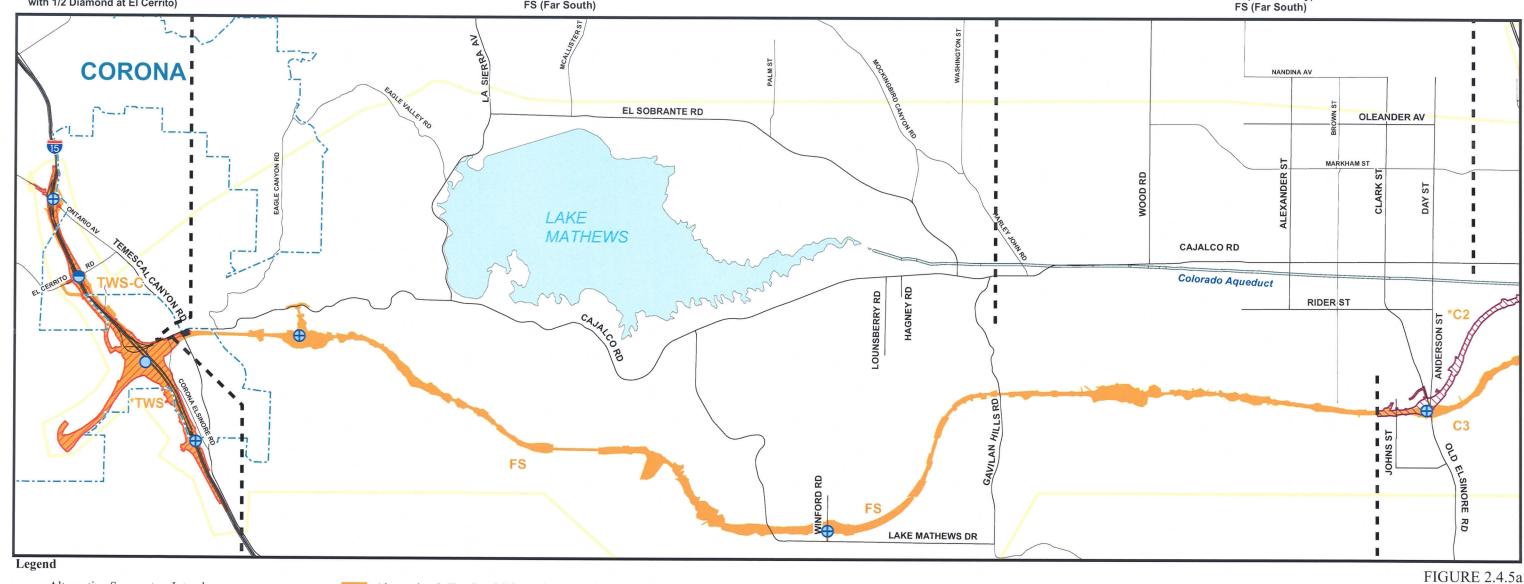
----- SEGMENTS ----TWS-C (Temescal Wash Area with Collector Distributor) *TWS (Temescal Wash Area with 1/2 Diamond at El Cerrito)

Lake Mathews Area

---- SEGMENTS ----LMS (Lake Mathews South) LMN-GP (Lake Mathews North General Plan) LMS-GP (Lake Mathews South General Plan)
FS (Far South)

Mead Valley Far South Area

----- SEGMENTS -----MV (Mead Valley) FS (Far South)



– – Alternative Segment Interchanges Study Area

Service

Alternative 9 (Far South/Placentia Avenue) Temescal Wash Design Variation (1/2 Diamond at El Cerrito)

Service (1/2 Diamond) Rider Design Variation (Alternative 9)

System SOURCE: TBM (2006), Jacobs Engineering (02/2007)

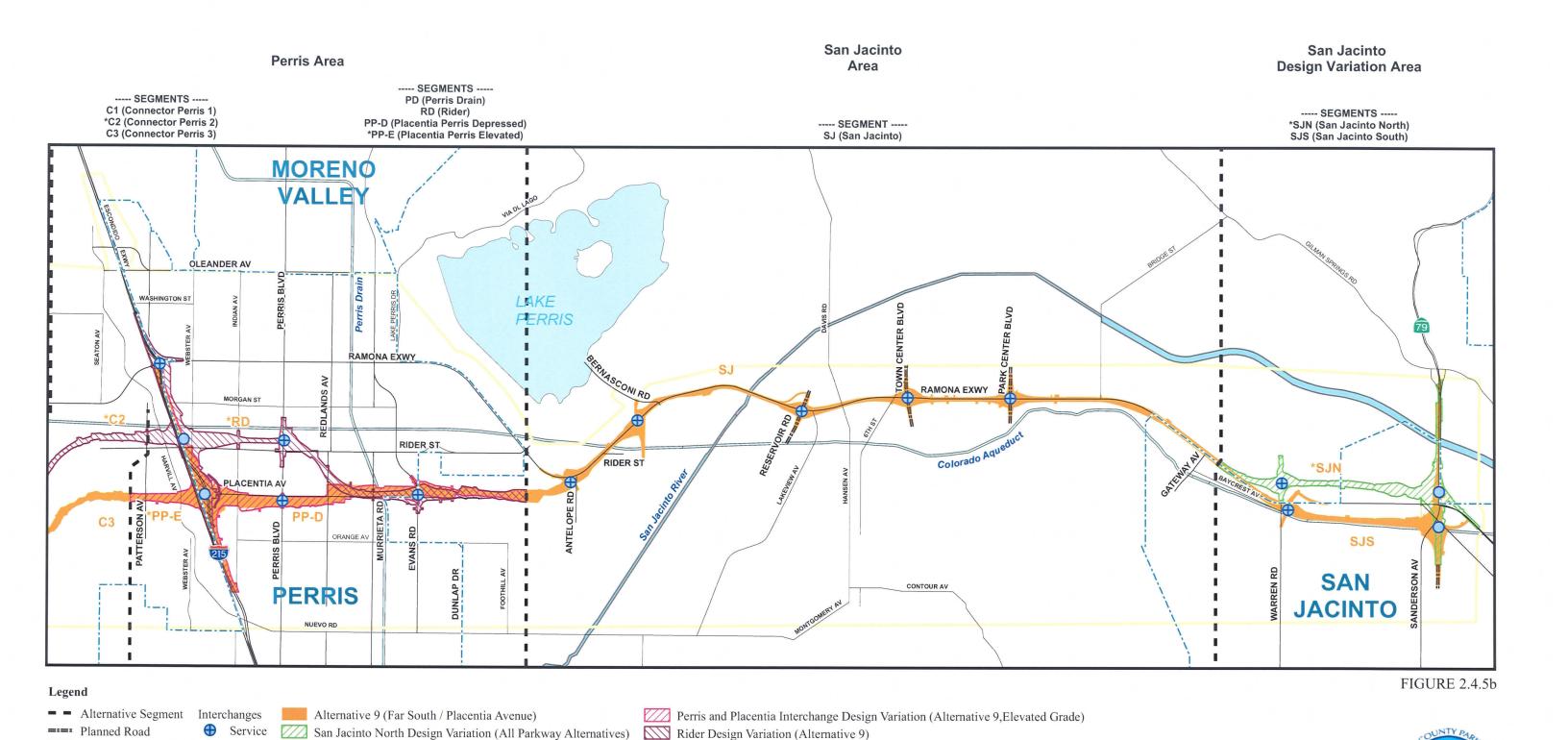
* = Design variation.

3.22 Kilometers 2 Miles

Alternative 9

KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

This page intentionally left blank



Alternative 9

KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

 $I:\c V531\c GIS_Final\c Project Description\c EIR_EIS\c proj_desc_alt9_S2_030707.mxd\ (\ 4/9/2008\)$

System

3.22 Kilometers

2 Miles

* = Design variation.

Study Area

SOURCE: TBM (2006), Jacobs Engineering (02/2007)

interchange, nor does it require any change to the existing railroad tracks (owned by RCTC and operated by BNSF) west of I-215. There is a local interchange at a realigned Placentia Avenue for the I-215 and a local interchange at Perris Boulevard for access to the MCP project. Rights of way at the proposed MCP/I-15, MCP/I-215, and MCP/SR-79 interchanges allow for a possible maintenance station with a yard.

Service interchanges for Alternative 9 are proposed at:

- 1. A location approximately 2,000 m (6,560 ft) east of Temescal Canyon Road (referenced as the Estelle Mountain interchange);
- 3. Lake Mathews Drive;
- 4. Old Elsinore Road;
- 5. Perris Boulevard;
- 6. Evans Road; Ramona Expressway;
- 7. Bernasconi Road;
- 8. Reservoir Road;
- 9. Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008);
- 10. Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008); and
- 11. Warren Road.

There are four design variations that apply to Alternative 9, as described below.

2.4.8 Design Variations

2.4.8.1 Temescal Wash Area Segment Design Variation

The TWS Segment is a design variation for the TWS-C Segment that partially removes access to I-15 from El Cerrito Road since the El Cerrito Road interchange southbound on-ramp and northbound off-ramp would be closed. Under this design variation, a collector-distributor road system is provided from Weirick Road to Cajalco Road, with modifications to the existing Weirick Road, El Cerrito Road, and Ontario Avenue interchanges, and at the proposed Cajalco Road interchange. A collector-distributor road system would provide an intermediate road or segment that collects and feeds traffic between the MCP and local streets and that would be



A separate project is underway to replace the existing Cajalco Road interchange. Construction is planned to begin in January 2011.

approximately \$29 million per mile for the MCP project. The collector distributor and system for this design variation is not as extensive as the system proposed under the "base case" for each alternative.

The TWS Segment is a design variation of the TWS-C Segment for all of the MCP Build Alternatives (see Figures 2.4.1a, 2.4.2a, 2.4.3a, 2.4.4a, and 2.4.5a). This design variation would result in a reduction in cost of the MCP project by \$202.6 million.

2.4.8.2 San Jacinto North Segment Design Variation

The SJN Segment extends from the eastern terminus of the SJ Segment 1.32 km (0.82 mi) west of Warren Road east to SR-79. It follows an alignment approximately 347.4 m (1,140 ft) north of the existing Ramona Expressway. This segment also extends approximately 1.48 km (0.92 mi) north of the Ramona Expressway along SR-79 and approximately 1.06 km (0.67 mi) south of the Ramona Expressway along SR-79. The SJN Segment is a design variation of the SJS Segment for all of the MCP Build Alternatives (see Figures 2.4.1b, 2.4.2b, 2.4.3b, 2.4.4b, and 2.4.5b). This design variation would result in a reduction in cost of the MCP project by approximately \$8.9 million.

2.4.8.3 Rider Street Segment Design Variation

The RD Segment design variation is a combination of Segments C2 and RD. The combination of Segments C2 and RD is only applicable as a design variation for Alternative 9. It begins at the eastern terminus of the FS Segment, approximately 125 m (410 ft) east of Haines Street. The RD Segment is also part of Alternatives 5 and 7. The RD Segment design variation terminates about 87 m (291 ft) west of Dawson Street. This design variation also includes the MCP/I-215 interchange similar to Alternatives 5 and 7, with it extending along I-215 north and south of Rider Street (see previous Figures 2.4.5a and 2.4.5b). Based on the cost estimates in the *Draft* Project Report (Jacobs, 2008), this design variation would result in an increase in cost for Alternative 9 by approximately \$9.6 million. However, during preparation of the Section 4(f) Evaluation (see Appendix B of this Draft EIR/EIS) as part of the analysis of avoidance alternatives for Paragon Park, it was found that the Rider Street Design Variation would result in additional costs of approximately \$300 million due to the cost of acquiring and relocating several large intermodal warehouse facilities that are scheduled to be approved by the City of Perris and that will be constructed by 2010, prior to construction of the MCP. Therefore, the Rider Street Design Variation would result in an increase in cost for Alternative 9 by approximately \$309.6 million.



2.4.8.4 Placentia Avenue/Perris Boulevard Elevated Grade Segment Design Variation

The PP-E Segment is an elevated design variation of the PP-D Segment in Alternative 9. The PP-E Segment follows Placentia Avenue at the eastern terminus of the C3 Segment at a point approximately 272 m (895 ft) west of Patterson Avenue and extends east to 87 m (291 ft) west of Dawson Street. This segment includes an MCP/I-215 interchange, extending along I-215, approximately 1,570 m (5,150 ft) north and 1,870 m (6,100 ft) south of Placentia Avenue. For this design variation, the road is elevated approximately 8 m (26 ft) from Barrett Avenue to Wilson Avenue. This design variation would result in a reduction in cost for Alternative 9 by approximately \$63.6 million.

2.5 Common Design Features of MCP Build Alternatives (Alternatives 4, 5, 6, 7, and 9)

2.5.1 Design



Design standards from the *Caltrans Highway Design Manual* (Fifth Edition) were applied to the MCP project for roadway geometric criteria and standard design features. Also, design standards for STAA National Network for large trucks were applied. Riverside County roadway standards were applied for segments of alternatives designated as a General Plan Circulation Element facility. Caltrans design standards require that the minimum interchange spacing shall be 1.5 km (0.9 mi) in urban areas, 3.0 km (1.9 mi) in rural areas, and 3.0 km (1.9 mi) between system interchanges and service interchanges.

2.5.2 Typical Sections

The typical sections for the MCP Build Alternatives provide a four- to eight-lane facility for the parkway and a four- to six-lane facility for General Plan Circulation Element improvements. The traffic analysis to define the required typical section was based on a 2035 traffic forecasting model (see *MCP Traffic Report*, VRPA Technologies, Inc., 2008).





The parkway (MCP Build Alternatives) modeled required more lanes than the General Plan Circulation Element improvement (the No Project/General Plan Alternative) because: (1) with the General Plan Circulation Improvement, Cajalco

Road and Ramona Expressway would be widened to a four- to six-lane expressway to serve local traffic; and (2) with the MCP Build Alternatives, a limited access parkway is proposed to provide for regional travel demand. Therefore, a facility with a higher capacity is required.



The alternatives being analyzed include sufficient right of way to accommodate a multimodal transportation facility that includes both highway lanes and a wide median that could accommodate a future travel lane or a transit facility. This EIR/EIS only addresses the MCP project as described in Section 2.4; any future improvements would be subject to separate environmental documentation. The proposed action is the acquisition/preservation of right of way and the construction of a specific highway facility; therefore, the alternatives are specified in terms of an ultimate facility that the right of way will accommodate. The following elements are included in the design concept for the ultimate facility:

- Two to four mixed-flow lanes in each direction for the parkway alternatives.
- Shoulders designed to Caltrans standards for freeways.
- Median of sufficient width to accommodate Caltrans standard median widths for the Parkway Alternatives. Riverside County median standards are applied to the General Plan roadway component of Alternatives 6 and 7 (between I-15 and El Sobrante Road).

The alternatives may require right of way that vary in width as a result of steep topography requiring cut (excavation) and fill, features of the natural and built environment, and design requirements. Therefore, variations in these cross sections are needed in constrained areas. The right of way widths defined for preservation for each alternative may be larger than indicated in the cross section diagrams. Generally, the needed right of way varies from 67 m (220 ft) to 201 m (660 ft) in width.

Figures 2.5.1 and 2.5.2 show the specific typical cross sections applied along the MCP project corridor for the parkway and General Plan Alternatives, respectively.

2.5.3 Interchanges

 The MCP Build Alternatives include interchanges at I-15, I-215, SR-79, and major arterials in the study area to allow traffic to travel to and from the MCP, I-15, I-215, SR-79, and area arterials. There are two kinds of interchanges associated with the MCP Alternatives:

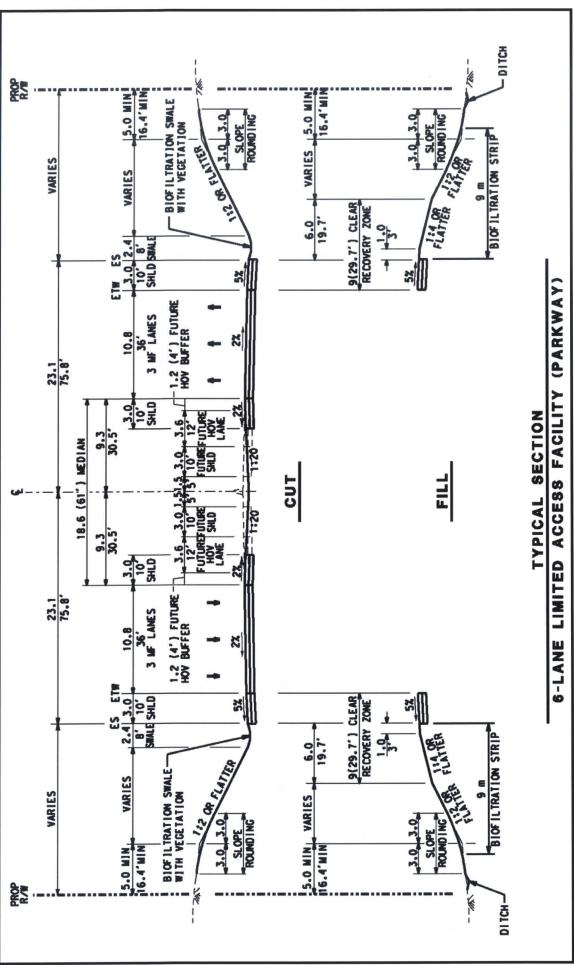


Figure 2.5.1



KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200 Typical Cross Sections: General Plan Roadways in Alternatives 6 and

Right-of-Way

Dimension

METERS

FEET

SOURCE: Jacobs Engineering (2007)

This page intentionally left blank

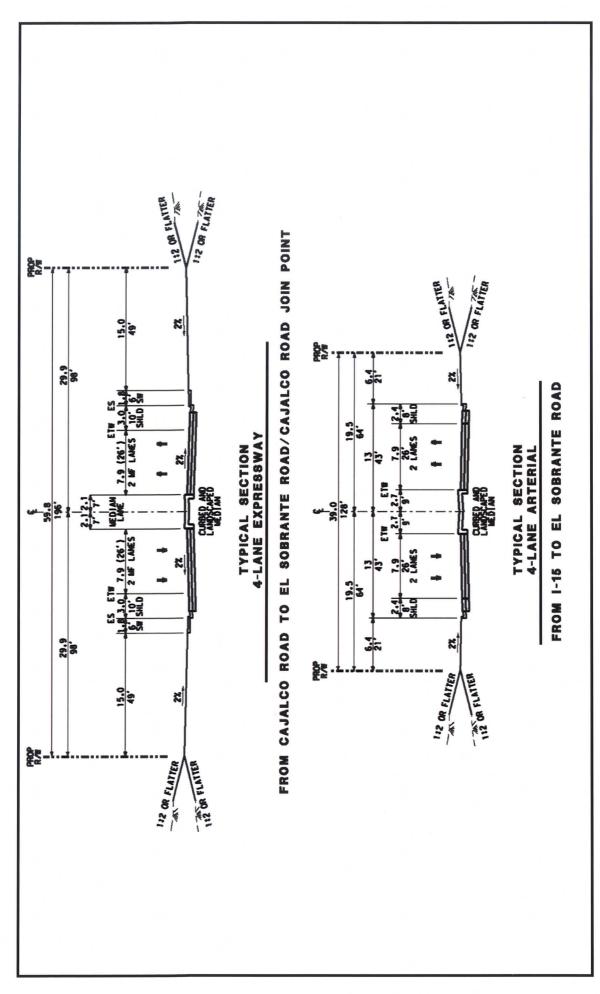


Figure 2.5.2



Typical Cross Sections: General Plan RP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Right-of-Way

METERS Dimension

SOURCE: Jacobs Engineering (2007)

This page intentionally left blank

- System interchanges at I-15, I-215, and the proposed realignment of SR-79. The proposed MCP/I-15 interchange and design variation is the same for all five MCP Build Alternatives and includes a design variation that is the same for all five MCP Build Alternatives. The proposed MCP/I-215 interchange has three variations depending on the alternative. The MCP/SR-79 interchange and design variation is the same for all five MCP Build Alternatives and includes a design variation that is the same for all five MCP Build Alternatives. Each of the system interchanges and related improvements to existing interchanges and arterials associated with the new system interchanges is described in detail below.
- Service interchange locations were determined by traffic information and coordination with City and County General Plan Circulation Elements.
 Table 2.5.A lists the proposed service interchanges for each alternative. The proposed service interchanges for the MCP Build Alternatives consist of the following types: compact diamond, spread diamond, two-quadrant cloverleaf, partial cloverleaf, and trumpet. For detailed exhibits of all the service interchanges for each alternative, see Figure 2.5.3, Caltrans Typical Local Street Interchange Types.

2.5.4 Truck-Climbing Lanes

In accordance with Caltrans Highway Design Manual Section 204.5 regarding sustained grades, climbing lanes are needed where the grade exceeds 2 percent and the total change in elevation is greater than 75 m (246 ft). These climbing lanes provide trucks and other slow-moving vehicles a separate lane so they do not impede traffic flow. Alternatives 4, 5, 6, and 7 include an eastbound truck-climbing lane from I-15 to the area south of Lake Mathews. Alternative 9 includes an eastbound truck-climbing lane from I-15 to the local interchange at Lake Mathews Drive/Winford Street. There are no westbound truck-climbing lanes for the MCP project.

2.5.5 Bridges

Bridges are provided at major crossings of water resources, natural resources, local roads, and railroads to provide access over the MCP project for vehicle, pedestrian, bicycle, equestrian, and wildlife uses. Bridges, rather than culverts, are proposed in many areas to minimize or avoid impact to water resources. Bridges are also provided to minimize or reduce the amount of grading in areas with steep topography, or to





Table 2.5.A Mainline MCP Service Interchange Configuration Types

	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 9	Alt. 9 Rider DV	Alt. 9 PP-E DV	Alt. 4, 5, 6, 7, 9 SJN DV
Estelle Mountain (at Cajalco Rd.)	L-11	L-11	Half L-1 mod	Half L-1 mod	L-11	L-11	L-11	4,5,9: L-11 6,7: Half L-1 mod
Lake Mathews Dr.	L-1	L-1	L-1	L-1	N/A	N/A	N/A	4,5,6,7: L-2
El Sobrante Rd.	L-1/L-8	L-1/L-8	L-1/L-8	L-1/L-8	N/A	N/A	N/A	4,5,6,7: L-1/L-8
Wood Rd.	L-8	L-8	L-8	L-8	N/A	N/A	N/A	4,5,6,7: L-8
Alexander St.	L-1/L-9	L-1/L-9	L-1/L-9	L-1/L-9	N/A	N/A	N/A	4,5,6,7: L-1/L-9
Clark St.	L-1/L-9	L-1/L-9	L-1/L-9	L-1/L-9	N/A	N/A	N/A	4,5,6,7: L-1/L-9
Lake Mathews Dr. (at Winford St.)	N/A	N/A	N/A	N/A	L-1/L- 2	L-1/L-2	L-1/L-2	9: L-2
Old Elsinore Rd.	N/A	N/A	N/A	N/A	L-1	L-1/L-9	L-1	9: L-1 or L-1/L-9
Perris Blvd.	L-9	L-7 mod	L-9	L-7 mod	L-1 mod	L-7 mod	L-1 mod	4,6: L-9 5,7: L-7 9: L-1 mod or L-7
Evans Rd.	L-9	L-9	L-9	L-9	L-9	L-9	L-9	L-9
Ramona Expressway	L-9/L-2	L-9/L-2	L-9/L-2	L-9/L-2	L-9/ L-2	L-9/L-2	L-9/L-2	L-9/L-2
Bernasconi Rd.	L-7	L-7	L-7	L-7	L-7	L-7	L-7	L-7
Reservoir Ave.	L-2	L-2	L-2	L-2	L-2	L-2	L-2	L-2
Town Center Blvd.	L-9/L-2	L-9/L-2	L-9/L-2	L-9/L-2	L-9/ L-2	L-9/L-2	L-9/L-2	L-9/L-2
Park Center Blvd.	L-2	L-2	L-2	L-2	L-2	L-2	L-2	L-2
Warren Rd.	L-9/L-1	L-9/L-1	L-9/L-1	L-9/L-1	L-9/ L-1	L-9	L-9	L-9

Source: Project Report, Jacobs, 2008.

DV = Design Variation L-1 = Compact Diamond

L-2 = Spread Diamond

L-7 = Two-Quadrant Cloverleaf L-8 = Two-Quadrant Cloverleaf

L-9 = Partial Cloverleaf

L-11 = Trumpet mod = modified N/A = not applicable

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

SJN = San Jacinto North

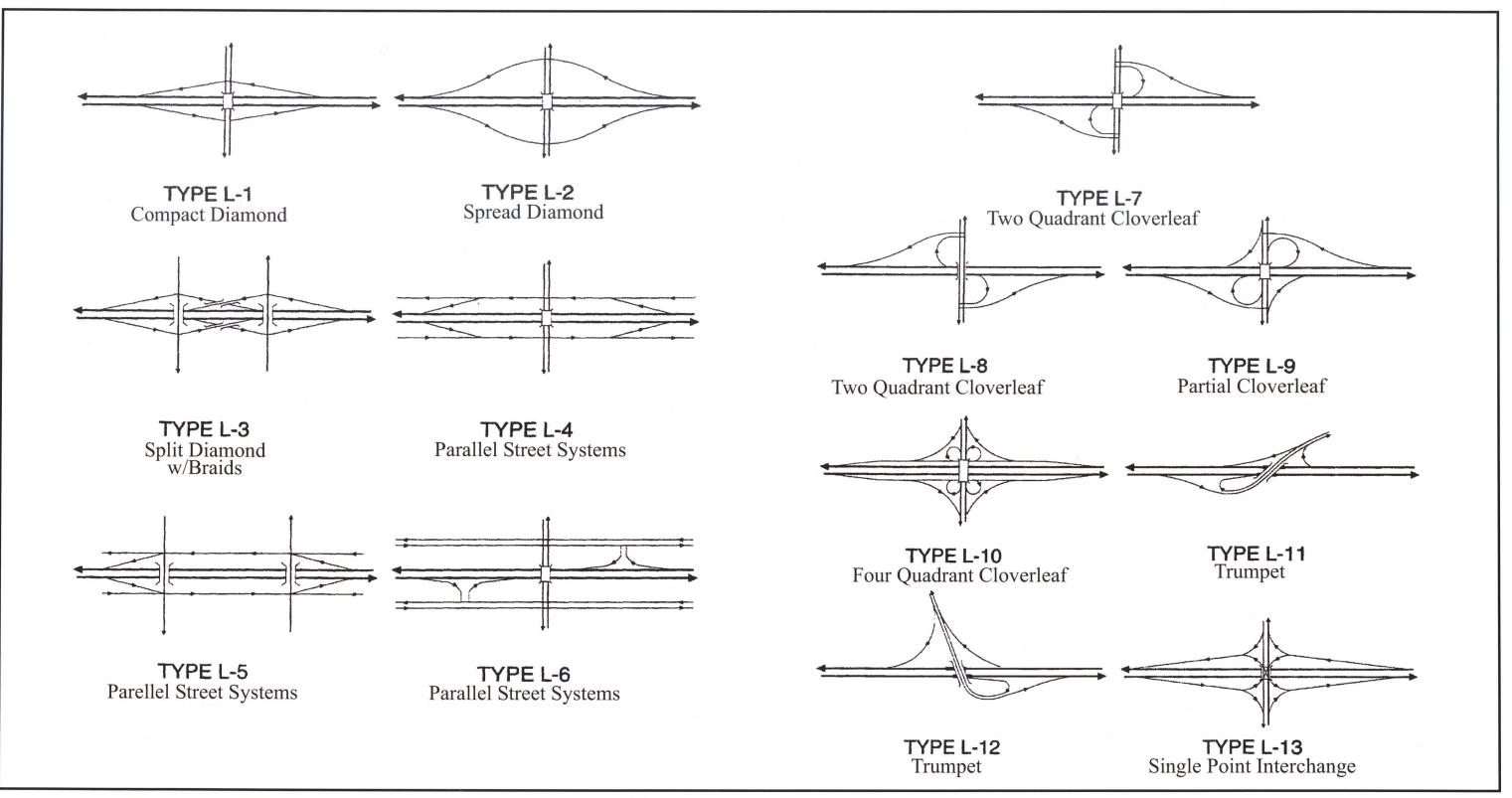


Figure 2.5.3



Chapter 2 Project Description and Alternatives

This page intentionally left blank

minimize or reduce right of way acquisitions especially in developed areas. All bridges will be designed to Caltrans standards. The bridges have been categorized into four types of crossings: "Water and Natural Resources," "Local Roads," "Wildlife Crossings," and "Other Crossings."

The bridge cross sections would be consistent with the road cross sections on either side of the bridge. For example, if a bridge is provided on a road segment with four general-purpose lanes, the bridge structure cross section would also provide four general-purpose lanes¹. Therefore, the cross sections on the bridges would match the MCP project cross sections or the General Plan local circulation element facility for local arterial roads crossing the MCP project.

The locations of bridge structures along the MCP Build Alternatives are shown in the figures in Appendix I, Attachment A, and bridge lengths with type of crossing are shown in Appendix I, Attachment B. Section 3.7 provides additional discussion of views of the proposed facility, including bridges, as well as mitigation measures to incorporate attractive walls, medians, and other visually pleasing hardscapes in project design (Mitigation Measure VIS-4) and incorporating a context-sensitive design process (VIS-8).

2.5.5.1 Bridges for Water and Natural Resource Crossings

The MCP Build Alternatives include a number of bridge structures crossing water and natural resources. Appendix I, Attachment B lists the MCP Build Alternatives and the locations along these alignments where bridges are proposed to span water resources and natural resources. These bridges are labeled "Natural Resources" in Appendix I, Attachment B. These bridges can also serve to provide for movement of wildlife, along with providing a crossing of water and/or natural resources. In Appendix I, Attachment B, the bridges are labeled "HCP" if the bridge is in or adjacent to an existing Habitat Conservation Plan or western Riverside County MSHCP; therefore, the bridge also serves the purpose of maintaining wildlife connectivity. Bridges for the sole purpose of wildlife crossing are discussed later in this section.

Bridges will be constructed to Caltrans design standards and are proposed for all major river/stream crossings, including Temescal Wash, Cajalco Creek, Perris Drain, and the San Jacinto River. Major river/stream crossings are described below.

The Riverside County General Plan Circulation Element was used to determine the future width of local roadways to accommodate potential growth in the width on an overcrossing or length of undercrossing.

Temescal Wash

All of the MCP Build Alternatives cross Temescal Wash. It is a natural watercourse at the base of a steep cliff. As part of the project, two parallel, approximately 1,395 m (4,577 ft) long bridges would be constructed for Alternatives 4, 5, and 9 across Temescal Canyon Road and Temescal Wash, gaining elevation to the top of the cliff on the east side of Temescal Wash. For Alternatives 6 and 7, this bridge would be 1,720 m (5,643 ft) long. The bridge height ranges from 6 m to 39 m (20 ft to 128 ft) for Alternatives 4, 5, and 9, and from 8 m to 32 m (26 ft to 105 ft) for Alternatives 6 and 7. The location of this bridge is within the western Riverside County MSHCP Criteria Area and would accommodate wildlife movement and avoid or minimize direct impacts to the aquatic environment. Pier bents will completely avoid Temescal Creek and Bedford Canyon Wash; however, since the alignment of Cajalco Creek weaves in and out in the eastern portion of the bridge, some pier bents and protective revetments will impact waters along Cajalco Creek (see Section 3.18 of this EIR/EIS for a detailed discussion of impacts to waters).

The location of this bridge is shown in Appendix I, Attachment E, as Bridge Location #1.



Unnamed Drainage South of Lake Mathews

Alternatives 4, 5, and 9 have a viaduct crossing over a valley with an unnamed drainage. The viaduct is within the El Sobrante Landfill Habitat Conservation Plan Reserve, adjacent to the Lake Mathews MSHCP Reserve, and would accommodate wildlife movement. For Alternatives 4 and 5, the South Lake Mathews Viaduct is 530 m (1,745 ft), and for Alternative 9, the South Lake Mathews Viaduct length is 804 m (2,638 ft). The viaduct height ranges from 5 m to 23 m (17 ft to 76 ft). The viaduct would consist of two parallel structures, one with MCP project westbound travel lanes and the other with eastbound travel lanes. The viaduct completely avoids wetlands, waters, and CDFG jurisdictional areas. There are no fill, abutments, piers, or riprap in any of the jurisdictional areas.

The location of this structure is shown in Appendix I, Attachment E, as Bridge Location #2.

Perris Drain

Alternatives 4 and 6 include a section adjacent to the west side of the Perris Drain that then crosses the Perris Drain near Placentia Avenue. For Alternatives 4 and 6, a 3,417 m (11,210 ft) long bridge is proposed to avoid impacting the floodplain.



Approximately 240 m (656 ft) of the bridge crosses over the Perris Drain. Alternatives 5 and 7 cross the Perris Drain in one location with a 213 m (698 ft) bridge. Alternative 9 crosses in one location with a 273 m (896 ft) bridge. The bridge height ranges from 1 m to 3 m (4 ft to 10 ft). The bridge crossing of the Perris Drain would accommodate all proposed future improvements to the Perris Drain with minimal effect on the channel. The bridge completely avoids waters, wetlands, and CDFG jurisdictional areas along the Perris Drain. All abutments are located outside the channel and jurisdictional federal and state areas; however, pier bents will impact these areas.

San Jacinto River

All MCP Build Alternatives cross the San Jacinto River Floodplain, a natural curving watercourse measuring approximately 1,200 m (3,936 ft) in width. The project would construct two parallel, three-lane bridges, which are approximately 1,317 m (4,321 ft) long and 4 to 13 m (12 to 42 ft) high, downstream of the existing Ramona Expressway crossing of the San Jacinto River. This design would minimize floodplain encroachment and reduce hydraulic impacts. The existing two-lane bridge for Ramona Expressway is expected to overtop with the 100-year flow. The proposed new bridges would be approximately 12 m (38 ft) apart. The width of the bridges would be 47 m (154 ft). The existing Ramona Expressway Bridge would become part of a frontage road. This bridge is within the western Riverside County MSHCP Criteria Area and would accommodate wildlife movement within the San Jacinto River floodplain. The bridge would completely avoid wetlands, waters, and CDFG jurisdictional areas while crossing the river floodplain. Pier bents will be placed outside all jurisdictional federal and state areas. All abutments and pier bents are located outside all waters of the United States and CDFG jurisdictional areas.

The location of this bridge is shown in Appendix I, Attachment E, as Bridge Location #3.

More detailed discussion on the siting of bridge locations over water resources and determination of length of bridge over water resources can be found in Appendix I (Attachment C, Bridge Location Planning Process; and Attachment D, Bridge Waters and Wetlands Considerations).

2.5.5.2 Bridges for Local Road Crossings

The MCP Build Alternatives include a number of overcrossings/undercrossings of local roads to allow the MCP project to pass over or under those roads without

disruption to through traffic on the MCP project or the local roads. Appendix I, Attachment B lists the MCP Build Alternatives and the locations along those alignments where overcrossings/undercrossings are proposed to span local roads. These overcrossings/undercrossings are labeled "Local Road" in Appendix I, Attachment B.

2.5.5.3 Bridges for Wildlife Crossings

The MCP Build Alternatives include a number of wildlife crossings intended to link habitat that would otherwise be separated. Wildlife overcrossings are shown on the maps in Appendix I, Attachments A and E, and listed in Appendix I, Attachments B and F. These bridges are labeled "Wildlife Crossings" in Appendix I, Attachment B, and are provided for the sole purpose of wildlife crossings. Bridges for wildlife crossings are further discussed in Section 2.5.16, Project Design Features to Minimize Potential Environmental Impacts, and later in this document in Appendix I, Attachment C.

2.5.5.4 Bridges for Other Crossings

The MCP Build Alternatives include a number of crossings (such as crossing of railroads, direct connectors at the systems interchanges, and crossing of collector-distributor lanes or auxiliary lanes) on mainline I-15 and I-215. System interchange direct connectors are at MCP project interchanges with I-15, I-215, and SR-79. These connectors are structures that range in length from approximately 400 m to 1,800 m (1,312 ft to 5,905 ft). These bridges are labeled "Other" in Appendix I, Attachment B, and are shown on maps in Appendix I, Attachment A.



2.5.6 HOV Lanes and Park-and-Ride Facilities

No HOV lanes or park-and-ride facilities are proposed as part of the MCP Build Alternatives since no traffic congestion is expected on the MCP facility through the horizon year of 2035. However, the proposed design of any of the MCP Build Alternatives would not preclude future HOV lanes or park-and-ride facility projects. The proposed Perris Valley Line and Perris Multimodal Facility are in close proximity to the MCP project and those plans currently include a park-and-ride facility that would be located near the MCP project.

2.5.7 Retaining Walls

Retaining walls will be constructed at several locations. Retaining walls can be used to minimize the amount of grading, to avoid or minimize right of way acquisitions in developed areas, and avoid or minimize impacts to sensitive resources. Retaining wall locations will be refined in final design if the MCP project is approved. Table 2.5.B shows a summary of retaining walls by alternative. Preliminary retaining wall locations are shown in Figures 2.5.4a through 2.5.4d. Section 3.7 of this EIR/EIS includes Mitigation Measure VIS-6, which requires RCTC to include potential aesthetic enhancements for retaining walls.

Table 2.5.B Retaining Wall Summary by Alternative

Alternative	Retaining Wall Length by Height (linear meters)							
Alternative	3–4 m	5–6 m	7–8 m	9–10 m	12 m	14 m	19 m	Total
4	9,458	3,260	1,089	544	740	229	85	15,405
5	8,541	3,546	174	544	740	77	793	14,415
6	9,824	3,260	1,089	544	814	152	334	16,017
7	8,907	3,546	174	544	814	0	1,042	15,027
9	6,382	2,415	776	356	488	493	85	10,995



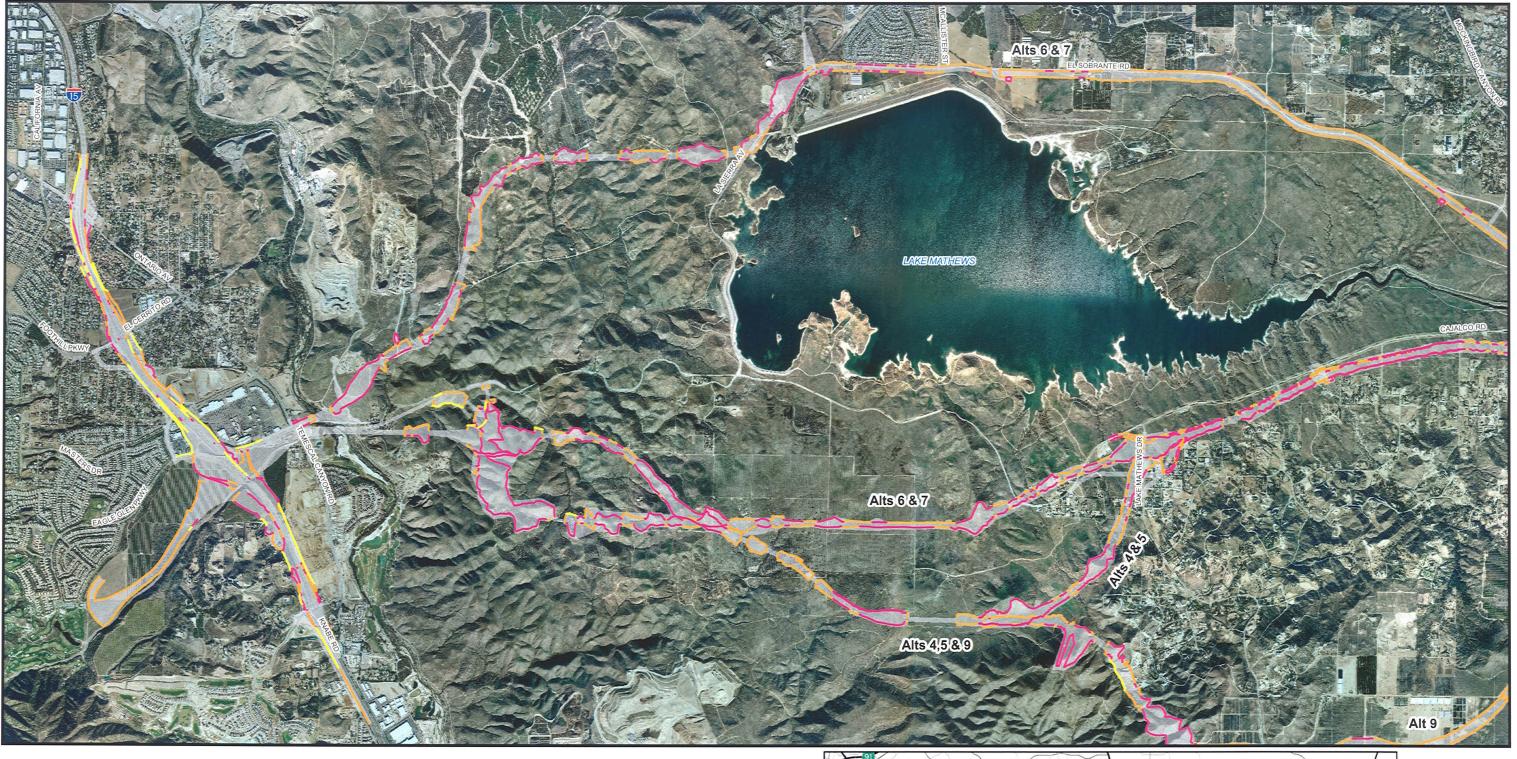
m = meters

2.5.8 Sound Walls

Sound walls will be constructed as needed to provide noise attenuation for existing noise-sensitive land uses, as well as noise-sensitive land uses that are under construction or are fully permitted for development. The *Mid County Parkway Noise Impact Analysis* (VRPA, 2008) analyzes existing noise conditions, as well as future conditions with and without the proposed project. Noise abatement measures must be considered where traffic noise impacts are identified. Traffic noise impacts result from: (1) an increase of 12 A-weighted decibels (dBA) or more over existing noise levels; and (2) predicted noise levels approach or exceed the Noise Abatement Criteria (NAC) (please see Section 3.15 for descriptions of these terms). According to the Caltrans Traffic Noise Analysis Protocol, for noise abatement to be considered feasible, the noise abatement must provide a minimum of 5 dBA noise reduction at impacted receivers. Noise abatement measures determined to be reasonable and feasible in consultation with the local jurisdictions at the time of final design are incorporated into the project plans and specifications. Please see Section 3.15 of this EIR/EIS for a detailed discussion of noise impacts and maps showing proposed sound



This page intentionally left blank





Right-of-Way (All Alternatives)

/ Retaining Wall

Cut

// Fill

SOURCE: AirPhoto USA (2006), TBM (2006), Jacobs Engineering (2/2007)

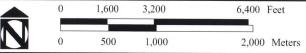
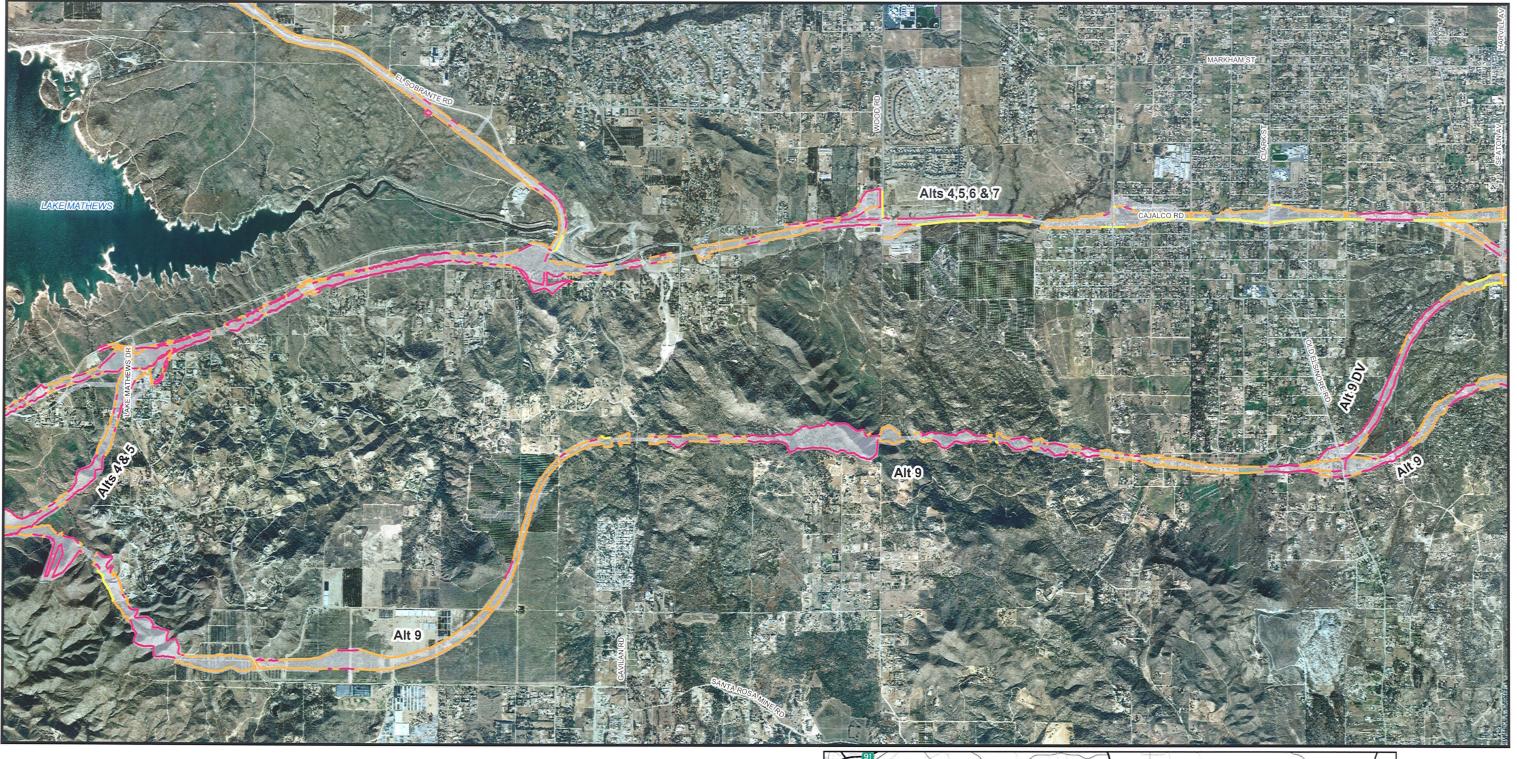




Figure 2.5.4a



This page intentionally left blank





Right-of-Way (All Alternatives)

Retaining Wall

Cut

// Fill

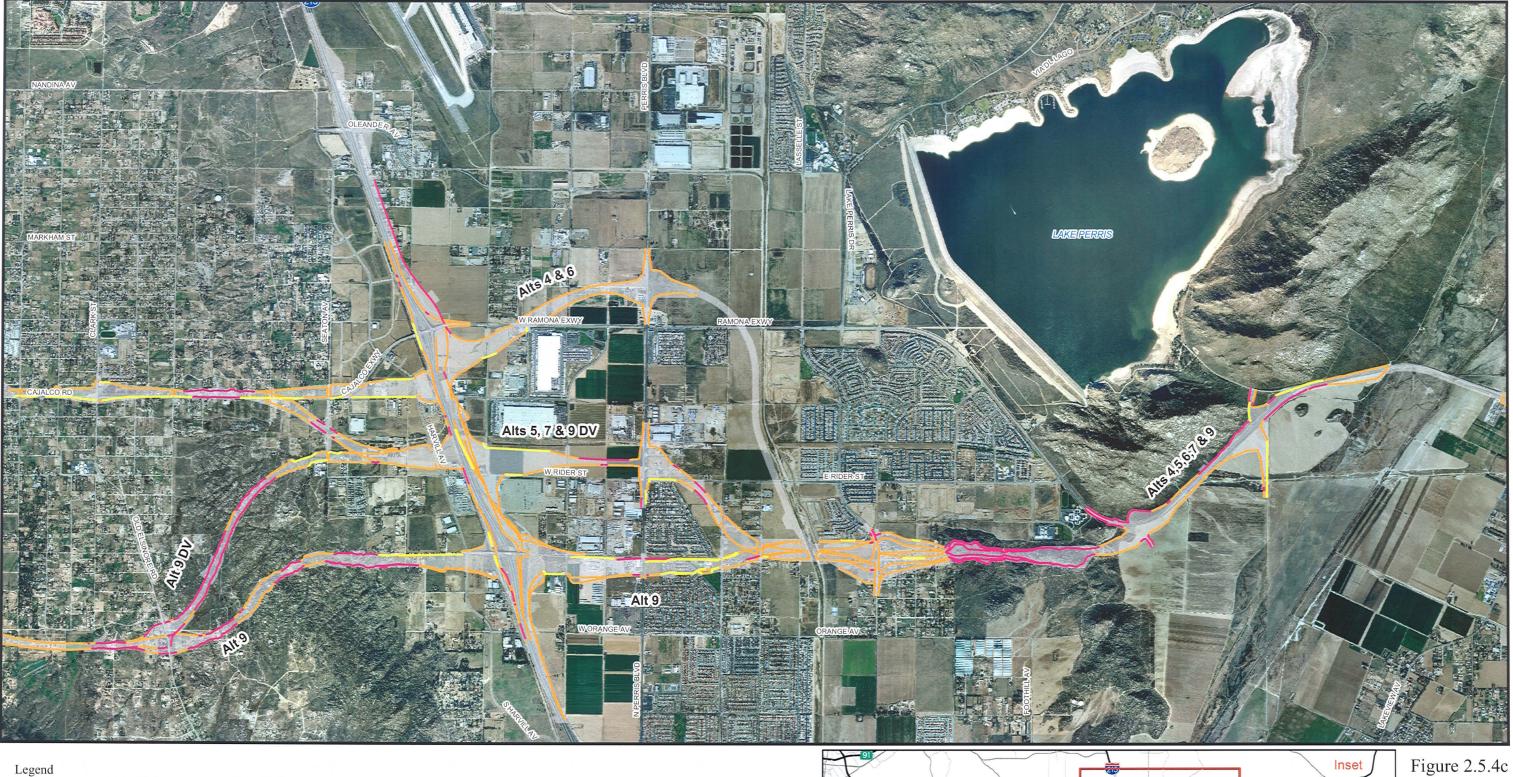
SOURCE: AirPhoto USA (2006), TBM (2006), Jacobs Engineering (2/2007)

0	1,600	3,200	6,400 Feet
0	500	1,000	2,000 Meters

Cut, Fill and Retaining Wall
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Figure 2.5.4b







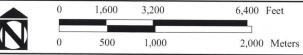
Right-of-Way (All Alternatives)

// Retaining Wall

Cut

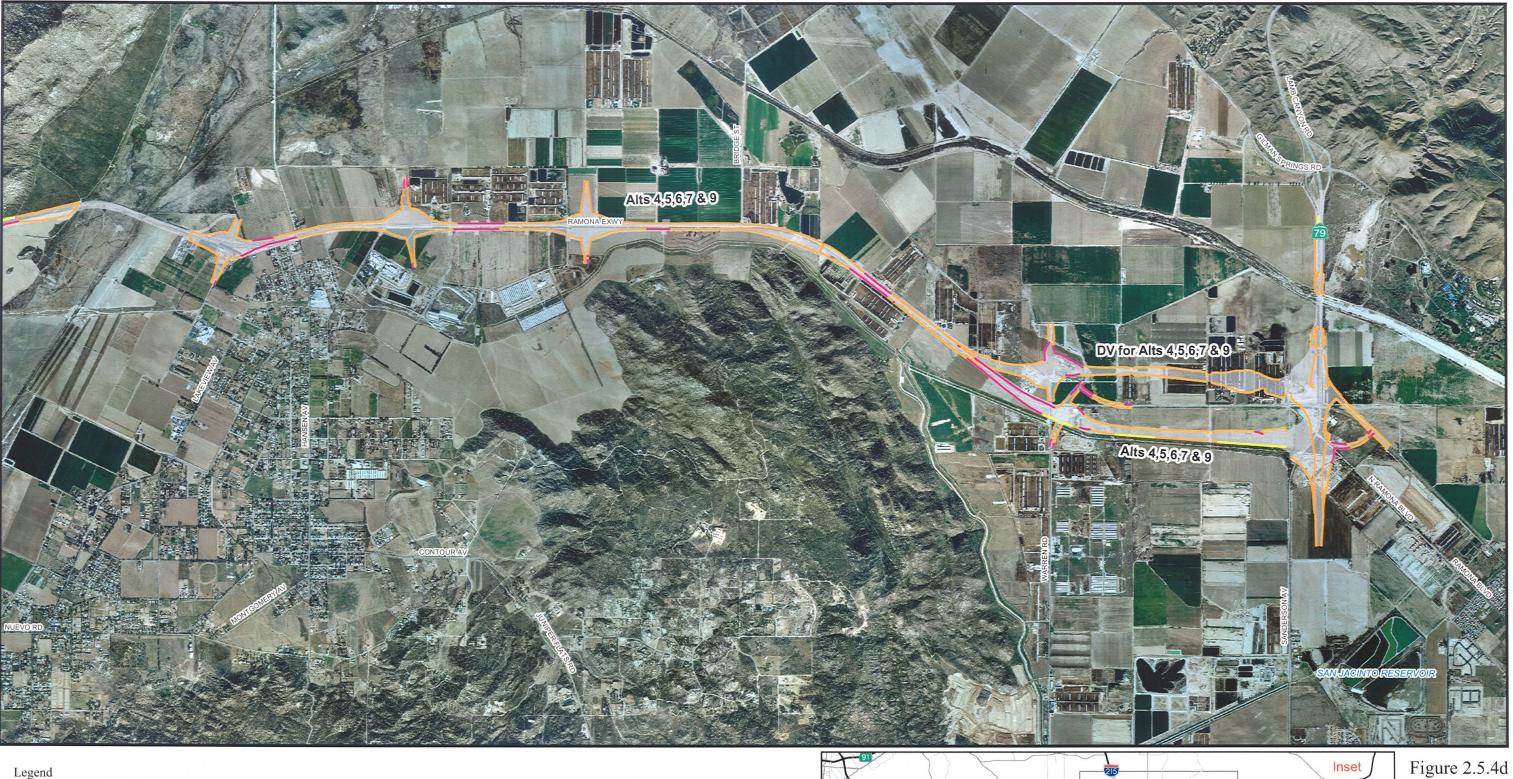
// Fill

SOURCE: AirPhoto USA (2006), TBM (2006), Jacobs Engineering (2/2007)



Cut, Fill and Retaining Wall KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200







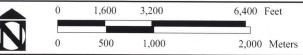
Right-of-Way (All Alternatives)

// Retaining Wall

Cut

// Fill

SOURCE: AirPhoto USA (2006), TBM (2006), Jacobs Engineering (2/2007)



Cut, Fill and Retaining Wall KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



Chapter 2	Project D	escription	and	Alternatives
-----------	-----------	------------	-----	--------------

This page intentionally left blank

wall locations. In addition, Section 3.7 of this EIR/EIS includes Mitigation Measure VIS-5, which requires RCTC to include aesthetic enhancements for soundwalls in the final design.

A summary of the length of sound walls per Build Alternative is provided in Table 2.5.C.



Table 2.5.C Sound Walls by Alternative

Alternative	Length				
4	15,181 m (49,789 ft)				
5	14,329 m (46,992 ft)				
6	14,916 m (48,920 ft)				
7	14,064 m (46,123 ft)				
9	8,760 m (28,731 ft)				

Source: Mid County Parkway Noise Impact Analysis, VRPA, 2008.

ft = feet

m = meters

2.5.9 Lighting

Caltrans standards require highway safety lighting at particular points in interchange areas to illuminate areas of potential vehicle conflict and to delineate exit ramps, entrance ramps, and island noses. Pole-mounted safety lighting will be provided at the system and service interchanges, ramps, and other areas as required by Caltrans and/ or Riverside County roadway standards. For any interchanges located near Public/ Quasi-Public (PQP) lands (see Section 3.17 of this EIR/EIS for description of PQP lands), the lighting will be shielded and directed to focus downward to illuminate only the MCP project and connecting roads so as to minimize light leakage outside the required safety lighting areas and to ensure that ambient lighting in the MSHCP Conservation Area is not increased. Any existing lighting on I-15, I-215, and SR-79 impacted by the connection of the MCP project would be replaced.

There will not be lighting on the MCP project mainline, with the exception of a portion of Alternatives 6 and 7. For the Lake Mathews North General Plan (LMN-GP) Segment portion of Alternatives 6 and 7, lighting is proposed from the intersection at La Sierra Avenue/El Sobrante Road to the MCP/El Sobrante Road interchange per Riverside County roadway standards. Lighting will not be placed on the section from La Sierra Avenue/El Sobrante Road west to I-15 due to the

alignment location in environmentally sensitive habitat reserve areas. Section 3.7 of this EIR/EIS includes Mitigation Measure VIS-7, which requires RCTC to prepare a lighting plan and design lighting fixtures that would minimize glare on adjacent properties.

2.5.10 Landscaping

Landscaping will be provided within the MCP right of way and impacted right of way of I-15, I-215, and SR-79. Replacement landscaping will be provided for any existing landscaping impacted. Landscaping will generally consist of native plant species, particularly in areas adjacent to undeveloped land and existing/proposed habitat reserve areas with native plant species. All plant species will be drought-tolerant to minimize the need for irrigation.

The roadside within the project limits is generally classified as "natural" vegetation. Provisions will be included for "Highway Planting" (using Caltrans highway planting standards) in urban areas. The urban areas along the MCP project that will include "Highway Planting" are as follows: I-15 interchange from I-15 to Temescal Wash, within Mead Valley along Cajalco Road between El Sobrante Road and I-215, and all areas between I-215 and SR-79, including I-215 and SR-79. In areas classified as rural or reserve, native vegetation will be provided to replace disturbed natural vegetation. The rural or reserve areas along the MCP project that will include native vegetation are as follows: from Temescal Wash to El Sobrante Road, along Lake Mathews Drive, and through Gavilan Hills to I-215.

In addition, the landscaping will include design components and plant materials intended to reduce the visual impacts of the MCP project on adjacent sensitive land uses. Section 3.7 provides additional discussion of the use of native plant materials and other landscaping to soften views of the proposed facility. Section 3.7 of this EIR/EIS includes Mitigation Measure VIS-2, which provides details on the proposed landscape plan. Coordination with master landscape plans for I-15 and I-215 will also be incorporated into preparation of the landscape plan for the MCP project.

2.5.11 Fencing and Median Barriers

Fencing would be installed along the right of way limits for the entire length of the MCP Build Alternatives. The height of the fencing will vary, with fencing in urban areas at 1.8 m (6.0 ft) and in rural areas at 1.5 m (5.0 ft). The height of fencing in

areas designated as reserve areas may be as high as 3 m (10 ft) to provide protection to wildlife. Some areas will have "wildlife jump outs" to provide a means for wildlife that accidentally enters the fenced right of way to have a safe way to exit from the facility area back to the reserve area. A wildlife jump-out ramp is designed to provide a smooth, sloped transition area for the animal to jump into natural habitat from the roadway. The type of fencing may include but is not limited to: (1) chain link fencing (Type CL-6 or equivalent) in urban or developed areas; (2) barbed wire (Type BW) and wire mesh (Type WM) in rural areas; and (3) a special design where needed for wildlife control. The specific locations, fence type, and heights of fencing will be finalized in consultation among the resource agencies (fencing in reserve areas) and Caltrans.

=

The MCP project mainline will have a thrie-beam barrier in the center of the median. A thrie-beam barrier is a post-and-block system, semi-rigid barrier that is used to allow for preservation of median planting and that can minimize visual impacts. The thrie-beam barrier is proposed so that any animals that may get onto the facility will not be trapped in the median area. Thrie-beam barriers are more aesthetically compatible in rural and natural areas because of their less "urban" character as compared to a concrete median barrier.

MCP Build Alternatives with areas near or adjacent to Metropolitan facilities will include security fencing and other measures to prevent unauthorized access to the Metropolitan facilities. These security measures will be developed in consultation with Metropolitan and Caltrans.

2.5.12 Runoff Management/Water Quality Best Management Practices (BMPs)

2.5.12.1 Design Pollution Prevention BMPs

Design Pollution Prevention Best Management Practices (BMPs) are permanent measures that are used to reduce erosion after construction is complete. These BMPs fall into the following categories:

Downstream Effects: Potential increased erosion from increased runoff flows
would be minimized using erosion control measures such as rock slope protection
(i.e., placement of rock on the surface of the soil to protect against wind and water
erosion and support the slope against lateral movement). Flows will be carried in
roadside vegetated swales and pipes, which will outlet to unlined channels.

Swales are vegetated or concrete open channels that transport (and infiltrate) runoff from adjacent land areas.

- **Slope Surface Protection:** New cut-and-fill slopes will potentially increase erosion. This would be minimized using erosion control measures such as rock or vegetative slope protection.
- Concentration Flow Conveyance Systems: Where cut slopes are 1:4 (slope sections are defined as ratio of height:length), erosion control such as an asphalt concrete dike, toe of fill ditches, and downdrains/overside drains would be used to control runoff and minimize gullies and scour (i.e., process by which water erodes a streambed and banks of a waterway). Direct surface runoff would need to be intercepted and existing cross drains modified.
- Erosion Control for Removal of Existing Vegetation: The project will require removal of existing vegetation. All removed vegetation will be replaced with an erosion control mix. Erosion control mixtures for the MCP project shall be reviewed by the Caltrans District 8 Landscape Architect.

As a possible future statewide facility, the MCP project would comply with the requirements of the Statewide Stormwater Management Plan.

2.5.12.2 Permanent Treatment BMPS

Treatment BMPs are measures designed to remove pollutants from storm water runoff prior to discharge to receiving waters. The following are examples of permanent BMPs:

- Multichambered treatment trains
- Biofiltration swales/strips
- Infiltration devices
- Detention devices
- Media filters
- Wet basins

Multichambered treatment trains and wet basins were determined not to be feasible for the MCP project, as permanent sources of water in sufficient quantities are not available. A multichambered treatment train is a storm water treatment device that uses sedimentation and filtering in each of three sequential chambers to primarily



remove total suspended solids¹ (TSS) pollutants from runoff. The multichambered treatment train was developed for treatment of storm water at critical source areas, such as vehicle service facilities, parking areas, paved storage areas, and fueling stations. Wet basins are detention systems comprised of a permanent pool of water, a temporary storage volume above the permanent pool, and a shoreline zone planted with aquatic vegetation. Wet basins are designed to remove pollutants from surface discharges by temporarily capturing and detaining the water quality volume in order to allow settling and biological uptake to occur. In addition, these BMPs require permanent pools of water, which are not permitted by the local vector control agency, which is the Riverside County Community Health Agency Department of Environmental Health.²

Biofiltration swales (bioswales) are vegetated channels that convey storm water and remove pollutants by filtration through the grass, sedimentation, absorption of soil particles, and infiltration through the soil. Bioswales are effective at removing debris and solid particles. Some dissolved constituents are also achieved. Bioswales will be incorporated into the project where undeveloped areas adjacent to existing right of way exist (Figure 3.10.3 provides the locations of the BMPs). A total of 2,999 linear meters (9,839 linear feet) of potential bioswales have been identified in the project area.

Infiltration basins are designed to remove pollutants by capturing storm water runoff and allow it to infiltrate the soil instead of being discharged into receiving waters. Infiltration basins remove a wider range of pollutants than detention basins. Pollutants removed by infiltration basins include TSS, nutrients, pesticides, particulate metals, dissolved metals, pathogens³, litter, biochemical oxygen demand⁴, and total dissolved

Total suspended solids are the dry-weight measurement of particles suspended in water.

Storm Water Data Report for Mid County Parkway, RBF Consulting, 2006.

Pathogens are disease-causing organisms that grow and multiply within the host, including viruses, bacteria, protozoa, and possibly helminth worms, and are a concern of storm water.

Biochemical oxygen demand refers to the oxygen used in meeting the metabolic needs of aerobic microorganisms in water containing organic matter. The higher the level of organic matter is, the higher the biochemical oxygen demand.

solids¹. Currently all proposed locations have been identified as extended detention basins; however, infiltration basins will be substituted where undeveloped areas adjacent to existing right of way exist (please see Section 3.10, Water Quality, for a figure showing the locations of the BMPs). The number of potential infiltration basins to be incorporated into the project are listed in Table 2.5.D.

Table 2.5.D Quantities of Potential BMPs to be Implemented in the Project Area

Alternative	Extended Detention Basins	Sand Filters	Infiltration Basins
Alternative 4: South of Lake Mathews/North Perris (Drain)	61	61	53
Alternative 5: South of Lake Mathews/South Perris (at Rider Street)	62	62	54
Alternative 6: General Plan North and South of Lake Mathews/North Perris (Drain)	70	70	62
Alternative 7: General Plan North and South of Lake Mathews/South Perris (at Rider Street)	71	71	63
Alternative 9: Far South/Placentia Avenue	54	54	47

Source: Draft Project Report, Jacobs, 2008.

Note: All proposed Best Management Practices (BMPs) have been identified as extended detention basins. Infiltration basins or sand filters will be substituted for extended detention basins where feasible; however this determination cannot be made until final design.

Detention basins are devices designed to reduce sediment and particulate loading in storm water runoff. Water is temporarily detained in the basin to allow sediment and particulates to settle out before the runoff is discharged to receiving waters. It is anticipated that detention basins will be located within on-/off-ramp infields and along the parkway at low points and before bridges. The number of potential detention basins to be incorporated into the project is listed in Table 2.5.D.

Media filters are devices designed to remove TSS pollutants (sediments and metals) from runoff through sedimentation and filtration. They also effectively remove trash and dissolved metals. Austin sand filters (which is a specific type of media filter that is open, at grade, and does not contain a permanent pool of water) will be incorporated into the project design. Storm water is directed into the first chamber where the larger sediments and particulates settle out, and the partially treated effluent is metered into the second chamber to be filtered through a media.

\frac{\frac}\fint}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}{\frac{\frac{\frac{\frac}\fint}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac}\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}}}}}}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}\frac{\frac{\frac{\frac{\frac{\frac{\frac}\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac}\frac{\frac{\frac{\frac{

Total dissolved solids refers to the sum of all cations and anions (sometimes measured in parts per million as calcium carbonate). Total dissolved solids comprise inorganic salts and small amounts of organic matter that are dissolved in water.

Currently all proposed locations have been identified as extended detention basins; however, sand filters may be substituted where undeveloped areas adjacent to existing right of way exist. The number of potential sand filters to be incorporated into the project are listed in Table 2.5.D.

All Permanent Treatment BMPs will be inspected and maintained per the Caltrans Storm Water Quality Handbook Maintenance Staff Guide (October 2007).

2.5.13 Grading

All alternatives will require extensive grading. The alternatives would be designed to reduce the earthwork quantities as much as possible by engineering the roadway design to closely follow the natural terrain. Section 3.7 of this EIR/EIS includes Mitigation Measures to reduce visual impacts from grading. By conforming to the existing ground surface as much as possible, the amount of cut and fill grading decreases, which in turn reduces the disturbance limits for the MCP Build Alternatives.

The earthwork requirements are presented below in Table 2.5.E. Alternatives 4, 5, 6, and 7 will require anywhere from 6.2 to 6.8 million cubic meters (219 to 240 million cubic feet) of borrow material, which would be imported from environmentally compliant borrow sites. Conversely, approximately 4.2 million cubic meters (148 million cubic feet) of excess soil material would be generated during construction of Alternative 9. This excess material would have to be transported off-site to environmentally compliant fill sites (e.g., other roadway or land development projects in western Riverside County) or to landfills. Borrow areas, disposal sites and haul routes are further discussed below in Section 2.5.15, Borrow Areas/Haul Routes.



Table 2.5.E Earthwork by Alternative

	Quantity and Type of Earthwork (cubic meters)						
Alternative	Excavation	Fill	Imported Borrow	Disposal Off Site			
4	10,246,200	16,711,070	6,464,870	0			
5	10,309,279	16,504,893	6,195,614	0			
6	10,171,760	16,992,885	6,821,125	0			
7	10,234,839	16,786,708	6,551,869	0			
9	23,473,805	19,241,157	0	4,232,648			

Source: Jacobs, 2008.

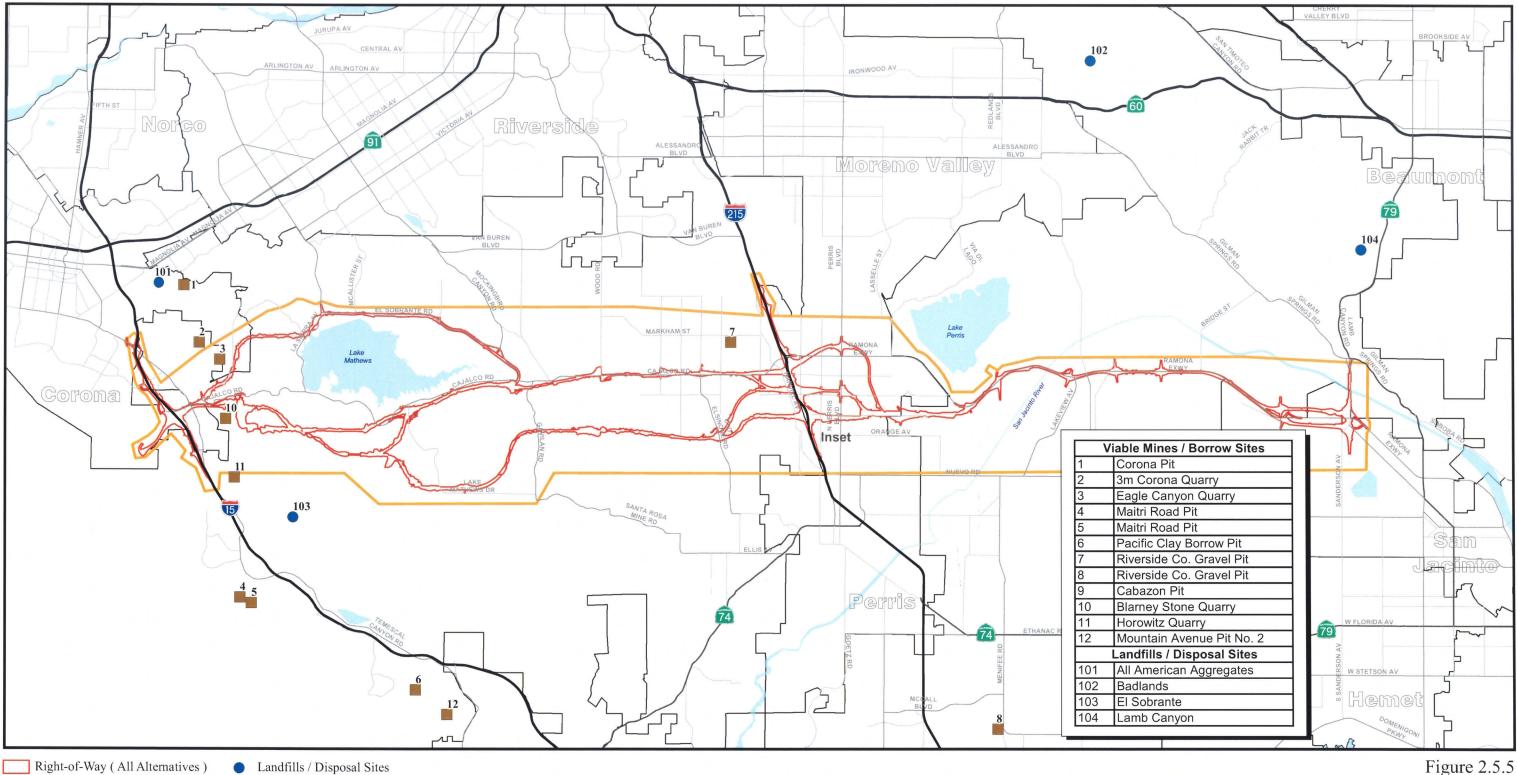
2.5.14 Changes to Local Circulation

All MCP Build Alternatives will result in local street closures adjacent to the proposed alternative alignment. A list of local circulation changes associated with each Build Alternative is show in Appendix I, Attachment G. In addition, figures have been included in Appendix I, Attachment G, that show key assumptions of how traffic demand would be handled on major roadways with implementation of the MCP Build Alternatives, including assumptions for Cajalco Road, El Cerrito Road, Placentia Avenue, and the Riverside County General Plan roadways.

2.5.15 Borrow Areas/Haul Routes

The locations of local borrow and disposal sites that have been identified for the MCP project are shown in Figure 2.5.5. These sites are within the project vicinity and capable of handling the needed quantities of borrow or disposal. Operators are the points of contact for accessing borrow sites, and a list of viable operators in the area of the project is provided in an inset table on Figure 2.5.5. These sites are already commercial sites that are environmentally compliant for excavation and disposal; therefore, use of these sites does not require further additional environmental approvals. At the time of construction, if the contractor chooses to use sites that have not been environmentally approved for excavation or disposal, additional environmental approvals would be required at that time.

There are two types of truck trips that will be generated as a result of earthwork activities: (1) Earthwork Balance – truck trips within the project to fully utilize excess material as fill wherever possible on the project; and (2) Imported Borrow or Disposal Off Site – truck trips to bring in needed imported borrow that cannot be generated by the project, or truck trips to remove excess material that cannot be utilized on the project to a disposal site. Table 2.5.F shows both types of truck trips for all alternatives. The truck hours for Earthwork Balance are calculated based on where material is generated and where the material is utilized on the project. The truck hours for Imported Borrow and Disposal Off Site are calculated based on where the need for borrow is or where the excess material is generated and the locations of the borrow sites and disposal sites as shown in Figure 2.5.5.



SOURCE: TBM (2006), Jacobs Engineering (2/2007), LSA (2007)

Mid County Parkway Study Area

Cities

0	6,250	12,500	25,000 Feet
0	1,900	3,800	7,600 Meters

Local Borrow and Disposal Sites
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Mine Locations / Borrow Sites

Γhis page	intentionally	y left blank
-----------	---------------	--------------



Table 2.5.F Earthwork Truck Hours by Alternative

	Truck Hours						
Alternative	Earthwork Balance	Imported Borrow	Disposal Off Site	Total Truck Hours			
4	591,604	873,029	0	1,464,633			
5	593,625	1,018,699	0	1,612,324			
6	1,222,390	712,684	0	1,925,074			
7	1,181,682	858,355	0	2,040,036			
9	994,344	0	247,575	1,241,919			

Source: Jacobs, 2008.

Haul routes will be predominantly along existing local circulation roadways. However, the MCP project will be graded to act as the haul route whenever possible to minimize impacts to local roadway circulation and in rural areas where the local roadway is not sufficient to haul materials. Other measures to address short-term construction impacts due to earthwork haul activities will be provided in a Traffic Management Plan (TMP) as discussed in Section 3.6 of this EIR/EIS. There will not be a need for temporary staging and/or stockpile areas outside of the designated footprint of disturbance.

2.5.16 Project Design Features to Minimize Environmental Impacts

Initially, the alignments for each of the MCP Build Alternatives were laid out to take into consideration avoidance of waters and wetlands, existing reserves, and known cultural sites, while meeting Caltrans geometric design standards. The *Draft USACE Special Area Management Plan* (SAMP) data (Lichvar et al., 2003; Lichvar and Ericsson, 2004; Smith, 2003) were initially used, which provided a useful landscapelevel view of the waters and wetlands within the composite project footprint. The alignments were designed to avoid these areas as much as possible. In locations where realignment was not practical, bridges and, in some cases, retaining walls were used to avoid the waters and wetlands. When the Jurisdictional Delineation was completed, the project-specific data were compared with the SAMP data to make sure areas were avoided as much as possible.

As a result, all of the MCP Build Alternatives include several project design features intended to avoid or minimize potential environmental impacts on wildlife, the aquatic environment, and other natural resources. These project design features include bridges to cross water, habitat, and habitat linkage areas located within

existing habitat reserves, bridges or structures for wildlife over- and undercrossings, and "oversized" culverts for combined use as wildlife and drainage undercrossings. These project design features also include BMPs as discussed in Section 2.5.12 to minimize impacts to waters of the United States. Locations of these BMPs are included on Figure 3.10.3 in Section 3.10 of this EIR/EIS.

Details and locations of the bridges, wildlife crossings, and culverts are shown on the maps and tables in Appendix I, Attachments B and E. A more detailed discussion on the siting of bridge locations over water resources and the determination of length of bridge over water resources can be found in Appendix I, Attachment D, Bridge Waters and Wetlands Considerations.

2.5.16.1 Bridges for Crossing Water and Natural Resources

Bridge structures cross water and natural resources and can also serve to accommodate wildlife movement. In Appendix I, Attachment B, the bridges are labeled "HCP" if the bridge is in or adjacent to an existing Habitat Conservation Plan or western Riverside County MSHCP Criteria Area. These bridges are listed with length and height information in Appendix I, Attachment F.

2.5.16.2 Wildlife Crossings Bridges for Wildlife Overcrossings (Land Crossings)

These structures are provided to accommodate wildlife overcrossings. The proposed structures include an earthen bottom with native ground cover vegetation and fencing with vegetation cover to reduce light and sound from vehicles on the MCP project. Wildlife overcrossings plan view, profile, and typical sections are shown in Appendix I, Attachments E and F.

Bridge for Wildlife Undercrossing

There is one undercrossing east of Bridge Street, at approximately Station 341+00, referenced as Crossing Location No. 10 in wildlife crossing exhibits. This is a corrugated steel arch structure (or elliptical structure or circular culvert structure) that has a 3×6 m (10×20 ft) opening. In this location the terrain is flat. This cross section is proposed to get the required openness ratio (height to length) and still accommodate large mammals such as deer. This crossing has a natural earthen bottom.

A Station is a unit of measurement to define linear distance on the engineering plans of a new or existing roadway. The MCP Stations are in metric units, and each Station is separated by 100 meters.

2.5.16.3 Culverts and Combined Use Wildlife Undercrossing and Drainage Culverts

In addition to the structures described above, culverts and large-diameter wildlife crossings have been proposed along each of the MCP Build Alternatives. These structures are placed to reduce fill in the water crossings and to permit wildlife movement. The locations for culverts sized for drainage are shown on maps in Appendix I, Attachment E. These culverts may also be used by some small mammals. Culverts sized and located specifically for combined use as wildlife and drainage undercrossings are shown in Appendix I, Attachment E, and details are listed in Appendix I, Attachment F. These combined use wildlife and drainage undercrossings are provided at locations and spacing as determined by review of the reserves, types of wildlife, and in discussions with wildlife agencies. The crossings include the following type features: earthen fill bottom, low-flow notch to allow for more crossing area for wildlife, a bench above the 100-year water surface, and steel plates to prevent wash out of earthen bottom. The slope of the crossing allows for a clear line of sight from one end to the other.

All but one of the undercrossings utilize large-diameter structural steel plate pipes. All of the structural steel plate pipes were sized to exceed the target opening dimensions of 3 m x 6 m (10 ft x 20 ft) for accommodating mule deer movement (Ruediger and DiGiorgio, 2007). All of the crossings for Alternative 9 have an openness ratio ranging from 0.34 to 0.62 (1.12 to 2.02 calculated in feet). Culverts that do not meet the 0.6 target openness ratio for mule deer (Reed et al. 1979) are anticipated to be utilized for movement of other wildlife species and may still be used by mule deer based on the oversized (i.e., 6 m [20 ft] high by 7.7 m [25.3 ft] wide) nature of the feature. Along Alternative 9, mule deer will be able to utilize other bridges and overcrossings with openness ratios greater than 0.6 (1.96 calculated in feet) in proximity (located every 0.1–2 km [0.1–1.8 mi]) to the MSHCP Conservation Area. Along the remaining alternatives, in locations where the distance between wildlife crossings consists of a target openness ratio greater than 1.8 km (1.2 mi), there are oversized structural steel plate pipes located at least every 1.8 km (1.2 mi). These structural steel plate pipes meet the opening requirements for accommodating mule deer movement along the MSHCP Conservation Area (with the exception of Alternatives 4, 5, 6, and 7 southeast of Lake Mathews, which are located along the edge of the MSHCP Conservation Area and developed land). Wildlife crossings with openness ratios less than 0.6 (1.96 calculated in feet) will accommodate smaller wildlife and, in some cases, may also accommodate deer as there are anecdotal

observations of mule deer using culverts with a <1.96 (1.62, 1.20, 0.15–0.45 ratios calculated in feet) openness ratio (*Natural Environment Study*, LSA, 2008).

2.5.17 Phasing

Construction of any of the MCP Build Alternatives is estimated to take approximately 48 months, which assumes the project is constructed at one time. Therefore, the analyses included in this EIR/EIS assume construction of the project at one time and the worst case scenario of potential impacts for such construction ("worst case" in that the impacts would be concentrated within the 48-month period). However, if the construction is phased based on available funding, it may take longer to construct than 48 months. Because full funding is not yet identified, it would be speculative to estimate the construction period based on phased construction; therefore, impact evaluations are based on a single 48-month construction schedule.

2.5.18 Railroad Involvement

All MCP Build Alternatives involve the transverse crossing of railroad lines west of I-215. The railroad lines are owned by the RCTC and operated by BNSF. The transverse crossings will be overhead, with new crossings under some MCP Build Alternatives and expanded existing crossings under others. No new right of way is anticipated from the existing railroad right of way and no new railroad alignments are proposed. Early railroad notification will occur due to the lengthy approval process typically encountered with new or modified railroad crossings.

2.6 Unique Features of MCP Build Alternatives

2.6.1 Alternatives 4 and 6

Alternatives 4 and 6 propose a 3.5 km (2.2 mile) bridge to avoid impacting the floodplain in the Perris Drain area. The portion of the alignment that crosses over the Perris Drain crosses at a diagonal for an approximate length of 0.72 km (0.45 mi). The crossing of the Perris Drain spans such that the impact from a 100-year flood event would not increase the river's water surface elevation by more than 0.305 m (1 ft). The bridge crossing of the Perris Drain accommodates all previously proposed alternative improvements to the Perris Drain with no adverse impacts to hydraulics.



The proposed bridge minimizes floodplain encroachment. The proposed culverts in this area are between 600 and 900 millimeters (mm) (24 and 35 inches [in]).

2.6.2 Alternative 9

This alternative would depress the MCP project below existing ground level along Placentia Avenue, from Barrett Avenue to Wilson Avenue, to decrease visual impacts to the surrounding area. The depressed alignment includes a detention basin designed to hold the runoff from a 100-year, 24-hour storm event. Any storm water in the detention basin will be pumped out at the end of the storm into a 6.7 x 2.3 m (22.0 x 7.5 ft) concrete channel that drains into the Perris Drain.

A unique design feature of Alternative 9 includes a detention basin on the north side of the MCP alignment, east of Redlands Avenue. Part of the area occupied by that detention basin will be developed in active and passive recreation uses and landscaping to replace the impacted area and facilities at Paragon Park under Alternative 9. Pedestrian access between Paragon Park and the park facilities at the detention basin site will be provided across the MCP alignment east of Redlands Avenue to ensure that park patrons can safely walk or ride bicycles between the two facilities. Additional park space will be provided on the south side of the MCP east of Redlands Avenue using remnants of existing residential parcels that would be acquired for the MCP. Figure 3.1.3 in Section 3.1 of this EIR/EIS, shows the areas at Paragon Park anticipated to be displaced by Alternative 9 and the proposed replacement park areas on the east side of Redlands Avenue, north and south of the MCP alignment.

2.6.3 Cajalco Road Closure Pursuant to MSHCP Section 7.2.3 (Alternatives 4, 6, and 9)

Although Section 7.2.3 of the MSHCP discusses coverage of improvements to Cajalco Road as both a Circulation Element roadway (four-lane arterial highway) and as a Community and Environmental Transportation Acceptability Process (CETAP) corridor (four- to eight-lane limited access expressway), it does not give priority in terms of coverage to either of the facilities. Specific language from the MSHCP is as follows:

If it is not feasible to build the CETAP Corridor in the alignment north of Lake Mathews, the proposed alternative involves the realignment



and widening of Cajalco Road south of Lake Mathews to a four-lane arterial status, or other configuration that could be demonstrated to meet the criteria outlined in this section. The alternative would be proposed in place of the CETAP alternative between El Sobrante Road and the Temescal Wash.

The Cajalco Road alternative would involve the realignment of existing Cajalco Road and the construction of a new four-lane divided roadway, or other configuration that could be demonstrated to meet the criteria outlined in this section, to replace the existing two-lane roadway. The road improvements will follow the CETAP alternative alignment from I-215 westerly to a location approximately 9 miles east of I-15, at roughly the intersection of existing Cajalco Road and El Sobrante Road. At that location the proposed Cajalco Road Option alignment will continue in a south and westerly direction, while the CETAP alternative alignment travels northwesterly. The greatest distance between the two alignments is approximately three miles, at a location that is south of the western end of Lake Mathews. The Cajalco Road Option joins the CETAP Alternative alignment again approximately 1 mile east of I-15. The area within the gap between the two alignments is almost entirely within the existing Lake Mathews Reserve.

Based on traffic demand, project timing, and availability of funding, it may be necessary to construct improvements to Cajalco Road as a Circulation Element roadway, including widening and realignment generally along its current location prior to construction of the MCP project. However, the County of Riverside and RCTC agree that in the event that County road improvements to Cajalco Road precede construction of the MCP project in the area described above in Section 7.2.3 of the MSHCP (south of Lake Mathews), any existing improvements at the time the MCP project is complete would be subject to the design considerations identified in the MSHCP. Specifically, when the MCP is constructed, any portions of the existing or future improved Cajalco Road south of Lake Mathews from Gavilan Road 5.5 km (3.4 mi) west, that are not needed to provide for local access will be removed and restored to a natural state, consistent with the conditions in Section 7.2.3 of the MSHCP.



2.7 Comparison of Alternatives

For a complete comparison of the MCP Alternatives, please refer to the impact summary table provided in the Executive Summary of this EIR/EIS. Table 2.7.A compares the cost breakdown of the MCP Build Alternatives.

Table 2.7.A Cost Breakdown for the MCP Build Alternatives



		Estimate	d Cost Breakd	own (billions c	f dollars)	
Category	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 9	Locally Preferred Alternative Alternative 9 TWS DV
Engineering	0.73	0.68	0.75	0.70	0.64	0.60
Right of Way	3.64	3.39	3.76	3.51	3.19	2.98
Right of Way	0.78	0.85	0.82	0.89	0.68	0.62
Construction	2.71	2.39	2.77	2.45	2.36	2.21
Environmental Mitigation	0.15	0.15	0.17	0.17	0.15	0.15
Total Cost	4.37	4.07	4.51	4.21	3.83	3.58

Source: Jacobs, 2008.

2.8 Identification of a Locally Preferred Alternative

As the NEPA lead agency, FHWA will identify a Preferred Alternative after comments are received from the public during release of the Draft EIR/EIS.



As the CEQA lead agency, RCTC believes that identifying a Locally Preferred Alternative in the Draft EIR/EIS allows for better public disclosure and for the public to focus their review and comment on that alternative. After comparing and weighing the benefits and impacts of all of the feasible alternatives, at its regular meeting of September 12, 2007, the RCTC Commissioners approved identification of Alternative 9 TWS DV as the Locally Preferred Alternative in the Draft EIR/EIS since the technical studies completed for the project demonstrated, as described below, that Alternative 9 TWS DV is the least environmentally damaging alternative to both the natural and human environments.



- Alternative 9 TWS DV uses the least amount of land from the fewest number of Section 4(f) properties.
- Alternative 9 TWS DV impacts the least total acres of least Bell's vireo habitat.

- Alternative 9 TWS DV impacts the least total acres of existing Habitat Conservation Plan lands.
- Alternative 9 TWS DV impacts the least amount of jurisdictional wetlands and nonwetland waters of the United States and CDFG riparian habitat.
- Alternative 9 TWS DV does not pass through the Lake Mathews MSHCP area.
- Alternative 9 TWS DV would have a benefit to parks and recreational facilities by creating a second park in Perris, resulting in 0.65 ha (1.57 ac) more park acreage in Perris than exists today.
- Alternative 9 TWS DV converts the least amount of farmlands with special designations (i.e., Prime, Unique) to nonagricultural uses.
- Alternative 9 TWS DV has the fewest impacts to farmlands under Williamson Act Preserves.
- Alternative 9 TWS DV impacts the least amount of land, a total of 1,049.2 ha (2,592.7 ac). The other MCP Build Alternatives impact anywhere from 1,065.9 ha (2,634.0 ac) to 1,331.1 ha (3,289.1 ac) of land.
- Alternative 9 TWS DV results in one of the lower number of residential and business relocations. Alternative 9 TWS DV will require relocation of a total of 401 residential and business parcels; relocations required under the other MCP Build Alternatives range from 396 to 672 parcels.
- Alternative 9 TWS DV will impact fewer minority or low-income populations as defined under Executive Order 12898 regarding environmental justice.
- Alternative 9 TWS DV is routed through less populated areas between I-15 and I-215, and therefore would not impact as many sensitive viewers as Alternatives 4 through 7.
- Alternative 9 TWS DV impacts one sacred cultural site as compared to the other MCP Build Alternatives that impact two sacred sites.
- Alternative 9 TWS DV would have the fewest floodplain encroachments of all of the MCP Build Alternatives.
- Alternative 9 TWS DV would be constructed over the fewest number of streams and therefore would have the lowest probability of pollutants entering the waters from bridge construction.
- Alternative 9 TWS DV is one of the lowest in adding new pavement; therefore, it would result in one of the lowest volumes of additional storm water runoff.
- Alternative 9 TWS DV impacts to existing hazardous waste/materials sites are less than the impacts of the other MCP Build Alternatives since a lesser number of hazardous waste/materials sites would be affected.

- Direct human exposure to Mobile Source Air Toxics (MSATs) generated by vehicles on the MCP would be lower for the Alternative 9 TWS DV than Alternatives 4 through 7 since Alternative 9 TWS DV is routed through less populated areas.
- The cost for Alternative 9 TWS DV is less than the other MCP Build Alternatives at \$2.98 billion for construction and \$600 million for engineering for a total of \$3.58 billion (the next lowest MCP Build Alternative is Alternative 9 base case at \$3.83 billion).

2.8.1 Local Governments and Organizations

Previously, the City of San Jacinto has identified the SJS Segment of Alternative 9 as a locally preferred alternative. Metropolitan has written a letter of support for Alternative 9 as the only Alternative that avoids their habitat reserve area. The City of Perris had previously identified a Preferred Alternative adjacent to Lake Perris; however, this Alternative has since been removed from the suite of Alternatives based on information provided by Metropolitan and DWR (details discussed previously in this chapter). Since rescinding their previously identified Preferred Alternative, the City of Perris has yet to take any formal action regarding a Preferred Alternative. At scoping meetings held in late 2004 and another public meeting in August 2005, the public did not identify a preference for a particular alternative. Individual property owners typically stated preferences for alternatives that were not on or near their properties.

2.9 Alternatives Considered and Withdrawn from Further Study

2.9.1 Alternatives Formally Considered and Withdrawn

Two alternatives were evaluated and eliminated from further study during the alternatives refinement process. Table 2.9.A identifies and describes the two alternatives and provides a summary of the decision to remove these alternatives from further study. Section 2.2 provides additional information about the process undertaken to develop and refine alternatives evaluated in the technical studies for the Draft EIR/EIS.



Table 2.9.A Summary of Alternatives Withdrawn from Further Study

Alternative Number	Alternative Name	Description	Comment
2	North Lake Mathews/ North Perris Alternative	Provide a six- to eight- lane, limited-access facility north of Lake Mathews and a north alignment through the city of Perris	This alternative was eliminated due to engineering safety concerns regarding proximity to the Lake Perris Dam, Cajalco Dam, and Metropolitan facilities, as stated in letters from Metropolitan dated May 13, 2005, and DWR dated August 19, 2005.
3	North Lake Mathews/ South Perris Alternative	Provide a six- to eight- lane, limited-access facility north of Lake Mathews and a south alignment through the city of Perris	This alternative was eliminated due to engineering safety concerns regarding proximity to Cajalco Dam and Metropolitan facilities, as stated in a letter from Metropolitan dated May 13, 2005.

DWR = State Department of Water Resources
Metropolitan = Metropolitan Water District of Southern California



As noted above, the parkway alternatives north of Lake Mathews were eliminated from further analysis as a result of engineering safety constraints. Alternatives 2 and 3 were each proposed as a six- to eight-lane, limited-access parkway within a 67 m (220 ft) right of way, which is a much larger facility than Alternatives 6 and 7 (combination Parkway and General Plan Alternatives), which include General Plan improvements to El Sobrante Road north of Lake Mathews as included in the adopted Riverside County Circulation Element of the General Plan. The RCTC determined that the General Plan improvements could be constructed and still meet the dam safety criteria stipulated by Metropolitan, whereas Alternatives 2 and 3 did not.



2.9.2 Other Alternatives Considered

At the RCTC Board meeting of September 12, 2007, the RCTC Board approved the designation of Alternative 9 TWS DV as the Locally Preferred Alternative in the Draft EIR/EIS. During public comment on this item, one individual proposed a new alternative that would essentially combine the alignments of Alternative 4 and 5 south of Lake Mathews with the alignment of Alternative 9 through Perris. As proposed, the alternative would follow the alignment of Alternatives 4 and 5 from I-15 easterly to a point just east of El Sobrante Road where Alternatives 4 and 5 are routed along Cajalco Road. From there, the alignment would be routed to the southeast through primarily undeveloped land to a point where it would connect with the Alternative 9 alignment just west of Old Elsinore Road. From that point, the proposed alternative would continue easterly along the Alternative 9 alignment along Placentia Avenue and Ramona Expressway, with an eastern terminus at SR-79.

To determine if this proposed alternative would reduce the impacts of the MCP project, a screening analysis was conducted. Most of the total length of the proposed alternative (approximately 30 miles out of the total alternative length of 32 miles) had already been surveyed and analyzed in the technical studies for Alternatives 4 and 9. Data from these two alternatives were combined (i.e., data for Alternative 4 from I-15 easterly to the join point of the proposed alternative at Cajalco Road was added to data for Alternative 9 from SR-79 westerly to the join point of the proposed alternative at Old Elsinore Road) to provide an initial quantification of impacts associated with the proposed alternative. This screening methodology employed a conservative approach since it did not consider any additional impacts that would occur within the unsurveyed portions of the proposed alternative (approximately a 2.8 km [1.8 mi] section between Cajalco Road and Old Elsinore Road). The screening analysis results indicated that this proposed alternative would result in greater impacts to wetlands and other waters, habitat reserves, and residential property acquisitions/relocations than would occur under Alternative 9 TWS DV, even without the addition of any additional impacts that would occur in the unsurveyed section between Cajalco Road and Old Elsinore Road. Therefore, RCTC did not bring this alternative forward to the MCP partner agencies for consideration as an addition to the suite of alternatives already under evaluation.

2.10 Permits and Approvals Needed

The permits, reviews, and approvals list in Table 2.10.A are anticipated to be required for the proposed MCP project.

The project is subject to federal as well as state environmental review requirements because the RCTC proposes the use of federal funds from the FHWA and the project requires FHWA approval of new connections to the federal Interstate highway system at I-15 and I-215. Project documentation, therefore, has been prepared in compliance with both CEQA and NEPA. The RCTC is the project proponent and the lead agency under CEQA and has adopted guidelines for implementing CEQA. FHWA is the lead agency under NEPA, with Caltrans acting as its agent and providing oversight for the NEPA process. The NOI for the MCP project was published in November 2004 (prior to the August 10, 2005, effective date for the SAFETEA-LU); therefore, the project is not required to follow the environmental review process required by Section 6002.

USACE is a cooperating agency for the MCP project, while the County of Riverside, the Cities of Corona, Perris, and San Jacinto, and the CDFG are official responsible



agencies on the preparation of the EIR/EIS pursuant to the Council on Environmental Quality Regulations (40 CFR 1501.6). Following certification of the Final EIR/EIS by RCTC and FHWA, with oversight by Caltrans, these agencies intend to adopt the EIR/EIS for purposes of independent CEQA/NEPA compliance responsibilities related to the discretionary state and federal actions, including General Plan Amendments by the County of Riverside and the Cities of Corona, Perris, and San Jacinto or permit approvals by USACE or USFWS.



Table 2.10.A Permits and Approvals Needed

Timeline	1 Section 7 consultations				_		following identification of a Preferred Alternative and prior	to approval of the Final EIS.	က			bitat 4. Approval of replacement lands pursuant to the Habitat	Conservation Plan for the Stephens' kangaroo rat and	amendments to other Habitat Conservation Plans will be	requested by RCTC after the Record of Decision is	approved for the MCP EIS.	Application to be submitted following identification of a Preferred Alternative	Approval of replacement lands pursuant to the Habitat	Conservation Plan for the Stephens' kangaroo rat will be	requested by RCTC after certification of the Final EIR.	1. Section 1602 Notification is to be submitted and		2. The MSHCP Consistency Determination and DBESP will				რ	RCTC after the Final EIR is certified.	4. Approval of replacement lands pursuant to the Habitat	Conservation Plan for the Stephens' kangaroo rat and	amendments to other Habitat Conservation Plans will be requested by RCTC after certification of the Final EIR.
Permit/Approval	 Section 7 consultation for Threatened and Endandered 	Species	Section 7 consultation with USACE on Section 404 permit	Conclusion RCTC's MSHCP Consistency Determination	Control of the Contro	 Concurrence on Determination of Biologically Equivalent or Superior Preservation (DRESD) 	Opposite in case value (DDEC) Approval of amondment to western Divorside County	MODED		 Approval of amendment to El Sobrante Landfill MSHCP 	(USA Waste is permittee)	 Approval of any replacement lands pursuant to the Habitat 	Conservation Plan for the Stephens' kangaroo rat.	 Approval of any amendments to the Lake Mathews 	MSHCP and Natural Communities Conservation Plan.		 Section 404 Permit for filling or dredging waters of the United States 	 Approval of replacement lands pursuant to the Habitat 	Conservation Plan for the Stephens' kangaroo rat:		 Section 1602 Lake and Streambed Alteration Agreement 	 Concur on RCTC's MSHCP Consistency Determination 	 Approval of MSHCP Amendment 	 Approval of amendment to El Sobrante Landfill MSHCF 	(USA Waste is permittee)	 Approval of replacement lands pursuant to the Habitat 	Conservation Plan for the Stephens' kangaroo rat			Approval or any amendments to the Lake Mathews MCHCD and Mather Communities Conservation Dish	MOTOR AND VARIETY COMMITTEE COMMITTEE AND VARIOUS FAILS
Agency	United States Fish and Wildlife	Service (USFWS)															United States Army Corps of Engineers (USACE)	United States Department of the	Interior-Bureau of Land	Management (BLM)	California Department of Fish	and Game (CDFG)									

Table 2.10.A Permits and Approvals Needed

Timeline	Application to be submitted prior to construction iit.	To be conducted following approval of a Preferred Alternative	Approval of replacement lands pursuant to the Habitat Conservation Plan for the Stephens' kangaroo rat will be requested by RCTC after certification of the Final EIR. Section 4(f) consultation will be completed prior to completion of the Final EIR/EIS.	Application to be submitted following approval of a Preferred Alternative	Section 4(f) consultation will be completed prior to completion of the Final EIR/EIS.	no	Application(s) to be submitted prior to construction	To be determined after the approval of a Preferred Alternative	To be determined after the approval of a Preferred Alternative	ility SHPO has given a preliminary concurrence on the agencies' preliminary determinations of eligibility and for the preliminary findings of effect. Final concurrence will occur after submittal of the final Historic Properties Survey Report (which will occur prior to completion of the Final EIR/EIS).
Permit/Approval	 Water Discharge Permit, approval of Notice of Intent to comply with General Construction Activity NPDES Permit. 	Concur on RCTC's MSHCP Consistency Determination	 Approval of replacement lands pursuant to the Habitat Conservation Plan for the Stephens' kangaroo rat Section 4(f) consultation 	Section 401 Water Quality certification	 Freeway Agreement with Caltrans should the MCP project be adopted as a State Highway by the California Transportation Commission 	 Approval of encroachment permits and street construction permits, street closures and re-routing, and associated improvements in the public right of way Section 4(f) consultation for El Cerrito Sports Park (County) and Paragon Park (City of Perris) 	 Encroachment permits for improvements affecting RCFCD facilities 	 For Alternatives 4, 5, 6, or 7, Lake Mathews Habitat Conservation Plan amendment and Section 4(f) consultation 	 For Alternatives 4, 5, or 9, El Sobrante Landfill MSHCP standard amendment 	 Concurrence with the agencies' determinations of eligibility and on the findings of effect.
Agency	State Water Resources Control Board	Western Riverside County Regional Conservation Authority (RCA)	County of Riverside, Riverside County Habitat Conservation Agency (RCHCA)	Regional Water Quality Control Board 8, Santa Ana Region (RWQCB)	County of Riverside, Cities of Corona, Perris, and San Jacinto		Riverside County Flood Control District (RCFCD)	Metropolitan Water District of Southern California	USA Waste	State Historic Preservation Officer

Table 2.10.A Permits and Approvals Needed

Agency	Permit/Approval	Timeline
Interested Native American	Required consultation under Section 106 of the National	Native American Consultation for the MCP is ongoing.
Tribes	Historic Preservation Act on the overall project cultural	
	work completed to date, including (but not limited to)	
	determinations of eligibility, findings of effect, and future	
	work that includes involvement with the memorandum of	
	Agreement, Archaeological Monitoring Plan, and Data	
	Recovery Plan.	
±3 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		

Caltrans = California Department of Transportation
EIR = Environmental Impact Report
EIS = Environmental Impact Statement
MCP = Mid County Parkway
MSHCP = Multiple Species Habitat Conservation Plan
NPDES = National Pollutant Discharge Elimination System
RCTC = Riverside County Transportation Commission

Chapter 3

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

Chapter 3.0 describes the existing affected environment for the areas affected by the MCP Build Alternatives. The affected environment is the base environmental condition on which environmental effects of the alternatives are evaluated in this Environmental Impact Report/Environmental Impact Statement (EIR/EIS).

The sections in Section 3.0 include the regulatory setting applicable to the environmental topic, the methodology of impact analysis, a description of the affected environment, environmental effects resulting from the MCP Build and No Build Alternatives, a discussion of environmental effects relative to the amendment of the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), and measures to avoid, minimize, or mitigate adverse impacts of the MCP Build Alternatives. Photographs, maps, graphic exhibits, and data matrices are included throughout Section 3.0 where applicable to support the impact analyses.

The National Environmental Policy Act (NEPA) uses the terms impact, effect, and consequences synonymously. For an action to affect the environment it must have a causal relationship with the environment. NEPA distinguishes three types of causal impacts: direct, indirect, and cumulative. Cumulative impact is defined and the contribution of the MCP Build Alternatives to cumulative effects is analyzed in Section 3.25 of this EIR/EIS. Direct and indirect effects are defined below and analyzed in Sections 3.1 through 3.24 of this Draft EIR/EIS.

- Direct effects are caused by the action and occur at the same time and place (40 Code of Federal Regulations [CFR] 1508.8).
- Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8).

As part of the scoping and environmental analysis conducted for the project, the following environmental resources were considered, but no potential for adverse impacts to these resources was identified. Consequently, there is no further discussion regarding these resources in this EIR/EIS:

- Coastal Resources, Coastal Barriers, and Coastal Zone Impacts: The project site is approximately 60 kilometers (40 miles) east of the Pacific Ocean and would, therefore, not have an effect on any coastal resources.
- **Fisheries:** There are no fisheries in the project vicinity.
- Wild and Scenic Rivers: There are no rivers listed in the National Inventory of Wild and Scenic Rivers located near the project vicinity.

HUMAN ENVIRONMENT

3.1 Land Use

The information in this section is based on the *Community Impact Assessment* (LSA Associates, Inc., 2008) and the *Draft Section 4(f) Evaluation* (LSA Associates, Inc., 2008).

3.1.1 Existing and Future Land Use

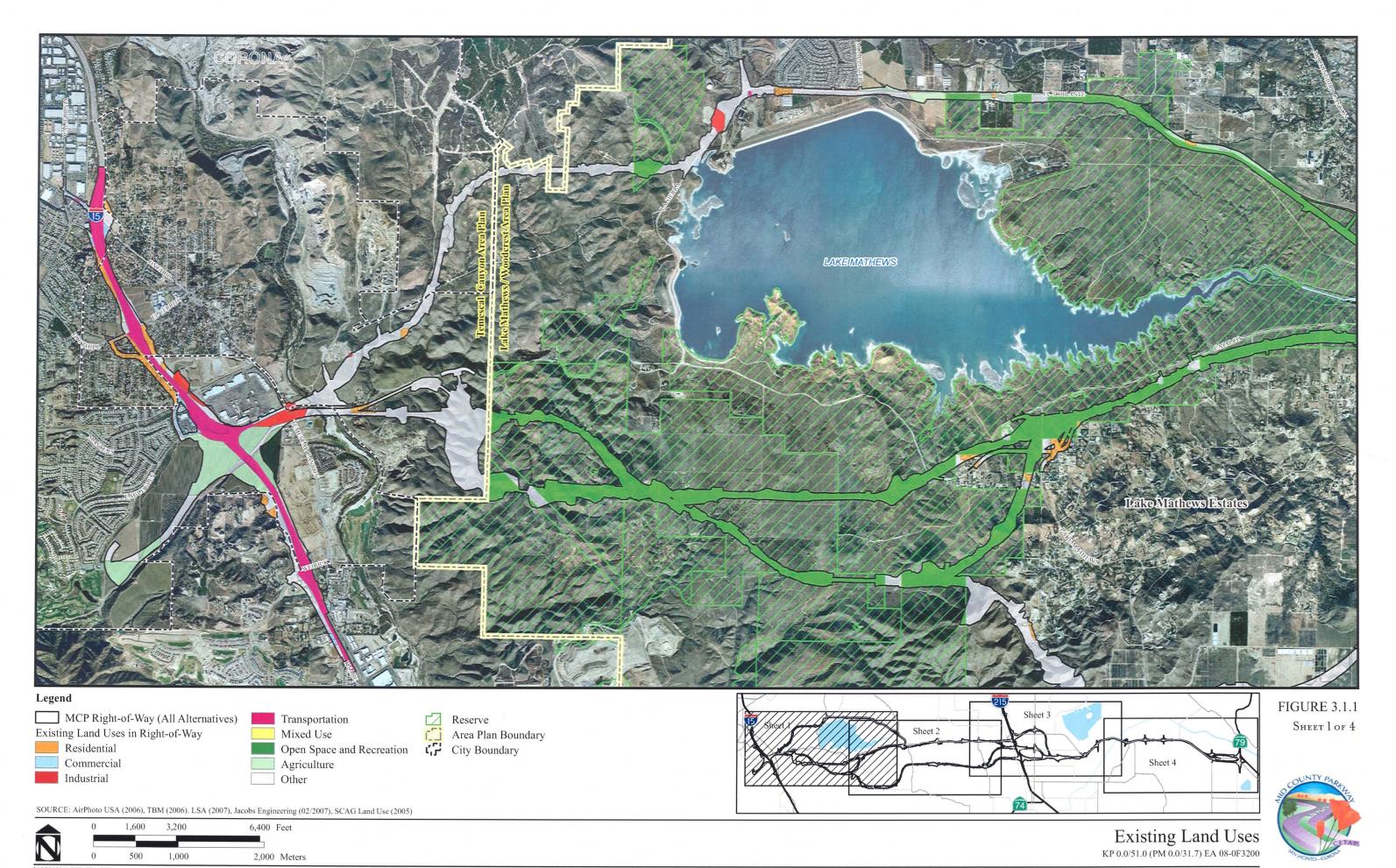
Land use is addressed in terms of existing and planned land uses. Existing land uses are defined as those uses within the Mid County Parkway (MCP) study area as well as in adjacent areas when scoping was initiated in November 2004. Since then, some land uses have changed in response to ongoing land development occurring at a rapid pace within the MCP study area. However, the baseline used for analysis has remained the same. Existing land uses were determined through aerial photograph interpretation and field reconnaissance.

Planned land uses are those that will occur as a result of land use designations and policies contained in various applicable land planning documents. The applicable land planning documents include the City of Corona General Plan (March 2004), City of Perris General Plan (2004/2005), City of San Jacinto Draft General Plan (January 2006), and County of Riverside General Plan (October 2003).

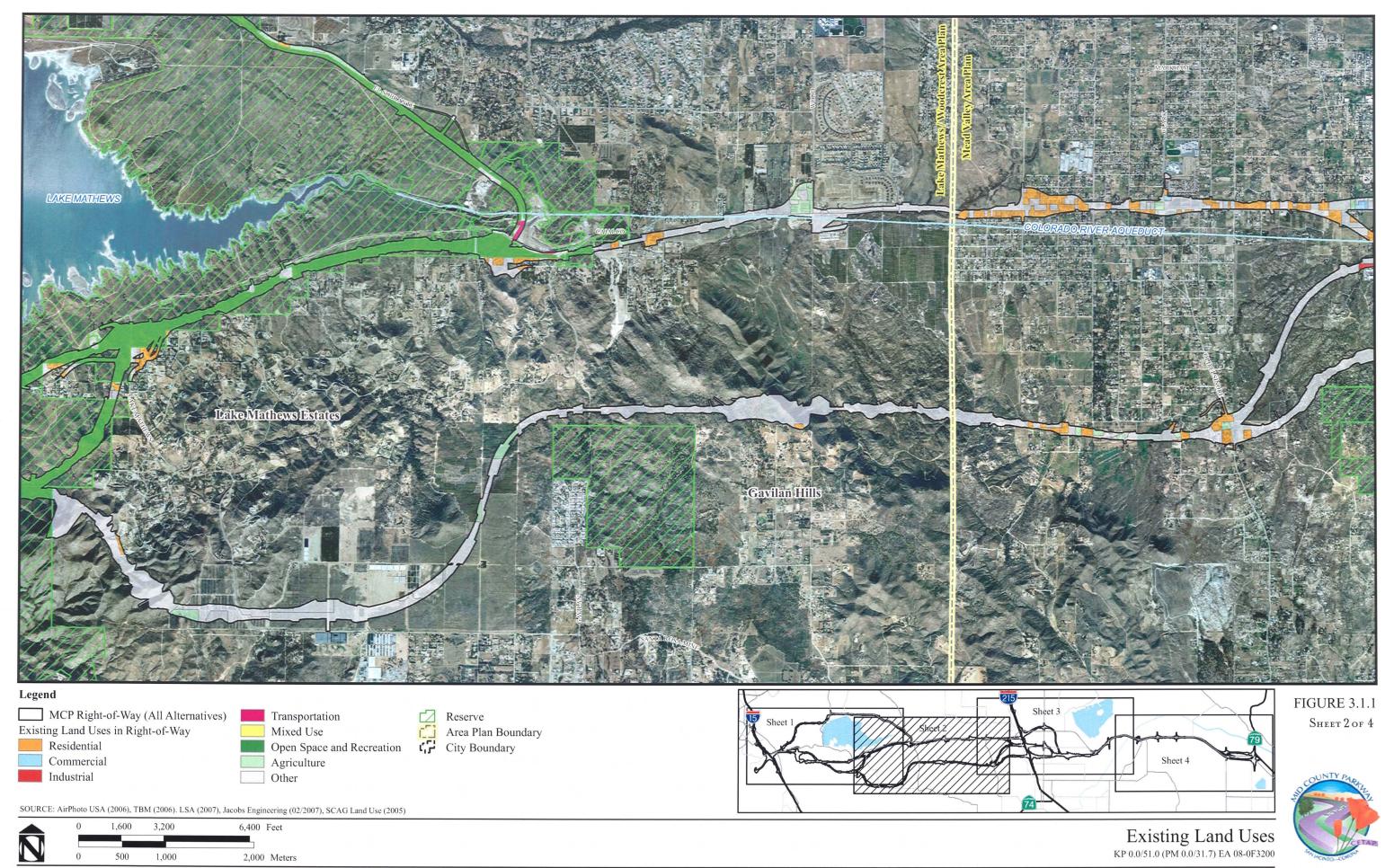
3.1.1.1 Affected Environment

The MCP study area consists of a mixture of urbanized, residential, rural residential, agricultural, industrial/commercial, and open space land uses (including existing wildlife reserves and lands that may be acquired for conservation under the western Riverside County Multiple Species Habitat Conservation Plan [MSHCP]). Section 3.4, Community Impacts, of this EIR/EIS has additional information regarding schools, businesses, etc. Figure 3.1.1 shows existing land uses in the MCP study area within the proposed right of way for all the MCP Build Alternatives. The following describes existing land uses by jurisdictions and geographic/community area.

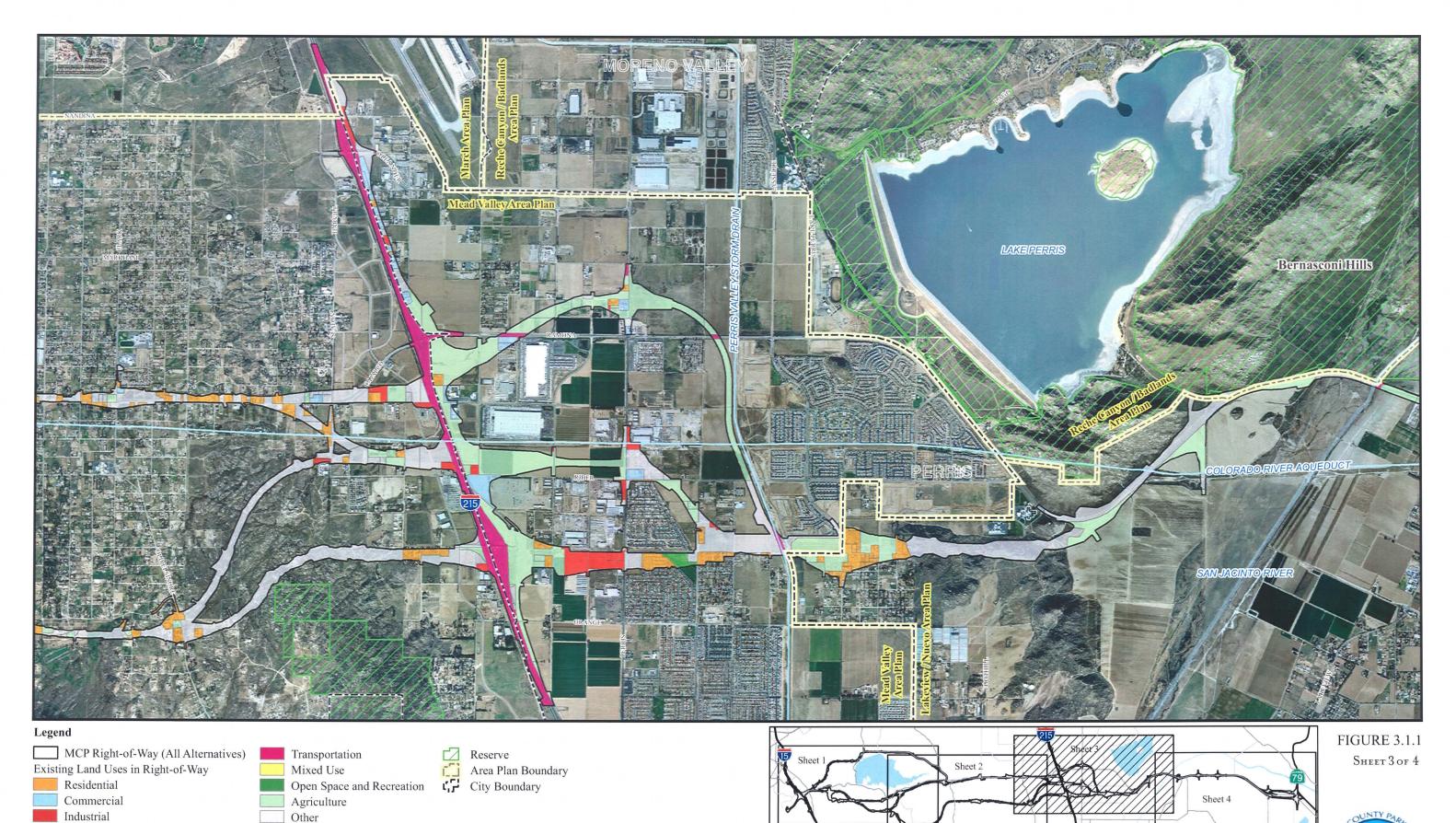




Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



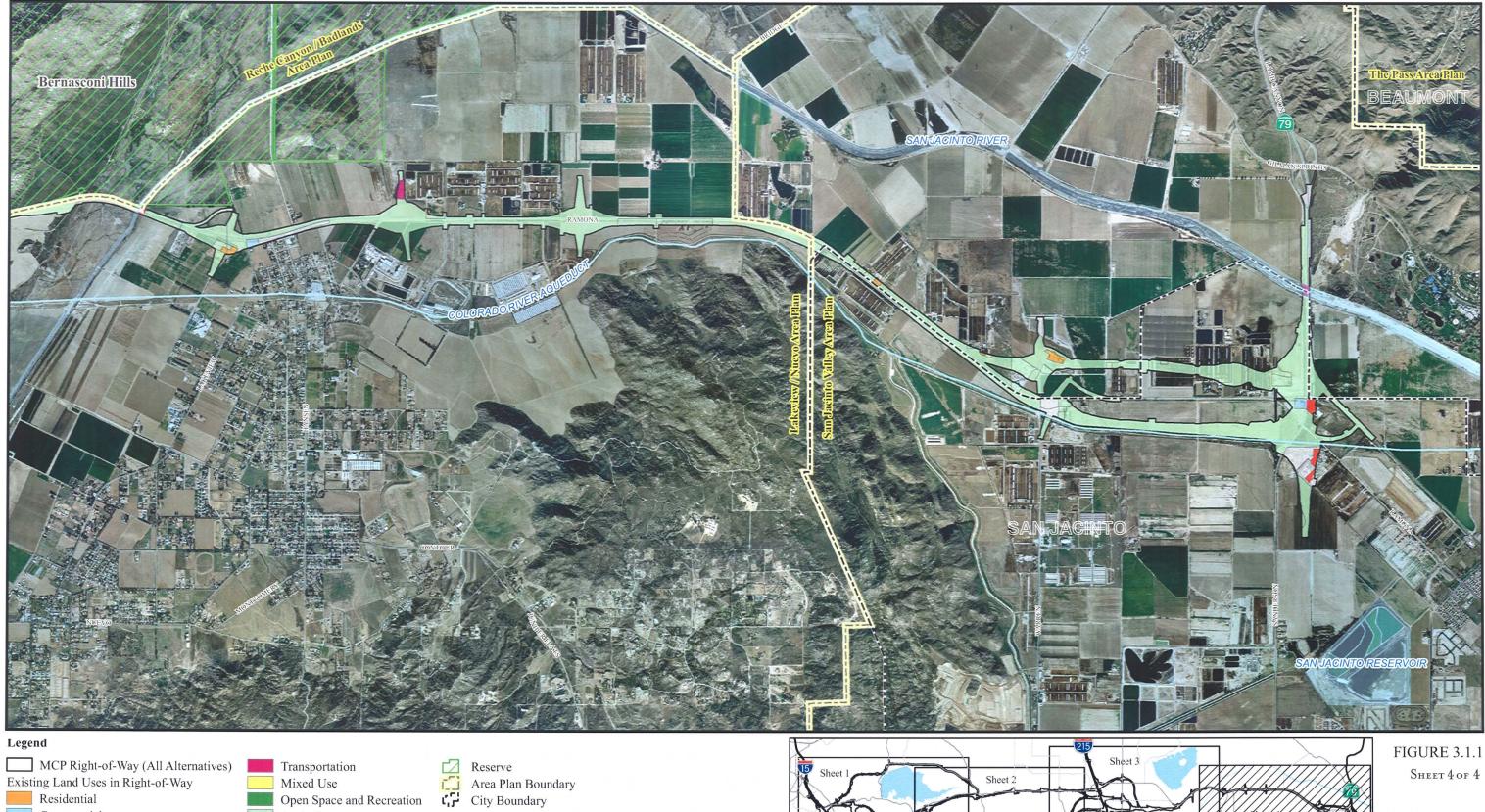


0 1,600 3,200 6,400 Feet 0 500 1,000 2,000 Meters Existing Land Uses
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

3.1-8





Existing Land Uses in Right-of-Way

Residential Commercial Industrial

Agriculture

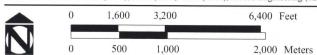
Other

Sheet 2

Sheet 4 of 4



SOURCE: AirPhoto USA (2006), TBM (2006). LSA (2007), Jacobs Engineering (02/2007), SCAG Land Use (2005)



Existing Land Uses KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Riverside County (Unincorporated Area)

Much of the MCP study area is located within unincorporated portions of Riverside County. These areas are described from west to east below.

Temescal Canyon Area

The unincorporated portions of Temescal Canyon, located at the western end of the MCP study area, are undergoing rapid development, with both residential and mixed-use projects (such as the Dos Lagos development located southeast of the Interstate 15 [I-15]/Cajalco Road interchange) that have been recently completed or are still under construction. Several large mining and rock quarry operations are in this area, including the Harlow Rock Quarry on the south side of Cajalco Road just west of Temescal Canyon Road and several large mining operations west of Eagle Canyon Road and north of Cajalco Road.



Lake Mathews/Woodcrest

Much of the terrain in the Lake Mathews/Woodcrest area is hilly, with scattered gentle rolling foothills. There are many rugged rock outcroppings throughout the Gavilan Hills area. Lake Mathews provides an open space resource and visual amenity for the area. Open space is the dominant land use in this area. Southeast of the intersection of Cajalco Road and Lake Mathews Drive is the community of Lake Mathews Estates, a rural residential community characterized by large single-family residences.



East of Lake Mathews, land uses at the intersection of Cajalco Road and Wood Road consist of a Christmas tree farm, a residential development, and a detention basin. A mix of commercial and residential structures is located at the southwest corner of Cajalco Road and Gavilan Road. Residences are located between Harley John Road and Gustin Lane (north and south sides of Cajalco Road). Residences are located on the south side of Cajalco Road, just east of Gustin Lane. Clusters of residences are located on the north side of Cajalco Road. While residences are located on the north side of Cajalco Road at Extravaganza Lane, open space and agricultural land comprise the area east from Extravaganza Lane to Wood Road.

At the intersection of Cajalco Road and El Sobrante Road, the Colorado River Aqueduct and the Val Verde Channel are visible at the northeast corner. The land uses along El Sobrante Road north of Lake Mathews are mostly open space, interspersed with scattered residences and agricultural land. The community of Victoria Grove is located on the north side of El Sobrante Road, between La Sierra

Avenue and McAlister Street. In addition, residential development is underway on the west side of La Sierra Avenue at the intersection with El Sobrante Road. South along La Sierra Avenue from the intersection with El Sobrante Road is primarily open space.



In the southeastern portion of the Lake Mathews/Woodcrest area are the Gavilan Hills. The area is rural in character, with very-low-density residential, agricultural, vacant land, and open space reserve (Harford Springs Wildlife Reserve) being the predominant land uses. As shown in the Lake Mathews/Woodcrest Area Plan, future land use planned for the area would maintain this rural character (Riverside County General Plan, 2003).

Mead Valley



Cajalco Road is the key arterial highway serving the community of Mead Valley. It also functions as a major link between Interstate 215 (I-215) and I-15. South of Cajalco Road is a mixture of equestrian estate homes set among rolling hills and large stands of eucalyptus. A community center and a fire station are located in Mead Valley. The area north of Cajalco Road is predominantly a grid-like pattern of 0.2 hectare (ha) (0.5 acre [ac]) and larger residential lots. Manuel L. Real Elementary School and Tomas Rivera Middle School are also located in this area.

Land uses along Cajalco Road between Brown Street and I-215 consist of commercial properties, single-family residences, vacant land, manufactured housing, motels, roadside businesses, residential/commercial scrap yards, a light industrial building, abandoned homes, a church, a nursery, a government repository, a construction equipment yard, a lumberyard, and a gas station.



Rural residential areas exist between Gold Valley Road and Juniper Road, and a developed area between Headly Road and Brown Street consists of scattered manufactured housing, mobile homes, and a few single-family residences.

Lakeview/Nuevo

The Lakeview/Nuevo area is within a wide valley formed by the San Jacinto River east of Lake Perris. Agriculture is the primary land use, including both farmland and uses supporting agricultural operations. The Bernasconi Hills create a border in the northwest, while the Lakeview Mountains form the eastern boundary of this area. The San Jacinto Wildlife Area is located at the foot of the Bernasconi Hills. The Colorado River Aqueduct runs underground in an east-to-west orientation. A liquor store and several buildings are located on the southwest corner of the intersection of Hansen

Avenue/Davis Road and the Ramona Expressway. Mobile homes are southwest of the intersection. Four small homes are located northeast of the intersection along Davis Road. A small community composed of rural residential uses is located south of the Ramona Expressway and west of Hansen Avenue. Reservoir Road parallels Ramona Expressway to the south. The Lakeview Community Church and Jesus Center Christian School are located on the corner of Magnolia Avenue and Reservoir Road.

Much of the land in the Lakeview/Nuevo area is planned for residential and mixed-use development in accordance with the Lakeview/Nuevo Area Plan (Riverside County General Plan, 2003).

San Jacinto Valley

Located within the eastern portion of the MCP study area, the San Jacinto Valley lies between the Lakeview Mountains in the northwest, the Dawson Mountains in the southwest, and the San Jacinto Mountains along its northeastern flank (also a portion of the San Bernardino National Forest). The portions of the San Jacinto Valley within the MCP study area are mostly agricultural (dairy) land. The San Jacinto Valley Area Plan (Riverside County General Plan, 2003) designates this area for agricultural and open space (conservative) uses.

City of Corona

The city of Corona is located at the western terminus of the MCP study area. West of the I-15/Cajalco Road interchange is open space/agricultural land. The area north of Bedford Canyon Road/Eagle Glen Parkway is high-density residential, comprising single-family residences. Single-family residences are the predominant feature on the north end of the MCP study area, on both sides of the I-15 up to Ontario Avenue. There is an industrial area located west of I-15 at the intersection of Compton Avenue and Ontario Avenue.

The area adjacent to the I-15/Cajalco Road interchange consists of mostly retail commercial uses in the northwest quadrant, a large agricultural field in the southwest quadrant (planned for future development), a major retail center (the Crossings) in the northeast quadrant, and vacant space in the southeast quadrant. Land uses at the Cajalco Road/Temescal Canyon Road intersection include industrial uses such as a recycling center and a granary in the southwest quadrant of the intersection; a fenced site consisting of bulk construction supplies in the southeast quadrant; and a tanker truck storage area, a fire station, and a site under construction located in the northeast quadrant.



City of Perris

The city of Perris is in the central portion of the MCP study area, extending easterly from I-215. Much of the area within Perris is developing with both residential and nonresidential land uses. Specific areas within the Perris portion of the MCP study area are described in more detail below.

Along I-215 within Perris, the predominant land uses are commercial/industrial. Some land is still in agricultural production, but these areas are converting rapidly to commercial/industrial uses.

Along Ramona Expressway from I-215 easterly to Rider Street are a variety of land uses, including agricultural, commercial/retail, and residential. Prominent land uses are the Lake Perris State Fairgrounds located north of Ramona Expressway and east of the Perris Valley Storm Drain, and a large warehouse distribution facility located at the southwest corner of Ramona Expressway and Indian Avenue.

Along the Perris Valley Storm Drain, existing land uses are residential and vacant land (much of which is undergoing or will soon be undergoing development).

Existing land uses along Rider Street from I-215 easterly to Perris Boulevard are primarily commercial/industrial, including two large warehouse distribution facilities. Other land in this area currently in agricultural production is planned for additional commercial uses, including more warehouse distribution facilities. East of Perris Boulevard, existing land uses are a mix of residential, commercial, and vacant parcels.

Existing land use along Placentia Avenue from Dunlap Drive to just southwest of Rider Street along the Ramona Expressway is mostly vacant land that is rapidly developing. Rural residential uses, an elementary school (Val Verde Elementary School), and large vacant properties are on the east side of I-215. Single-family residences on large parcels are located to the southeast of Placentia Avenue near the intersection with Patterson Avenue. To the northwest are single-family manufactured/mobile homes on large parcels. Continuing east along Placentia Avenue, there is predominantly open space and agricultural land around Indian Avenue. At the intersection of Placentia Avenue and Perris Boulevard, there is predominantly agricultural land, except for a large industrial building at the southwest corner. Between Perris Boulevard and Redlands Avenue, there is an area of single-family residences on the south side of Placentia Avenue. Paragon Park is located between

Spectacular Bid Street and Redlands Avenue. Between Redlands Avenue and Wilson Avenue, there are single-family residences on the south side of Placentia Avenue.

City of San Jacinto

Within the easterly portion of the MCP study area in the city of San Jacinto, agriculture and open space with scattered homes dominate the landscape along the Ramona Expressway from the San Jacinto River easterly to SR-79.

Reserves and Habitat Conservation Plans

Habitat Conservation Plans prepared under the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA) are the primary planning and regulatory tools that guide the preservation of natural biological communities. While Habitat Conservation Plans are not prepared under CESA, the state process of issuing an incidental take permit under CESA complements the federal Habitat Conservation Plan process and usually includes the same or similar species, depending on their status.

The following Reserves and Habitat Conservation Areas (HCAs) are located within the MCP study area:

- Western Riverside County MSHCP
- Lake Mathews MSHCP
- El Sobrante Landfill MSHCP
- Riverside County Habitat Conservation Agency (RCHCA) area
- Lake Mathews-Estelle Mountain Reserve
- Habitat Conservation Plan for the Stephens' Kangaroo Rat Reserve
- Harford Springs Wildlife Reserve
- Motte-Rimrock Reserve

A detailed description of these reserves and HCAs, as well as a discussion of impacts to these reserves and HCAs as a result of the MCP are provided in Section 3.17, Natural Communities.

3.1.1.2 Environmental Consequences

Permanent Impacts

Build Alternatives

As shown in Table 3.1.A, all of the MCP Build Alternatives would impact existing residential, commercial (retail/office), industrial, transportation (existing roadways), agricultural, and open space (habitat reserves/parklands/undeveloped lands) land uses.



Alternative 9 and its design variations have the lowest impact to agricultural, residential, and commercial land uses due primarily to its routing south of Mead Valley through the Gavilan Hills area. Alternatives 4 and 6 have the highest impact to commercial land uses due primarily to the routing of the parkway alignment through some of the commercial areas in the northern portion of the city of Perris as well as Mead Valley. Alternative 9 and its design variations have the highest impact to industrial land uses due to its routing along Placentia Avenue.

With regard to overall land use compatibility, those segments of all MCP Build Alternatives that follow existing El Sobrante Road, Cajalco Road, or Ramona Expressway are generally compatible with adjacent land uses, as these areas have been planned in consideration of future construction of either a Community and Environmental Transportation Acceptability Process (CETAP) corridor or a General Plan roadway (expressway or urban arterial) in these areas. In areas where the MCP Build Alternatives are located off of the alignments of El Sobrante Road, Cajalco Road, or Ramona Expressway, there are some conflicts with land use compatibility. Specific areas include:



• South of Lake Mathews (Lake Mathews South [LMS] Segment in Alternatives 4, 5, and 9; Lake Mathews South General Plan [LMS-GP] and Lake Mathews North General Plan [LMN-GP] Segments in Alternatives 6 and 7): In this area, the existing land use is primarily habitat reserve, with some low-density residential and rural residential uses. Constructing an MCP Alternative in these areas would introduce a major highway in these areas and its associated effects such as noise, vehicle emissions, and barriers to wildlife movement.



• Gavilan Hills (Far South [FS] Segment in Alternative 9): In this area, the existing land use is primarily low-density residential and rural residential, as well as some agriculture. Constructing Alternative 9 would introduce a major highway facility and its associated effects such as noise, vehicle emissions, and lighting in the Gavilan Hills, which would impact the rural quality of this area.

Table 3.1.A Existing Land Use Impacts by Alternative per Hectare (Acre)

	Agriculture	Commercial	Industrial	Open Space	Other	Public Facilities	Residential	Transportation	Total
Alt. 4 Base Case	409.2 (1,011.1)	20.7 (51.1)	18.2 (45.1)	168.7 (416.8)	281.1 (694.6)	4.1 (10.1)	79.7 (196.9)	146.0 (360.7)	1,127.6 (2,786.2)
Alt. 4 SJN DV	414.0 (1,023.1)	20.7 (51.2)	17.4 (42.9)	168.7 (416.8)	274.4 (678.1)	4.1 (10.1)	81.4 (201.2)	146.0 (360.7)	1,126.7 (2,784.0)
Alt. 4 TWS DV	408.9 (1,010.3)	21.8 (53.8)	15.2 (37.5)	168.7 (416.8)	276.4 (682.9)	3.7 (9.2)	69.7 (172.2)	145.4 (359.3)	1,109.7 (2,742.0)
Alt. 5 Base Case	388.8 (960.8)	12.9 (31.9)	17.6 (43.4)	168.2 (415.6)	294.9 (728.7)	5.8 (14.4)	79.8 (197.3)	126.2 (311.9)	1,094.3 (2,704.1)
Alt. 5 SJN DV	393.7 (972.9)	13.0 (32.0)	16.7 (41.3)	168.2 (415.6)	288.2 (712.2)	5.8 (14.4)	81.6 (201.6)	126.2 (311.9)	1,093.4 (2,701.9)
Alt. 5 TWS DV	388.5 (960.1)	14.0 (34.6)	14.5 (35.9)	168.2 (415.6)	290.2 (717.1)	5.5 (13.5)	69.8 (172.6)	125.7 (310.5)	1,076.4 (2,659.9)
Alt 6 Base Case	427.1 (1,055.3)	21.5 (53.0)	24.1 (59.5)	219.4 (542.0)	403.2 (996.2)	4.1 (10.1)	84.2 (208.2)	147.6 (364.7)	1,331.1 (3,289.1)
Alt. 6 SJN DV	431.9 (1,067.4)	21.5 (53.2)	23.2 (57.4)	219.4 (542.0)	396.5 (979.7)	4.1 (10.1)	85.9 (212.5)	147.6 (364.7)	1,330.2 (3,286.9)
Alt. 6 TWS DV	426.8 (1,054.6)	22.6 (55.8)	21.0 (52.0)	219.4 (542.0)	398.4 (984.5)	3.7 (9.2)	74.2 (183.5)	147.0 (363.3)	1,313.2 (3,244.9)
Alt. 7 Base Case	406.8 (1,005.1)	13.7 (33.9)	23.4 (57.9)	218.9 (540.9)	417.0 (1,030.3)	5.8 (14.4)	84.4 (208.6)	127.8 (315.9)	1,297.8 (3,206.9)
Alt. 7 SJN DV	411.6 (1,017.1)	13.8 (34.0)	22.6 (55.7)	218.9 (540.9)	410.3 (1,013.8)	5.8 (14.4)	86.2 (212.9)	127.8 (315.9)	1,296.9 (3,204.8)
Alt. 7 TWS DV	406.5 (1,004.4)	14.8 (36.6)	20.4 (50.3)	218.9 (540.9)	412.2 (1,018.7)	5.5 (13.5)	74.4 (183.9)	127.3 (314.5)	1,279.9 (3,162.8)
Alt. 9 Base Case	355.3 (878.0)	9.7 (24.0)	26.5 (65.4)	71.9 (177.7)	425.2 (1,050.6)	1.6 (4.0)	56.8 (140.3)	120.2 (296.9)	1,067.1 (2,636.9)
Alt. 9 RD DV	390.3 (964.4)	12.9 (31.9)	18.4 (45.4)	68.5 (169.2)	421.6 (1,041.8)	5.3 (13.2)	46.9 (115.9)	125.8 (310.8)	1,089.6 (2,692.6)
Alt. 9 PP-E DV	355.8 (879.3)	9.8 (24.1)	27.3 (67.6)	71.9 (177.8)	423.0 (1,045.3)	1.6 (4.0)	56.3 (139.1)	120.1 (296.8)	1,065.9 (2,634.0)
Alt. 9 SJN DV	360.2 (890.1)	9.8 (24.2)	25.6 (63.2)	71.9 (177.7)	418.5 (1,034.1)	1.6 (4.0)	58.5 (144.6)	120.1 (296.9)	1,066.2 (2,634.7)
Alt. 9 TWS DV	355.0 (877.3)	10.8 (26.8)	23.4 (57.8)	71.9 (177.7)	420.4 (1,038.9)	1.3 (3.1)	46.8 (115.6)	119.6 (295.5)	1,049.2 (2,592.7)
Source: Southern California Association of Governments, 2006	Association of Gover	rnments, 2006.							

DV = Design Variation PP-E = Placentia Avenue/Perris Boulevard Elevated Grade RD = Rider Street SJN = San Jacinto North TWS = Temescal Wash Area



• Perris Area: In this area, compatibility with existing land uses is low since the MCP Build Alternatives traverse areas where there is a variety of existing residential, commercial, and industrial land uses. Between I-215 and where the MCP Build Alternatives connect to Ramona Expressway south of Lake Perris, the MCP Build Alternatives are routed through areas where either no roadway exists or was previously planned, or where the existing or planned roadways are 2- to 6-lane arterials (e.g., Placentia Avenue and Rider Street) rather than the 6- to 8-lane, limited-access parkway proposed for the MCP project.

No Build Alternative

Under the MCP No Build Alternatives, the permanent impacts discussed above for the MCP Build Alternatives would not occur. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway, and would therefore be compatible with existing and planned land uses.

Discussions of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 Temescal Wash Area Design Variation (TWS DV), which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.



Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in

Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV.

Land use was not specifically analyzed in the MSHCP EIR/EIS. However, the introduction of the MSHCP EIR/EIS states that long-term implementation of the MSHCP would result in changes to the regional pattern of land use, with possible increased development pressure and intensification of development outside the criteria areas. Community division was, however, determined not to be a topic of concern and therefore was not analyzed in the MSHCP EIR/EIS.

Based on the analysis of impacts of the MCP related to land use discussed above in this document, the impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts to land uses beyond that previously analyzed.

Temporary Impacts

Build Alternatives

Construction would temporarily affect nearby land uses. Temporary construction impacts would include disruption of local traffic patterns and access to residences and businesses; increased traffic congestion; and increased noise, vibration, and dust. Although some businesses could close or relocate during a prolonged construction period, this impact would be localized and would not likely result in long-term changes in land use.

No Build Alternatives

The two No Build Alternatives would not result in temporary land use impacts from construction of the MCP project, but there would be temporary impacts resulting from other planned transportation improvements in the MCP study area.

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, there would be no temporary land use impacts along these roadways under Alternative 1A. Therefore, temporary land use impacts in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than under the MCP Build Alternatives.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. Under Alternative 1B,



temporary land use impacts would be expected to be less than the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as MCP Build Alternatives 6 and 7, since these alternatives implement the General Plan roadway alignments in this area.

3.1.1.3 Avoidance, Minimization, and/or Mitigation Measures

As previously discussed in this section, the MCP Build Alternatives would result in physical changes to communities, including temporary physical divisions of established areas as a result of the reconfiguration of existing roads, sidewalks, bicycle lanes, and driveways during construction. Mitigation measures have been identified below to reduce impacts to the existing land uses and communities during construction. While these measures would reduce impacts during construction, they would not completely eliminate the impacts. These measures would apply to all MCP Build Alternatives.

In addition, as part of the Traffic Management Plan specified in Mitigation Measure TR-2 in Section 3.6 (Traffic and Transportation/Pedestrian and Bicycle Facilities) of this EIR/EIS, a plan to maintain business access shall also be provided. Specific avoidance, minimization, and/or mitigation measures that address impacts to open space are also provided in Section 3.17, Natural Communities.

- LU-1
- During construction, the construction contractor shall be required by the Riverside County Transportation Commission (RCTC) to maintain pedestrian access to adjacent land uses in the construction area throughout the construction period. If existing access points are disrupted, alternative access will be provided. Appropriate signage and temporary sidewalks will be provided as needed throughout construction, and the construction contractor shall provide and maintain appropriate signage to direct both pedestrian and vehicular traffic to businesses via alternate routes. Disabled access, consistent with the requirements of the American with Disabilities Act, shall also be maintained during construction.
- LU-2
- During construction, the Riverside County Transportation Commission (RCTC) shall require one or more public information field office(s) near the construction site(s) be established. The field office(s) will serve the following purposes:



- Provide the community and businesses with a physical location where information pertaining to construction can be obtained in both English and Spanish
- Enable RCTC staff to facilitate communication between RCTC staff and residents and business operators
- Notify property owners, residents, and businesses of major construction activities (e.g., utility relocation/disruption, rerouting of delivery trucks) at least 14 days prior to the disruption
- Respond to phone inquiries
- Coordinate business outreach programs

3.1.2 Consistency with State, Regional, and Local Plans

3.1.2.1 Affected Environment

The Southern California Association of Governments (SCAG) Regional Comprehensive Plan (RCP) and Regional Transportation Plan (RTP), along with the General Plans of the affected communities (County of Riverside and Cities of Corona, Perris, and San Jacinto), were reviewed in order to identify the regional planning goals, land use-related goals, and specific policies of the local jurisdictions that should be considered in evaluating the MCP project.

SCAG Regional Comprehensive Plan–Growth Management Chapter Policies

- The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.
- 3.20 Support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.
- 3.21 Encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites.

SCAG Regional Transportation Plan

Goals

- Maximize mobility and accessibility for all people and goods in the region.
- Ensure travel safety and reliability for all people and goods in the region.



- Preserve and ensure a sustainable regional transportation system.
- Maximize the productivity of our transportation system.
- Protect the environment, improve air quality, and promote energy efficiency.
- Encourage land use and growth patterns that complement our transportation investments.

Transportation Policies

- Transportation investments shall be based on SCAG's adopted Regional Performance Indicators, which include mobility, accessibility, reliability, safety, cost effectiveness, productivity, sustainability, preservation, environmental and environmental justice.
- Ensuring safety, adequate maintenance, and efficiency of operations on the existing multimodal transportation system will be RTP priorities and will be balanced against the need for system expansion investments.
- RTP land use and growth strategies that differ from currently expected trends will require a collaborative implementation program that identifies required actions and policies by all affected agencies and subregions.

Air Quality Policies

- Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community-based shuttle services, provision of demand management-based programs, or vehicle-miles traveled/emission fees) so that options to command and control regulations can be assessed.
- Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, County, subregional and local) consist of air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.

Riverside County General Plan

Adopted in 2003, the Riverside County General Plan sets the direction for Riverside County's land use and development, as well as the development of its economic base, the framework of its transportation system, and the preservation of the natural and cultural resources it contains.





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.
- 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.
- 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.
- C 1.5 Evaluate the planned circulation system as needed to enhance the arterial highway network.
- C 1.6 Cooperate with local, regional, state, and federal agencies to establish an efficient circulation system.

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.
- LU 16.4 Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.

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.

Riverside County Area Plans

Recognizing the unique character of Riverside County's different communities, Area Plans were developed as part of the Riverside County General Plan to guide development in specific locations. Area Plans are components of the General Plan that address issues and development policies in greater detail than the parent document. Each Area Plan is considered an element of the General Plan. Area Plans



serve as a guide for land use, zoning, transportation improvements, open space, and other capital improvements while preserving the uniqueness of the surrounding communities. The Area Plans within the MCP study area include Temescal Canyon, Lake Mathews/Woodcrest, Mead Valley, Lakeview/Nuevo, and San Jacinto Valley. The following policies relevant to the MCP project are common to all of these Area Plans:

- Design and develop the vehicular roadway system in accordance with the Functional Classifications and Standards section in the General Plan Circulation Element.
- Maintain the County's roadway Level of Service standards as described in the Level of Service section of the General Plan Circulation Element.

City of Corona General Plan

Adopted in 2004, the General Plan for the city of Corona presents a vision for its future and a strategy to make that vision a reality. The General Plan provides a framework for Corona's physical, economic, social, and environmental development and addresses all geographic areas in the city as well as those surrounding areas that may be served by the city in the future. It is long range, looking ahead to 2025, while at the same time presenting policies to guide day-to-day decisions. The following goals and policies are relevant to the MCP project.

Land Use Element

Goal 1.3

A development pattern that retains and complements the city's important residential neighborhoods, commercial and industrial districts, and open spaces.

Policies

- 1.4.8 Require that development occur only when the public infrastructure and services needed to support that development are available, will be provided concurrently, or are committed to be provided within a reasonable time frame where this would not incur adverse impacts on current infrastructure and services, to the extent permitted by State law.
- 1.12.1 Provide for the continuation of existing and development of new manufacturing, research and development, professional office, and similar uses in accordance with the Land Use Plan's designations and applicable density standards and design and development policies.

Circulation Element

Goal 6.2

Support development of a network of regional roadway facilities which ensure the safe and efficient movement of people and goods from within the city to areas outside its boundaries, and which accommodate the regional travel demands of developing areas outside the city.

Policies

- 6.2.3 Coordinate impacts of new roadway connections with adjacent Cities and Riverside County to ensure consistency in design and operations of the new facilities and connections.
- 6.2.4 Participate in programs to mitigate regional traffic congestion.
- 6.2.7 Consider the implementation of intercity/intraregional connections to improve regional and local mobility.

City of Perris General Plan

The General Plan of the City of Perris guides future development plans and gives direction on strategies for future growth. The General Plan is a 30-year guide for local government decisions on growth, capital investment, and physical development in the city. The City of Perris updated six of the seven mandatory General Plan Elements in 2005–2006 (Land Use, Circulation, Conservation, Noise, Open Space, and Safety).

Circulation Element

Goal I

A comprehensive transportation system that will serve projected future travel demand, minimize congestion, achieve the shortest feasible travel times and distances, and address future growth and development in the city.

Policies

- I.A Design and develop the transportation system to respond to concentrations of population and employment activities, as designated by the Land Use Element and in accordance with the designated Transportation System.
- I.C Cooperate with local, regional, State, and federal agencies to establish an efficient multimodal circulation system.

Goal II

A well planned, designed, constructed and maintained street and highway system that facilitates the movement of vehicles and provides safe and convenient access to surrounding developments.

Policies

- II.A LOS "D" along all City-maintained roads (including intersections) and LOS "D" along I-215 and SR-74 (including intersections with local streets and roads). An exception to the local road standard is LOS "E", at intersections of any Arterials and Expressways with SR-74, the Ramona-Cajalco Expressway or at I-215 freeway ramps.
- II.B Maintain the existing transportation network while providing for future expansion and improvement based on travel demand, and the development of alternative travel modes.

Goal VII

A transportation system that maintains a high level of environmental quality.

Policies

VII.A Implement the Transportation System in a manner consistent with federal, State, and local environmental quality standards and regulations.

Goal VIII

Enhanced traffic flow, reduced travel delay, reduced reliance on single-occupant vehicles, and improved safety along the City and State roadway system.

City of San Jacinto General Plan

The City of San Jacinto General Plan is the primary long-range planning document that guides growth and development within San Jacinto. The General Plan establishes the community's vision for the future and includes goals, policies, and programs to achieve that vision. San Jacinto is primarily a residential community and will continue to have a substantial portion of its land devoted to housing. A draft General Plan update and supporting EIR were completed in January 2006 (www.ci.san-jacinto.ca.us/maps_guidelines.htm, accessed October 15, 2007).



Land Use Element

Goal 4

Promote high quality development that ensures compatibility with surrounding land uses and major transportation corridors.

Policies

4.3 Maximize commercial, retail, and employment opportunities along the city's major corridors and intersections, including the SR-79, the Ramona Expressway, Sanderson, and Cottonwood.

Circulation Element

Goal C-1

Provide a circulation system that meets the needs of existing and future land uses.

Policies

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.

Goal C-2

Achieve a circulation system that is integrated with the larger regional transportation system to ensure the economic well-being of the community.

Policies

- 2.1 Coordinate planning and construction of local circulation improvements, public transit systems and regional highway facilities with adjacent jurisdictions and regional transportation agencies.
- 2.5 Work with regional and State transportation agencies to ensure that the construction of regional roadways minimally disrupts access to existing business and employment centers.
- 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.

Goal C-4

To reduce expenditure, improve design, and minimize traffic disruption, work with Riverside County Transportation Commission (RCTC), Caltrans, South Coast Air Quality Management District (SCAQMD) and other regional agencies



to coordinate local street improvements with major transportation system improvement projects such as improvements to SR-79. The City will also continue to participate in proposed roadway modifications (including SR-79) and revise the General Plan circulation system is necessary, to reflect changes in these modification. In addition, the impacts of discretionary development projects and major transportation projects will be monitored and mitigation may be required.

Reserves and Habitat Conservation Plans

As discussed above in Section 3.1.1.1, Affected Environment, there are several reserves and Habitat Conservation Agencies in the MCP study area. Habitat Conservation Plans, as prepared under FESA and CESA, are the primary planning and regulatory tools that guide the preservation of natural biological communities. While Habitat Conservation Plans are not prepared under CESA, the State process of issuing an incidental take permit under CESA complements the federal Habitat Conservation Plan process and usually includes the same or similar species, depending on their status. A detailed description and discussion of the affected reserves and Habitat Conservation Plans are provided in Section 3.17.

3.1.2.2 Environmental Consequences

There are no temporary impacts related to consistency with State, regional, and local plans; therefore, this section only discusses permanent impacts.

Build Alternatives

SCAG Regional Transportation Plan and Regional Comprehensive Plan Implementation of the MCP project would be consistent with the RTP, as the MCP project is included as a future transportation corridor in the RTP.

Implementation of the MCP project would be consistent with and help further the goals of the RCP as follows:

- The MCP project would provide transportation infrastructure in support of regional growth plans and policies (RCP Policy 3.03).
- The MCP project supports protection of vital resources such as wetlands and habitat for endangered plants and animals. Although these resources are impacted to some degree by each MCP Alternative, each Alternative has been developed with the intent to achieve maximum avoidance of such resources first, then consider minimization and mitigation opportunities (RCP Policy 3.20).
- The MCP project would also help support implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and

archaeological sites. Although these resources are impacted to some degree by each MCP Alternative, each Alternative has been developed with the intent to achieve maximum avoidance of such resources first, then consider minimization and mitigation opportunities (RCP Policy 3.21).

City and County General Plans

With regard to overall General Plan consistency, adoption of any MCP Build Alternative would require the County of Riverside and the Cities of Corona, Perris, and San Jacinto to amend their General Plan Land Use and Circulation Elements to reflect the final MCP alignment, interchange locations, and elimination of any land uses that may need to be acquired for the project. A discussion of each alternative is provided below.

Alternative 4

Riverside County

The Riverside County General Plan Circulation Element shows a CETAP corridor on an alignment starting in the east at SR-79 that follows existing Ramona Expressway, Cajalco Road, and El Sobrante Road (north of Lake Mathews), and then terminates at I-15 on the west. Within unincorporated portions of the county, MCP Alternative 4 generally follows this alignment except for the portion south of Lake Mathews.

Alternative 4 generally complies with relevant General Plan policies and goals, as discussed in Section 3.1.2.1. However, this alternative would directly impact almost 400 ha (1,000 ac) of agricultural land, most of which is in unincorporated county area. This impact would be inconsistent with Land Use Policy LU 16.4, which encourages conservation of agricultural lands.

Alternative 4 would also directly impact 79.7 ha (196.9 ac) of residential land uses. This is inconsistent with Land Use Policy MVAP 1.1 of the Mead Valley Area Plan, which promotes maintenance of a minimum lot size of 0.2 ha (0.5 ac). Some of the proposed partial right of way acquisitions in Mead Valley would reduce lot size below 0.2 ha (0.5 ac).

City of Corona

Alternative 4 is generally consistent with the goals and policies of the City's General Plan, as listed in Section 3.1.2.1. However, due to this alternative's impacts to designated commercial and industrial land uses within the city of Corona, there is a conflict with Policy 1.12.1, which provides for the









continuation of existing and development of new, manufacturing, research and development, and professional office uses.

City of Perris

Alternative 4 is generally consistent with the goals and policies of the City's General Plan, as discussed in Section 3.1.2.1, which promote provision of a transportation system to support planned land use within the city. However, since Alternative 4 does not follow the original CETAP corridor alignment along Ramona Expressway, this alternative is inconsistent with the designated roadways and land uses (residential, commercial, and industrial) shown in the General Plan.

City of San Jacinto

Alternative 4 is generally consistent with the goals and policies of the City's General Plan, as listed in Section 3.1.2.1, which promote providing a circulation system that meets the needs of existing and future land uses. However, since Alternative 4 does not follow the original CETAP corridor alignment along Ramona Expressway, this alternative is inconsistent with the designated roadways and land uses (residential, commercial, and industrial) shown in the General Plan.

Alternative 5

With regard to consistency with City and County General Plans, Alternative 5 is the same as Alternative 4. Although Alternative 5 follows a different alignment through Perris, it is still inconsistent with the City's General Plan, as it follows an alignment along Placentia Avenue and Rider Street instead of Ramona Expressway.

Alternative 6

With regard to consistency with City and County General Plans, Alternative 6 is the same as Alternative 4 except in the area surrounding Lake Mathews between I-15 and El Sobrante Road. In this area, the project includes a four-lane urban arterial north of Lake Mathews¹ and a four-lane, access-controlled expressway south of Lake Mathews. The proposed arterial street improvements north and south of Lake Mathews are consistent with the Riverside County General Plan





The General Plan provides for up to six lanes in this location; however, traffic forecast modeling indicates that four lanes will meet projected demand.

Circulation Element and generally follow the alignments shown in the General Plan.

Alternative 7

With regard to General Plan consistency, Alternative 7 is the same as Alternative 6. Although Alternative 7 follows a different alignment through Perris, it is still inconsistent with the City's General Plan, as it follows an alignment along Placentia Avenue and Rider Street instead of along Ramona Expressway.

Alternative 9

Alternative 9 generally complies with the relevant County General Plan policies and goals, as listed in Section 3.1.2.1. Similar to Alternatives 4–7, since Alternative 9 would impact 355 ha (878 ac) of designated agricultural land, it is inconsistent with Land Use Policy 16.4, which encourages conservation of agricultural land. Alternative 9 is inconsistent with both the Mead Valley and Lake Mathews/Woodcrest Area Plans, as it traverses areas designated for very-low-density and rural residential uses. Under Alternative 9, these land use designations would change for properties and portions of properties directly affected by Alternative 9.

In Corona, Alternative 9 is the same as Alternatives 4–7 with regard to consistency with the goals and policies of the City's General Plan.

In Perris, Alternative 9 is similar to Alternatives 4–7 with regard to general consistency with the goals and policies of the City's General Plan, but is inconsistent with the designated roadways and land uses in the General Plan. For Alternative 9, these inconsistencies are focused along Placentia Avenue.

In San Jacinto, Alternative 9 is the same as Alternatives 4–7 with regard to consistency with the goals and policies of the City's General Plan.

Reserves and Habitat Conservation Plans

As summarized below, the MCP Build Alternatives would impact four Habitat Conservation Plans. A detailed discussion of the impacts to specific reserves and Habitat Conservation Plans is provided in Section 3.17, Natural Communities.











Western Riverside County MSHCP

The MSHCP allows participating jurisdictions (United States Fish and Wildlife Service [USFWS] and California Department of Fish and Game [CDFG]) to authorize the "take" of both federal and/or state listed species identified in the MSHCP and found during surveys within the boundaries of the MSHCP Plan Area. All MCP Build Alternatives would impact portions of MSHCP Criteria Area. Specific discussion of MSHCP Cores and Linkages impacted is provided in Section 3.17 of this EIR/EIS. RCTC would prepare a consistency analysis to demonstrate the MCP project's consistency with the MSHCP.

Lake Mathews Multiple Species Habitat Conservation Plan Area
Alternative 9 TWS DV does not pass through the Lake Mathews MSHCP area;
however, the proposed alignments of Alternatives 4 through 7 and their design
variations do pass through conserved lands within the Lake Mathews MSHCP
area. Currently there is no process in place to amend the Lake Mathews MSHCP
to allow development by other parties on these conservation lands, including the
proposed MCP project; however, there is no language in the Lake Mathews
MSHCP prohibiting an amendment. Amending the Lake Mathews MSHCP would
require the Metropolitan Water District of Southern California (Metropolitan), as
the permittee, to agree to initiate an amendment. Approval from the CDFG and
USFWS would be required, and mitigation would likely consist of a purchase of
land for conserving habitat with similar values for covered species that would be
impacted.

El Sobrante Landfill Multiple Species Habitat Conservation Plan Alternatives 6 and 7 do not impact the El Sobrante Landfill MSHCP, but Alternatives 4, 5, and 9, including Alternative 9 TWS DV, do impact it. These alternatives impact more than 5 percent conserved El Sobrante Landfill MSHCP land; therefore, a standard amendment to the plan would be required if one of these alternatives is chosen. Such an amendment would be subject to the same environmental documentation, public review, and agency approval requirements that apply to all Habitat Conservation Plans. Mitigation would likely consist of a purchase of land for conserving habitat, with similar values for covered species that would be impacted.







Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County

There are four reserves established through implementation of the Habitat Conservation Plan for the Stephens' kangaroo rat location within the area of the proposed MCP project. These include the Lake Mathews-Estelle Mountain Reserve, Steele Peak Reserve, Motte-Rimrock Reserve, and San Jacinto-Lake Perris Reserve. Only the Lake Mathews-Estelle Mountain Reserve would be impacted by the MCP project. Alternatives 6 and 7 would result in the greatest impact, and Alternative 9 would result in the least.

Mitigation for the impacts of Alternative 9 TWS DV to Habitat Conservation Plans will be achieved through compliance with provisions of the MSHCP, the El Sobrante Landfill MSHCP, and the Habitat Conservation Plan for the Stephens' kangaroo rat. The MSHCP was conceived and developed and is being implemented specifically to address the direct, indirect, cumulative, and growth-related effects on species and habitats in western Riverside County resulting from activities covered by the MSHCP, including the MCP project.

No Build Alternatives

Planned improvements in the regional and local circulation system other than the MCP project are accounted for in the adopted Riverside County General Plan, the RCTC's Measure A program, and other adopted plans and policies, and would not impact any adopted state, regional, or local plans and policies.

Under Alternative 1A, the planned street network would be constructed with the exception of improvements to Cajalco Road and Ramona Expressway. Not improving either Cajalco Road or Ramona Expressway would be inconsistent with the County and City General Plans.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan; therefore, this alternative is considered to be consistent with the County and City General Plans.

Discussions of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.



The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 TWS DV, which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV.

As discussed previously, land use was not specifically analyzed in the MSHCP EIR/EIS. However, the introduction of the MSHCP EIR/EIS states that long-term implementation of the MSHCP would result in changes to the regional pattern of land use, with possible increased development pressure and intensification of development outside the criteria areas. Habitat Conservation Plan conflicts and conflicts with General Plans were, however, determined not to be a topic of concern and therefore were not analyzed in the MSHCP EIR/EIS.

Based on the analysis of impacts of the MCP related to land use discussed above in this document, the impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts to land uses beyond that previously analyzed.

3.1.2.3 Avoidance, Minimization, and/or Mitigation Measures

As discussed previously in this section, the MCP Build Alternatives will require amendments to the County and City General Plans to reflect the final MCP alignment, interchange locations, and to change the land use designations on property that would be acquired for the project to a transportation or public use designation. Mitigation has been identified below that is applicable to all MCP Build Alternatives to reduce







impacts from these required plan amendments. With implementation of Mitigation Measure LU-3, no residual impact would result relative to plan consistency.

Following approval of the Mid County Parkway (MCP) project, the Riverside County Transportation Commission (RCTC) shall request that the County of Riverside and the Cities of Corona, Perris, and San Jacinto amend their respective General Plans to reflect the final MCP alignment, interchange locations, and modification of land use designations for property that will be acquired for the project.

3.1.3 Parks and Recreational Facilities

3.1.3.1 Affected Environment

Parks and recreational facilities that meet the definition of Section 4(f) properties are described in detail in the *Draft Section 4(f) Evaluation* (LSA Associates, Inc., 2008) provided in Appendix B. Recreation resources that are not Section 4(f) properties are also discussed in the *Draft Section 4(f) Evaluation*. The Section 4(f) properties and the recreation resources are shown on Figure 3.1.2. The locations of the Section 4(f) historic sites are not shown on the figure in order to protect those sites from unauthorized artifact collecting or vandalism.

The parks and recreation resources in the MCP study area are:

- El Cerrito Sports Park (planned; under construction in 2008);
- Paragon Park;
- Play and sports fields at El Cerrito Middle School, Manuel Real Elementary School, Tomas Rivera Middle School, Val Verde High School, Val Verde Elementary School, Lakeside Middle school, Sierra Vista Elementary School, and Mountain Shadows Middle School;
- Eagle Glen Golf Course;
- Dos Lagos Golf Course;
- Morgan Park;
- Basin Park; and
- Lake Perris State Recreation Area.



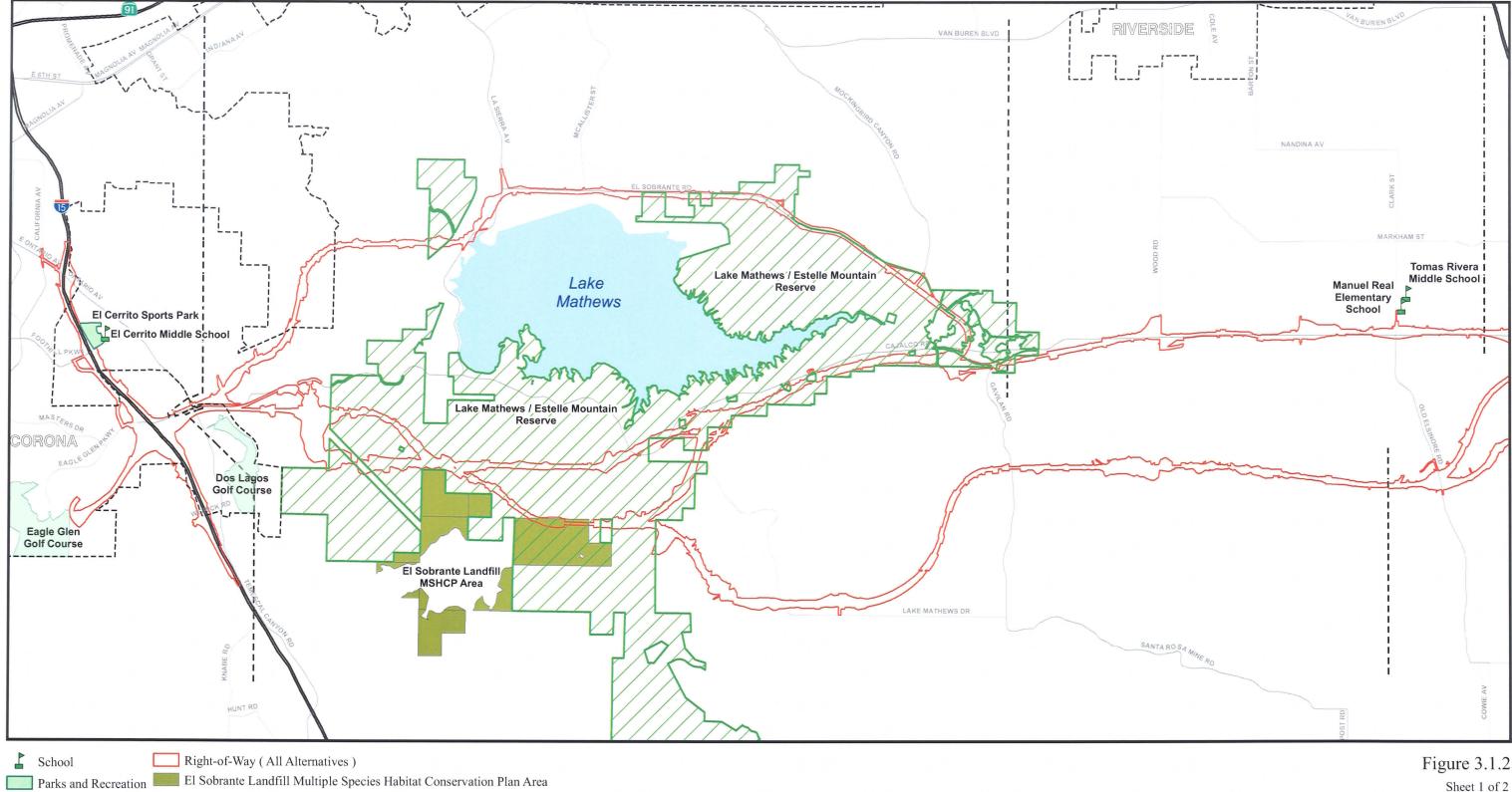


Figure 3.1.2 Sheet 1 of 2

SOURCES: TBM (2006), Jacobs Engineering (04/2007), LSA (2007)

Reserve



Section 4(f) Properties and Recreation Resources KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

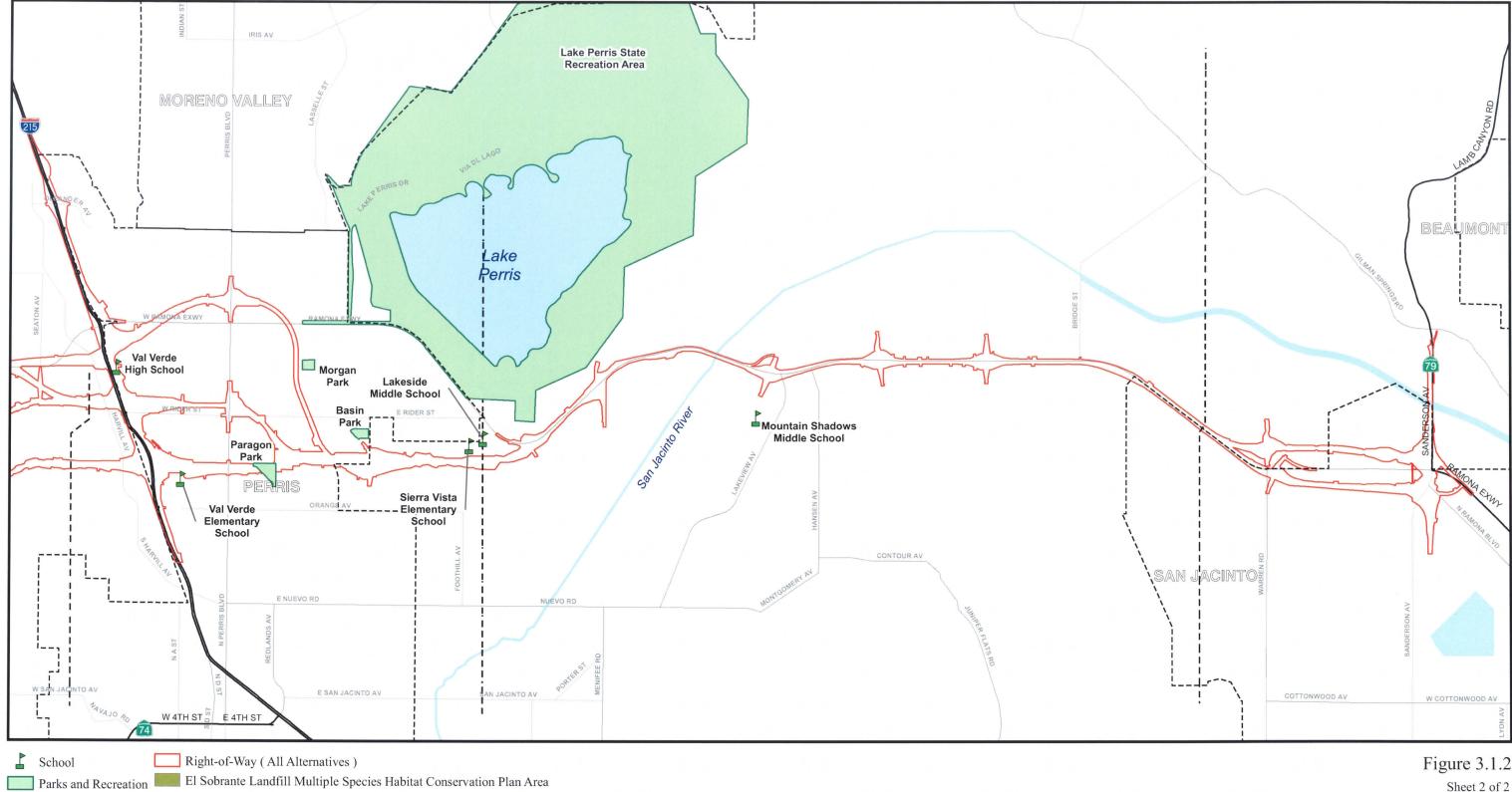
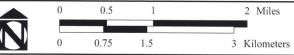


Figure 3.1.2 Sheet 2 of 2

SOURCES: TBM (2006), Jacobs Engineering (04/2007), LSA (2007)

Reserve





3.1.3.2 Environmental Consequences

As described in detail in Chapter 2.0 (Alternatives) the MCP Build Alternative right of way was defined to include the permanent right of way needed for each MCP Build Alternative and the anticipated disturbance limits for construction of the alternatives. Therefore, no temporary construction easements (TCEs) or other temporary uses of land outside the defined footprints/right of way are anticipated. As a result, no evaluation of temporary impacts to park and recreational facilities was required. The park and recreational facilities in the MCP study area were also assessed to determine whether any indirect traffic, noise, air quality, visual and aesthetics, water quality, biological resources, or community impacts of the MCP Alternatives could result in impacts that would substantially impair the activities, features, and/or attributes of the park or recreational facility.

The Draft Section 4(f) Evaluation, provided in Appendix B, evaluated the identified Section 4(f) properties to assess whether the MCP Build Alternatives would result in a use of property from those resources. Use impacts were evaluated based on overlaying the alternative footprints/right of way limits on the geographic information system (GIS) mapping of the boundaries of the Section 4(f) properties, including recreational facilities. Locations where the footprints/right of way for the MCP Build Alternatives would result in the acquisition of land from these Section 4(f) properties were identified.

Build Alternatives

Table 3.1.B lists the use impacts to parks and recreational facilities by the MCP Build Alternatives. Two parks would be impacted: the proposed El Cerrito Sports Park and the existing Paragon Park.

Not all uses of Section 4(f) properties (including parks and recreational facilities) have the same magnitude of impact, and not all Section 4(f) properties have the same quality. A qualitative analysis of the use of Section 4(f) properties by the MCP Build Alternatives is provided to assist in understanding the net impact of each MCP Build Alternative on Section 4(f) properties. This analysis considers the impacts of the MCP Build Alternatives on Section 4(f) properties after implementation of the project avoidance, minimization, and mitigation measures described in Section 3.1.3.4 below. The comparison of alternatives and the net harm analysis considered:



Table 3.1.B Park and Recreational Facility Use Impacts and Consideration of Net Harm after Mitigation

Resource	Use Impacts by Alternative	Net Harm after Mitigation
El Cerrito	Alternatives 4, 5, 6, 7, and 9: 0.95	All the MCP Build Alternatives would use the
Sports Park	ha (2.36 ac)	same amount of property from this park.
		The alternatives with the Temescal Wash Area Design Variation would not use property from this park.
	Alternatives 4, 5, 6, 7, and 9 with the Temescal Wash Area Design Variation: No use	
Paragon Park	Alternatives 4, 5, 6, and 7, and Alternative 9 with Rider Street Design Variation: No use	Alternatives 4, 5, 6, and 7, and Alternative 9 with the Rider Street Design Variation would not use property from this park.
		Alternative 9 and Alternative 9 with the Elevated Grade Design Variation would result in approximately the same use of this park.
	Alternative 9: 3.62 ha (8.95 ac)	
	Alternative 9 with the Elevated	
	Grade Design Variation: 3.73 ha	
	(9.21 ac)	

Source: LSA Associates, Inc., 2008.

ac = acre ha = hectare

- The size of the property used in comparison to the overall size of the property;
- The effect of using (acquiring) property at an edge of a property versus use through the middle of the property;
- The key features and attributes of the Section 4(f) property and how those features and the property are affected; and
- The level of use of the affected part of the property (less used versus more highly used sections).

As shown in Table 3.1.B, all five MCP Build Alternatives would use 0.95 ha (2.36 ac) from the planned El Cerrito Sports Park. Because this is a planned but not yet constructed park, it is anticipated that the sports fields used by the Build Alternatives could be shifted to the east, outside the footprint/right of way of this Alternative. In summary, the net harm of the use of El Cerrito Sports Park by the five MCP Build Alternatives can be minimized.



As shown in Table 3.1.B and Figure 3.1.3, Alternative 9 and Alternative 9 TWS DV would result in the use of property from Paragon Park in the city of Perris. This part of the park includes tennis courts, a basketball court, four handball courts, and a playground. This use of Paragon Park includes a narrow strip on the north side of the



MCP alignment that would not be used by the MCP project but that would be segmented from the rest of this park by the MCP project. There is also a City-owned 0.43 ha (1.07 ac) parcel on the northwest part of this area that is currently occupied by a fire station. The part of the park to the south, which would not be impacted by Alternative 9 TWS DV, contains open grass fields and picnic tables.

As described in Section 2.6.2, a unique project design feature of Alternative 9 TWS DV includes a detention basin on the north side of the MCP alignment, east of Redlands Avenue. To ensure compliance with the California Public Parks Preservation Act and to avoid net losses in parklands, part of the area occupied by that detention basin would be developed in active and passive recreation uses and landscaping to replace the impacted area and facilities at Paragon Park under Alternative 9 TWS DV. Pedestrian access between Paragon Park and the park facilities at the detention basin site would be provided across the MCP alignment east of Redlands Avenue to ensure that park patrons could safely walk or ride bicycles between the two facilities. Additional park space would be provided on the south side of the MCP project, east of Redlands Avenue, using remnants of existing residential parcels that would be acquired for the MCP project. Figure 3.1.3 shows the areas at Paragon Park anticipated to be displaced by Alternative 9 TWS DV and the proposed replacement park areas on the east side of Redlands Avenue, north and south of the MCP alignment. The total net increase in park land with implementation of this alternative is 0.65 ha (1.57 ac).

Figure 3.1.4 shows the impacts to Paragon Park under Alternative 9 TWS DV with the PP-E Design Variation, similar to Alternative 9 TWS DV. Alternative 9 TWS DV with the PP-E Design Variation also includes the provision of replacement parkland and a replacement site for the fire station.

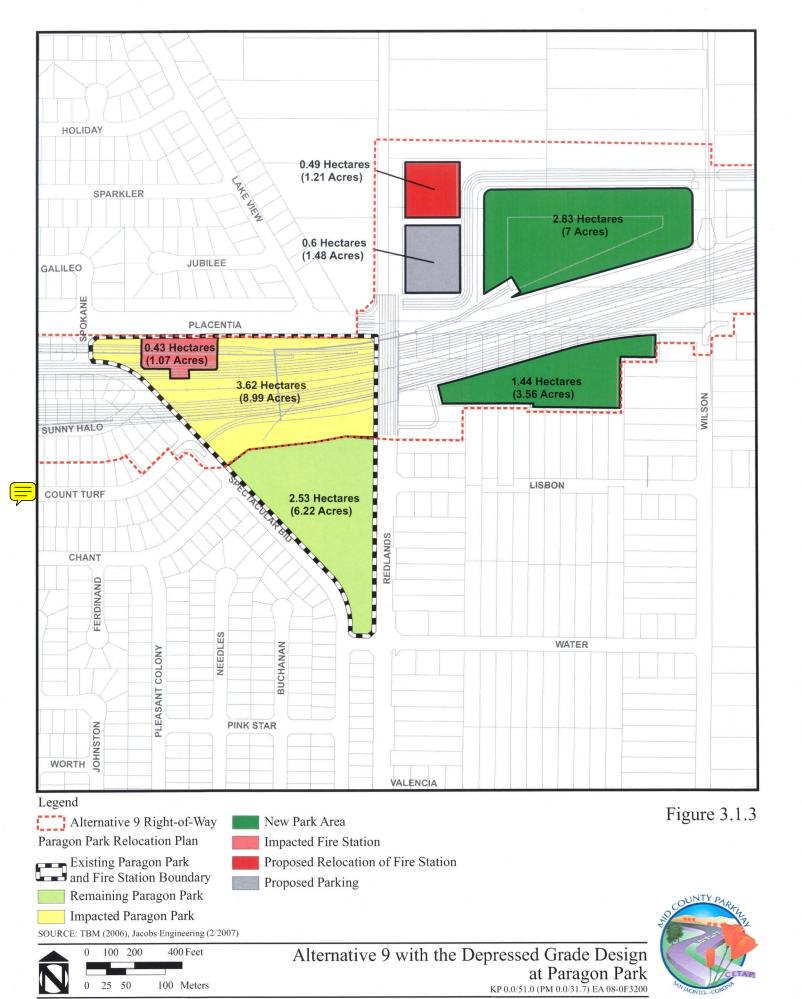
Alternatives 4, 5, 6, and 7 would not use any land from Paragon Park.

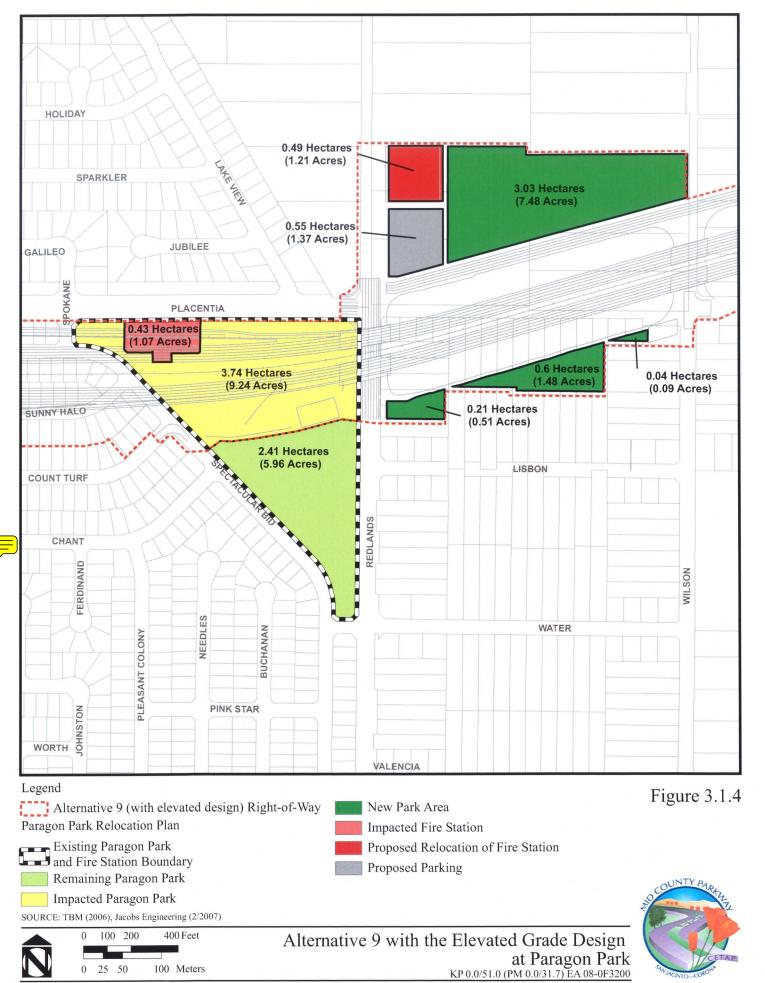
As shown on Figure 3.1.2, other recreation resources in the area are outside the right of way for the MCP Build Alternatives; therefore, no property would be acquired. These recreation resources are not anticipated to be affected by indirect impacts due to their distances from the MCP Build Alternatives.











No Build Alternatives

Alternative 1A proposes no MCP improvements; therefore, Alternative 1A would not result in the use of Section 4(f) properties or the acquisition of property from, or indirect impacts on, recreational resources.

Alternative 1B proposes no MCP improvements. Alternative 1B assumes Cajalco Road and the Ramona Expressway would be constructed to their ultimate widths and alignments as shown in the *Riverside County General Plan*. As a result, Alternative 1B could result in the use of Section 4(f) properties and in the acquisition of property from recreation uses, depending on the actual alignments and widths of the road facilities under this Alternative, similar to the impacts of Alternatives 6 and 7 west of El Sobrante Road because those alternatives follow the General Plan road alignments in this area. In addition, depending on the distance of road facilities to area recreation resources, Alternative 1B could result in indirect impacts on recreation resources.

Discussion of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 TWS DV, which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in



Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV.

_

As discussed previously, the analysis in the MSHCP EIR/EIS did include consideration of impacts to park facilities under the public services section. The MSHCP EIR/EIS concluded that no impact would occur to existing park facilities. In addition, the MSHCP would not require the deletion or relocation of planned parks; therefore, no impact to planned park facilities would occur.

Based on the analysis of impacts of the MCP related to land use discussed above in this document, the impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts to land uses or parks beyond that previously analyzed.



3.1.3.3 Avoidance, Minimization, and/or Mitigation Measures

As discussed previously in this section and as shown in Figure 3.1.3, Alternative 9 would impact portions of Paragon Park. In order to reduce these impacts, the MCP project has been designed so that portions of Alternative 9 would be developed into active and passive recreation uses and landscaping to replace the impacted area and facilities at Paragon Park. Mitigation has been identified below to ensure implementation of the proposed replacement park project design feature that would offset impacts to Paragon Park, resulting in a net increase of parkland in the City of Perris.

LU-4

Prior to completion of final design of the Mid County Parkway (MCP) project, the Riverside County Transportation Commission (RCTC) shall require replacement of the land used from Paragon Park, providing replacement park acreage and facilities east of Redlands Avenue and immediately north and south of the MCP alignment. Pedestrian access between Paragon Park and the new park facilities would be provided across the MCP alignment east of Redlands Avenue to ensure that park patrons can safely walk or ride bicycles between the two facilities. RCTC will coordinate closely with the City of Perris during final design of the replacement park areas to include, modify, relocate, and/or expand the existing uses at Paragon Park to best meet the park and recreation needs of the community.

3.2 Growth



The information in this section is based on the *Community Impact Assessment* (LSA Associates, Inc., 2008).

3.2.1 Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969, require evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations, 40 CFR 1508.8, refer to these consequences as indirect impacts. Indirect 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. 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..."

3.2.2 Affected Environment

Growth trends within each of the affected jurisdictions are discussed below.

3.2.2.1 Riverside County



Riverside County is the 5th most populated county in California and the 15th most populated in the nation. The MCP study area is located in a subregion of the county known as western Riverside County. This subregion includes the cities of Banning, Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Menifee, Moreno Valley, Murrieta, Norco, Perris, Riverside, San Jacinto, Temecula, and Wildomar, as well as unincorporated areas. According to the Western Riverside Council of Governments (WRCOG) 2005 indicators, this subregion's population increased by 30 percent between 1990 and 2000, reaching a total of 1,131,981. Growth is expected to continue to more than 2.4 million residents by 2030. Most of the population growth is expected to stem from domestic migration and high birth rates. The population in

Riverside County is projected to grow at an annual rate of 3.4 percent, which is much faster than the southern California regional average rate of 1.25 percent.

3.2.2.2 City of Corona

Between 1990 and 2000, the population of Corona increased 64.2 percent, from 76,095 to 124,966. This increase was more than twice the percentage increase for Riverside County (32 percent). This growth has been due to the city's accessibility and affordable housing market relative to other areas in southern California. By 2030, the population of Corona is projected to increase 37.2 percent, to over 170,000 people.

According to the 2004 General Plan, the city of Corona's recent history has been as one of the fastest growing cities in the United States during the 1980s and 1990s. Currently, most of its land that was most suitable for development has been exhausted. As of 2002, only 16 percent of the city's land, or 1,609 hectares (ha) (3,977 acres [ac]), remained vacant and may be considered for development. Another 243 ha (601 ac) were being used for agricultural purposes. The pace of future growth is likely to slow and occur on the limited vacant land on the periphery of the city's existing urban development and the smaller remaining parcels within this pattern. Without annexation of surrounding properties in the city's Sphere of Influence (SOI), any additional growth would occur as re-use of existing underutilized parcels and redevelopment of older developments. The trend in this direction was initiated through the city's efforts to foster revitalization of its downtown area and North Main Street.

3.2.2.3 City of Perris

Between 1990 and 2000, the population of the city of Perris increased 45 percent, from 21,460 to 36,189. It is projected to increase 145 percent by 2030. According to the Inland Empire Quarterly Economic Report (January 2005), Perris was the 14th fastest growing city in California in 2004. The City's adopted General Plan Land Use Element (2005) states that approximately 36 percent of the land designated for residential use in the city is developed. Therefore, 64 percent of land designated for residential use remains to be developed. Similarly, vast tracts of vacant land are designated for employment-generating uses. Therefore, the city has sufficient vacant land available for development to accommodate the city's projected growth through 2030.

3.2.2.4 City of San Jacinto

Between 1990 and 2000, the population of the city of San Jacinto increased by 46.7 percent, from 16,210 to 23,779. It is projected to increase by 79.2 percent by 2030, to over 42,000 people. When compared to other incorporated areas in western Riverside County, the city's population growth rate was higher than the county's from 1990 to 2000 but lower than all of the surrounding cities except for Moreno Valley. According to the Draft General Plan (2006), approximately 29 percent of the city is designated Open Space, 48 percent Residential, 5 percent Commercial, 7 percent Industrial, and 16 percent Special Designation.

3.2.3 Environmental Consequences

Since growth-related effects represent permanent impacts of a project, there is no discussion of temporary impacts in this section.

3.2.3.1 Build Alternatives

Construction of a new transportation facility such as the MCP project could have growth-related effects by reducing or removing barriers to growth by creating conditions that attract additional residents or new economic activity or by providing a catalyst for future growth in the area.

A number of factors could influence the amount, rate, location, and direction of growth (planned or unplanned) in the MCP study area. These could include:

- Perceived quality of life;
- General economic conditions;
- Specific market conditions for housing, employment, and related services;
- Availability and condition of infrastructure, ranging from schools to transportation systems; and
- Local and regional growth management and land use policies.

Overall Growth Potential in the MCP Study Area

The first step in considering growth-related effects of the MCP project is to consider how each alternative may influence the location, amount, rate, or type of growth, and how growth could impact resources of concern. As described above, the MCP project is located in western Riverside County, which has been undergoing rapid growth since the late 1980s. This area is projected to continue to grow rapidly, with a projected annual growth rate of 3.4 percent over the next 20 years, compared to the

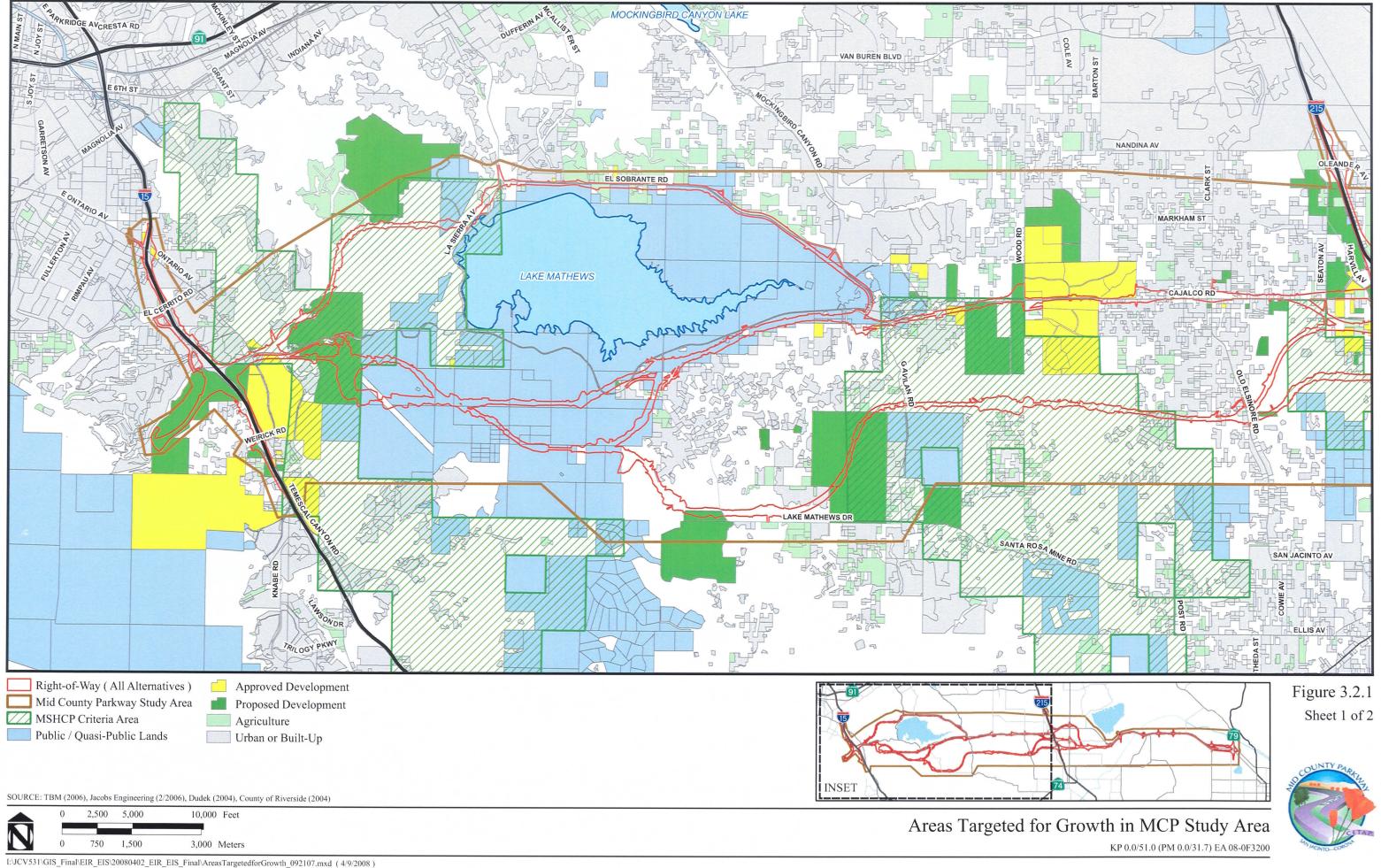


1.25 percent average in southern California. This pace of development within the MCP study area is projected to occur with or without the MCP project. Lack of transportation system capacity and accessibility has not been a major constraint to development in the area, as evidenced by extensive development occurring in advance of other planned major transportation improvements such as widening of the Interstate 15 (I-15) and Interstate 215 (I-215) freeways.

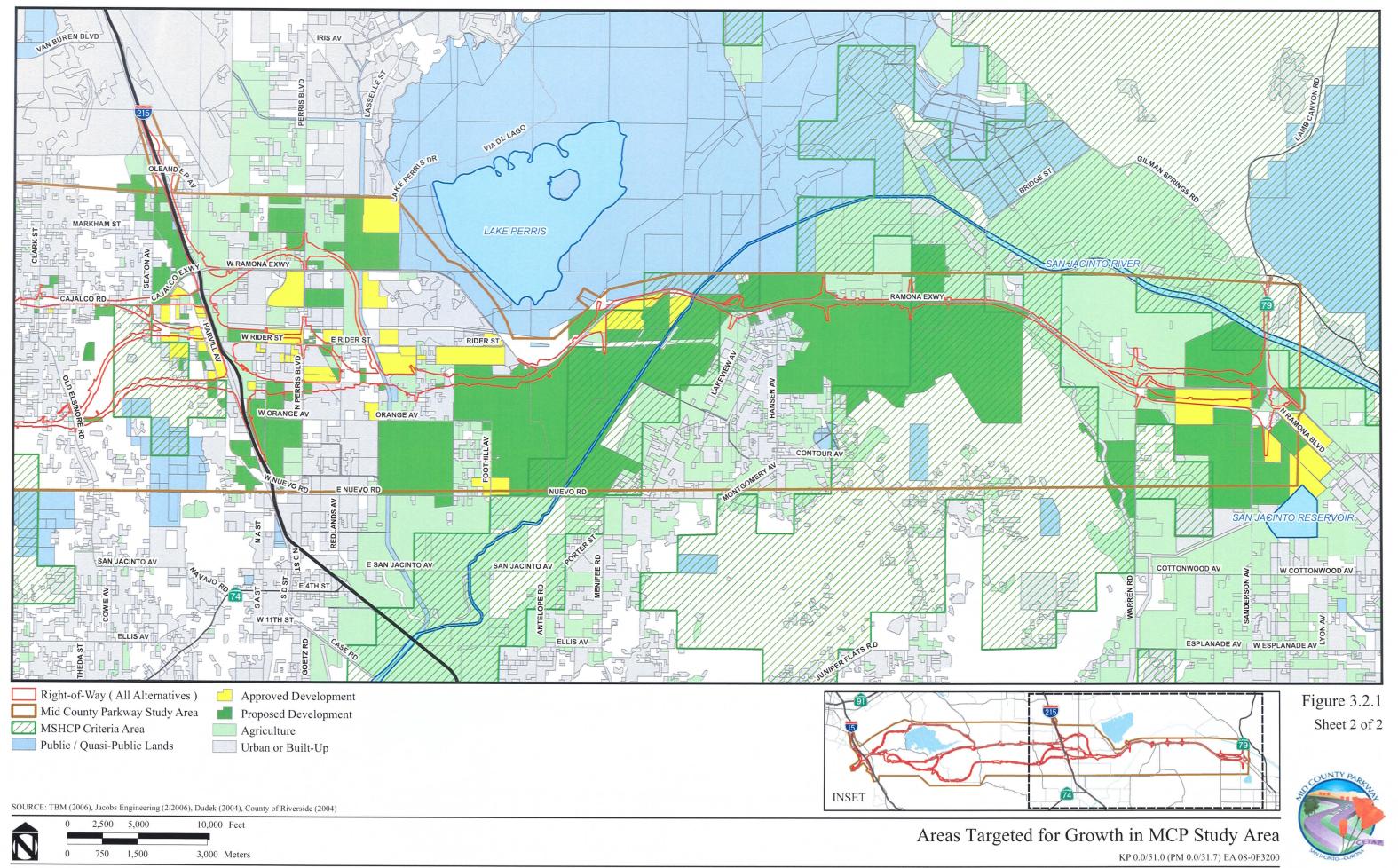
There are developed areas within the MCP study area, developing areas, and undeveloped land. It is this undeveloped land that is the focus of determining whether the MCP project would have any growth-related effects to environmental resources. As shown in Figure 3.2.1, much of this undeveloped land is at some stage in the development entitlement process (i.e., Specific Plan, Tentative Tract Map, etc.) with the local agency having jurisdiction over the land. The information shown in Figure 3.2.1 is current as of November 30, 2007. These lands are being developed consistent with the respective local jurisdictions' General Plan land use maps, which designate areas for both land development and open space. On average, the MCP study area is about 50 percent "built out," but that percentage varies from more developed areas such as Corona (where 84 percent of the area designated for development is built out) to Perris (where 36 percent of the area designated for development is built out). Since all of the local jurisdictions' General Plans have been recently updated (2003 or later), the development that is occurring is consistent with those General Plans and in those areas planned for development. In addition, Riverside County and the cities of Corona, Perris, and San Jacinto are fulfilling their obligations as permittees under the western Riverside County Multiple Species Habitat Conservation Plan (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 MCP study area that are protected from future development, including the Lake Mathews/Estelle Mountain Reserve, the El Sobrante Landfill MSHCP Reserve, the Harford Springs Reserve, the Motte-Rimrock Reserve, and the San Jacinto Wildlife Area. These existing habitat reserve lands are classified as "Public, Quasi-Public" lands on Figure 3.2.1.



Based on the above review of land development trends within the MCP study area, implementation of the MCP project is expected to have little influence on the location, amount, rate, or type of growth in the area. The basis for this conclusion is that: (1) the area has been undergoing rapid development since well before the MCP planning (and prior Community and Environmental Transportation Acceptability



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

Process [CETAP] corridor planning) had begun; (2) the MCP project has been integrated into the overall planning of the area based on the inclusion of the CETAP corridor overlay in the Riverside County General Plan Circulation Element (the Draft Tier 1 EIS/EIR for the Hemet to Corona/Lake Elsinore corridor concluded that Alternatives 1A and 1B, which parallel the MCP alignments, would remove a barrier to implementation of planned land use in the area, but would not result in unplanned growth in the area); and (3) based on RCTC's monthly meetings with the local land use authorities, there has been no indication of developers intensifying or substantially modifying their development proposals in response to the proposed MCP project. Some developers have elected to make minor adjustments to their proposed plans to limit the effects of the MCP project on their proposed development (e.g., relocating proposed buildings so they would not be within the footprint of an MCP Build Alternative).

Comparison of Growth Potential for MCP Build Alternatives Alternatives 4 through 7

Alternatives 4 through 7 share the same alignment for much of their length; therefore, the overall growth-related impacts are similar for all four alternatives.

System interchanges are proposed for all Build Alternatives at I-15, I-215, and State Route 79 (SR-79). Currently, there are service interchanges at these locations connecting Cajalco Road/Ramona Expressway to I-15, I-215, and an at-grade intersection at SR-79. The existing service interchanges connect the highways to the arterial street system and provide access to the MCP study area. Implementation of any of the MCP Build Alternatives would involve improvement to these interchanges so that they continue to provide service-level connectivity to the study area as well as providing regional connectivity of these highways with the MCP project. The systems interchanges are proposed in locations where interchanges already exist, where development has already occurred, and where additional development is planned for in the adopted land use plans for the area. The MCP project, as connected with other highways through system interchanges, will make the study area more regionally accessible and will accommodate future growth and development in a manner consistent with that proposed in the adopted land use plans for the area.

Alternatives 4 through 7 are located in proximity to, or in some areas on the existing alignment of, Cajalco Road west of I-215 and Ramona Expressway east of I-215. The location of these MCP Build Alternatives is consistent with the CETAP corridor overlay shown in the Riverside County General Plan Circulation Element, except for





the Lake Mathews South (LMS) Segment (which is located south of Lake Mathews; the CETAP corridor is shown north of Lake Mathews) and the Perris Drain (PD) Segment (where the alignment is located along the Perris Valley Storm Drain).



Service interchanges for Alternative 4 are proposed at a location approximately 2,000 meters (m) (6,560 feet [ft]) east of Temescal Canyon Road (referred to as the Estelle Mountain interchange), at Lake Mathews Drive, El Sobrante Road, Wood Road, Alexander Street, Clark Street, Perris Boulevard, Evans Road, Antelope Road, Bernasconi Road, Reservoir Road, Town Center Boulevard (proposed new arterial associated with future proposed development; this interchange would replace the previously planned CETAP corridor interchange at Bridge Road), Park Center Boulevard (proposed new arterial associated with future proposed development), and Warren Road. Service interchanges for Alternative 5 are the same as for Alternative 4 except that the Perris Boulevard interchange is located near Rider Street instead of north of Ramona Expressway.



The possibility of growth-related effects from these interchanges varies by location. Land immediately adjacent to some of the proposed interchanges is public or quasi-public land where development is not allowed. Both the Lake Mathews Drive and El Sobrante Road interchanges are located in or are adjacent to land owned by the Metropolitan Water District (Metropolitan) that is designated for habitat conservation.

The area south of the proposed El Sobrante Road interchange is private land that is designated for estate density residential development in the Riverside County General Plan. Due to the existing low-density character of the surrounding area, which is characterized by rolling topography, it is expected that the low-density nature of the area would not be altered. However, it is conceivable that there would be pressure for limited commercial service or retail uses immediately adjacent to the interchange.



The proposed interchanges at Antelope Road and Bernasconi Road are characterized by the Lake Perris State Recreation Area (SRA) north of the MCP facility and proposed residential uses to the south. The Lake Perris SRA is an established public recreation resource and includes a water reservoir for the state water project as well as well as adjacent habitat conservation areas. No changes are anticipated to these important state resources, with or without implementation of the MCP project. The SRA is expected to remain as public recreation area and open space and would not be subject to future development. The approved residential developments and other proposed land development projects currently under consideration in the vicinities of

these interchanges are being developed in a manner that accommodates the proposed MCP Build Alternatives and is consistent with the CETAP corridor overlay shown in the Riverside County General Plan Circulation Element.



Planned and approved development plans are already being considered at other proposed interchanges, and these development plans would have to be refined in order to accommodate Alternatives 4 through 7. These include the Estelle Mountain and Wood Road interchanges. In these cases, it is expected that the proposed or approved developments would not change in overall character and density, but would alter subdivision layout or site plans as necessary to reflect the selected transportation alternatives. Similarly, the Town Center Boulevard and Park Center Boulevard interchanges (both proposed new arterials associated with future proposed development) are being planned to be compatible with the future development plans.

Other proposed interchanges are located in areas characterized primarily by private land that may be developed or redeveloped as a result of the implementation of the MCP project. These interchanges include Alexander Street and Clark Street west of I-215 and Perris Boulevard (Alternative 5), Evans Road, and Warren Road east of I-215. In addition, the proposed interchange locations at Reservoir Road and Perris Boulevard (Alternative 4) are in areas that are a combination of approved/proposed projects and other private land, some of which are vacant or in agricultural use that could be developed. Land that is private and vacant or underutilized near the interchanges is the most likely area where future development might change in type as a result of interchange access (i.e., roadway commercial uses rather than residential).

The Alexander Road interchange is located in an area designated for low-density residential and recreation open space uses. Residential development has been approved for the area northwest of the proposed interchange. Given the proximity of the Clark Street interchange, where commercial development would be more consistent with the Riverside County General Plan, no notable change to planned land uses are anticipated at Alexander Road.

The Riverside County General Plan calls for commercial uses along Cajalco Road at Clark Street. The proposed MCP alignment is slightly north of Cajalco Road. The presence of an interchange adjacent to a commercially designated or developed area could lead to requests to extend the area designated for commercial uses to include the area around the interchange.

The area around Perris Boulevard and Ramona Expressway, where an interchange is proposed for Alternative 5, is currently designated for Commercial Retail uses in the General Plan. The existing and planned land uses for the surrounding area are primarily light industrial and business park. These uses are consistent with the access that would be provided by an interchange, and no change in planned land use is expected to occur.

Similarly, the area around Evans Road and Placentia Avenue, where the Evans Road interchange is proposed, is currently planned for Commercial Retail and high-density residential uses. These relatively high-intensity uses would be compatible with the increased access that an interchange would provide, and no changes to the General Plan to allow greater land use intensity would be expected.

The proposed interchange at Warren Road is located slightly north of the existing Ramona Expressway in an area where the General Plan calls for continued agricultural use of the land. The presence of an interchange could have the effect of facilitating a change in land use designation for this area to allow more intense land uses should area landowners/developers submit development applications for the conversion of agricultural land to suburban land uses. Currently, the Riverside County General Plan includes policies supporting the continuation of agricultural uses in the county; however, there is typically pressure to convert agricultural land in areas that are experiencing population growth, such as western Riverside County. The improved access of the MCP project coupled with an interchange at Warren Road could increase these pressures. The Warren Road interchange is common to all five Build Alternatives.

Alternatives 6 and 7 involve the implementation of General Plan Circulation Element improvements between I-15 and El Sobrante Road and a new six- to eight-lane parkway east of El Sobrante Road to SR-79. Alternative 6 is the same as Alternative 4 east of El Sobrante Road, and Alternative 7 is the same as Alternative 5 east of El Sobrante Road. The proposed arterial street improvements north and south of Lake Mathews are consistent with the Riverside County General Plan Circulation Element and generally follow the alignments shown in the General Plan. Because they are consistent with the recently adopted Riverside County General Plan Circulation Element, no growth-related effects beyond those described for Alternatives 4 and 5 would be expected to occur with Alternatives 6 and 7.

Alternative 9

Alternative 9 is approximately 3.2 kilometers (km) (2.0 miles [mi]) south of Cajalco Road for much of its length but shares the same connection to I-15 as Alternatives 4 through 7. Alternative 9 is unique compared to the other MCP Build Alternatives for the segments between the Lake Mathews South (LMS) Segment and Placentia/Rider Streets. In this area, Alternative 9 follows an alignment that was not considered in the Riverside County General Plan.

Service interchanges for Alternative 9 are proposed at a location approximately 2,000 m (6,560 ft) east of Temescal Canyon Road (referenced as the Estelle Mountain interchange), Lake Mathews Drive, Old Elsinore Road, Perris Boulevard, Evans Road, Ramona Expressway, Bernasconi Road, Reservoir Road, Town Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008), Park Center Boulevard (new arterial proposed to be added to the Riverside County General Plan Circulation Element in 2008), and Warren Road.



The planned interchange at Lake Mathews Drive in Alternative 9 is in an area that is privately owned. The topography where the interchange is located is relatively flat, but the surrounding area is characterized by fairly steep terrain. This area is planned for Rural Residential uses in the Riverside County General Plan. The planned interchange at Old Elsinore Road is in an area characterized by existing very low density residential uses. There is also a high percentage of low-income and/or minority residents in this area. This area is planned for very low density residential uses in the Riverside County General Plan. The interchanges at Lake Mathews Drive and Old Elsinore Road are outside the area originally contemplated for the west-east CETAP corridor. The provision of these two service interchanges may affect the rate, type, amount, and location of growth in this area. While the possibility of growthrelated effects is constrained by steep topography, existing rural land uses (including existing reserves such as the Harford Springs Reserve, Motte-Rimrock Reserve, and Lake Mathews-Estelle Mountain Reserve), and the overall rural character of the areas, these two interchanges could hasten the build out of these areas or result in the introduction of more intense uses than were considered in the adopted Riverside County General Plan. In the area around the proposed Old Elsinore Road interchange, indirect effects to low-income or minority populations may be both adverse (pressure to redevelop rental properties to more intense uses) and beneficial (improved regional access and mobility).

Resources of Concern for Growth-Related Effects

Four key resources were identified as resources of concern for growth-related effects in the MCP study area (threatened/endangered species, aquatic resources, cultural resources, and farmlands) and are discussed below.

Threatened and Endangered Species

Biological resources of concern, such as threatened and endangered species, may be impacted due to growth-related effects of the MCP Build Alternatives. Much of the MCP study area is within or adjacent to areas identified for conservation under the western Riverside County MSHCP. The MSHCP is a comprehensive, multijurisdictional Habitat Conservation Plan (HCP) (pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act [FESA] and the California Natural Communities Conservation Planning Act [NCCP Act]) that focuses 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 and is discussed further in Section 3.17 of this EIR/EIS. Under the MSHCP, resource conservation is achieved on a regional habitat-based approach rather than a project-by-project approach. The MSHCP was intended to address the cumulative and indirect effects of General Plan land uses and public infrastructure projects, referred to as "Covered Activities" under the MSHCP. Both RCTC and Caltrans, as signatories of the MSHCP, are obligated to comply with the specific conditions described in Sections 13.7 and 13.8 of the MSHCP Implementation Agreement.

Much of the ecological and biological resources in the MCP study area are within existing preserves or within the MSHCP Criteria Area where development will be limited and subject to the requirements of the MSHCP. The Criteria Area of the MSHCP represents the area from which 62,000 ha (153,000 ac) of new conservation lands will be acquired to contribute toward the assembly of the overall MSHCP Reserve. The Criteria Area serves to connect habitats, maintain connectivity between habitats, and provide linkages where species can move from one area to another without being impeded by future development.

There are two primary components to be considered in determining MCP project consistency with the MSHCP: (1) how the project relates to the MSHCP Reserve Assembly (i.e., acquisition and conservation of additional reserve lands); and (2) how the project meets other requirements of the MSHCP (e.g., determination of

consistency with the MSHCP conservation objectives). As a conditionally covered activity under the MSHCP, pursuant to the provisions of Section 7.2.3 of the MSHCP (see Section 3.17.4 of this EIR/EIS for a detailed discussion of the MCP project coverage under the MSHCP), any indirect growth-related effects of the MCP project on threatened and endangered species would be covered through compliance with MSHCP criteria.

Aquatic Resources

Wetlands and nonwetland waters of the United States and State are resources of concern in western Riverside County. In cooperation with other federal, state, and local agencies, the United States Army Corps of Engineers (USACE) is developing a Special Area Management Plan (SAMP) for both the San Jacinto River and Upper Santa Margarita watersheds. The SAMP is being developed to address anticipated development, infrastructure, and maintenance projects and aquatic resources in the watersheds of the San Jacinto River and Upper Santa Margarita River (SAMP study area). The SAMP will provide a comprehensive plan for protecting and enhancing aquatic resources while providing for the permitting of reasonable economic development and public infrastructure in coordination with local land use plans and the western Riverside County MSHCP. The SAMP will provide a framework for a long-term programmatic permitting process for projects in the watersheds subject to USACE permit authority under Section 404 of the Clean Water Act. In addition, the SAMP will include a comprehensive reserve program for the protection, restoration, and management of aquatic resources within the study area. Through this regional approach to watershed management, the SAMP will address the cumulative and indirect growth-related effects of future land and infrastructure development within these watersheds.

Cultural Resources

Cultural resources are nonrenewable resources that include prehistoric and historic archaeological sites as well as historic buildings and other structures. As growth occurs in an area such as western Riverside County, these resources are subject to impacts from physical land development as well as from increased human activity where resources may be damaged or destroyed as a result of activities such as off-road vehicle use and vandalism. The Riverside County General Plan EIR identifies areas of sensitivity for cultural resources. The Open Space Element of the Riverside County General Plan includes policies that provide for protection of cultural resources by requiring that land development projects consider avoidance of cultural resources before consideration of minimization or mitigation. In the MCP study area,

the area between I-15 and I-215 is classified as having high sensitivity for cultural resources. Most of this area is within the jurisdiction of the County of Riverside and is subject to these General Plan policies. The County is working closely with area developers to protect cultural resources that may be affected by land development projects in the area. Since these development proposals are proceeding irrespective of the MCP project, the MCP project is not anticipated to have any growth-related effects on cultural resources.

Farmlands

The Riverside County General Plan identifies farmlands as an important resource throughout Riverside County, and includes policies that encourage the conservation and protection of existing farmlands and discourages the placement of incompatible land uses near industrial agricultural uses such as dairies and poultry farms. Even with these policies in place, the Riverside County General Plan EIR acknowledges that there will continue to be loss of farmlands due to development throughout Riverside County. In the MCP study area, most agricultural lands are located in the area between I-215 and SR-79. As a result of RCTC's monthly coordination meetings with County staff and City of Perris staff regarding land development proposals in this area, much of the agricultural land that exists in the area today is expected to be converted to residential and commercial land development, which is consistent with the General Plan land use designations for these lands. These development proposals are proceeding irrespective of the MCP project; therefore, the MCP project is not anticipated to have any growth-related effects on farmlands.

No Build Alternatives

Under the MCP No Build Alternatives, the growth-related effects discussed above for the MCP Build Alternatives would not occur for the MCP project. However, the other transportation improvement projects included in the No Build Alternatives may result in growth-related effects already considered in the Riverside County General Plan. For example, Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway and would, therefore, not result in any unplanned growth-related effects.

Discussions of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species, including species and habitats associated with wetlands and other waters, are reduced through implementation of the MSHCP, which includes the assembly of an approximately 202,340 ha (500,000 ac)

reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 Temescal Wash Area Design Variation (TWS DV), which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV.

The analysis in the MSHCP EIR/EIS included consideration of growth inducement because of the potential for the MSHCP Conservation Area to remove an impediment to development. The MSHCP EIR/EIS concluded that while the establishment of the MSHCP Conservation Area would likely be regarded as an enhancement to western Riverside County's quality of life, the MSHCP does not contain components that would directly generate residential, commercial, or industrial development or induce population growth within the Plan Area. In addition, the MSHCP would result in the loss of developable land within western Riverside County that could redistribute growth in the region, as development demand may occur in areas where it is not currently anticipated. In addition, the MSHCP EIR/EIS concluded that the MSHCP would have an indirect growth-inducing effect, because it will accommodate and streamline the approval of future development within those areas of western Riverside County outside the limits of the MSHCP Conservation Area.

Based on the analysis of impacts of the MCP related to growth discussed above, the impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS.





Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in growth-related impacts beyond those previously analyzed.

3.2.4 Avoidance, Minimization, and/or Mitigation Measures

Because of its prior inclusion as a CETAP corridor in the overall Riverside County Integrated Project (RCIP) planning process that led to the adoption of the updated Riverside County General Plan and the western Riverside County MSHCP, the MCP project is expected to have limited possibility to result in growth-related effects. CETAP is an integral component of the RCIP and Riverside County General Plan, and the future growth as projected and planned for in the General Plan reflects the presence of a new major west-east corridor in western Riverside County. Therefore, the implementation of the west-east corridor already included and analyzed in the General Plan would not result in unplanned growth. While Alternative 9 is located in a more remote location than the other MCP Build Alternatives and may result in minor adjustments to the rate, type, amount and location of growth, growth-related effects overall would be minor because any changes would occur within the framework of the three components of the RCIP: the General Plan, the habitat preservation as included in the MSHCP, and the CETAP transportation corridors. The MCP project is implementing CETAP and accommodating both planned growth and planned open space preservation in accordance with the RCIP; therefore, no mitigation is warranted for adverse growth-related effects. Because the MCP study area contains a number of environmental resources of concern (i.e., habitat, aquatic resources, and cultural resources), RCTC is exploring the potential to acquire privately held lands in this area to meet both its overall obligations under the MSHCP as well as mitigation requirements to natural communities resulting from the MCP project, as discussed in Section 3.17, Natural Communities, of this EIR/EIS. Acquiring privately held lands in this area that may otherwise be subject to future development would help minimize growth-related effects of Alternative 9 on environmental resources of concern.



3.3 Farmlands/Timberlands

The information in this section is based on the *Community Impact Assessment* (CIA) (LSA Associates, Inc. 2008). There are no timberlands within the MCP study area; therefore, there is no discussion of this resource in this section.

3.3.1 Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, 7 USC 4201-4209; and its regulations, 7 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.

The California Environmental Quality Act 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.

3.3.2 Affected Environment

3.3.2.1 Farmlands in the MCP Study Area

Agriculture is one of Riverside County's most important land uses. In 2002, Riverside County had 3,186 farms on approximately 228,814 hectares (ha) (572,036 acres [ac]). It is also the largest industry in the county in terms of dollar values. Agricultural revenues generated in the county in 2002 were valued at \$1.01 billion, 66 percent from crops and orchard products and the remainder from livestock sales and their products. Nevertheless, agriculture faces continuing conversion pressures near and within agricultural regions. For example, between the years 2000 and 2002, 18,688 ha (46,719 ac) of agricultural land in Riverside County were converted to nonagricultural uses.

¹ 2002 Agricultural Census, United States Department of Agriculture.

² Ibid.

Agricultural land uses in the MCP study area are typical of those found throughout the rest of Riverside County between Palm Springs, Indio, and Blythe, including dairies, grain farms, orchards, and poultry operations, with a majority of the agricultural operations occurring in the eastern portion of the study area (see Figure 3.3.1).

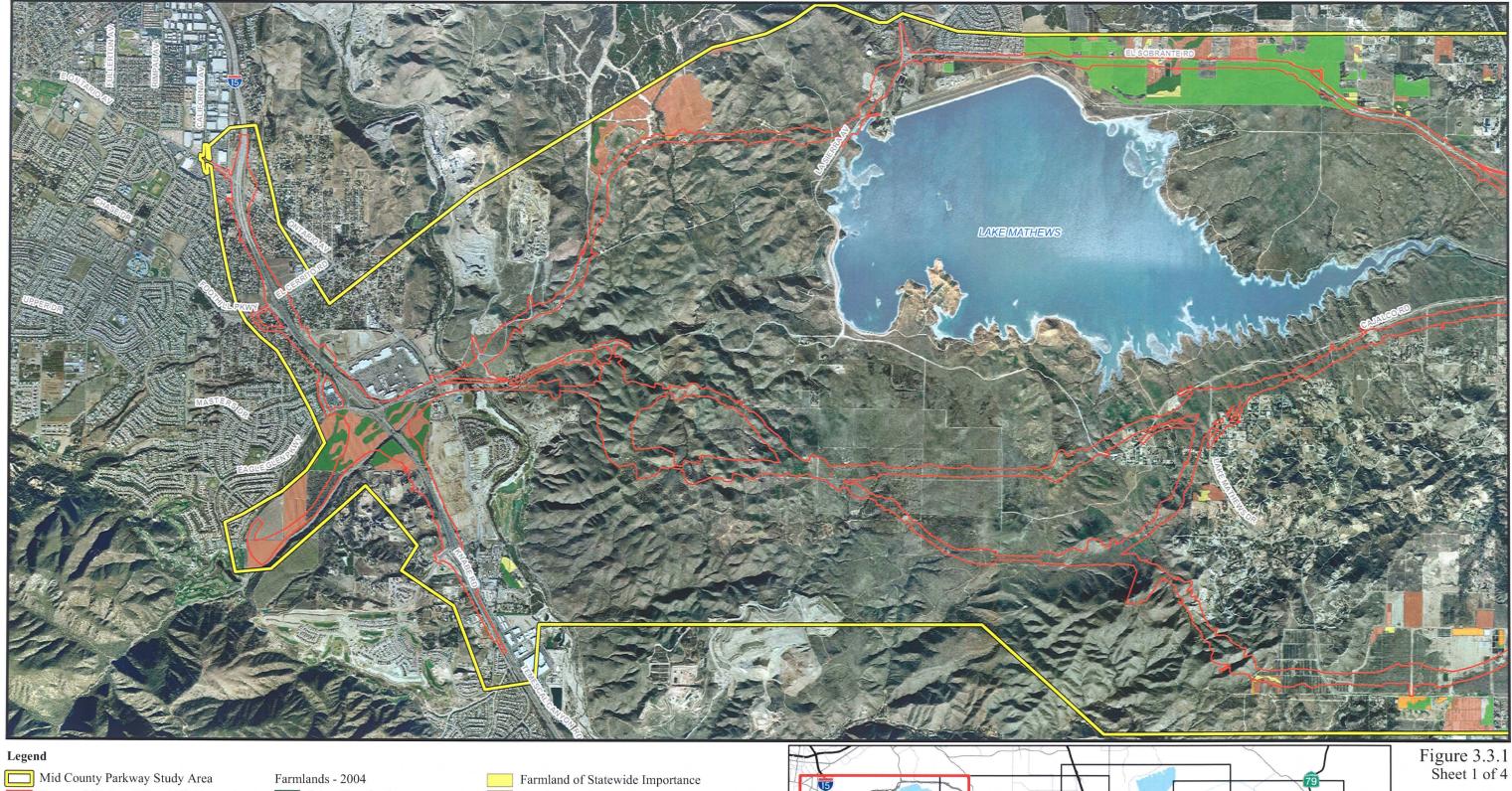
Riverside County, the California Department of Conservation, and the United States Department of Agriculture utilize five different land mapping categories to describe farmland as follows:

- Farmlands of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- Farmlands of Statewide Importance: Irrigated land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops. This land has minor shortcomings such as greater slopes or less ability to store soil moisture than Prime Farmland.
- Grazing Land: Land on which the existing vegetation is suited to the grazing of livestock. This category is used only in California and was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.
- Prime Farmland: Irrigated land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields.
- Unique Farmland: Lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California.

Table 3.3.A shows the farmland (hectares [acres]) by category within the MCP study area.

3.3.2.2 Policies Related to Farmlands in the MCP Study Area Riverside County General Plan

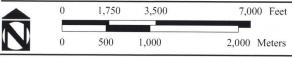
The Riverside County General Plan identifies agriculture as the land use that "defines the unique character of many communities in Riverside County, and helps to define



Proposed Right-of-Way (All Alternatives) Prime Farmland

Grazing Land Farmlands of Local Importance Unique Farmland

SOURCE: Air Photo USA, (2006); Jacobs Engineering (02/2007); Farmland and Mapping and Monitoring Program (2004)

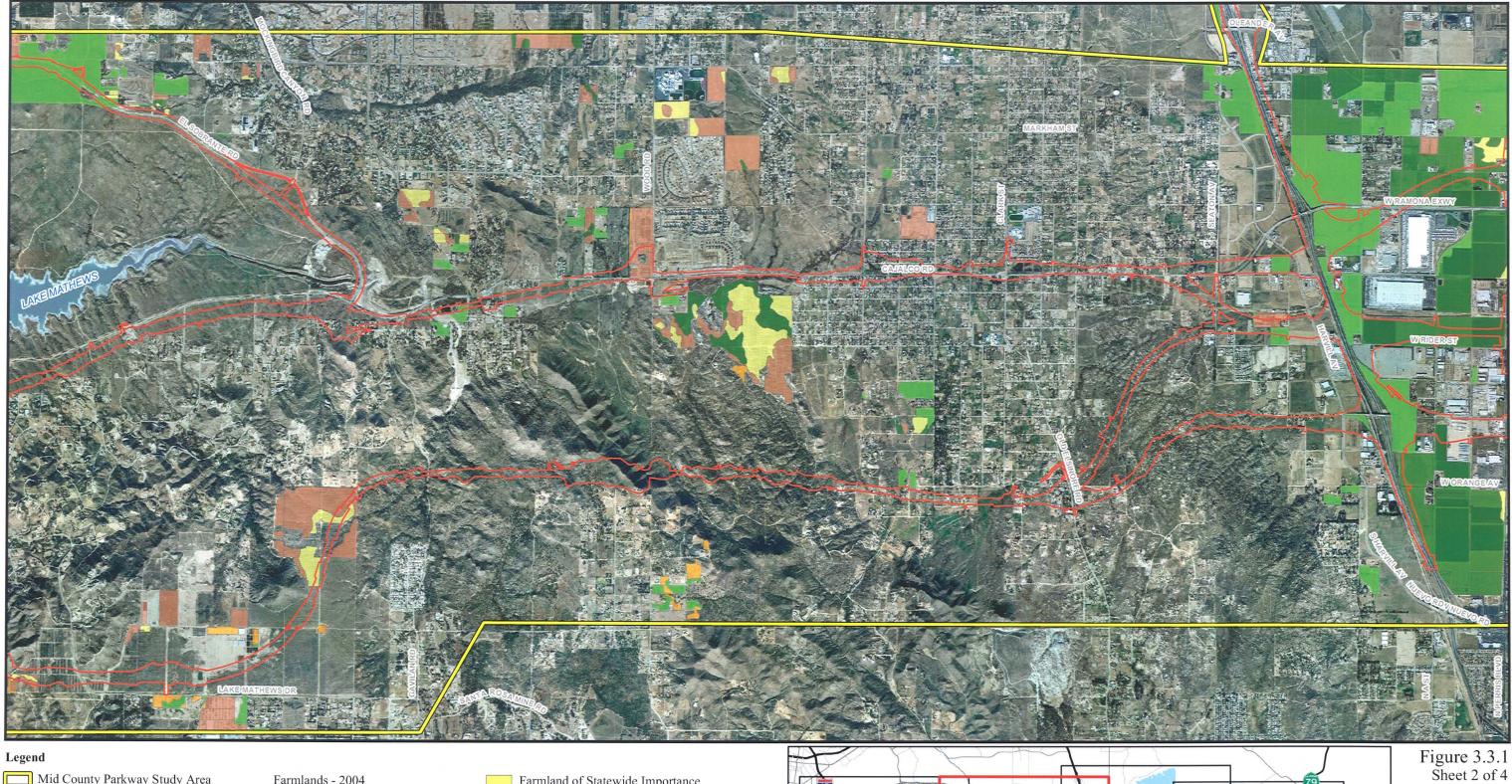


Designated Farmlands in MCP Study Area
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environm	е
	••
T	-

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

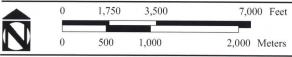


Mid County Parkway Study Area Proposed Right-of-Way (All Alternatives) Prime Farmland

Farmlands - 2004

Farmland of Statewide Importance Grazing Land Farmlands of Local Importance Unique Farmland

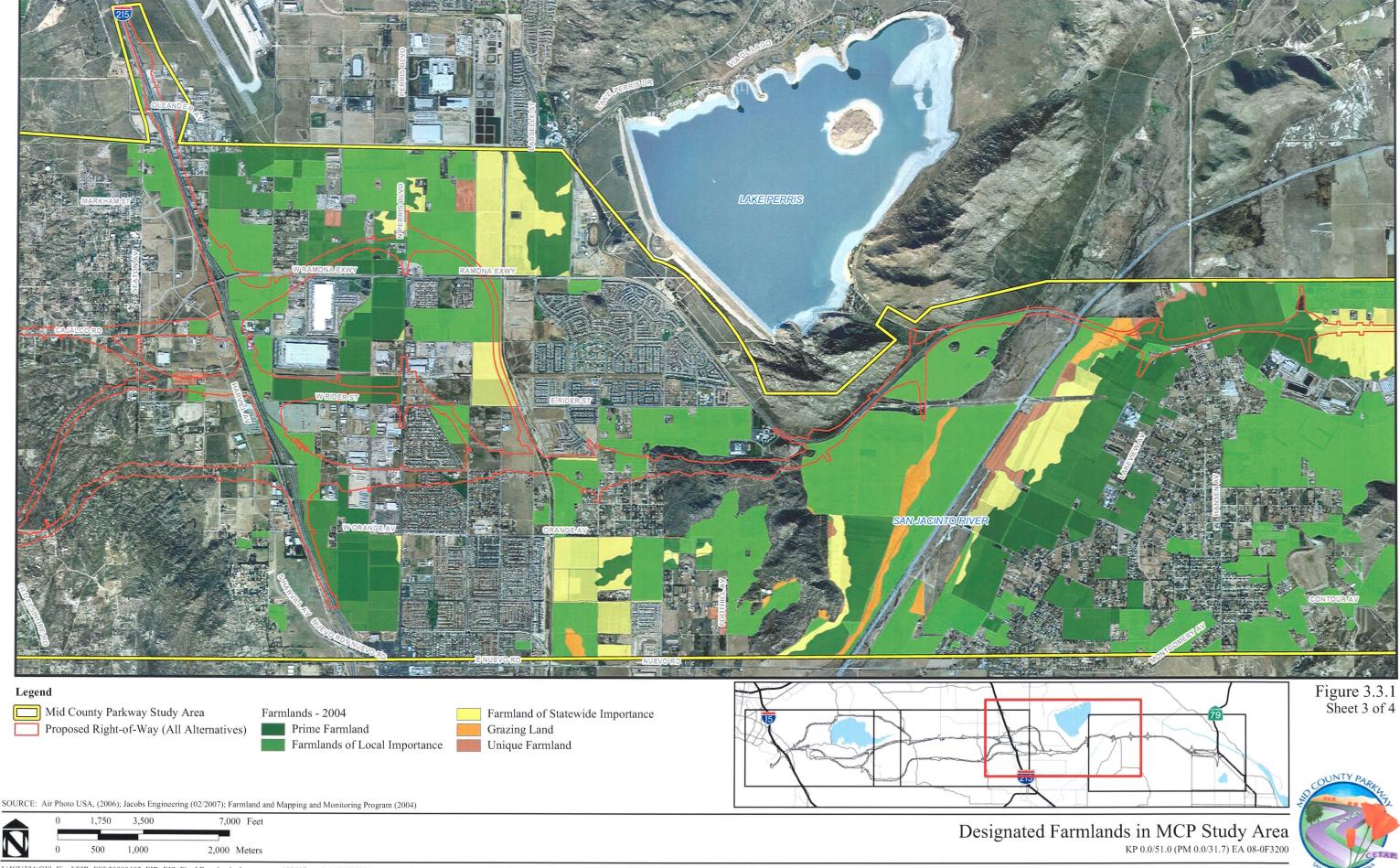
SOURCE: Air Photo USA, (2006); Jacobs Engineering (02/2007); Farmland and Mapping and Monitoring Program (2004)



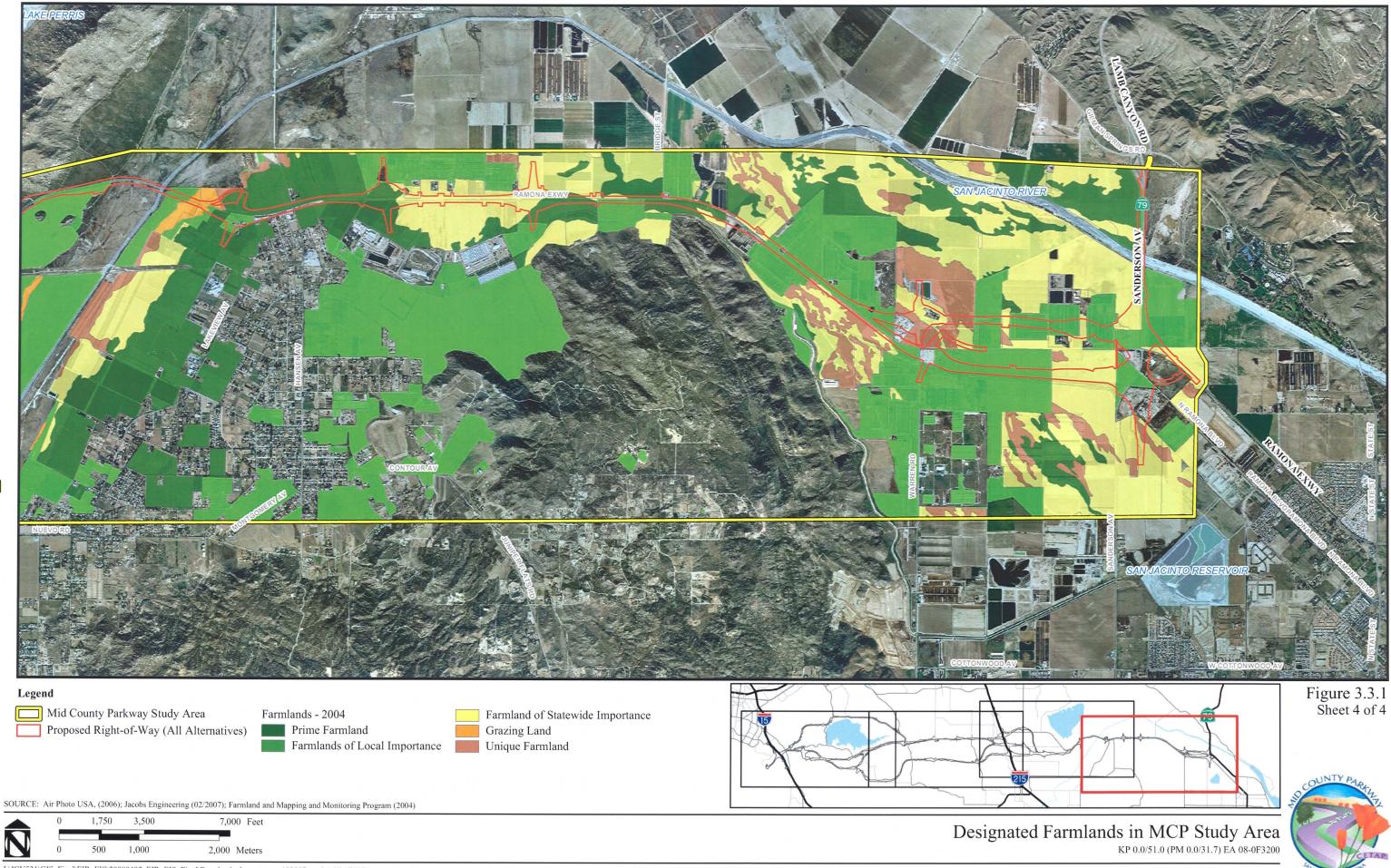
Designated Farmlands in MCP Study Area
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Meas	Chapter 3	3 Affected Environment	: Environmental Conseq	quences, and Mitigation	Measures
---	-----------	------------------------	------------------------	-------------------------	----------

This page intentionally left blank



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures
This page intentionally left blank



	Chapter 3	Affected Envi	ronment, Envir	onmental Cons	sequences, and	Mitigation :	Measures
--	-----------	---------------	----------------	---------------	----------------	--------------	----------

This page intentionally left blank



Table 3.3.A MCP Study Area Farmland Acreages by Category

Land Mapping Category ¹	Hectares (Acres)
Farmlands of Local Importance	2,796 (6,909)
Farmlands of Statewide Importance	1,436 (3,548)
Grazing Land	98 (242)
Prime Farmland	1,448 (3,578)
Unique Farmland	642 (1,587)
Total	6,420 (15,684)

Source: Community Impact Assessment, LSA Associates, Inc. 2008.

MCP = Mid County Parkway

the edges of and provide separation between developed areas." Mounting growth pressures near and within agricultural regions, however, are and will continue to impact agricultural operations due to the conversion of farmlands to other uses. As part of the General Plan, the agriculture land use designation and associated policies were established to help conserve productive agricultural lands within the county. These include row crops, nurseries, citrus groves and vineyards, dairies, ranches, poultry and hog farms, and other agriculture-related uses.



Riverside County Right-to-Farm Ordinance

Riverside County seeks to conserve, protect, and encourage the development, improvement, and continued viability of its agricultural land and industries over the long term. The county also seeks to balance the rights of farmers to produce food and other agricultural products with the rights of nonfarmers to own, occupy, or use land within or adjacent to agricultural areas. The intent of the Riverside County Right-to-Farm Ordinance is to reduce the loss of Riverside County's agricultural resources by limiting the circumstances under which agricultural operations may be deemed to constitute a nuisance.

City of Corona General Plan

One of the goals of the General Plan for the City of Corona is to promote the preservation of agriculture on lands and to protect adjacent uses from impacts related to agricultural activities. At the same time, however, the General Plan includes a policy stating that agricultural activities be facilitated until such time as the land is needed to accommodate population and employment growth.

City of Perris General Plan

The City of Perris General Plan identifies large tracts of land that are currently used for agriculture; these tracts of land are in close proximity to Interstate 215 (I-215). Because of their proximity to the I-215 corridor, the General Plan identifies these

No land within the mapping category "Area Not Mapped" exists within the study area.

agricultural lands as prime candidates for conversion to land uses that are dependent on freeway access and visibility.

City of San Jacinto General Plan

Agriculture is a dominant feature of the existing landscape of San Jacinto, particularly in the western portion of the city. The General Plan for the City of San Jacinto recognizes that agricultural activities currently provide revenue sources for the city and its residents. However, the General Plan also acknowledges that agricultural lands will eventually be converted to urban uses because of increasing pressures from surrounding new development, incompatibility with new development, and changes in the economy.

3.3.2.3 Agricultural Preserves



The California Land Conservation Act, also known as the Williamson Act, was adopted in 1965. The Williamson Act is a nonmandated State program administered by counties and cities for the preservation of agricultural land. Participation in the program is voluntary on the part of both landowners and local governments and is implemented through the establishment of Agricultural Preserves (40 ha [100 ac] minimum). Once a Preserve is established by the local government, it is eligible for the execution of Williamson Act contracts. Individual property owners enter into a contract that restricts or prohibits development of their property to nonagricultural uses during the term of the contract in return for lower property taxes. Preserve lands are enrolled as Williamson Act Preserves for a successive minimum 10-year period unless a notice of nonrenewal is filed or a contract cancellation is approved by the local government. This voluntary program allows property owners to have their property assessed on the basis of its agricultural production rather than at the current market value.

The Williamson Act (Chapter 7, Article 6, Sections 51290 et seq.) addresses the circumstance of a public improvement within an existing agricultural preserve. Section 51290 addresses avoidance and/or guidance for any federal, state, or local public improvements, and any improvements of public utilities, and the acquisition of land in agricultural preserves. Section 51291 addresses land within an agricultural preserve that may be required by a public agency or person for a public use and the requirement for that public agency or person to advise the Director of Conservation and the local governing body responsible for the administration of the preserve of that agency's or person's intention to consider the location for a public improvement within the preserve.

Within the MCP study area, there are a few scattered agricultural preserves (including Williamson Act Preserves) north and east of Lake Mathews. However, the majority of the land in agricultural preserves is on the northeast edge of the MCP study area, as shown in Figure 3.3.2.

3.3.3 Environmental Consequences

3.3.3.1 Permanent Impacts

Build Alternatives

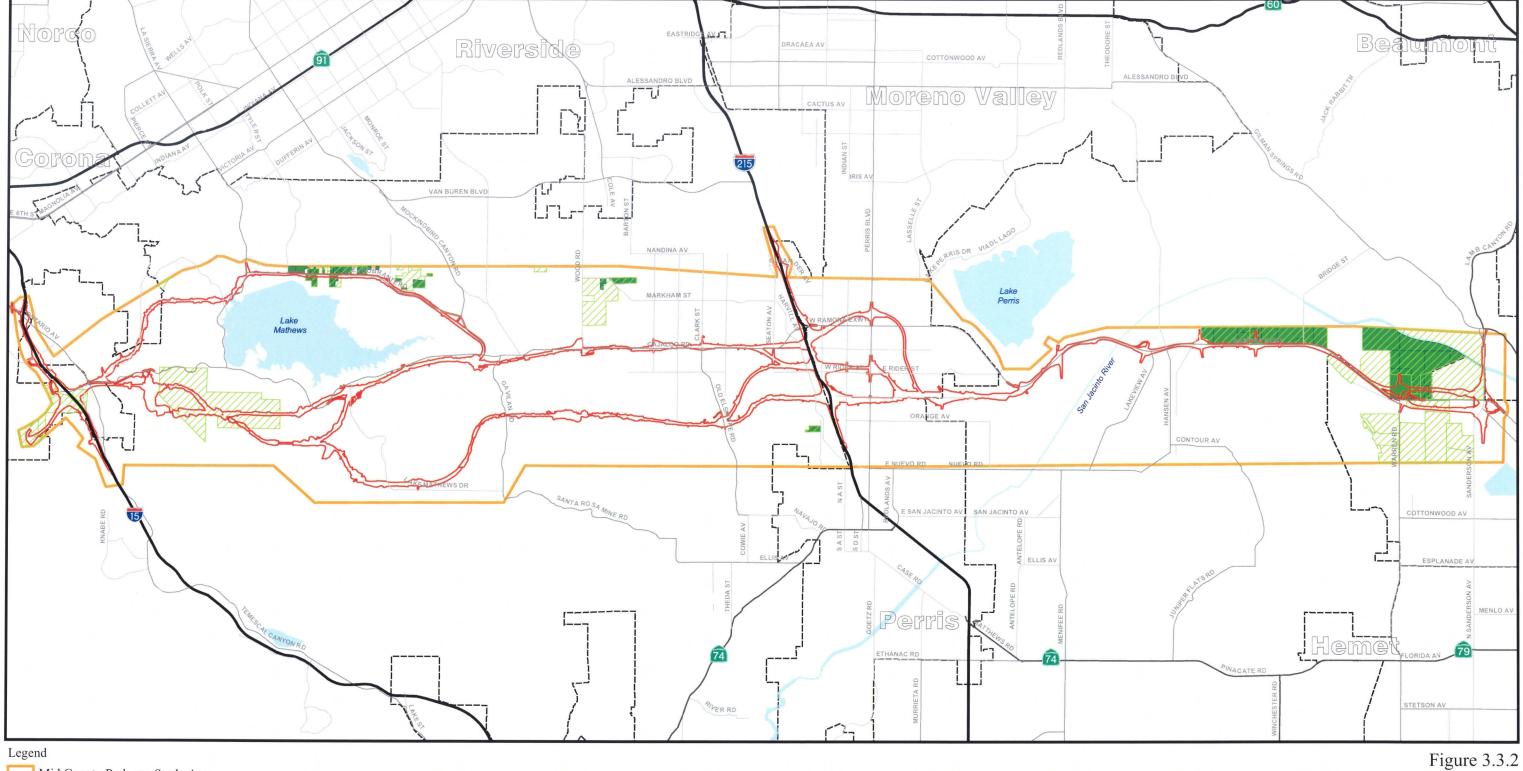
Farmland Conversion Impact Rating

A project that has federal involvement and may irreversibly convert farmland (directly or indirectly) to a nonagricultural use must comply with the federal FPPA. The FPPA calls for completing Form AD-1006, Farmland Conversion Impact Rating. For corridor-type projects such as MCP, Form NRCS-CPA-106 is used in lieu of Form AD-1006. The purpose of completing the Farmland Conversion Impact Rating form is to provide a method of assessing farmland impacts in order to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses and to assure that federal programs are administered in a manner that, to the extent practicable, would be compatible with State, local, and private programs and policies to protect farmlands. Through ongoing coordination with the NRCS since September 2006, Form NRCS-CPA-106 was completed for each MCP Build Alternative and design variation for the MCP project. The forms are provided in Appendix B of the CIA.

Form NRCS-CPA-106 uses a point-based approach to assess the relative value of agricultural land resources. Completing the Farmland Conversion Impact Rating is an iterative process requiring both the NRCS (formerly the Soil Conservation Service, or SCS) and the federal agency to complete specified portions of the form. For the first set of factors, the Land Evaluation Criteria, the NRCS determines whether the project location has farmland that is subject to the FPPA. If the project has farmland that is subject to the FPPA, the NRCS measures the relative value of the farmland in the project location on a numerical scale. Measuring and assigning point values to the second set of factors, the Corridor Assessment Criteria, is the responsibility of the federal agency. A single score is generated for a given project after the relative value of the farmland and the Corridor Assessment Criteria are scored and weighted. For the numerical score, factors accounting for the value of the farmland include:



This page intentionally left blank

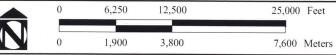


Mid County Parkway Study Area

Right-of-Way (All Alternatives)

Agricultural Preserves Williamson Act Preserves

SOURCE: TBM (2006), Jacobs Engineering (2/2007), Riverside County Assesors Office (2006), California State GIS (2006)



Agricultural Preserves

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

percentage of nonurban use along the perimeter and within a 1-mile radius of the project; percentage of the land that has been actively farmed in the last 5 to 10 years; applicability to federal, state, and local policies or programs protecting the farmland; size of the farm in respect to average size in the County; amount of non-farmable land as a result of interference with land patterns; availability of farm support services and markets; demand for farm support; on-farm investments; and the likelihood of the conversion of surrounding farmlands due to the kind and intensity of a proposed project. Final project scoring is based on a scale of 260 points, with a maximum score of 100 points for the relative value of the farmland and a maximum score of 160 points for the Corridor Assessment Criteria. The total number of points is used to determine the level of significance of a project's impact on farmland.

All MCP Build Alternatives would traverse areas currently being devoted to a variety of agricultural uses, including grazing, dryland and irrigated farming, orchards, and dairies. Overall, none of the alternatives or associated design variations would have a substantial adverse impact on agricultural lands. This determination is supported by the conclusions derived from the NRCS-CPA-106 forms. The final scoring for each alternative and associated design variations on Form NRCS-CPA-106 is shown in Table 3.3.B. The final score for Alternatives 4 through 7 and the associated design variations is 138, and the final score for Alternative 9 and its associated design variations is 139. According to the instructions for completing Form NRCS-CPA-106, sites receiving a total score of less than 160 points shall be given a "minimum level of consideration for protection." Therefore, according to the results of Form NRCS-CPA-106, all alternatives and design variations for the MCP project should be given the "minimum level of consideration for protection," and no further analysis need be evaluated for farmland issues under the FPPA.

Conversion of Designated Farmland

Table 3.3.C contains the total acreage of farmland as designated by Riverside County, the California Department of Conservation, and the United States Department of Agriculture that would be directly converted by all MCP Build Alternatives and associated design variations. Prime Farmland, Farmland of Statewide Importance, and Unique Farmland represent the most important farmland categories. The conversion of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland to nonagricultural uses associated with implementing any of the alternatives or design variations varies by only a small margin. Alternative 7 would result in the greatest conversion of Prime Farmland and Unique Farmland, while Alternative 6 would result in the greatest conversion of Farmland of Statewide Importance.



Table 3.3.B Form NRCS-CPA-106 Final Scoring

Alternative	Land Evaluation Subtotal	Corridor Assessment Subtotal	Final NRCS-CPA-106 Score
Alt. 4 Base Case	63	75	138
Alt. 4 SJN DV	63	75	138
Alt. 4 TWS DV	63	75	138
Alt. 5 Base Case	63	75	138
Alt. 5 SJN DV	63	75	138
Alt. 5 TWS DV	63	75	138
Alt. 6 Base Case	63	75	138
Alt. 6 SJN DV	63	75	138
Alt. 6 TWS DV	63	75	138
Alt. 7 Base Case	63	75	138
Alt. 7 SJN DV	63	75	138
Alt. 7 TWS DV	63	75	138
Alt. 9 Base Case	63	76	139
Alt. 9 RD DV	63	76	139
Alt. 9 PP-E DV	63	76	139
Alt. 9 SJN DV	63	76	139
Alt. 9 TWS DV	63	76	139

Source: Community Impact Assessment, LSA Associates, Inc., 2008.

Alt. = Alternative
DV = Design Variation

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

RD = Rider Street

SJN = San Jacinto North

TWS = Temescal Wash Area



Table 3.3.C Impacts to Farmland per Hectare (Acre)

Alternative	Prime .	Unique	Prime +	Farmlands of	Farmlands of Farmlands of Local Statewide	드	Grazing	All Direct Impacte	Percent of Farmland in Riverside County ²	armland in County ²
	Farmiand	Farmland	Onidne	Importance	Importance	Statewide Importance	Land		Prime/ Unique	Total
Alt. 4 Base Case	88.7 (219.1)	49.3 (121.8)	138.0 (340.9)	184.9 (456.9)	65.0 (160.7)	250.0 (617.6)	3.4 (8.3)	391.3 (966.8)	0.20	0.17
Alt. 4 SJN DV	88.8 (219.4)	51.5 (127.1)	140.2 (346.5)	183.4 (453.1)	69.3 (171.3)	252.7 (624.4)	3.4 (8.3)	396.3 (979.2)	0.20	0.17
Alt. 4 TWS DV	88.7 (219.1)	49.3 (121.8)	138.0 (340.9)	184.9 (456.9)	65.0 (160.7)	250.0 (617.6)	3.4 (8.3)	391.3 (966.8)	0.20	0.17
Alt. 5 Base Case	98.9 (244.4)	52.0 (128.5)	150.9 (372.9)	159.2 (393.4)	57.0 (140.8)	216.2 (534.1)	3.4 (8.3)	370.4 (915.3)	0.22	0.16
Alt. 5 SJN DV	99.0 (244.7)	54.2 (133.8)	153.2 (378.5)	157.6 (389.5)	61.3 (151.4)	218.9 (540.9)	3.4 (8.3)	375.4 (927.7)	0.22	0.16
Alt. 5 TWS DV	98.9 (244.4)	52.0 (128.5)	150.9 (372.9)	159.2 (393.4)	57.0 (140.8)	216.2 (534.1)	3.4 (8.3)	370.4 (915.3)	0.22	0.16
Alt. 6 Base Case	89.7 (221.6)	53.5 (132.2)	143.2 (353.8)	213.0 (526.4)	65.8 (162.7)	278.9 (689.1)	3.7 (9.2)	425.8 (1,052.2)	0.20	0.18
Alt. 6 SJN DV	89.8 (221.9)	55.7 (137.6)	145.5 (359.5)	211.5 (522.6)	70.1 (173.3)	281.6 (695.9)	3.7 (9.2)	430.8 (1,064.5)	0.21	0.18
Alt. 6 TWS DV	89.7 (221.6)	53.5 (132.2)	143.2 (353.8)	213.0 (526.4)	65.8 (162.7)	278.9 (689.1)	3.7 (9.2)	425.8 (1,052.2)	0.20	0.18
Alt. 7 Base Case	99.9 (246.9)	56.2 (138.9)	156.1 (385.8)	187.3 (462.8)	57.8 (142.8)	245.1 (605.6)	3.7 (9.2)	404.9 (1,000.6)	0.22	0.17
Alt. 7 SJN DV	100.0 (247.2)	58.4 (144.3)	158.4 (391.4)	185.7 (459.0)	62.1 (153.4)	247.8 (612.4)	3.7 (9.2)	409.9 (1,013.0)	0.23	0.17
Alt. 7 TWS DV	99.9 (246.9)	56.2 (138.9)	156.1 (385.8)	187.3 (462.8)	57.8 (142.8)	245.1 (605.6)	3.7 (9.2)	404.9 (1,000.6)	0.22	0.17
Alt. 9 Base Case	77.8 (192.3)	46.6 (115.2)	124.4 (307.5)	143.5 (354.6)	61.4 (151.8)	204.9 (506.3)	3.4 (8.3)	332.7 (822.2)	0.18	0.14
Alt. 9 RD DV	98.9 (244.4)	48.6 (120.2)	147.6 (364.6)	158.7 (392.2)	60.3 (149.0)	219.0 (541.2)	3.4 (8.3)	369.9 (914.1)	0.21	0.16
Alt. 9 PP-E DV	77.9 (192.6)	46.6 (115.2)	124.6 (307.8)	143.8 (355.4)	61.4 (151.8)	205.2 (507.2)	3.4 (8.3)	333.2 (823.3)	0.18	0.14
Alt. 9 SJN DV	77.9 (192.6)	48.8 (120.6)	126.7 (313.1)	141.9 (350.7)	65.7 (162.4)	207.6 (513.1)	3.4 (8.3)	337.7 (834.6)	0.18	0.14
Alt. 9 TWS DV	77.8 (192.3)	46.6 (115.2)	124.4 (307.5)	143.5 (354.6)	61.4 (151.8)	204.9 (506.3)	3.4 (8.3)	332.7 (822.2)	0.18	0.14
,	1 A		1 0000				7		G ,	

Sources: Community Impact Assessment, LSA Associates, Inc., 2008; Farmland Conversion Report 2002–2004, California Department of Conservation of Land Resource Protection, December 2006.

1 Prime, Unique, Local/Statewide Importance, and Grazing.

2 Total agricultural land in Riverside County is 235,737 ha (582,497 ac). The total prime and unique farmlands in Riverside County is 70,062 ha (173,120 ac).

DV = Design Variation
PP-E = Placentia Avenue/Perris Boulevard Elevated Grade
RD = Rider Street
SJN = San Jacinto North
TWS = Temescal Wash Area

Alternative 9 would result in the conversion of the least amount of Prime Farmland and Unique Farmland, while Alternative 5 would result in the conversion of the least amount of Farmland of Statewide Importance. Overall, Alternative 6 would result in the greatest conversion of designated farmland, and Alternative 9 would result in the conversion of the least amount of designated farmland.

Williamson Act Preserves

There are a few scattered Williamson Act Preserves north and east of Lake Mathews; however, a majority of the acres of Williamson Act Preserves located within the MCP Build Alternatives and the associated design variations are found on the northeast edge of the study area. Table 3.3.D identifies the amount of Williamson Act Preserves that would be impacted by the MCP Build Alternatives and design variations.

Table 3.3.D Williamson Act Preserves

1			:)
٠	ν	_	ر

Alternative	Hectares (Acres)
Alt. 4 Base Case	16.78 (41.47)
Alt. 4 SJN DV	37.05 (91.55)
Alt. 4 TWS DV	16.78 (41.47)
Alt. 5 Base Case	16.78 (41.47)
Alt. 5 SJN DV	37.05 (91.55)
Alt. 5 TWS DV	16.78 (41.47)
Alt. 6 Base Case	24.42 (60.35)
Alt. 6 SJN DV	44.69 (110.44)
Alt. 6 TWS DV	24.42 (60.35)
Alt. 7 Base Case	24.42 (60.35)
Alt. 7 SJN DV	44.69 (110.44)
Alt. 7 TWS DV	24.42 (60.35)
Alt. 9 Base Case	16.78 (41.47)
Alt. 9 RD DV	16.78 (41.47)
Alt. 9 PP-E DV	16.78 (41.47)
Alt. 9 SJN DV	37.05 (91.55)
Alt. 9 TWS DV	16.78 (41.47)

Source: Community Impact Assessment, LSA Associates, Inc. 2008.

Alt. = Alternatives

RD = Rider Street

DV = Design Variation

RD = Rider Street SJN = San Jacinto North TWS = Temescal Wash Area

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

No Build Alternatives

Under the MCP No Build Alternatives, the permanent impacts to farmlands discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but conversion of other farmlands to nonagricultural uses could result from other transportation improvement projects included in the No Build Alternatives.

Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway and would

therefore result in conversion of farmlands to nonagricultural uses immediately adjacent to those roadways.



Discussions of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species, including species and habitats associated with wetlands and other waters, are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 Temescal Wash Area Design Variation (TWS DV), which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV.

The analysis in the MSHCP EIR/EIS included consideration of impacts to farmlands because of the potential for the MSHCP Conservation Area to result in a decrease in the number of acres of land available for agricultural use. The MSHCP EIR/EIS concluded that because existing agricultural operations are a covered activity and would be permitted to continue even within the Conservation Area (subject to provisions outlined in the MSHCP), implementation of the MSHCP would not result in the conversion of existing agricultural operations into nonagricultural uses. Therefore, no adverse impacts resulting from the conversion of active agricultural land to non-agricultural uses would occur.

Based on the analysis of impacts of the MCP related to farmlands, which was discussed earlier in this document, the impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts to farmlands beyond that previously analyzed.

3.3.3.2 Temporary Impacts Build Alternatives

Temporary impacts to farmlands as a result of construction of any of the MCP Build Alternatives occur due to the proximity of construction activities to field crops or grazing lands. Fugitive dust emissions from grading and exhaust emissions from construction equipment could have an adverse impact on farmlands immediately adjacent to the construction areas. These impacts would be minimized through implementation of Mitigation Measures AQ-1 through AQ-3, described in Section 3.14 (Air Quality) of this EIR/EIS.

Noise from construction equipment could startle or otherwise disturb livestock. These impacts would be minimized through implementation of Caltrans Standard Specification, Section 5-1, "Sound Control Requirements," in the Standard Special Provisions. Agricultural operations could be adversely impacted where the MCP project would bisect existing agricultural parcels of land, impairing the ability of farm equipment to be easily transported from one parcel to another, or within the same parcel. These impacts would be minimized through implementation of the construction Traffic Management Plan described under Mitigation Measure TR-2 in Section 3.6 (Traffic/Transportation) of this EIR/EIS.

No Build Alternatives

Under the MCP No Build Alternatives, the temporary adverse effects to farmlands discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but would occur for other farmlands impacted by the other transportation improvement projects included in the No Build Alternatives. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway and would therefore result in some of the same proximity and access impacts along these two roads as those discussed above for the MCP Build Alternatives.

3.3.4 Avoidance, Minimization, and/or Mitigation Measures

As discussed above, the MCP Build Alternatives would convert Prime Farmland, Unique Farmland, and Farmland of Statewide Importance and would conflict with existing zoning for agricultural use and Williamson Act contracts; therefore, mitigation measures have been identified and are described below to reduce these impacts. These measures would apply to all MCP Build Alternatives.

- AG-1 Prior to the start of any construction activity adjacent to farmlands, the Riverside County Transportation Commission (RCTC) shall provide written notification to agricultural property owners or leaseholders immediately adjacent to the disturbance limits for the Mid County Parkway (MCP) project. The notification is to indicate the intent to begin construction, including an estimated date for the start of construction. In order to provide agricultural property owners or leaseholders sufficient lead time to make any changes to their operations due to MCP project construction, this notification shall be provided at least 3 but no more than 12 months prior to the start of construction activity.
- AG-2 Prior to the start of any construction activity adjacent to any farmlands, the Riverside County Transportation Commission (RCTC) shall coordinate with agricultural property owners or leaseholders to provide temporary livestock and equipment crossings of the MCP right of way to minimize impacts to livestock movement, and routine operations and normal business activities during project construction.
- AG-3 Prior to completion of right of way acquisition, the Riverside County Transportation Commission (RCTC) shall prepare and send all required notices to the Director of Conservation and the local governing body responsible for the administration of agricultural preserves pursuant to Section 51291 of the Williamson Act for any roadways within established agricultural preserves.
- AG-4 During final design, and in coordination with property owners of lands in use for agricultural operations, the Riverside County Transportation Commission (RCTC) will finalize the realignments of any affected access roads to provide equipment crossings to minimize impediments

to routine agricultural operations and normal business activities that may result from long-term project operation.

Previous avoidance, minimization, and/or mitigation measures that address acquisition of farmland are discussed in Section 3.4.2, Relocations.

3.4 Community Impacts

The information in this section is based on the *Community Impact Assessment* (CIA) (LSA Associates, Inc., 2008) and the *Draft Relocation Impact Report* (DRIR) (Epic Land Solutions, June 2007).

3.4.1 Community Character and Cohesion

3.4.1.1 Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA), established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. The Federal Highway Administration in its implementation of NEPA [23 U.S.C. 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, 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.

3.4.1.2 Affected Environment

Study Area Communities

Riverside County (Unincorporated Area)

Much of the MCP study area is located in unincorporated portions of Riverside County. These areas are described from west to east below. A full discussion and description of the communities within the MCP study area are provided in Section 3.1, Land Use.

Temescal Canyon Area

Located at the western end of the MCP study area, this area is undergoing rapid development, with both residential and mixed-use (commercial, industrial, etc.)

•

projects that have been recently completed or are still under construction. Several large mining and rock quarry operations are in this area.

Lake Mathews/Woodcrest Area

The majority of the Lake Mathews/Woodcrest area is predominantly open space. Southeast of the intersection of Cajalco Road and Lake Mathews Drive is the community of Lake Mathews Estates, a rural residential community characterized by large single-family residences on large lots. West of Lake Mathews are widely spaced residences. A mix of commercial and residential structures is located at the southwest corner of Cajalco Road and Gavilan Road. The community of Victoria Grove is located on the north side of El Sobrante Road, between La Sierra Avenue and McAlister Street.

Mead Valley Area

As described in the Mead Valley Area Plan component of the Riverside County General Plan (October 2003), the Mead Valley Area includes many unique communities that are defined by their rural and semirural character. Mead Valley communities within the MCP study area include Mead Valley itself, Gavilan Hills, and Old Elsinore Road. Overall, the Mead Valley Area Plan land use plan provides for a predominantly rural community character with an equestrian focus.

South of Cajalco Road is a mixture of equestrian estate homes set among rolling hills and large stands of eucalyptus. A community center and a fire station are located in Mead Valley. The area north of Cajalco Road is predominantly a grid-like pattern of 0.2 hectare (ha) (0.5 acre [ac]) and larger residential lots. An elementary and a middle school are also located in this area. A high level of pedestrian traffic through this community along Cajalco Road was noted during field observation.

Located along Cajalco Road between Brown Street and Interstate 215 (I-215) are commercial properties, single-family residences, vacant land, manufactured housing, motels, roadside businesses, residential/commercial scrap yards, a light industrial building, abandoned homes, a church, a nursery, a government repository, a construction equipment yard, a lumberyard, and a gas station.

Most of these rural residential properties have been in place for decades, and it is expected that the community cohesion within this segment is the highest of any of the segments, based on tenure of the residents, the presence of small community retail businesses, and the high level of pedestrian activity in the area.









Lakeview/Nuevo Area

The Lakeview/Nuevo area is within a wide valley formed by the San Jacinto River east of Lake Perris. Agriculture is the primary land use, including both farmland and uses supporting agricultural operations. A liquor store and several buildings are located on the southwest corner of the intersection of Hansen Avenue/Davis Road and the Ramona Expressway. The Lakeview Community Church and Jesus Center Christian School are located on the corner of Magnolia Avenue and Reservoir Road.

San Jacinto Valley Area

The portions of the San Jacinto Valley within the MCP study area are mostly agricultural (dairy) land.

City of Corona

The city of Corona is located at the western terminus of the MCP study area. The surrounding area is comprised of open space/agricultural land and high-density residential comprising single-family residences. Single-family residences are the predominant feature on the north end of the MCP study area, on both sides of Interstate 15 (I-15) up to Ontario Avenue. There is an industrial area located west of I-15 at the intersection of Compton Avenue and Ontario Road.

The area adjacent to the I-15/Cajalco Road interchange is mostly retail commercial in all quadrants except the southwest quadrant, which is currently in an agricultural use. The community in the immediate area is relatively new, with much of it having been developed in the last 5–10 years.

City of Perris

The city of Perris is in the central portion of the MCP study area, extending easterly from I-215. Much of the area within Perris is developing with both residential and nonresidential land uses. Commercial/industrial uses surround the I-15, while the area along the Ramona Expressway is a combination of commercial, industrial, and residential. Residential development is occurring eastward of the I-15. The Perris area is undergoing change from a rural/semirural community to a more urbanized area as a result of ongoing land development.

City of San Jacinto

Agriculture and open space with scattered homes dominate the landscape along the Ramona Expressway from the San Jacinto River easterly to State Route 79 (SR-79).



Study Area Demographics

As shown in Figures 3.4.1a and 3.4.1b, the MCP study area was covered by 10 Census Tracts in the 1990 Census and by 31 Census Tracts from the 2000 Census that are located directly adjacent to the project limits in which the direct impacts and many of the indirect impacts of the project may occur. (The difference in the number of Census Tracts used for the 1990 and 2000 Censuses is due to the increased number of Census Tracts as a result of population growth in the area by 2000.) The MCP study area includes an area much larger than that directly affected by project construction and right of way acquisitions, but it provides a broader picture of the area affected by the MCP Build Alternatives than the city and county demographics alone can provide. Census Tracts were used because they are the most complete demographic data set available for analysis. For context and comparison, information is also provided at city and county levels for certain topics.

Community cohesion is 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 (*Community Impact Assessment Handbook*, Caltrans, June 1997). The demographic characteristics for the MCP study area provided within this assessment were obtained from a combination of sources, including the United States Census Bureau, the Southern California Association of Governments (SCAG), and the Western Riverside Council of Governments (WRCOG).

Elements of community cohesion can be found in demographic data used to profile communities from the 2000 Census. Typical indicators of community cohesion are described below, followed by a specific discussion of these indicators within the MCP study area.

- **Age:** Elderly and stay-at-home parents tend to be more active in their community. They have time to become involved. The transit-dependent population is comprised of the population under age 18 and age 65 and older.
- **Ethnicity:** Ethnic homogeneity is associated with a higher degree of community cohesion.
- **Household Size:** Households of two or more people tend to correlate with a higher degree of community cohesion.

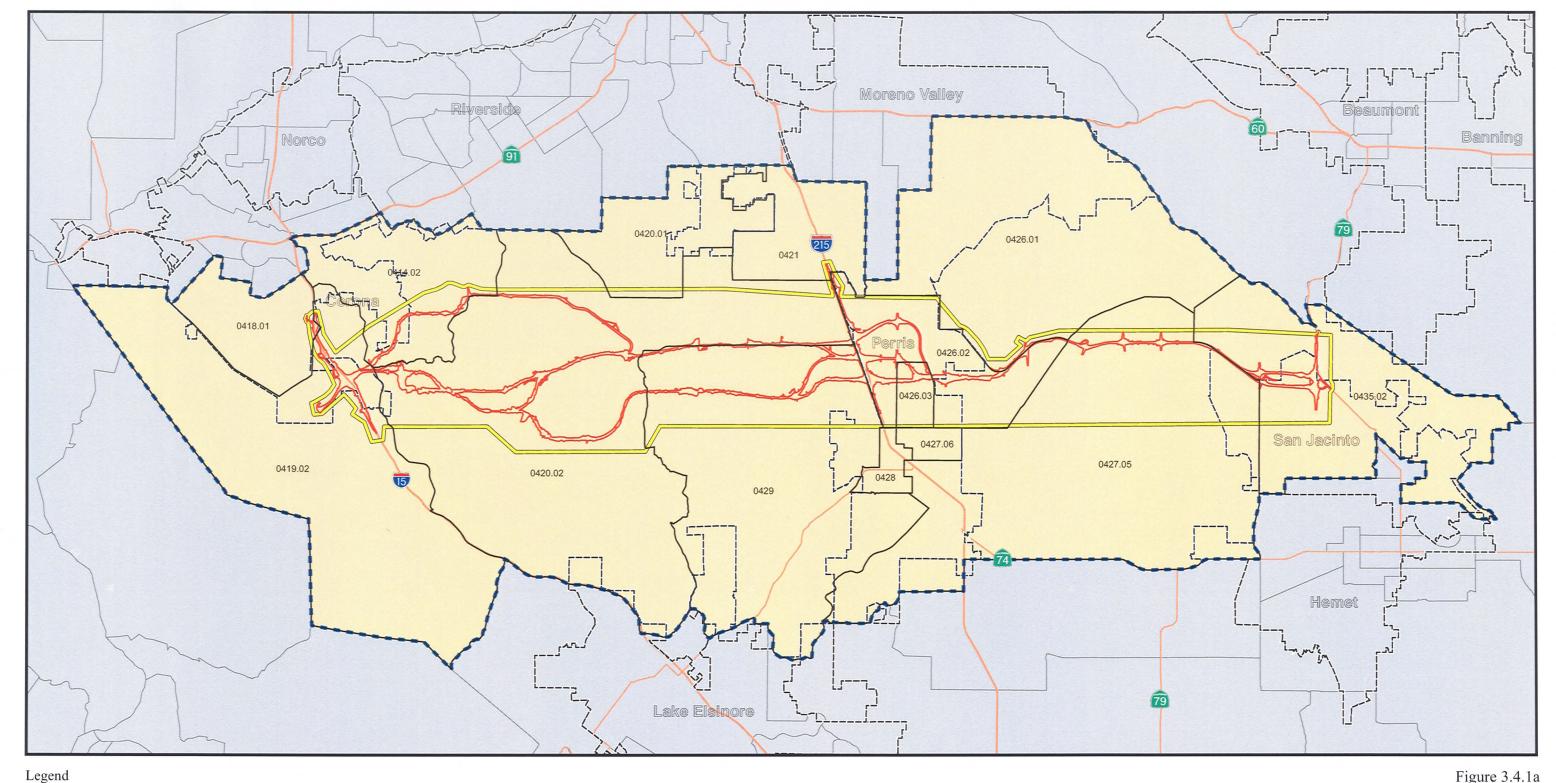


Figure 3.4.1a

Study Area Census Tracts 1990 KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

MCP Study Area

0429.19 Study Area Census Tracts (1990)

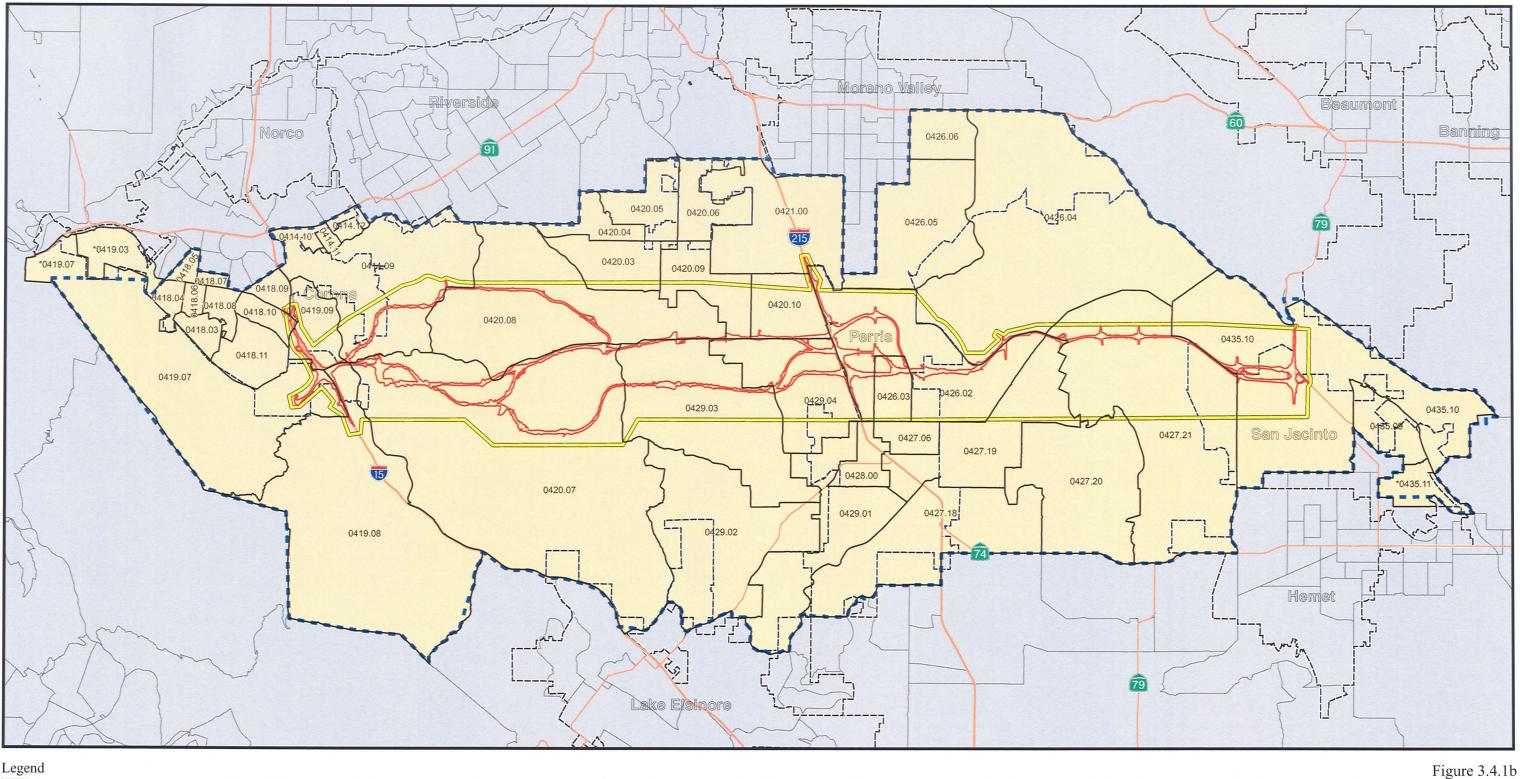
MCP Right-of-Way (All Alternatives) Census Tracts outside of Study Area (1990)

Community Impact Assessment Study [___] City Boundary
Area (Based on 1990 Census Tracts)

SOURCE: TBM 2006, Census 2000, Jacobs Engineering (02/07)

0	7,500	15,000	30,000 Feet
0	2,500	5,000	10,000 Met

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



Legend

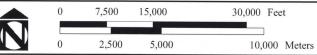
MCP Study Area

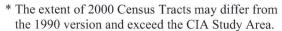
MCP Right-of-Way (All Alternatives)

Community Impact Assessment Study
Area (Based on 1990 Census Tracts)

Census Tracts outside of Study Area (2000)

SOURCE: TBM 2006, Census 2000, Jacobs Engineering (02/2007)







Study Area Census Tracts 2000 KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

^{0429.19} Study Area Census Tracts (2000) with Tract Number

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

• Transit-Dependent Population: Residents who tend to walk or use public transportation for travel tend to correlate with a higher degree of community cohesion.

Age

In 2000, the population under 18 comprised 30.3 percent of the county's population, while the population under 18 in the MCP study area was slightly higher, at 30.5 percent. The MCP study area had a higher proportion of residents age 65 and over than the county. The number of residents in the MCP study area age 65 and over was 19.1 percent in 2000, but comprised only 12.7 percent of the total county population (195,964) in 2000. In 2000, Census Tract 435.10 in the MCP study area had the highest percentage of persons age 65 or over (25.8 percent).

Ethnicity

Table 3.4.A shows the ethnic composition of the county, individual cities, and the MCP study area in 1990 and 2000. Figure 3.4.2 illustrates ethnic characteristics of Census Tracts within the MCP study area, and Figure 3.4.3 illustrates the percentage of Hispanic population within the MCP study area.

Based on the 2000 Census, the largest racial category in the county, Corona, Perris, and San Jacinto was White (65.6, 62.0, 41.2, and 69.3 percent of the population, respectively). Between 1990 and 2000, the population of Whites has declined by 10.8 percent in the county, 13.0 percent in Corona, 29.3 percent in Perris, and 5.3 percent in San Jacinto. Hispanics of any race comprised 36.2 percent of the population in the county in 2000, up from 26.3 percent in 1990. A large portion of the cities of Corona, Perris, and San Jacinto was also comprised of Hispanics (35.7, 56.2, and 40.3 percent, respectively). The largest racial group of the study area, according to the 2000 Census, was White (60.7 percent of the population), while Hispanics of any race comprised 37.6 percent of the study area population.

Household Size

In 2000, the average household size within the county was 2.98 persons per household, according to the Census. Among the cities located within the MCP study area, Perris has the highest average household size, with 3.73 persons, while San Jacinto has the smallest average household size, with 2.84 persons. Within the MCP

Persons of Hispanic or Latino heritage may be considered members of other racial classifications.

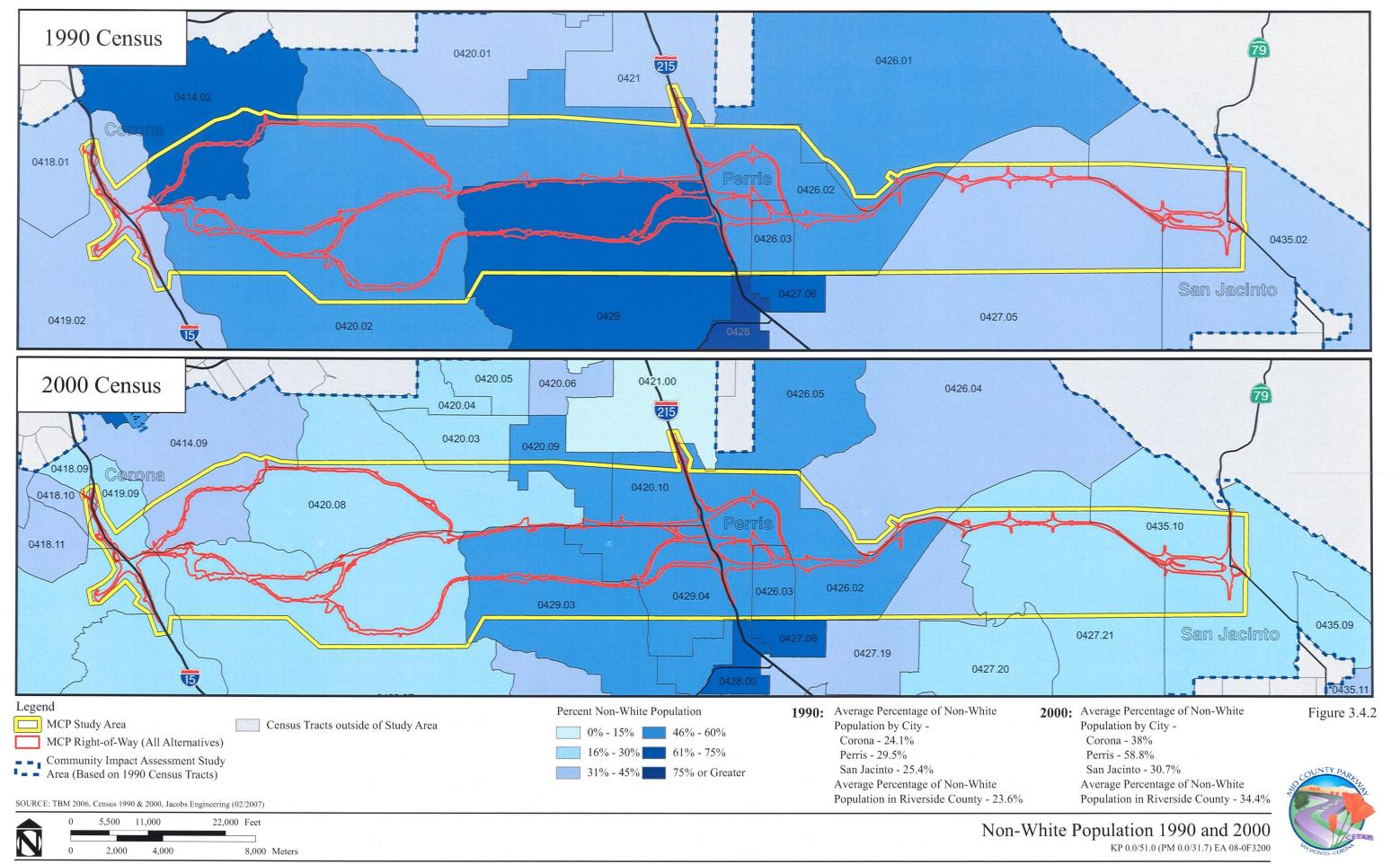
Table 3.4.A Ethnic Composition

					Total Percentage			
Year	Jurisdiction	White	Black	American Indian/ Native Alaskan	Asian ²	Hawaiian³/ Pacific Islanders	Other	Hispanic
				County				
1990	Riverside County	894,767 (76.4%)	63,591 (5.4%)	11,494 (1.0%)	41,591 (3.6%)		158,970 (13.6%) 307,514 (26.3%)	307,514 (26.3%)
2000	Riverside County	1,013,478 (65.6%)	96,421 (6.2%)	18,168 (1.2%)	56,954 (3.7%)	3,902 (0.3%)	288,868 (18.7%)	559,575 (36%)
1990	Corona	57,744 (75.9%)	2,102 (2.8%)	634 (0.8%)	5,399 (7.1%)	111111111111111111111111111111111111111	10,261 (13.4%)	23,101 (30.4%)
2000	Corona	77,514 (62%)	8,031 (6.4%)	1,086 (0.9%)	9,425 (7.5%)	387 (0.3%)	21,894 (17.5%)	44,569 (35.7%)
1990	Perris	15,119 (70.5%)	2,788 (13.0%)	218 (1.0%)	713 (3.3%)		2,622 (12.2%)	7,704 (35.9%)
2000	Perris	14,909 (41.2%)	5,748 (15.9%)	529 (1.5%)	995 (2.7%)	121 (0.3%)	11,781 (32.6%)	20,322 (56.2%)
1990	San Jacinto	12,099 (74.6%)	193 (1.2%)	342 (2.1%)	156 (1.0%)	-	3,420 (21.1%)	5,455 (33.7%)
2000	San Jacinto	16,488 (69.3%)	630 (2.6%)	556 (2.3%)	267 (1.1%)	38 (0.2%)	4,641 (19.5%)	9,583 (40.3%)
	Course Contact Chaire Lines	0000						

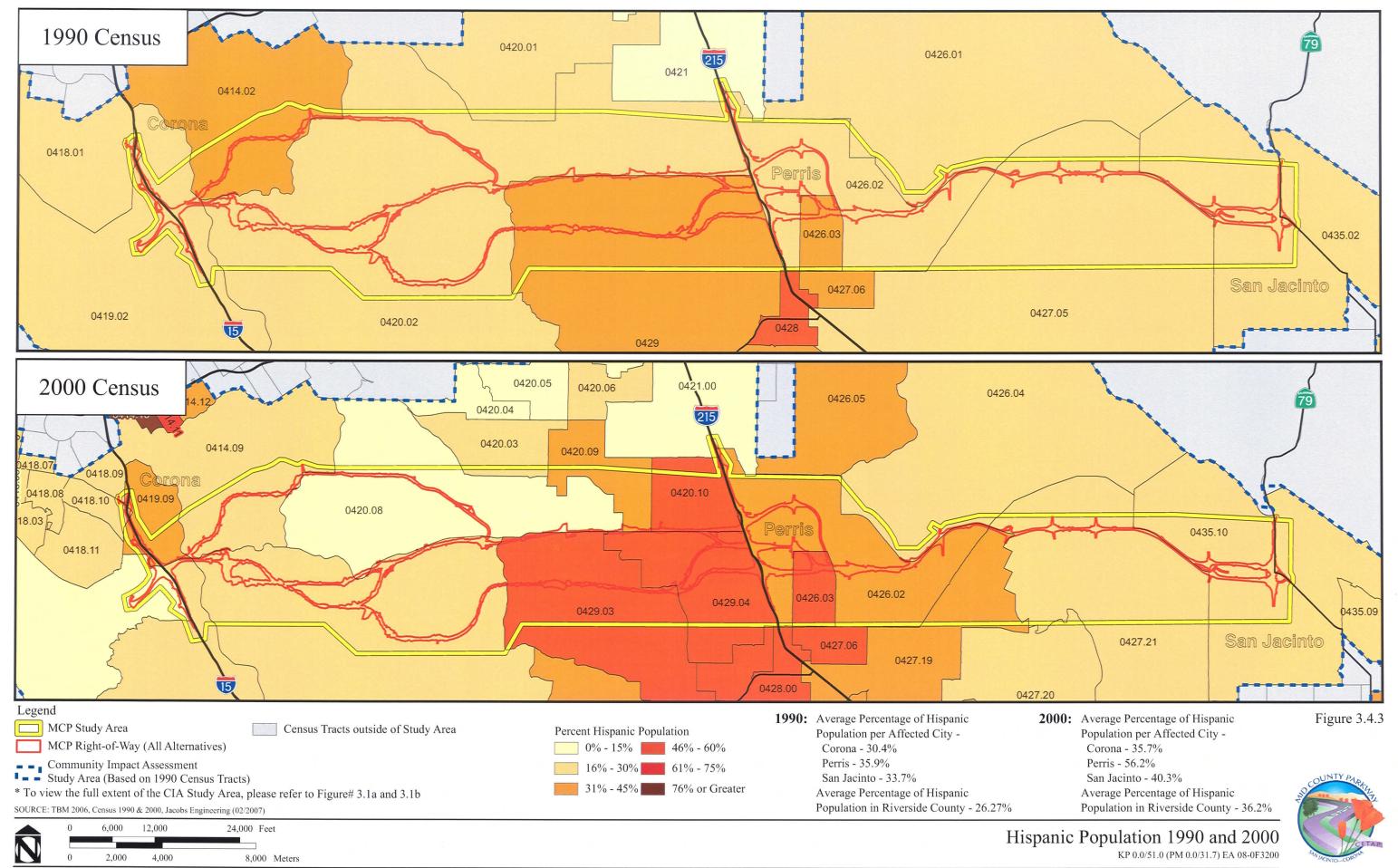
Source: United States Census, 1990 and 2000.

Percentages do not add to 100 percent because the White, Black, American Indian and Alaska Native, Hawaiian and Pacific Islander, and Other categories include persons identified with one race only; the Hispanic category overlaps with other categories.

In 1990, the Asian population included Hawaiian and Other Pacific Islanders; in 2000, the Asian population did not include Hawaiian and Other Pacific Islanders race was included with the Asian population.



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



**\(\begin{align*}
 \]**

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

study area, the average household size is greater, totaling approximately 3.35 persons per household, while the individual study area Census Tracts of 420.1 and 429.04 had the highest individual average household sizes, at 3.77 and 3.75 persons per household, respectively.

Housing

Riverside County has some of the most affordable housing in southern California. As a result, the cities in Riverside have some of the highest rates of homeownership in metropolitan areas in California. As shown in Table 3.4.B, in 2000, the three study area cities had higher percentages of owner-occupied and renter-occupied units than the county average; this is due, in part, to the higher vacancy rate in the County compared to the three cities.



Table 3.4.B Housing Profile

State	Regional	Stu	dy Area Ci	ties
California	Riverside County	Corona	Perris	San Jacinto
Total Housing Units	584,674	39,271	10,553	9,476
Housing Units, Occupied	86.6%	95.3%	91.5%	87.7%
Owner-occupied Units	59.6%	67.5%	68.1%	71%
Renter-occupied Units	26.9%	32.5%	31.9%	29%
Vacant Units	13.4%	4.7%	8.5%	12.3%

Source: United States Census Bureau, Census 2000, factfinder.census.gov.

Housing Tenure

The United States Census Bureau conducts the American Housing Survey (AHS) to provide up-to-date housing statistics for the Department of Housing and Urban Development (HUD). The data collected provides information about a general sample of a metropolitan (Riverside-San Bernardino) area of a greater size than the MCP study area. Nevertheless, the AHS is useful as a rough indicator of neighborhood stability and is based on the assumption that the longer people live in a community, the more committed they become to it, and the more cohesive the community becomes as a result. The AHS is only one tool that is coupled with direct surveys of the community and other demographics to determine the level of community cohesion present in the MCP study area.

The AHS for the Riverside-San Bernardino-Ontario Metropolitan Area: 2000 was issued in July 2003, and the sample was from surveys conducted in Riverside County and the cities of Riverside and San Bernardino. According to the AHS, 7,081 of the

10,839 households in the sample (or 65.3 percent of households) have lived in their unit since 1999 or earlier.

Transit-Dependent Population

The Federal Transit Administration (FTA) defines transit-dependent persons as those who are without private transportation, elderly (over age 65), youths (under age 18), or below poverty or median income levels as defined by the United States Census Bureau. The cities of Corona and San Jacinto reported similar proportions of persons under 18 years of age (33.4 percent and 31.3 percent, respectively) compared to the county average (30.3 percent). The city of Perris reported nearly 40 percent of its population as under 18 years of age.

The cities of Corona and Perris reported significantly lower percentages of the population over age 65 (5.8 percent and 6.2 percent, respectively) compared to the county average of 12.7 percent. However, the city of San Jacinto reports that over 17 percent of its population is age 65 or older. This is approximately 35 percent higher than the county average. Compared to the County, which reports 43 percent of its population as transit dependent, of the three cities, San Jacinto has the highest percentage of transit-dependent persons, with 48.5 percent. Perris has 45.8 percent, and Corona has 39.2 percent.

Community Facilities

In addition to parks and recreation areas discussed in Section 3.1.3 and public safety facilities discussed in Section 3.5 of this EIR/EIS, other community facilities such as schools, libraries, post offices, and community centers within the MCP study area are discussed below.

Schools

County of Riverside

While the County does not have its own school districts, the County Office of Education is a service agency linking the County's 23 school districts to the California Department of Education. The Nuview Union School District is located in the unincorporated community of Nuevo. The following Nuview Union School District schools are located in the MCP study area:

- Mountain Shadow Middle School: 30402 Reservoir Road
- Nuview Elementary School: 29680 Lakeview Avenue
- Valley View Elementary School: 21200 Maurice Street

City of Corona

The City of Corona is served primarily by the Corona-Norco Unified School District, with the exception of the northeastern portion of the city, which is served by the Alvord Unified School District. The following school, part of the Corona-Norco Unified School District, is located in the MCP study area:

El Cerrito Middle School: 7610 El Cerrito Road

City of Perris

The City of Perris is served primarily by the Perris Union High School District and the Val Verde Unified School District. The Perris Union High School District does not have any schools within the MCP study area. The following schools, part of the Val Verde Unified School District, are located in the MCP study area:

- Avalon Elementary School: 1815 East Rider Street
- Citrus Hill High School: 18150 Wood Road
- Columbia Elementary School: 21350 Rider Street
- Glen View Preschool: 21-200 Oleander Avenue
- Lakeside Middle School: 27720 Walnut Avenue
- Manuel L. Real Elementary School: 19150 Clark Street
- Mead Valley Elementary School: 21-100 Oleander Avenue
- Sierra Vista Elementary School: 20300 Sherman Road
- Tomas Rivera Middle School: 21675 Martin Street
- Triple Crown Elementary School: 530 Orange Avenue
- Val Verde Elementary School: 2656 Indiana Avenue
- Val Verde High School: 972 West Morgan Street

Two proposed schools, part of the Val Verde Unified School District, are in the MCP study area:

- May Ranch Elementary School: 900 East Morgan Avenue
- Southwest High School: 1400 Orange Avenue

City of San Jacinto

The San Jacinto Unified School District serves the City of San Jacinto. No schools of the San Jacinto Unified School District are located within the MCP study area.

Other Community Facilities (Libraries, City Halls, etc.) Libraries

There is one library located within the MCP study area:

Community of Nuevo: Nuview Library, 29990 Lakeview Avenue

Post Offices

There are two post offices within the MCP study area:

• City of Corona: 1941 California Avenue

• Community of Nuevo: 29245 Lakeview Avenue

Community/Senior Centers

There is one Community/Senior Center located within the MCP study area:

Mead Valley Senior/Community Center: 21091 Rider Street

Community Cohesion Summary

According to the indicators of community cohesion described above (including ethnic homogeneity, a high percentage of persons aged 65 and over, and the large number of residents who meet the FTA definition of transit-dependent persons), it can be concluded that there is a high degree of community cohesion throughout the MCP study area, particularly in the Lake Mathews, Mead Valley, Gavilan Hills, Perris, Lakeview/Nuevo, and San Jacinto Valley areas.

Economics

The employed civilian populations in the study area cities in Riverside County are summarized in Table 3.4.C. As shown, the educational services/health care/social assistance, manufacturing, and retail trade sectors have the highest levels of employment in the study area cities and the county overall.

Commuting Patterns

Traffic congestion and long commutes have a negative impact on personal perceptions of quality of life and on regional air quality. As employment and population continue to increase in the region, hours of traffic delays and daily vehicle miles traveled per person are projected to increase as well. One major transportation and mobility issue that the Inland Empire as a whole faces is that many residents work in neighboring counties. While this has become slightly less pronounced over time, the 2000 United States Census showed that nearly 61 percent of Riverside County residents were employed outside their cities of residence and only 21 percent

were employed in their cities of residence. Table 3.4.D illustrates travel patterns for the study area cities and the county overall. As shown, the majority of residents in Corona, Perris, and San Jacinto work outside their cities of residence.



Table 3.4.C Employment in the Study Area Cities and the County Overall

	Emp	loyed Civilian Po	pulation (16 and	over)
Economic Sector	Corona	Perris	San Jacinto	Riverside County
Construction	4,125 (7.2%)	1,352 (11.3%)	691 (9.1%)	55,751 (9.2%)
Manufacturing	10,569 (18.5%)	2,233 (18.7%)	980 (12.9%)	72,837 (12.1%)
Retail Trade	6,950 (12.1%)	1,563 (13.1%)	925 (12.2%)	76,466 (12.7%)
Finance, Insurance	3,924 (6.9%)	408 (3.4%)	304 (4.0%)	34,348 (5.7%)
Professional, Technical Services	4,785 (8.4%)	947 (7.9%)	589 (7.7%)	51,577 (8.6%)
Educational, Health, Social Services	9,973 (17.4%)	1,973 (16.5%)	1,761 (23.2%)	113,407 (18.8)
Lodging, Food Service	3,814 (6.7%)	951 (8%)	684 (9.0%)	58.131 (9.8%)
All Other Sectors	13,136	2,507	1,672	30,166 (5.0%)
Total	57,276	11,934	7,606	492,683

Source: United States Census Bureau, Census 2000, factfinder.census.gov.

Table 3.4.D Travel Patterns (2000)



	Regio	nal	Affected Co	ommunities
	Riverside County	Corona	Perris	San Jacinto
Worked outside place of residence	359,575 (61%)	40,760 (72.4%)	9.123 (78%)	5,849 (78%)
Worked in place of residence	155,136 (21%)	15,503 (27.5%)	2,457 (21%)	1.603 (21.5%)
Travel Time in Minutes	31.2	35.2	37.9	32.4
Drive alone	433,644 (73.4%)	42,524 (75.7%)	7,856 (67.8%)	5,366 (72%)
Carpool	104,195 (17.6%)	9,223 (16.4%)	2,840 (24.5%)	1,453 (19.5%)
Public Transportation	8,143 (1.4%)	662 (1.2%)	182 (1.6)	25 (0.3)
Walk	11,217 (1.9%)	892 (1.6%)	263 (2.3%)	201 (2.7%)

Source: United States Census Bureau, Census 2000, factfinder.census.gov.

3.4.1.3 Environmental Consequences

Permanent Impacts

Build Alternatives

Alternatives 4 and 5

Alternatives 4 and 5, like all MCP Build Alternatives, would result in a physical change that would permanently alter the character of the existing community. As previously described, Alternatives 4 and 5 would construct a six- to eight-lane parkway for most of their length. The new parkway, once complete, would be a

much wider roadway facility than currently exists within the affected communities and would result in a reconfiguration of existing adjacent roadways, sidewalks, bicycle lanes, and driveways. On local streets affected by the parkway, sidewalks and crosswalks familiar to the residents would be relocated and/or replaced with new sidewalks and crosswalks. Existing routes that are used to travel from one part of the community to another and are familiar to residents would be redesigned to accommodate the new parkway, associated interchanges, and area roadway improvements. Property acquisition would result in the relocation of residents and established businesses and places of employment to other parts of the MCP study area and outside the MCP study area.

Although a temporary disruption of community character and cohesion would occur as a result of construction of Alternatives 4 and 5, the ultimate mobility improvements provided would also benefit these communities by providing an improved connection to other parts of the MCP study area, western Riverside County, and the region as a whole. Community services within the MCP study area, such as fire, police protection, and other emergency responders would be more readily available with Alternatives 4 and 5 since mobility within the MCP study area would improve over existing conditions. Effects on community cohesion are discussed below for specific communities.

Temescal Canyon Area

In the Temescal Canyon area, Alternatives 4 and 5 have been aligned to avoid both existing and developing (e.g., Dos Lagos) communities; therefore, these alternatives would not impact community cohesion in this area. Implementing Alternatives 4 and 5 would cause rerouting and/or closing portions of Knabe Road (west of I-15) and Temescal Canyon Road (east of I-15), which would have a slightly adverse effect on access and travel time for residents living within the vicinity of these improvements.

Lake Mathews/Woodcrest Area

Permanent community character and cohesion impacts would be minimal within this area since Alternatives 4 and 5 will be located within existing Riverside County Habitat Conservation Agency (RCHCA) or Metropolitan Water District of Southern California (Metropolitan) habitat reserve lands that do not allow for urban development. Alternatives 4 and 5 would cause rerouting and/or closing portions of Cajalco Road, Lake Mathews Drive, Gavilan Hills Road, and several other roadways that would intersect the MCP.



To meet the consistency requirements of the western Riverside County MSHCP (see Section 3.17 of this EIR/EIS for a detailed discussion of MSHCP consistency), the implementation of the MCP could also include the closure of Cajalco Road from the area just east of La Sierra Avenue to the area just west of Lake Mathews Road. This closure would reroute existing and future traffic that would otherwise use this segment of Cajalco Road for through travel and local access. From an overall roadway capacity point of view, the closure of Cajalco Road will delete a roadway with the capacity to carry approximately 15,000 vehicles per day. However, the opening of the MCP will provide a roadway with the capacity to carry approximately 75,000 vehicles per day, thereby greatly increasing the west-east roadway capacity available in the MCP study area.

For Alternatives 4 and 5, the possible closure of Cajalco Road will affect travel times for residences located along Cajalco Road in the area west of Lake Mathews Road. This area is estimated to include approximately 20 residences with possible future growth to approximately 100 residences by 2035, the horizon year for the MCP traffic analysis. The additional travel time (between 5 and 10 minutes) will vary depending on the travel destination. For access to destinations in the I-15/Cajalco Road area, a Cajalco Road closure will require travel east to the MCP/Lake Mathews Drive interchange, resulting in an increased travel time of approximately 5 minutes. For access to destinations in the El Sobrante Road/La Sierra Avenue area, a Cajalco Road closure will require travel east to El Sobrante Road and then west to La Sierra Avenue, resulting in travel time increases of approximately 10 minutes. As described in Section 3.5, Utilities and Emergency Services, there are no fire stations or law enforcement stations along the section of Cajalco Road that would be impacted by a road closure.

Mead Valley Area

Implementing Alternatives 4 and 5 through this area would result in a high concentration of property acquisitions that would remove a large number of the rural residential properties in this community. The acquisition of existing properties coupled with the implementation of the parkway would serve to permanently alter the community character of Mead Valley from that of a semirural community to a more urbanized area. In addition, residents of the community who travel on foot would encounter a physical barrier in crossing the proposed parkway where none exists today along existing Cajalco Road.





The ability to cross the MCP project would be limited to overcrossings and interchanges spaced every 0.8–1.6 kilometers (km) (0.5–1.0 mile [mi]). Vehicular traffic within the Mead Valley community would also be affected by these access changes and would reduce the mobility of area residents However, moderate increases from traveling less direct routes would be compensated for by the overall decrease in travel times as a result of traveling on the higher-speed facility.

Perris Area

The acquisition of existing properties coupled with the implementation of the parkway would serve to change the community character of this area from a semirural community to a more urbanized area. Construction of Alternatives 4 and 5 would change the character of the Perris area by introducing a major transportation facility where none was planned before, but would not impair community cohesion since it is routed along the edges of existing communities.

As a result of constructing the MCP/I-215 systems interchange, Alternatives 4 and 5 would result in a direct physical impact to 78,095 square feet (sf) of portable classrooms of Val Verde High School and 70,452 sf of the Val Verde Unified School District Administration and Facilities Operation Building (Right of Way Data, Epic Land Solutions, 2006).

Lakeview/Nuevo Area

A small number of properties and a community retail/convenience store would be acquired along Reservoir Road between Lakeview Avenue and Hansen Avenue. The community retail/convenience store appears to be the only store within several miles of the adjacent community. The permanent closure of this convenience store, the only store within the immediate vicinity, would result in the removal of an important retail resource to the residents in the vicinity, thus impacting community cohesion. The acquisitions of the rural residential properties would contribute to a change in the community character by displacing and relocating existing residents.

San Jacinto Valley Area

The portion of the San Jacinto Valley impacted by Alternatives 4 and 5 is primarily dairy land, with few businesses or residences affected; therefore, there would be no community cohesion impacts in this area.





Alternatives 6 and 7

Alternatives 6 and 7, like all MCP Build Alternatives, would result in a physical change that would permanently alter the character of the existing community. East of El Sobrante Road and in the I-15 area, Alternatives 6 and 7 would result in impacts similar to those resulting from Alternatives 4 and 5 since the MCP project follows the same alignments in these areas. The differences in impacts between Alternatives 4 and 5 and Alternatives 6 and 7 west of El Sobrante Road to Temescal Canyon Road are discussed below.



Lake Mathews/Woodcrest Area

Portions of Alternatives 6 and 7 will be located within existing RCHCA or Metropolitan lands that do not allow for urban development. However, property acquisitions along El Sobrante Road between La Sierra Avenue and Palm Street would occur. Since these are on the outskirts of the community areas, no adverse impacts to community cohesion would occur.

Alternative 9

Alternative 9, like all MCP Build Alternatives, would result in a physical change that would permanently alter the character of the existing community. Alternative 9 would result in a four- to eight-lane parkway throughout the MCP study area and would cause impacts to community character and cohesion similar to those caused by Alternatives 4 through 7, particularly the Temescal Canyon Area, Lakeview/Nuevo Area, and San Jacinto Valley Area where Alternative 9 follows the same alignment as Alternatives 4 through 7. Impacts of Alternative 9 in other areas are discussed below.



Lake Mathews/Woodcrest Area

For Alternative 9, the possible closure of parts of Cajalco Road will affect travel times for existing and future residences and businesses along Cajalco Road from the area west of Lake Mathews Road to the area west of Clark Street. In this area, access to the I-15/Cajalco Road area and points beyond would be gained by traveling south to the MCP and then west to the I-15/Cajalco Road area, rather than directly to the west along Cajalco Road. The increase in travel time by traveling in a less direct route would be partly offset by the decrease in travel times provided by traveling on a higher speed facility (i.e., MCP versus Cajalco Road). The maximum increase in travel distance is estimated to be 5 miles and the maximum increase in travel time is estimated to be 10 minutes. Depending on the individual origin and destination, some

travelers may choose alternative routes such as I-215, Mockingbird Canyon Road, El Sobrante Road, and La Sierra Avenue as a result of the Cajalco Road closure. The diverse number of origins, destinations, and travel routes makes a detailed comparison difficult. However, comparison of traffic forecasts from the MCP No Build scenarios with the MCP Alternative 9 scenario does not indicate any substantial change in travel patterns along any particular travel route.

With regard to community cohesion, Alternative 9 is anticipated to have little effect on the cohesiveness of the Lake Mathews Estates community since the alignment is routed around the southerly edge of this community, displacing only a few residential properties in this area. However, some change to community character would result through introduction of a highway in a semirural area where no such facility was previously planned.

Mead Valley Area

Unlike Alternatives 4 through 7, implementing the MCP through this area would reduce acquisitions of rural residential properties in the Mead Valley community since the property acquisitions would occur in the less populated Gavilan Hills area rather than along Cajalco Road. Although fewer in number than under Alternatives 4 through 7, many of these rural residential properties have existed for decades, and the community cohesion within this area is the highest of any of the communities within the MCP study area, based on tenure of the residents and the high value that the residents place on their rural quality of life. The removal of existing properties and the implementation of the parkway would serve to permanently alter the rural community character of the portion of the Gavilan Hills area traversed by the parkway.

Perris Area

In the city of Perris, Alternative 9 is routed along Placentia Avenue on an alignment below existing grade (i.e., below existing ground level). Alternative 9 will require the acquisition of numerous residential parcels south of Placentia Avenue between Perris Boulevard and Wilson Avenue. Alternative 9 will adversely impact the character of the community by introducing a 6- to 8-lane, limited-access parkway where an urban arterial was previously planned. Alternative 9 will also impact community cohesion by removing many long-term residents (the area was developed in the 1970s) as



well as removing large portions of and facilities within Paragon Park, a community park serving this area.

These impacts would be more severe under the Placentia Avenue/Perris Boulevard Elevated Grade (PP-E) Design Variation, which would construct the parkway on an elevated alignment along Placentia Avenue, resulting in increased property acquisitions as well as the visual impact of an elevated facility.

Under the Rider Street (RD) Design Variation of Alternative 9, the impact to community character and cohesion would be similar to Alternatives 5 and 7, which follow the same alignment along Rider Street within the Perris area.

Design Variations

With the exception of the TWS Design Variation, none of the design variations for the MCP Build Alternatives would result in any change in effects on community character and cohesion beyond those described above.

In the Temescal Canyon Area, the community surrounding the I-15/El Cerrito Road interchange will experience both beneficial and adverse effects as a result of the northbound off-ramp and southbound on-ramp being closed under the TWS Design Variation.

Under the TWS Design Variation, the closure of the I-15 northbound off-ramp and the southbound on-ramp at El Cerrito will result in a reduction of access options to the areas served by the interchange. Traffic that would have otherwise used these ramps would be diverted to the I-15/Ontario Avenue and I-15/Cajalco Road interchanges. A traffic analysis was performed to determine what facilities would experience traffic increases or decreases as a result of these ramp closures (Mid County Parkway Traffic Analysis of I-15/El Cerrito Half Diamond Interchange, VRPA Technologies, Inc., January, 2007). Figures 3.4.4a and 3.4.4b show the estimated diversion of daily traffic due to these ramp closures. Traffic is forecast to decrease on El Cerrito Road, but will increase on Cajalco Road, Ontario Avenue/ Temescal Canyon Road, and on California Avenue due to the ramp closures. While the loss of access is considered an adverse community impact, the reduction of traffic on El Cerrito Road will be a beneficial effect for residences along El Cerrito Road.





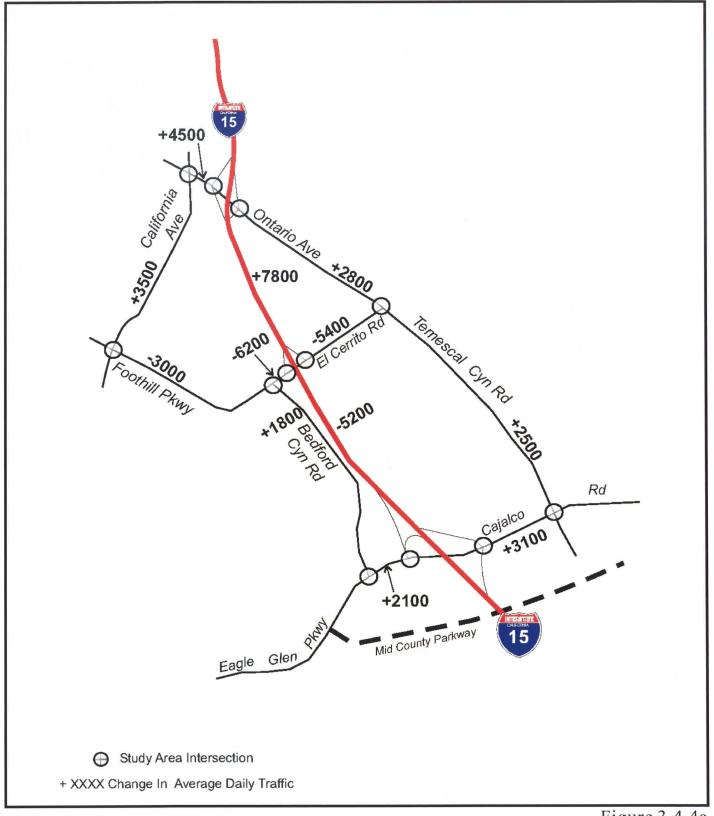


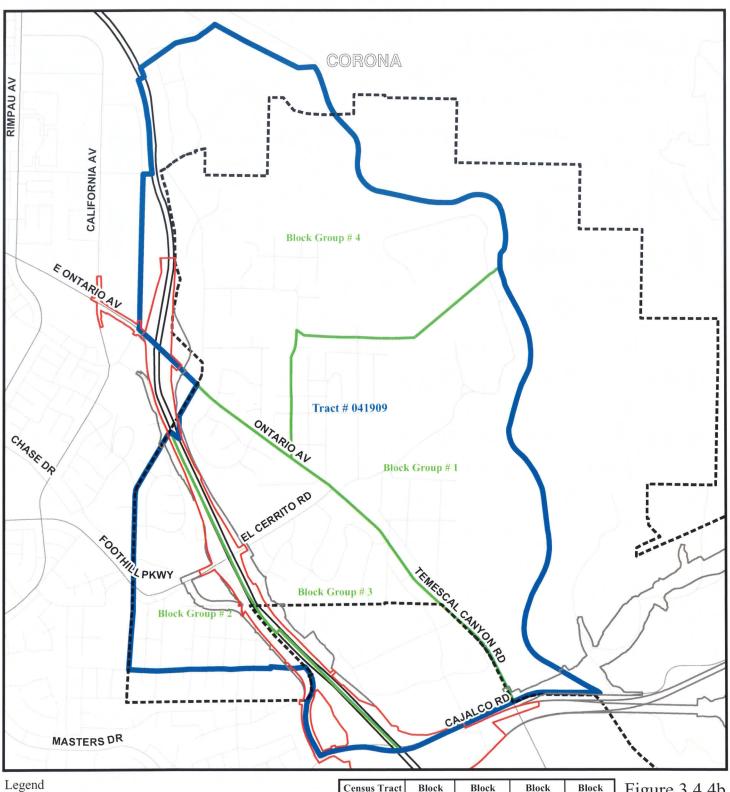
Figure 3.4.4a

SOURCE: VRPA Technologies, Inc.



I-15/El Cerrito Interchange 2035-Change in Average Daily Traffic with Closure of Southbound On-Ramp and Northbound Off-Ramp KP0.0/51.0 (PM 0.0/31.7) EA 08-0F3200





Census 2000 Tracts

Census 2000 Block Group

Right-of-Way(*TWS Segment) Right-of-Way (All Alternatives)

City Boundary

	Census Tract	Block	Block	Block	Block
	419.09	Group #1	Group # 2*	Group #3*	Group # 4
Work in County of Residence	53%	65%	40%	49%	53%
Work outside County of Residence	47%	34%	60%	51%	44%
* Highest Per	centage of Popu	lation with 7	Fravel Time >	60 Minutes	

Figure 3.4.4b

SOURCE: TBM (2006), Jacobs Engineering (2/2007), LSA (2007)



2,000 Feet 500 1,000 0 125 250 500 Meters

Commute Patterns of I-15 / El Cerrito Road

KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

The traffic analysis also projected that travel times would increase for trips using the two ramps as follows: northbound trips from the I-15/Cajalco Road interchange to the I-15/El Cerrito Road interchange would increase from 1.0 minute to 4.6 minutes, and southbound trips from the I-15/El Cerrito Road interchange to the I-15/Cajalco Road interchange would increase from 1.0 minute to 2.6 minutes.

No Build Alternatives

Under the MCP No Build Alternatives, the specific permanent impacts to community cohesion discussed above for the MCP Build Alternatives would not occur as a result of the MCP project itself. Impacts to these communities could result from other transportation improvement projects included in the No Build Alternatives, specifically future improvements to I-15 and I-215 as well as the SR-79 realignment project. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway, and would therefore not be expected to result in community cohesion impacts since those improvements are consistent with the long-term transportation and land use plans for the area.

Discussion of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 Temescal Wash Area Design Variation (TWS DV), which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified

in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV.

The analysis in the MSHCP EIR/EIS included consideration of the potential impacts on population, housing, and employment. The MSHCP EIR/EIS concluded that implementation of the MSHCP would likely cause dwelling units and employment facilities previously planned for development within the Criteria Area to be shifted into areas that would not be conserved. However, implementation of the MSHCP would not change (either reduce or increase) the amount of development (dwelling units and/or employment facilities) allowed pursuant to local land use controls. In addition, the MSHCP would not displace substantial numbers of housing units or persons; implementation would only restrict where future development could occur. The MSHCP EIR/EIS concluded that, for the reasons listed above, the MSHCP would not have a substantial direct impact on population, housing, and employment.

Based on the analysis of impacts of the MCP related to population, housing, and employment, which is discussed above in this document, the impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts on population, housing, and employment beyond that previously analyzed.

Temporary Impacts

Build Alternatives

Construction of any of the MCP Build Alternatives would temporarily affect local communities. Temporary construction impacts would include: disruption of local traffic patterns (traffic diversions due to local road, temporary ramp and mainline lane closures) and access to residences, businesses, and community facilities; increased traffic congestion; and increased noise, vibration, and dust. Although some businesses may close or relocate during a prolonged construction period, this impact would be localized and would not likely result in long-term changes in land use. To minimize disruptions due to closures, the MCP project would be constructed in stages, particularly at the MCP/I-15 and MCP/I-215 interchanges. Construction staging at these interchanges is described in detail in the *Draft Project Report* (Jacobs Civil Engineering, 2007).

A Traffic Management Plan (TMP), as described in Section 3.6, will be implemented for the MCP project in a cost-efficient and timely manner with minimal interference to the traveling public. The TMP, when implemented, will minimize construction-related traffic delay by the effective application of traditional traffic mitigation strategies and innovative combinations of public and motorist information, demand management, incident management, system management, alternative route strategies, construction strategies, and other strategies.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, there would be no temporary community impacts along these roadways under Alternative 1A.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. Under Alternative 1B, temporary land use impacts would be expected to be less than the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as MCP Build Alternatives 6 and 7, since these alternatives implement the General Plan roadway alignments in this area.

3.4.1.4 Avoidance, Minimization, and/or Mitigation Measures

The MCP Build Alternatives have been routed to avoid existing and planned communities as much as possible. Overcrossings and undercrossings are provided as project design features to maintain some connectivity within the communities bisected by the MCP project.

Mitigation Measure LU-1 described in Section 3.1 would reduce impacts of all MCP Build Alternatives to community cohesiveness during construction by ensuring that vehicle, bicycle, equestrian, and pedestrian circulation and access were maintained during construction. Mitigation Measure LU-4 described in Section 3.1 would reduce impacts to long-term community cohesiveness of Alternative 9 in the Perris Area by providing replacement park acreage and facilities to offset the loss of acreage and facilities within Paragon Park.

For all MCP Build Alternatives, Mitigation Measure TR-2, which provides for a Traffic Management Plan during construction and is described in Section 3.6, would reduce temporary construction-related impacts to communities.

3.4.2 Relocations

3.4.2.1 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 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 U.S.C. 2000d, et seq.). Please see Appendix C for a copy of the Department's Title VI Policy Statement.

3.4.2.2 Affected Environment

All of the communities within the MCP study area described in Section 3.1 could be affected by displacements and partial acquisitions of residential and nonresidential property, including mobile homes. Nonresidential properties include retail trade, finance, insurance, services, government/nonprofit, and other types of nonresidential property uses. A full acquisition of a property is defined as an area within which occupants of residential and nonresidential units would be displaced by the project and would be expected to relocate. A partial acquisition is when a small area of a property is acquired, but full use of the property and dwelling structures, including multifamily units, would remain. Generally, partial acquisitions consist of portions of a back, side, or front yard, landscaping, or parking. Partial acquisitions for areas containing multifamily residences may not affect all units on the parcel. Additionally, if loss of parking is substantial, a full acquisition of the parcel may be required. Another form of a partial acquisition is a temporary construction easement, which describes acquisition of a portion of a property only during project construction.

The severity of property acquisition impacts varies greatly with the population involved. If the community is stable and cohesive and residents have been in their homes for many years, many of the displaced persons may have a difficult time adjusting to new homes and neighborhoods because they have a strong attachment to their existing home and neighborhood.

3.4.2.3 Environmental Consequences

Permanent Impacts

Build Alternatives

Acquisitions

The MCP Build Alternatives would result in the acquisition of nonresidential (dairies, agricultural, sod-farms, open storage, big box distribution, manufacturing, and retail), residential (mobile homes, single-family, multifamily), and municipal (fire station, police station, school district offices, and a high school) properties. Estimated totals of acquired parcels and displacees are tabulated in Table 3.4.E. Acquisitions required under the other MCP Build Alternatives range from 396 to 672 parcels.¹

All property acquisition and relocation will be handled in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 (Public Law 91-646, 84 Stat. 1894). The Uniform Act mandates that certain relocation services and payments by RCTC be made available to eligible residents, businesses, and nonprofit organizations displaced by its projects. The Uniform Act provides for uniform and equitable treatment by federal or federally assisted programs of persons displaced from their homes, businesses, or farms, and establishes uniform and equitable land acquisition policies. Design refinements to avoid or minimize impacts to existing land uses related to the temporary use and/or permanent acquisition of property will be incorporated in the final design of the selected alternative.

Business and Employee Displacements and Relocations

Full acquisitions of nonresidential properties (businesses) for the MCP Build Alternatives would require relocation of employees and businesses to other locations. The partial acquisitions and Temporary Construction Easements (TCEs) would not require the relocation of businesses or employees.

This information was obtained from the *Draft Relocation Impact Report* (Epic Land Solutions, June 2007). Detailed maps and tables showing the locations of full and partial acquisitions are shown in Figures P1–P25 and Table P in Appendix P of this EIR/EIS.

Table 3.4.E Full and Partial Displacements by Alternative

	Alt. 4 Base	Alt. 4 SJN	Alt. 4 Alt. 4 Alt. 4 Alt. Base SJN TWS Bas	Alt. 5 Base	Alt. 5 SJN	Alt. 5 TWS	Alt. 6 Base	Alt. 6 SJN	Alt. 6 TWS	Alt. 7 Base	Alt. 7 SJN	Alt. 7 TWS	Alt. 9 Base	Alt. 9	Alt. 9 PP-E	Alt. 9 SJN	Alt. 9 TWS
	Case	_	≥	Case			Case		_	Case		≧	Case	RD DV	^	^	
Residential Displacements	351	361	283	305	315	237	336	346	268	290	300	222	268	172	270	278	200
Nonresidential Displacements	292	285	283	268	261	259	333	326	324	309	302	300	210	224	190	203	201
Total Displacements	643	646	999	573	929	496	699	672	592	599	602	522	478	396	460	481	401
Total Estimated Occupants/Employees Displaced	1,799	1,991	1,799 1,991 2,109	1,580	1,772	1,890 1	,753	1,945	2,063	1,534	1,726	1,534	1,329	1,075	1,347 1,503		1,051

Source: Draft Relocation Impact Report, Epic Land Solutions, 2007.
Att = Alternative
DV = Design Variation
PP-E = Placentia Avenue/Perris Boulevard Elevated Grade
RD = Rider Street
SJN = San Jacinto North
TWS = Temescal Wash Area

Table 3.4.F summarizes the numbers of displaced employees by for each MCP Build Alternative and design variation. Information from the Draft Relocation Impact Report (Epic Land Solutions, 2007) for the MCP was used to identify businesses requiring relocation under each MCP Build Alternative. The numbers of employees displaced as a result of full property acquisitions under each Build Alternative were estimated based on employee generation factors in the SCAG Employee Density Study Summary Report (Natelson Company, Inc., 2001). Those factors include the type of nonresidential use and the total square footage of each type of use.

Table 3.4.F Number of Displaced Employees by Alternative and Jurisdiction

Alternative	Corona	Perris	San Jacinto	Unincorporated Riverside County	Total
Alt. 4 Base Case	60	106	13	89	267
Alt. 4 SJN DV	60	106	13	89	267
Alt. 4 TWS DV	64	106	13	89	272
Alt. 5 Base Case	60	56	13	161	290
Alt. 5 SJN DV	60	56	13	161	290
Alt. 5 TWS DV	64	56	13	161	294
Alt. 6 Base Case	106	106	13	90	314
Alt. 6 SJN DV	106	106	13	90	314
Alt. 6 TWS DV	110	106	13	90	319
Alt. 7 Base Case	106	56	13	162	337
Alt. 7 SJN DV	106	56	13	162	337
Alt. 7 TWS DV	110	56	13	162	341
Alt. 9 Base Case	60	35	13	10	119
Alt. 9 RD DV	60	56	13	195	323
Alt. 9 PP-E DV	60	34	13 ·	10	117
Alt. 9 SJN DV	60	35	13	10	118
Alt. 9 TWS DV	64	35	13	10	122

Source: Community Impact Assessment, LSA Associates, Inc., 2008.

Alt. = Alternative

DV = Design Variation

PP-E = Placentia Avenue/Perris Boulevard Elevated

Grade

RD = Rider Street

SJN = San Jacinto North

TWS = Temescal Wash Area

In summary, the total number of nonresidential uses displaced by each Build Alternative, and the numbers of employees in those businesses, summarized from Table 3.4.F are:

Alternative 4 and the Alternative 4 Design Variations: Alternative 4 will require the relocation of 205 businesses in the three study area cities and unincorporated Riverside County, resulting in the displacement of 267 employees. Alternative 4 SJN DV (San Jacinto North Design Variation) will require the relocation of 202 businesses, resulting in the displacement of 267

- employees. Alternative 4 TWS DV will result in the relocation of 199 businesses, resulting in the displacement of 272 employees.
- Alternative 5 and the Alternative 5 Design Variations: Alternative 5 will require the relocation of 217 businesses in the three study area cities and unincorporated Riverside County, resulting in the displacement of 290 employees. Alternative 5 SJN DV will require the relocation of 214 businesses, resulting in the displacement of 290 employees. Alternative 5 TWS DV will require the relocation of 211 businesses, resulting in the displacement of 294 employees.
- Alternative 6 and the Alternative 6 Design Variations: Alternative 6 will require the relocation of 278 businesses, resulting in the displacement of 314 employees in the three study area cities and unincorporated Riverside County. Alternative 6 SJN DV will require the relocation of 275 businesses, resulting in the displacement of 314 employees. Alternative 6 TWS DV will require the relocation of 272 businesses, resulting in the displacement of 319 employees.
- Alternative 7 and the Alternative 7 Design Variations: Alternative 7 will require the relocation of 290 businesses, resulting in the displacement of 337 employees from the three study area cities and unincorporated Riverside County. Alternative 7 SJN DV will require the relocation of 287 businesses, resulting in the displacement of 337 employees. Alternative 7 TWS DV will require the relocation of 284 businesses, resulting in the displacement of 341 employees.
- Alternative 9 and the Alternative 9 Design Variations: Alternative 9 and Alternative 9 SJN DV will require the relocation of 131 and 128 businesses, respectively, resulting in the displacement of 119 and 118 employees, respectively, from the three study area cities and unincorporated Riverside County. Alternative 9 PP-E DV (Placentia Avenue/Perris Boulevard Elevated Grade Design Variation) will require the relocation of 115 businesses, resulting in the displacement of 117 employees. Alternative 9 RD DV (Rider Street Design Variation) will require the relocation of 162 businesses, resulting in the displacement of 323 employees. Alternative 9 TWS DV will require the relocation of 125 businesses, resulting in the displacement of 122 employees.

Property Taxes

Property taxes are levied on the assessed value of privately owned property. Property taxes in the study area are collected by Riverside County and

apportioned to the unincorporated communities in the county and to all incorporated cities, including the cities of Corona, Perris, and San Jacinto. The amount levied is approximately 1 percent of the assessed property value. The amount of property tax paid by parcel was recorded based on property taxes paid to the Riverside County Office of the Assessor in 2005. The amounts of property taxes paid were obtained from the County's Extended Roll Fixed Tax Amounts for 2005. For this analysis, the property tax revenue was assumed to be the total property tax amount collected by the Assessor's Office from each city and the unincorporated communities in Riverside County before it is redistributed to the cities and the county for revenue purposes. The reported property tax collected totaled \$183,786,037 in the City of Corona, \$54,898,179 in the City of Perris, \$36,246,838 in the City of San Jacinto, and \$630,394,324 in unincorporated Riverside County in 2005.

The property tax revenues associated with full parcels acquired for the MCP Build Alternatives were divided by the total property tax collected by city/unincorporated to reach the percentage of the total property tax revenue loss by jurisdiction. The only parcels included in the calculations for property tax loss were the full-parcel acquisitions under the Build Alternatives.

Table 3.4.G summarizes the losses of property taxes in the three study area cities and unincorporated Riverside County for each of the MCP Build Alternatives. In summary, the total property tax revenue losses for each Build Alternative are:

- Alternative 4 and the Alternative 4 Design Variations: Alternative 4 will require the acquisition of 586 parcels, resulting in an annual loss in property tax revenues in the three cities and unincorporated Riverside County of \$1,094,340. Alternative 4 SJN DV will result in the acquisition of 583 parcels, resulting in an annual loss of property tax revenues of \$1,074,135. Alternative 4 TWS DV will result in the acquisition of 512 parcels, resulting in an annual loss in property tax revenues of \$941,223.
- Alternative 5 and the Alternative 5 Design Variations: Alternative 5 will require the acquisition of 565 parcels in the study area, resulting in an annual loss of property tax revenues of \$1,037,102. Alternative 5 SJN DV will require the acquisition of 562 parcels, resulting in an annual loss of property tax revenues of \$1,016,897. Alternative 5 TWS DV will result in the acquisition of 491 parcels, resulting in an annual loss in property tax revenues of \$883,985.

Table 3.4.G Property Tax Revenue Losses by Alternative and Jurisdiction

Alternative Corona Perris Alt. 4 Base Case \$143,923 (0.08%) \$178,726 (0.33%) Alt. 4 SJN DV \$143,923 (0.08%) \$178,726 (0.33%) Alt. 5 Base Case \$143,923 (0.08%) \$178,726 (0.33%) Alt. 5 Base Case \$143,923 (0.08%) \$172,185 (0.31%) Alt. 5 Base Case \$151,287 (0.08%) \$172,185 (0.31%) Alt. 6 Base Case \$175,239 (0.10%) \$178,726 (0.33%) Alt. 6 Base Case \$175,239 (0.10%) \$178,726 (0.33%) Alt. 6 TWS DV \$182,603 (0.10%) \$178,726 (0.33%) Alt. 7 Base Case \$175,239 (0.10%) \$172,185 (0.31%) Alt. 7 Base Case \$175,239 (0.10%) \$172,185 (0.31%) Alt. 7 SJN DV \$182,603 (0.10%) \$472,185 (0.31%) Alt. 7 TWS DV \$143,923 (0.08%) \$424,593 (0.77%) Alt. 9 Base Case \$143,923 (0.08%) \$318,360 (0.58%) Alt. 9 PP-E DV \$143,923 (0.08%) \$318,360 (0.58%) Alt. 9 PP-E DV \$143,923 (0.08%) \$324,593 (0.77%)	Loss of Property Tax Revenues (% of 1	Tax Revenues (% of Total Property Tax Revenues by Jurisdiction	s by Jurisdiction)	
\$143,923 (0.08%) \$143,923 (0.08%) \$151,287 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$151,287 (0.08%) \$151,287 (0.08%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		San Jacinto	Unincorporated Riverside County	Total
\$143,923 (0.08%) \$151,287 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$151,287 (0.08%) \$151,287 (0.08%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$78,150 (0.22%)	\$693,540 (0.11%)	\$1,094,340
\$151,287 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$151,287 (0.08%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$57,945 (0.16%)	\$693,540 (0.11%)	\$1,074,135
\$143,923 (0.08%) \$143,923 (0.08%) \$151,287 (0.08%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)	_	\$78,150 (0.22%)	\$533,059 (0.08%)	\$941,223
\$143,923 (0.08%) \$151,287 (0.08%) \$175,239 (0.10%) \$175,239 (0.10%) \$182,603 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$78,150 (0.22%)	\$642,843 (0.10%)	\$1,037,102
\$151,287 (0.08%) \$175,239 (0.10%) \$175,239 (0.10%) \$182,603 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$57,945 (0.16%)	\$642,843 (0.10%)	\$1,016,897
\$175,239 (0.10%) \$175,239 (0.10%) \$182,603 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$78,150 (0.22%)	\$483,362 (0.08%)	\$883,985
\$175,239 (0.10%) \$182,603 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$182,603 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$78,150 (0.22%)	\$658,731 (0.10%)	\$1,090,846
\$182,603 (0.10%) \$175,239 (0.10%) \$175,239 (0.10%) \$182,603 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$57,945 (0.16%)	\$658,731 (0.10%)	\$1,070,641
\$175,239 (0.10%) \$175,239 (0.10%) \$182,603 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$78,150 (0.22%)	\$498,250 (0.08%)	\$937,729
\$175,239 (0.10%) \$182,603 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$78,150 (0.22%)	\$608,034 (0.10%)	\$1,033,608
\$182,603 (0.10%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$57,945 (0.16%)	\$608,034 (0.10%)	\$1,013,403
\$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$78,150 (0.22%)	\$447,553 (0.07%)	\$880,491
\$143,923 (0.08%) \$143,923 (0.08%) \$143,923 (0.08%)		\$78,150 (0.22%)	\$360,032 (0.06%)	\$1,006,698
\$143,923 (0.08%) \$143,923 (0.08%)		\$78,150 (0.22%)	\$395,231 (0.06%)	\$789,489
\$143,923 (0.08%)		\$78,150 (0.22%)	\$340,100 (0.05%)	\$880,533
		\$57,945 (0.16%)	\$360,032 (0.06%)	\$986,493
Alt. 9 TWS DV \$151,287 (0.08%) \$424,593 (0.77%)		\$78,150 (0.22%)	\$199,551 (0.03%)	\$853,581

Source: Community Impact Assessment, LSA Associates, Inc., 2008.

Alt. = Alternative

DV = Design Variation

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

TWS = Temescal Wash Area

- Alternative 6 and the Alternative 6 Design Variations: Alternative 6 would require the acquisition of 665 parcels, resulting in an annual loss of property tax revenues of \$1,090,846. Alternative 6 SJN DV will require the acquisition of 662 parcels, resulting in an annual loss of property tax revenues of \$1,070,641. Alternative 6 TWS DV would require the acquisition of 591 parcels, resulting in an annual loss of property tax revenues of \$937,729.
- Alternative 7 and the Alternative 7 Design Variations: Alternative 7 will result in the acquisition of 644 parcels, resulting in an annual loss in property tax revenues of \$1,033,608. Alternative 7 SJN DV will require the acquisition of 641 parcels, resulting in an annual loss in property tax revenues of \$1,013,403. Alternative 7 TWS DV will require the acquisition of 570 parcels, resulting in an annual loss in property tax revenues of \$880,491.
- Alternative 9 and the Alternative 9 Design Variations: Alternative 9 will require the acquisition of 393 parcels, resulting in an annual loss in property tax revenues of \$1,006,698. Alternative 9 RD DV will require the acquisition of 351 parcels, resulting in an annual loss in property tax revenues of \$789,489. Alternative 9 PP-E DV will require the acquisition of 377 parcels, resulting in an annual loss of property tax revenues of \$880,553. Alternative 9 SJN DV will require the acquisition of 390 parcels, resulting in an annual loss of property tax revenues of \$986,493. Alternative 9 TWS DV will require the acquisition of 319 parcels, resulting in an annual loss of property tax revenues of \$853,581.

Sales Taxes

This analysis estimates the annual sales tax revenue losses to city, county, and state governments as a result of the acquisition of nonresidential parcels for the proposed MCP Build Alternatives. The sales tax rate in Riverside County and the cities of Corona, Perris, and San Jacinto is 7.75 percent, of which 6.25 percent is distributed to the State, 1.0 percent to the local jurisdiction, and 0.5 percent for highway projects in Riverside County (RCTC's Measure A). In the Taxable Sales in California (Sales and Use Tax) Report, the State Board tabulates sales tax revenues by business and jurisdictions on a quarterly basis. Due to privacy laws, the Board does not disclose sales tax revenues generated by individual businesses; therefore, the taxable sales for the individual businesses that would be acquired for each MCP Build Alternative is not available. The potential losses in sales tax revenues were estimated using total taxable sales in county unincorporated areas and the cities of Corona, Perris, and San Jacinto.

Table 3.4.H summarizes the loss of sales taxes in the three study area cities and unincorporated Riverside County for each of the MCP Build Alternatives. Based on the estimates provided in Table 3.4.H, the total estimated annual sales tax revenue losses to the cities, county, RCTC, and state by MCP Build Alternative are provided below.

Table 3.4.H Revenue Losses by Alternative and Jurisdiction

Alternative	Corona	Perris	San Jacinto	Unincorporated Riverside County	Total
Alt. 4 Base Case	\$1,683,687	\$2,789,563	\$88,196	\$5,892,893	\$10,454,339
Alt. 4 SJN DV	\$1,683,687	\$2,789,563	\$35,278	\$5,892,893	\$10,401,421
Alt. 4 TWS DV	\$1,279,602	\$2,789,653	\$88,196	\$7,143,674	\$11,301,035
Alt. 5 Base Case	\$1,683,687	\$3,785,835	\$88,196	\$5,496,732	\$11,054,450
Alt. 5 SJN DV	\$1,683,687	\$3,785,835	\$35,278	\$5,496,732	\$11,001,532
Alt. 5 TWS DV	\$1,279,602	\$3,785,835	\$88,196	\$5,712,384	\$10,866,017
Alt. 6 Base Case	\$1,818,382	\$2,789,563	\$88,196	\$9,408,820	\$14,104,961
Alt. 6 SJN DV	\$1,818,382	\$2,789,563	\$35,278	\$9,408,820	\$14,052,043
Alt. 6 TWS DV	\$1,414,297	\$2,789,563	\$88,196	\$9,408,820	\$13,700,876
Alt. 7 Base Case	\$1,818,382	\$3,785,835	\$88,196	\$9,012,659	\$14,705,072
Alt. 7 SJN DV	\$1,818,382	\$3,785,835	\$35,278	\$9,012,659	\$14,652,154
Alt. 7 TWS DV	\$1,414,297	\$3,785,835	\$88,196	\$9,012,659	\$14,300,987
Alt. 9 Base Case	\$1,683,687	\$2,640,122	\$88,196	\$2,376,965	\$6,788,970
Alt. 9 RD DV	\$1,683,687	\$3,785,835	\$88,196	\$2,773,126	\$8,330,844
Alt. 9 PP-E DV	\$1,683,687	\$2,042,358	\$88,196	\$2,178,884	\$5,993,125
Alt. 9 SJN DV	\$1,683,687	\$2,640,122	\$35,278	\$2,376,965	\$6,736,052
Alt. 9 TWS DV	\$1,279,602	\$2,640,122	\$88,196	\$2,376,965	\$6,384,885

Source: Community Impact Assessment, LSA Associates, Inc., 2008.

Alt. = Alternative

RD = Rider Street

DV = Design Variation

SJN = San Jacinto North

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

TWS = Temescal Wash Area

Alternative 4 and the Alternative 4 design variations:

• City of Corona: \$ 217,250 (Alternatives 4 and 4 SJN DV);

\$ 165,110 (Alternative 4 TWS DV)

• City of Perris: \$ 359,944 (Alternative 4 and all design variations)

• City of San Jacinto: \$ 11,380 (Alternatives 4 and 4 TWS DV);

\$ 4,552 (Alternative 4 SJN DV)

• County of Riverside: \$ 760,373 (Alternatives 4, 4 SJN DV, and

4 TWS DV)

• RCTC: \$ 751,150 (Alternative 4);

\$ 747,736 (Alternative 4 SJN DV);

\$ 741,054 (Alternative 4 TWS DV)

• State of California: \$ 9,389,371 (Alternative 4);

\$ 9,346,696 (Alternative 4 SJN DV);

\$ 9,263,174 (Alternative 4 TWS DV)

Alternative 5 and the Alternative 5 design variations:

• City of Corona: \$ 217,250 (Alternatives 5 and 5 SJN DV);

\$ 165,110 (Alternative 5 TWS DV)

• City of Perris: \$ 488,495 (Alternative 5 and all design variations)

• City of San Jacinto: \$ 11,380 (Alternatives 5 and 5 TWS DV);

\$ 4,552 (Alternative 5 SJN DV)

• County of Riverside: \$ 709,256 (Alternatives 5, 5 SJN DV, and

5 TWS DV)

• RCTC: \$ 713,190 (Alternative 5);

\$ 709,776 (Alternative 5 SJN DV);

\$ 703,095 (Alternative 5 TWS DV)

• State of California: \$ 8,914,878 (Alternative 5);

\$ 8,872,203 (Alternative 5 SJN DV);

\$ 8,788,862 (Alternative 5 TWS DV)

Alternative 6 and the Alternative 6 design variations:

• City of Corona: \$ 234,630 (Alternatives 6 and 6 SJN DV);

\$ 182,490 (Alternative 6 TWS DV)

• City of Perris: \$ 359,944 (Alternative 6 and all design variations)

• City of San Jacinto: \$ 11,380 (Alternatives 6 and 6 TWS DV);

\$ 4,552 (Alternative 6 SJN DV)

• County of Riverside: \$ 1,214,041 (Alternatives 6, 6 SJN DV, and

6 TWS DV)

• RCTC: \$ 909,997 (Alternative 6);

\$ 906,583 (Alternative 6 SJN DV);

\$ 883,927 (Alternative 6 TWS DV)

• State of California: \$11,374,968 (Alternative 6);

\$11,332,292 (Alternative 6 SJN DV);

\$11,049,093 (Alternative 6 TWS DV)

Alternative 7 and the Alternative 7 design variations:

• City of Corona: \$ 234,630 (Alternatives 7 and 7 SJN DV);

\$ 182,490 (Alternative 7 TWS DV)

• City of Perris: \$ 488,495 (Alternative 7 and all design variations)

City of San Jacinto: \$ 11,380 (Alternatives 7 and 7 TWS DV);

\$ 4,552 (Alternative 7 SJN DV)

• County of Riverside: \$ 1,162,924 (Alternative 7 and all design variations)

• RCTC: \$ 948,714 (Alternative 7);

\$ 945,300 (Alternative 7 SJN DV);

\$ 922,644 (Alternative 7 TWS DV)

• State of California: \$11,858,929 (Alternative 7);

\$11,816,253 (Alternative 7 SJN DV);

\$11,533,054 (Alternative 7 TWS DV)

Alternative 9 and the Alternative 9 design variations:

• City of Corona: \$ 217,250 (Alternatives 9, 9 RD DV, 9 PP-E DV,

and 9 SJN DV);

\$ 165,110 (Alternative 9 TWS DV)

• City of Perris: \$ 340,661 (Alternatives 9, 9 SJN DV, and

9 TWS DV);

\$ 488,495 (Alternative 9 RD DV);

\$ 263,530 (Alternative 9 PP-E DV)

• City of San Jacinto: \$ 11,380 (Alternatives 9, 9 RD DV, 9 PP-E DV,

and 9 TWS DV);

\$ 4,552 (Alternative 9 SJN DV)

• County of Riverside: \$ 306,705 (Alternatives 9, 9 SJN DV, and

9 TWS DV);

\$ 357,823 (Alternative 9 RD DV);

\$ 281,146 (Alternative 9 PP-E DV)

• RCTC: \$ 437,998 (Alternative 9);

\$ 537,474 (Alternative 9 RD DV);

\$ 386,653 (Alternative 9 PP-E DV);

\$ 434,584 (Alternative 9 SJN DV);

\$ 411,928 (Alternative 9 TWS DV)

State of California: \$ 5.

\$ 5,474,975 (Alternative 9);

\$ 6,718,422 (Alternative 9 RD DV);

\$ 4,883,166 (Alternative 9 PP-E DV);

\$ 5,432,300 (Alternative 9 SJN DV);

\$ 5,149,101 (Alternative 9 TWS DV)

No Build Alternatives

Under the MCP No Build Alternatives, the property acquisitions and relocations discussed above for the MCP Build Alternatives would not occur as a result of the MCP project itself, but similar impacts to these communities would result from some of the other transportation improvement projects included in the No Build Alternatives, specifically the widening of I-15 and I-215, and the SR-79 realignment project. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway. This widening would result in both full and partial acquisitions along these two roadways, but these impacts would be less than what would occur under the MCP Build Alternatives.

Discussion of Impacts Relative to MSHCP Amendment

As previously discussed, the analysis in the MSHCP EIR/EIS included consideration of the potential impacts on population, housing, and employment. In addition, the MSHCP would not displace substantial numbers of housing units or persons; implementation would only restrict where future development could occur. The MSHCP EIR/EIS concluded that the MSHCP would not have a substantial direct impact on population, housing, and employment. The impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS; therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV (the Locally Preferred Alternative) would not result in impacts on population, housing, and employment beyond that previously analyzed.

Temporary Impacts

Build Alternatives

Temporary construction impacts would occur under all MCP Build Alternatives and would occur for property owners whose properties are fully acquired and require relocation. These property owners would be temporarily impacted during the relocation process. As discussed in section 3.4.2.4, design refinements to avoid or minimize impacts due to temporary construction easements have been incorporated into the project.

No Build Alternatives

Under the MCP No Build Alternatives, the temporary adverse effects resulting from property acquisitions discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but would occur as a result of some of the other transportation improvement projects included in the No Build Alternatives, specifically the widening of I-15 and I-215, and the SR-79 realignment project. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway, and would therefore result in some of the same temporary property acquisition impacts along these two roadways discussed above for the MCP Build Alternatives.

3.4.2.4 Avoidance, Minimization, and/or Mitigation Measures

Considering the abundant housing stock developed in recent years within the MCP study area, as well as numerous other planned residential land development projects, a sufficient number of "comparable replacement dwellings" meeting decent, safe, and sanitary standards exist within the impacted or neighboring communities. It is anticipated that finding replacement housing for owner or tenant-occupied residences will not present any unusual problems. Recent foreclosures in the area will increase the number of properties available for residential relocations. The exception is those displaced from mobile homes. The current inventory for mobile home unit sales and rentals is scarce, and the area lacks in-kind mobile home replacement housing suitable as decent, safe, and sanitary. One option is for mobile home displacees to relocate into slightly larger single-family residences, resulting in a housing-of-lastresort entitlement under the Uniform Act. "Last Resort Housing" payments by RCTC combined with additional resources in finding suitable single-family or multifamily residential replacement housing is anticipated to minimize impacts during relocations. Additional information regarding mobile home relocation is provided in Appendix D of this EIR/EIS. At this time, it is not known whether any property acquisitions will necessitate construction for housing. Compliance with the Uniform Act offsets any potential impacts to communities due to relocations; therefore, no mitigation is required.

3.4.3 Environmental Justice

3.4.3.1 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 Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2000 (the reference year), this was \$17,050 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 of this document.

3.4.3.2 Affected Environment

The environmental justice analysis was conducted using Census Tract-level information from the 2000 Census for the reference populations of Riverside County and the cities of Corona, Perris, and San Jacinto. Data from all of the MCP study area Census Tracts were included in the following discussion. The following analysis provides a comparison of four measures with which to evaluate environmental justice:

- Percentage of non-White residents
- Percentage of Hispanic residents (the Census Bureau considers Hispanic or Latino ethnicity distinct from racial background)
- Percentage of population below poverty level
- Median household income

Non-White Population

Between 1990 and 2000, total population in Riverside County grew by 32 percent, and the percentage of non-White residents also increased. In Riverside County in 1990, the non-White population comprised 23.6 percent of the total population. In 2000, the non-White population comprised 34.4 percent of the total population. In 1990, the non-White population in Corona comprised 24.1 percent of the population; in 2000, 38 percent. In 1990, the non-White population in Perris comprised 29.5 percent of the population; in 2000, 58.8 percent. In 1990, the non-White population in San Jacinto comprised 25.4 percent of population; in 2000, 30.7 percent. Other ethnic groups increased both in the county and in all affected

communities, with the exception of the Asian population in Perris, which decreased from 3.3 percent of the total population in 1990 to 2.7 percent in 2000.

As mentioned previously, Figure 3.4.2 illustrates the percentage of non-White residents within the MCP study area Census Tracts. According to the 2000 Census, the non-White population was comprised of 63,892 persons or 39 percent of population within the MCP study area Census Tracts, with Census Tract 414.1 having the highest percentage of non-Whites (40.7 percent).

Hispanic Population

Hispanics comprise a large percentage of the population in the MCP study area. Countywide, the Hispanic population increased 82 percent between 1990 and 2000. In the City of Corona, the Hispanic population increased nearly 93 percent between 1990 and 2000. San Jacinto reported a nearly 76 percent increase between 1990 and 2000, and Perris reported a 164 percent increase. The largest number of Hispanics resided in the city of Perris, with 56 percent of the residents identified as Hispanic.

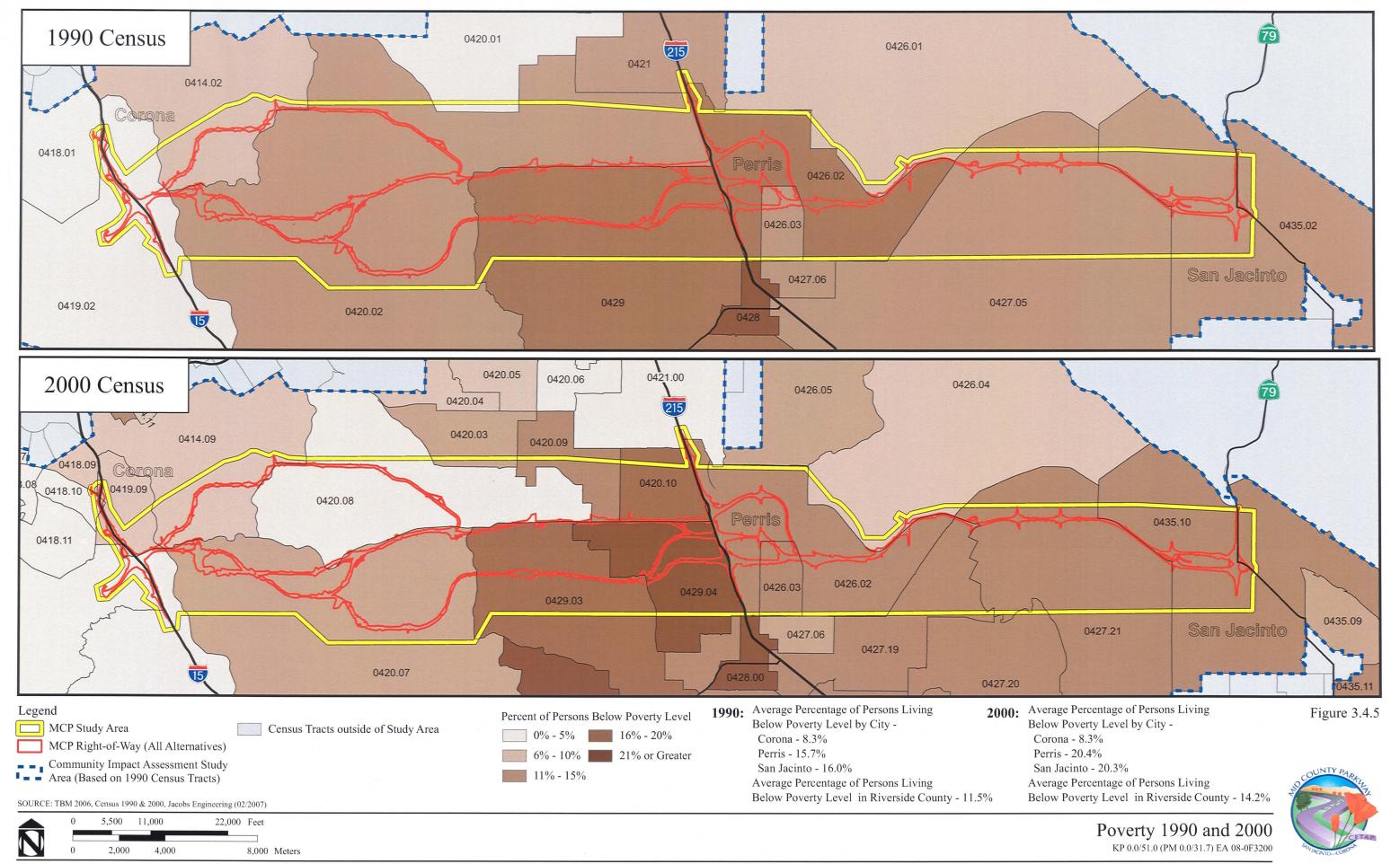
Almost 38 percent of the MCP study area population was identified by the 2000 Census as Hispanic, with Census Tract 414.1 having the highest percentage of Hispanics at almost 93 percent. As shown previously on Figure 3.4.3, a high concentration of Hispanics is located within Mead Valley and areas to the south.

Poverty Level

The percentage of persons living below the poverty level in 2000 was higher in the cities of Perris and San Jacinto (20.4 and 20.3 percent, respectively) than the county (14.2 percent), while the City of Corona has a lower percentage (8.3 percent). As shown on Figure 3.4.5, the percentage of persons living below the poverty level in 2000 in the MCP study area was lower than the county at 13.6 percent, with Census Tract 429.04 having the highest percentage at 32.3 percent.

Median Household Income

The median household income in the cities of Perris and San Jacinto (\$35,522 and \$30,627, respectively) was lower than the county (\$42,887) in 2000, while the median household income in the city of Corona was higher (\$59,615). The median household income of the MCP study area was \$49,530, with Census Tract 419.07 having the



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measu
--

This page intentionally left blank

highest household income at \$88,716 and Census Tract 429.04 having the lowest household income at \$28,431.

The percentage of persons living below the poverty level in 2000 was higher in the cities of Perris and San Jacinto (20.4 and 20.3 percent, respectively) than in the County (14.2 percent), while the city of Corona had a lower percentage (8.3 percent). As shown on Figure 3.4.6, the percentage of persons living below the poverty level in 2000 in the MCP study area was lower than in the County at 13.6 percent, with Census Tract 429.04 having the highest percentage at 32.3 percent.

3.4.3.3 Environmental Consequences

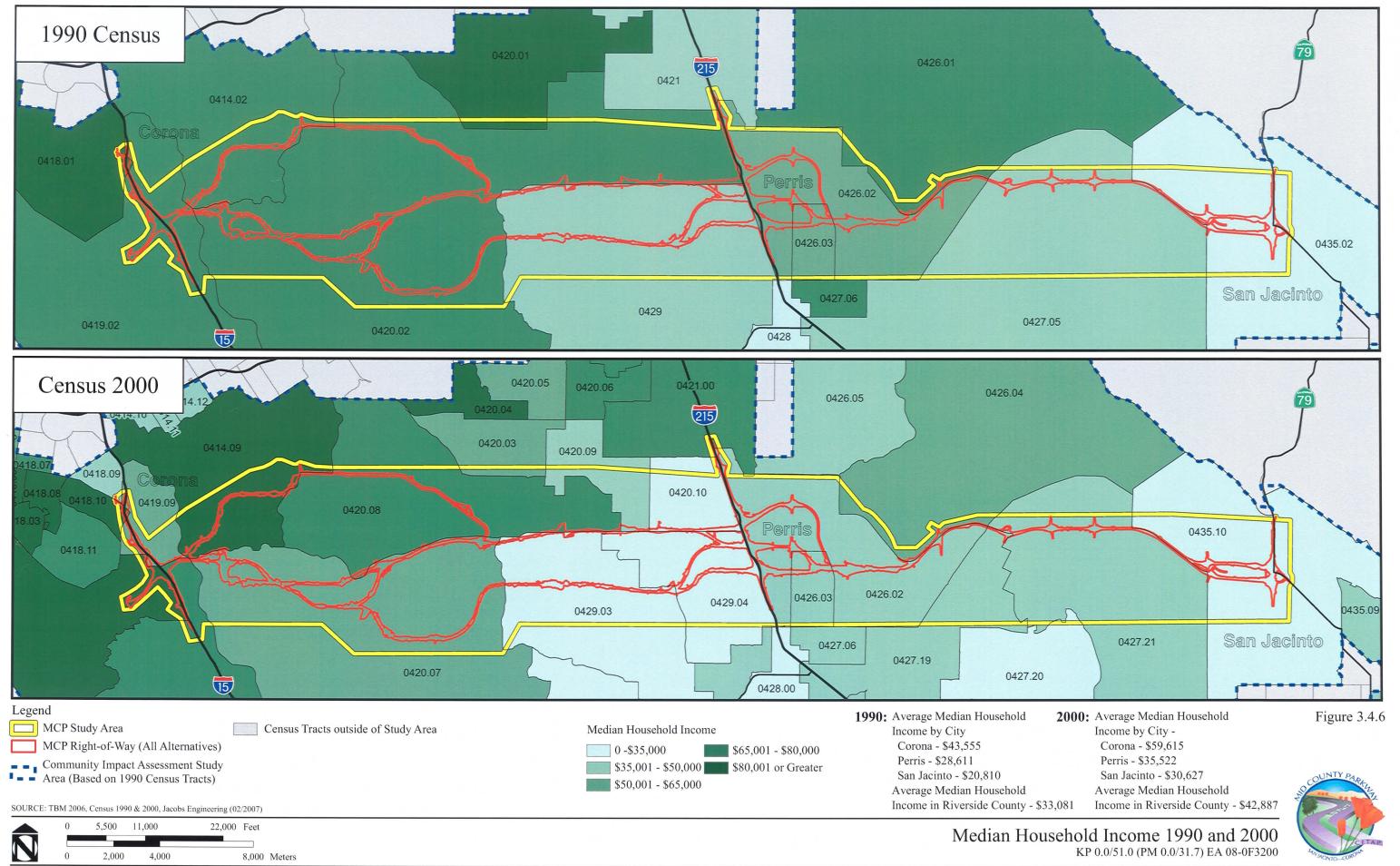
The following four measures were used to evaluate environmental justice impacts for the MCP Build Alternatives: percentage of non-White residents, percentage of Hispanic residents, percentage of population below the poverty line, and median household income. Minority and low-income populations could be impacted in several ways. Residences and businesses could be directly displaced or portions of property affected that would require relocation. The MCP project could also divide an ethnic or low-income neighborhood. However, the MCP project also could provide benefits to minority and low-income populations if transportation efficiency improves or if transit services are made more accessible or convenient.

In the *Department Desk Guide, Environmental Justice in Transportation Planning and Investments* (Caltrans, January 2003), no definitive guidelines are given for determining what impacts should be considered disproportionately high or adverse. However, two general issues are weighed for environmental justice analysis for transportation projects:

- Whether the adverse impact(s) of the proposed project will be predominantly borne by a minority or low-income population group; or
- Whether the adverse impact(s) of the proposed project will be appreciably more severe or greater in magnitude than the adverse impacts to nonminority and/or non-low-income population groups even after mitigation measures and offsetting project benefits are considered.

"Low-income" and "minority populations" are defined as any readily identifiable group of low-income or minority persons who live in geographically adjacent areas, or groups of geographically dispersed or transient persons who would be similarly affected by a proposed FHWA program, policy, or activity. Transportation agencies

This page intentionally left blank



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

such as Caltrans and RCTC must collect and evaluate data on minority and income characteristics, increase public participation in decision making, and provide mitigation measures to avoid or minimize the adverse effects of the federal action.

As discussed above in Section 3.4.3.2, Affected Environment, in the reference populations of Riverside County, the non-White population comprises 30 percent of the population while the Hispanic population is 36 percent. In the reference population of the cities of Corona, Perris and San Jacinto, the non-White population comprises 33, 53, and 26 percent of the total population, respectively. In these same cities, the Hispanic population comprises 36, 56, and 40 percent of the total population, respectively.

For 2000, the United States Department of Health and Human Services defines poverty guidelines for a family of four at \$17,050. In 2000, the reference population of Riverside County had 14 percent of the population living below poverty. The city of Corona had slightly more than 8 percent of its population below poverty, while Perris and San Jacinto each had approximately 20 percent.

The median household income for the reference population of Riverside County was nearly \$43,000. The city of Corona median household income was over \$59,000, while the cities of Perris and San Jacinto reported \$35,000 and \$30,000, respectively.

Table 3.4.I shows the census tract data for each MCP Build Alternative along with the reference population data for comparison with the four environmental justice criteria.

Table 3.4.I Environmental Justice Considerations by Alternative

Category	Alternatives 4 and 6	Alternatives 5 and 7	Alternative 9	Riverside County	City of Corona	City of Perris	City of San Jacinto
Percentage Non-White	37%	38%	38%	30%	33%	53%	26%
Percentage Hispanic	36%	37%	37%	36%	36%	56%	40%
Percentage Below Poverty	13%	14%	14%	14%	8%	20%	20%
Median Household Income	\$51,479	\$51,200	\$50,803	\$42,887	\$59,615	\$35,522	\$30,627

Source: United States Census, 2000.

Permanent Impacts

Build Alternatives

All MCP Build Alternatives would benefit most MCP study area residents, including minority and low-income populations, by improving mobility and circulation throughout the MCP study area and the western Riverside County region. However, the MCP Build Alternatives will involve the establishment of a parkway through the Mead Valley and Perris communities. Some Census Tracts within these communities have a higher percentage of non-White persons, a higher percentage of Hispanic population, a higher percentage of persons below the poverty line, and a lower median income than the county and the cities within the MCP study area. Implementation of the MCP project will result in property acquisitions, temporary construction detours, temporary and permanent air and noise impacts, permanent aesthetic impacts, and temporary and permanent changes in travel patterns throughout the MCP study area, including the Mead Valley and Perris areas.

All MCP Build Alternatives would impact minority and low-income populations, primarily from displacements/relocations and from impacts to community character and cohesion. When comparing the Alternatives, Alternatives 4 through 7 have a greater impact on Environmental Justice populations within the MCP study area than Alternative 9 due to their direct impact to low-income and minority populations along Cajalco Road. Alternative 9 does displace some homes in the southern portion of Mead Valley (within the Old Elsinore Road and Gavilan Hills communities), but the total number is lower than that for Alternatives 4 through 7. Therefore, while the impacts from Alternatives 4 through 7 are not disproportionately high to minority and low-income populations, Alternative 9 has a lesser impact on these populations. Mitigation measures have been developed to reduce these impacts. However, alternatives that would avoid or reduce these adverse effects on the low-income and minority populations are not practicable as it is not possible to route the MCP alignments around these populations. That is, for the project to meet its purpose of providing effective and efficient movement between and through Corona, Perris, and San Jacinto, it is not possible to completely avoid those Census Tracts with higher percentages of minority and low-income populations.

No Build Alternatives

Under the MCP No Build Alternatives, the permanent adverse effects to minority and low income populations discussed above for the MCP Build Alternatives would not occur as a result of the MCP project. Other transportation improvement projects included in the No Build Alternatives are not expected to result in disproportionate

impacts to minority or low-income populations within the MCP study area since these other projects primarily involve widening of existing highways. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway, and would therefore result in similar permanent impacts to minority and low-income populations discussed above for the MCP Build Alternatives, particularly in the Mead Valley area.

Discussion of Impacts Relative to MSHCP Amendment

Environmental justice was determined not to be a topic of concern and therefore was not analyzed in the MSHCP EIR/EIS. However, as previously mentioned, the analysis in the MSHCP EIR/EIS included consideration of the potential impacts on population, housing, and employment. An amendment to the MSHCP to provide coverage for Alternative 9 TWS DV (the Locally Preferred Alternative) would not change the conclusion of the MSHCP EIR/EIS related to environmental justice.

Temporary Impacts

Build Alternatives

Construction activities would temporarily affect environmental justice populations. Temporary construction impacts would include disruption of local traffic patterns and access to residences and businesses, increased traffic congestions, and increased noise, vibration and dust. However, construction activities would provide jobs, which would benefit local economies, including minority and low-income populations.

No Build Alternatives

Under the MCP No Build Alternatives, the temporary adverse effects to minority and low-income populations discussed above for the MCP Build Alternatives would not occur as a result of the MCP project. These populations also would not gain any economic benefit from construction activities. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway, and would therefore result in some of the same temporary impacts (both adverse and beneficial) to minority and low-income populations discussed above for the MCP Build Alternatives, particularly in the Mead Valley area.

3.4.3.4 Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, the MCP Build Alternatives will not cause disproportionately high and adverse effects on any minority or low-income populations as per EO 12898 regarding environmental justice. Therefore, no

avoidance, minimization, or mitigation measures are required. Mitigation measures stipulated in other sections of this EIR/EIS (land use, air quality, visual, noise, etc.) will reduce impacts to all affected populations, including environmental justice populations.

3.5 Utilities/Emergency Services

The information in this section is based on the *Draft Project Report* (Jacobs Engineering, 2008) and the *Community Impact Assessment* (LSA Associates, Inc. 2008).

3.5.1 Affected Environment

The physical impacts of the MCP Build Alternatives related to emergency services and utilities would be largely limited to the proposed right of way. As a result, the discussion of the affected environment focuses on services and utilities within the right of way or close enough to the right of way to be impacted by the MCP Build Alternatives. The specific locations of public services and utilities were identified based on information provided by the respective providers. Because services and utilities are generally provided in fairly large geographic areas (a city or service area for example), this section includes discussion of the larger service areas, as appropriate, to provide an appropriate context for the service providers or utilities, their facilities, and their services.

3.5.1.1 Fire and Medical Services

The Riverside County Fire Department (RCOFD) provides fire protection and emergency medical services to the MCP study area in the cities of Perris, San Jacinto, and unincorporated areas of Riverside County. The Corona City Fire Department provides fire protection and emergency medical services for the city of Corona.

The following RCOFD stations are located within the MCP study area:

- Station No. 3 (Nuview Station): 29490 Lakeview Avenue
- Station No. 4 (Cajalco Station): 17650 Cajalco Road
- Station No. 15 (El Cerrito Station): 20320 Temescal Canyon Road
- Station No. 59 (Mead Valley Station): 21510 Pinewood Street
- Station No. 90 (North Perris Station): 333 Placentia Avenue

Although they are located outside the MCP study area, the nearest emergency medical, acute care, and trauma care services for this area of Riverside County are:

 Corona Regional Medical Center and Rehabilitation Hospital (Magnolia Campus), 730 Magnolia Avenue, Corona; and • Riverside County Regional Medical Center, 26520 Cactus Avenue, Moreno Valley.

City of Corona

The Corona City Fire Department provides fire protection, prevention, and emergency medical services in the city of Corona.

There is one Corona City Fire Department fire station within the MCP study area:

• Temescal Public Safety Facility, 3777 Bedford Canyon Road (a joint police and fire facility)

Although it is outside of the MCP study area, the nearest emergency medical, acute care, and trauma care services for this area of Corona are provided at:

• Corona Regional Medical Center and Rehabilitation Hospital (Magnolia Campus), 730 Magnolia Avenue, Corona.

City of Perris

Fire protection services within the city of Perris are provided by the RCOFD through a service contract with the city. Of the eight stations providing service to the city, Stations 3, 59, and 90 are within the MCP study area, with Station 90 providing the first response to most calls within the city. The other stations provide back-up for service calls, as needed.

There are three stations that serve the city of Perris and are within the MCP study area:

- Station No. 3 (Nuview Station): 29490 Lakeview Avenue
- Station No. 59 (Mead Valley Station): 21510 Pinewood Street
- Station No. 90 (North Perris Station): 333 Placentia Avenue

City of San Jacinto

Fire protection and prevention services in the city are provided by a service contract with the RCOFD. Although it is outside of the MCP study area, Station 25 provides first response to calls within the city.

While it is located outside the MCP study area, the nearest emergency medical, acute care, and trauma care services available to the cities of Perris and San Jacinto are provided at:

 Riverside County Regional Medical Center, 26520 Cactus Avenue, Moreno Valley.

3.5.1.2 Law Enforcement

Law enforcement services in the MCP study area are provided by the Corona Police Department and the Riverside County Sheriff's Department (RCSD).

County of Riverside

The RCSD provides community policing and the operation and maintenance of correctional facilities. There are 13 stations (2 are administrative units) and 9 substations located throughout Riverside County. The RCSD is a "demand response" agency that maintains limited patrol services.

City of Corona

The Corona Police Department provides local police services within the city of Corona. The Corona Police Department provides services in crime investigation, offender apprehension, community awareness programs, and other services such as traffic control.

The Temescal Public Safety Facility is located at 3777 Bedford Canyon Road within the MCP study area. The Corona Fire and Police Departments jointly occupy the facility. At this location, the Corona Police Department operates its Southeast Substation, two patrol zones, volunteer program, FLEX team (a unit part of the Field Services Division), and helicopter program supervision from this facility.

City of Perris

The City of Perris provides police protection and law enforcement services through a service contract with the RCSD. The RCSD substation, which is located in the MCP study area, is attached to Fire Station 90 located at 333 Placentia Avenue. The staff of the new substation consists of one full-time Community Service Officer who answers public walk-in questions, completes crime reports, and makes crime information available to the public. The main RCSD station that provides services to the city area is located at 403 East 4th Street in Perris.

City of San Jacinto

The City of San Jacinto provides police protection and law enforcement services through a contract with the RCSD. The RCSD station that services the city is located at 160 West 6th Street (outside of the MCP study area).

3.5.1.3 Utilities

There are a number of utility services and utility lines in the MCP study area. These utility lines are electric, natural gas, fuel transport, water for domestic use and irrigation, wastewater transmission, and telephone, communication, and cable television cables. Utility providers include the City of Corona (water, sanitary sewer), Verizon (telephone), AT&T (telephone), Wiltel (telephone), Time Warner (cable TV), Adelphia (cable TV), Southern California Edison (overhead electric lines), The Southern California Gas Company (gas), Eastern Municipal Water District (water, sanitary sewer), western Municipal Water District (water, sanitary sewer), and Metropolitan Water District of Southern California (water supply, Colorado River Aqueduct pipelines).

3.5.2 Environmental Consequences

The MCP Build Alternatives do not include the construction of any residential or commercial uses and therefore would not result in increased population or demand for public services or utilities in the MCP study area. The analysis of impacts on public services and utilities focuses on both direct and indirect impacts as a result of construction and operation of the MCP Build Alternatives.

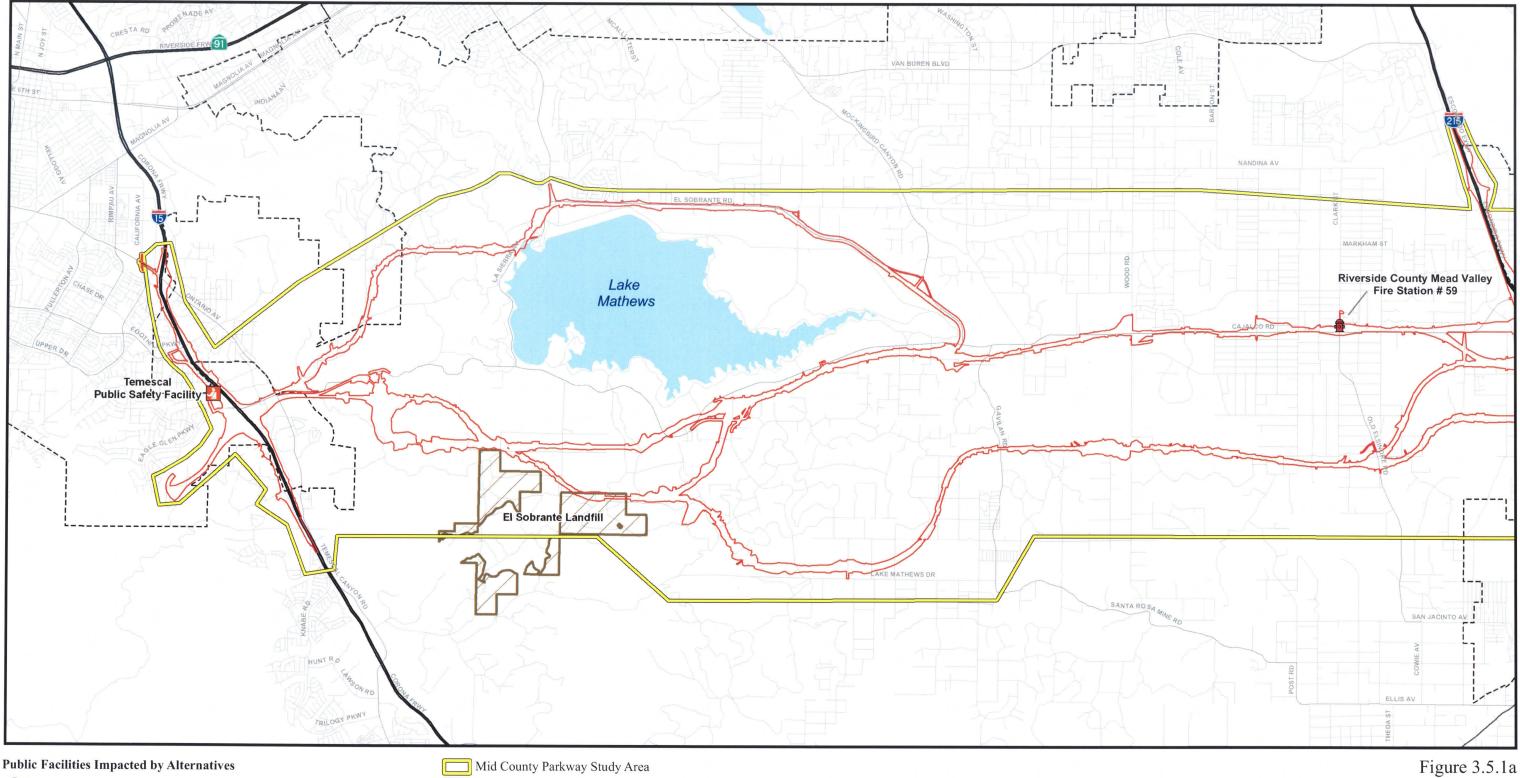
3.5.2.1 Permanent Impacts

Build Alternatives

Fire, Law Enforcement, and Emergency Services

Alternatives 4, 5, 6, 7, and 9 would have both beneficial and adverse effects on the ability of the RCOFD and the Corona City Fire Department to provide services to the MCP study area. Beneficial effects include emergency response times, as the ability to move fire, law enforcement, and emergency service resources from one area to another would be enhanced by the improved transportation network. The new, paved surface of the MCP roadway may also provide a barrier to the spread of wildfire in open space areas. However, the operation of the MCP project would also increase the risk of fire in open space areas as a result of cigarette butts or other flammable items being thrown from cars, as well as car fires.

Figures 3.5.1a and 3.5.1b show the public facilities that would be directly impacted by the MCP Build Alternatives. These facilities include:





Riverside County Mead Valley Fire Station # 59 (Alternatives 4,5,6 and 7)

City of Perris Fire Station # 90 (Alternative 9)

City of Perris Police Substation (Alternative 9)

Temescal Public Safety Facility (Alternatives 4,5,6,7 and 9)

Public Facilities Impacted by Alternatives Mid County Parkway Study Area Right-of-Way (All Alternatives)

El Sobrante Landfill MSHCP Area

SOURCE: TBM (2006), Jacobs Engineering (02/2007), LSA (2007)

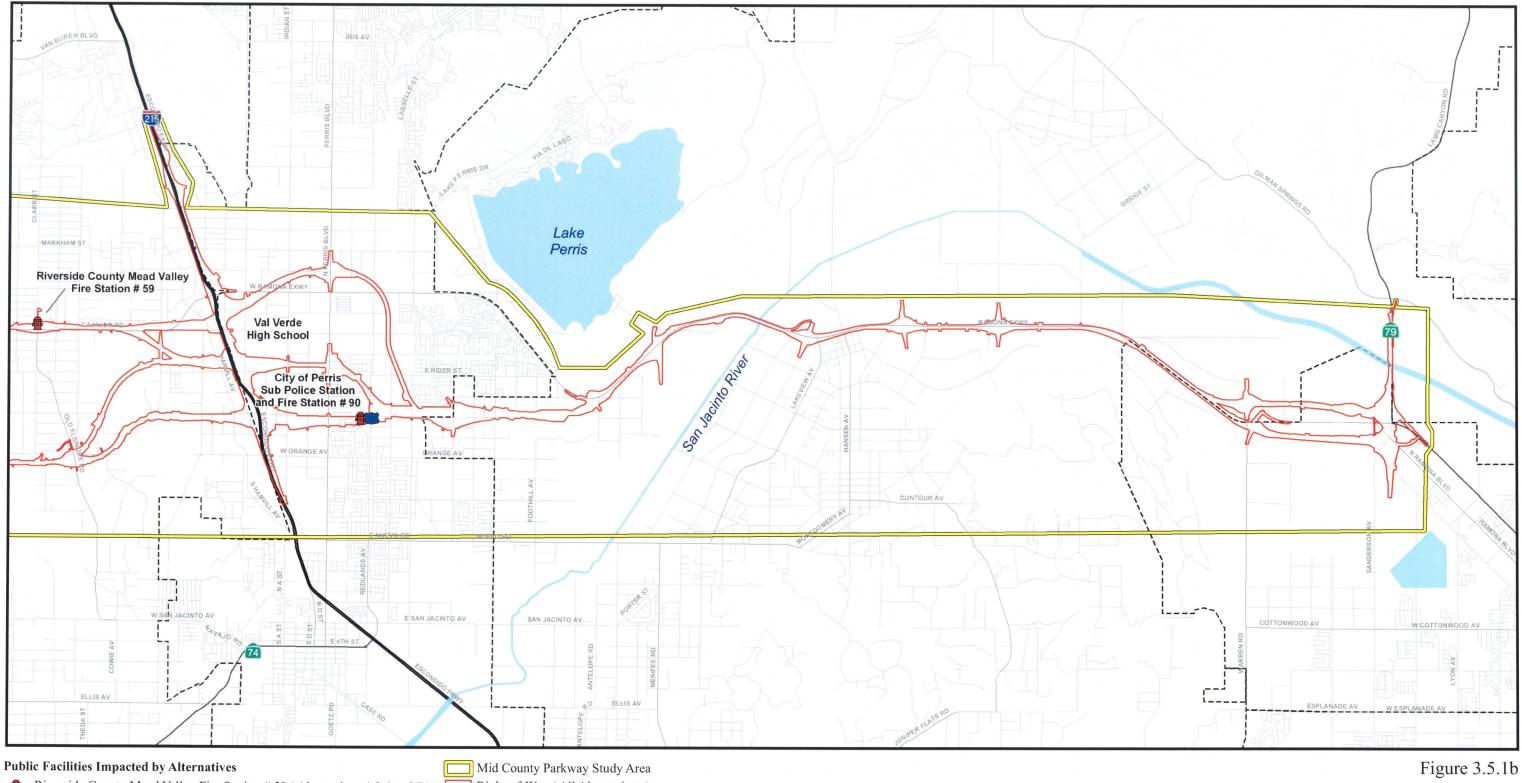
0	3,000	6,000	12,000 Feet
0	1,000	2,000	4,000 Mete

Utilities / Emergency Services Facilities KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank



Riverside County Mead Valley Fire Station # 59 (Alternatives 4,5,6 and 7)

City of Perris Fire Station # 90 (Alternative 9)

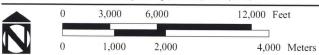
City of Perris Police Substation (Alternative 9)

Temescal Public Safety Facility (Alternatives 4,5,6,7 and 9)

Right-of-Way (All Alternatives)

El Sobrante Landfill MSHCP Area

SOURCE: TBM (2006), Jacobs Engineering (02/2007), LSA (2007)







This	page int	entionally	left blank	c



- RCOFD Station No. 59, 21510 Pinewood: This station would be directly impacted by Alternatives 4–7. The station would need to be relocated to maintain fire protection to the Mead Valley area.
- Corona City Fire Department Temescal Public Safety Facility, 3777 Bedford
 Canyon Road: This facility would be directly impacted by all MCP Build
 Alternatives, including the Temescal Wash Area (TWS) Design Variation. All
 alternatives would result in a direct physical impact to the Temescal Public Safety
 Facility due to the partial acquisition of the property, primarily the parking area
 and driveway.
- Station No. 90 (City of Perris/RCOFD/Police Substation), 333 Placentia Avenue: This station would be directly impacted by Alternative 9 (including the Placentia Avenue/Perris Boulevard Elevated Grade [PP-E] Design Variation). It is proposed to be relocated to the northeast corner of the Redlands Avenue/Placentia Avenue intersection. This new location is only 200 meters (650 feet) away from the existing location and therefore would not impact emergency response times within the station's service area. The new station would be constructed and put into operation prior to demolition of the existing station to ensure no loss of service to the community.

The closure of the I-15 northbound off-ramp and the southbound on-ramp at El Cerrito and closure of Cajalco Road in the Lake Mathews area would reduce access options and would increase response times on emergency calls that would otherwise have used these ramps as part of the response route. Because the Temescal Public Safety Facility is located close to the I-15/Cajalco Road interchange, it is expected that most service calls requiring freeway access would use the I-15/Cajalco Road interchange.

Utilities

As discussed below under 3.5.2.2, Temporary Impacts, the relocation, removal and protection in place of various utilities are impacts that are common to all the MCP Build Alternatives. Once the relocations are complete, there would be no permanent impacts to the utilities listed in Table 3.5.A.



Table 3.5.A Utility Impacts

Utility Provider	Type of Utility	Impacts
City of Corona	Potable water, reclaimed water, sanitary sewer	Impacts consist of relocating pipelines outside of the Mid County Parkway (MCP) right of way to avoid encroachments into the highway. Pipelines would be relocated into jacked steel casings across the MCP right of way at perpendicular crossings. Protection in place may be required in areas where excavation would occur.
Verizon	Telephone	Impacts consist of relocating conduits and aerial lines/poles outside of the MCP right of way to avoid longitudinal encroachments. Conduits crossing the proposed MCP right of way at new bridge locations would be relocated into the bridge structure cells. Aerial crossings of the MCP right of way may require relocating poles outside the right of way or installation of taller poles to meet vertical clearance requirements. Protection in place may be required in areas where excavation would occur.
		Major relocations required under all MCP Build Alternatives include:
		Relocate 72-inch conduit outside the MCP right of way along Ramona Expressway from Lakeview Avenue to Warren Road in San Jacinto.
		Relocate 42-inch conduit outside the MCP right of way near State Route 79 (SR-79) in San Jacinto.
AT&T and Wiltel Time Warner	Telephone Cable TV	Impacts consist of relocating conduits and aerial lines/poles outside of the MCP right of way to avoid longitudinal encroachments. Conduits crossing the proposed MCP right of way at new bridge locations would be relocated into the bridge structure cells. Aerial crossings of the MCP right of way may require relocating poles outside the right of way or installation of taller poles
and Adelphia		to meet vertical clearance requirements. Protection in place may be required in areas where excavation would occur.
Southern California Edison	Overhead electric lines	Impacts consist of relocating aerial lines and poles outside of the MCP right of way to avoid longitudinal encroachments. Aerial crossings of the MCP right of way may require relocating poles outside the right of way or installation of taller poles to meet vertical clearance requirements. Opportunities for converting aerial lines to underground conduits and/or placing conduits into new bridge structure cells may be available. Protection in place may be required in areas where new construction would occur.
		Major relocations include:
		Relocate 110 kilovolt (kV) aerial line poles outside the MCP right of way at Wood Road in Mead Valley (Alternatives 4 through 7).
		 Relocate 500 kV aerial line poles outside the MCP right of way at East Boundary Road in San Jacinto (all Build Alternatives).
		 Relocate the underground vault at the northeast intersection of Placentia Avenue/Wilson Avenue in Perris (Alternative 9).
The Southern California Gas Company	Natural gas lines, pressure-reducing station	Impacts consist of relocating pipelines outside of the MCP right of way to avoid longitudinal encroachments and relocating pipelines into jacked steel casings across the MCP right of way at perpendicular crossings. Protection in place may be required in areas where excavation would occur.
		Major relocations include:
		 Relocate pressure-reducing station at Cajalco Road/Clark Street in Mead Valley (Alternatives 4 through 7).
		 Relocate 6-inch high-pressure line in Cajalco Road between Clark Street and Carroll Street in Mead Valley (Alternatives 4 through 7).
		 Relocate 24-inch high-pressure line into jacked steel casing across the proposed MCP right of way, east of Martin Street across Ramona Expressway in San Jacinto (all Alternatives). Relocate 8-inch high-pressure line longitudinally outside the MCP right of way from Martin
		Street 9,900 meters east in San Jacinto (all Alternatives). Relocate 36-inch line outside the MCP right of way at the new Reservoir Road interchange
		in San Jacinto (all Alternatives). Relocate 36-inch line into jacked steel casing across the proposed MCP right of way at Davis Road/Hansen Avenue in San Jacinto (all Alternatives).



Table 3.5.A Utility Impacts

Utility Provider	Type of Utility	Impacts
Eastern Municipal Water District	Potable water, sanitary sewer	Impacts consist of relocating pipelines outside of the MCP right of way to avoid longitudinal encroachments and relocating pipelines into jacked steel casings across the MCP right of way at perpendicular crossings. Protection in place may be required in areas where excavation would occur. Major relocations include:
		Relocate 36-inch trunk sewer into jacked steel casing across the proposed MCP right of way at Redlands Avenue in Perris (Alternatives 5, 7, and 9).
		Relocate 24-inch trunk sewer into jacked steel casing across the proposed MCP right of way at Redlands Avenue in Perris (Alternatives 5, 7, and 9). Relocate 24-inch trunk sewer into jacked steel casing across the proposed MCP right of way at Redlands Avenue in Perris (Alternatives 5, 7, and 9). Relocate 24-inch trunk sewer into jacked steel casing across the proposed MCP right of way at Redlands Avenue in Perris (Alternatives 5, 7, and 9).
		Relocate 42-inch trunk sewer outside of the MCP right of way along Placentia Avenue in Perris (Alternative 9).
		Relocate well and pump station at the southwest corner of Placentia Avenue/Perris Boulevard in Perris (Alternative 9).
		 Relocate 36-inch water line into jacked steel casing across the proposed MCP right of way at Murrieta Road/Placentia Avenue in Perris (all Alternatives).
		Relocate 36-inch reclaimed water line outside of the MCP right of way located along Ramona Expressway from "C" Avenue to Gateway Avenue (all Alternatives).
Western Municipal Water District	Potable water, sanitary sewer, sanitary sewer lift station	Impacts consist of relocating pipelines outside of the MCP right of way to avoid longitudinal encroachments and relocating pipelines into jacked steel casings across the MCP right of way at perpendicular crossings. Protection in place may be required in areas where excavation would occur.
		Major relocations include:
		Relocate 21-inch to 27-inch water line into jacked steel casing across the proposed MCP right of way south of Lake Mathews (Alternatives 4 through 7).
		 Relocate 30-inch water line into jacked steel casing across the proposed MCP right of way south of Lake Mathews (Alternatives 4 through 7).
		Relocate 12-inch force main outside the MCP right of way at Cajalco Road/Wood Road in Mead Valley (Alternatives 4 through 7).
		 Relocate sanitary sewer lift station and 6-inch force main outside of the MCP right of way for the new eastbound off-ramp at Clark Street (Alternatives 4 through 7).
		Relocate 30-inch water line into jacked steel casing across the proposed MCP right of way located between Esperanza Road and Gavilan Road in the Gavilan Hills area (Alternative 9).
		Relocate 36-inch reclaimed water line outside of the MCP right of way located along Ramona Expressway from "C" Avenue to Gateway Avenue (all Alternatives).
Metropolitan Water District of Southern California (Metropolitan)	Water Supply Aqueduct Pipe Lines	The MCP, at various locations, would be located adjacent to and also cross Metropolitan pipelines along the alignment. The MCP would cross the Colorado River Aqueduct (CRA) in three places, and run roughly parallel to it in other locations. The three crossings are located just east of Lake Perris, at Warren Road, and at the interchange with SR-79. In areas where the MCP is running roughly parallel to the CRA, the design would incorporate elements to ensure that settlement from the roadway embankments is either minimized or avoided. At the crossing locations, two designs would be utilized. Where the roadway facilities are near ground level, a protective slab would be built over the CRA, and the roadway would then be placed on a small fill above the slab. This would minimize the potential for settlement or other impacts to the CRA. Where the roadway facilities are substantially above ground level, structures would be built to carry the roadway facilities over the CRA. This would occur at Warren Road and with the connectors at the interchange with SR-79. These structures would have a vertical clearance of 6.7 meters (22 feet) above ground at the CRA, as requested by Metropolitan for maintenance purposes. Columns would occur within Metropolitan's right of way for the CRA, but the designs of these structures would be such that settlement or other impacts to the CRA would be minimized or avoided.

Source: Draft Project Report, Jacobs Engineering, 2008.

No Build Alternatives

Under the MCP No Build Alternatives, the permanent impacts discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but similar impacts to public services and utilities could result from other transportation improvement projects included in the No Build Alternatives. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway. Since Alternative 1B would widen these roadways in accordance with the Riverside County General Plan, it would not result in the impacts to Station No. 59 and the Temescal Public Safety Facility discussed above for the MCP Build Alternatives.





Discussion of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species, including species and habitats associated with wetlands and other waters, are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 Temescal Wash Area Design Variation (TWS DV), which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV.

Utilities and service systems were determined not to be a topic of concern and therefore were not analyzed in the MSHCP EIR/EIS. However, the analysis in the MSHCP EIR/EIS included consideration of the potential impacts on fire protection facilities. The EIR/EIS found that the MSCHP would not increase the risk of wildland fires, but could increase the risk of fire at the habitat edges adjacent to development. The MSHCP would accommodate growth in areas outside of the Conservation Areas, which could result in indirect effects as development in the non-conserved regions approaches the edges of the conservation areas. However, adequate fire protection facilities would be provided to accommodate the increased development at the time of such development. In addition, fire protection facilities are allowed to be constructed within Conservation Areas; therefore, the configuration of Conservation Areas would not limit fire protection access in the MSHCP Plan Area. Thus, no existing or planned fire protection facilities would require deletion or relocation as a result of the MSHCP. The MSHCP also concluded that setting aside areas for conservation within larger natural areas would allow cities and the County to plan appropriate land uses along the anticipated urban-wildland border. This could indirectly result in decreased risk of wildland fire damage by placing compatible land uses and necessary buffer areas along the edges of the Conservation Areas.

Based on the analysis of impacts of the MCP related to fire protection facilities, (discussed above in this section), the impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS regarding fire protection. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts to fire protection facilities beyond that previously analyzed.

3.5.2.2 Temporary Impacts

Build Alternatives

Fire, Law Enforcement, and Emergency Services

Construction activities could result in traffic delays that could affect the ability of fire, law enforcement, and emergency service providers to meet response time goals within a particular alternative.

The risk of wildfires would increase during construction of any of the MCP Build Alternatives due to the use of combustion engines in construction equipment, welding equipment, and other sources of combustion. The MCP Build Alternatives traverse large areas of vacant land (primarily habitat reserve lands) that are covered with both native and nonnative vegetation that is highly flammable during most of the year.

Also, there are few roads and very little irrigated landscape that could act as fire breaks.

Non-fire-related medical emergencies could temporarily increase with the presence of construction workers and heavy machinery during construction of the project. Temporary road closures, lane closures, or detour routes may impair response times by fire, law enforcement, and other emergency service providers.

Utilities

During construction of any of the MCP Build Alternatives, utilities that could be impacted at locations where lines and facilities are within and adjacent to the disturbance limits would be relocated or protected in place. In the preliminary design that is the basis for this analysis, all utility lines and facilities within and adjacent to the right of way were identified. During final design, a determination would be made as to which of the identified utilities would be relocated, and plans for the relocations would be developed.

Relocation, removal, and protection in place are common impacts to all MCP Build Alternatives. During relocation and removal, as well as other construction activity, utility services would be temporarily interrupted or damaged. Table 3.5.A describes the impacts to utilities under all MCP Build Alternatives.

No Build Alternatives

Under the MCP No Build Alternatives, the temporary adverse effects to public services and utilities discussed above as a result of the MCP Build Alternatives would not occur for the MCP project itself, but would for the other transportation improvement projects included in the No Build Alternatives. Alternative 1B would implement the Riverside County General Plan Circulation Element improvements on Cajalco Road and Ramona Expressway, and would therefore result in some of the same public service disruption and utility relocation impacts discussed above for the MCP Build Alternatives.

3.5.3 Avoidance, Minimization, and/or Mitigation Measures

As discussed above, the MCP Build Alternatives would result in adverse impacts associated with fire protection and police protection services and the relocation of existing utilities; therefore, mitigation is required. Mitigation Measures U&ES-1 through U&ES-10 have been developed to reduce these impacts, and would apply to

all MCP Build Alternatives unless otherwise noted. In addition, Mitigation Measure TR-2, which requires preparation of a Traffic Management Plan as described in Section 3.6, will ensure that emergency vehicle access and response times are maintained at acceptable levels. RCTC's compliance with the Uniform Relocations Assistance and Real Property Acquisition Policies act of 1970 in acquisition of all public and private property within the right of way for the MCP project as described in Section 3.4 will ensure that public facilities are relocated with no service disruption to the public.

Public Facility Acquisition. During final design, the Riverside County Transportation Commission (RCTC) will refine the project design to avoid or minimize temporary use of and permanent acquisition of land currently occupied by public service facilities. The RCTC will coordinate with the affected public agencies to obtain their input in the design refinement process.

Specifically for Station No. 90, RCTC will coordinate with the City of Perris to finalize the location, property acquisition, size, parking, design, and funding for the relocation of the City of Perris/Riverside County Fire Department (RCOFD)/Police Substation to the northeast corner of the Redlands Avenue/Placentia Avenue intersection, an approximate 0.49-hectare (1.21-acre) property.

Specifically for the Temescal Public Safety Facility, RCTC will coordinate with the City of Corona to finalize the relocation of the loss of parking area if it cannot be accommodated on site. The driveway and facility will remain operational after the partial acquisition.

- **U&ES-2 Fire Protection.** During construction in areas subject to wildfires as determined by the Riverside County Fire Department (RCOFD), the Riverside County Transportation Commission (RCTC) shall require the contractor to install signs around construction sites warning of high fire risk and of area closings during the high fire season as declared by the RCOFD.
- **U&ES-3 Fire Protection.** During construction, the construction contractor will be required to maintain access by emergency personnel to any existing fire roads as identified and used by the Riverside County Fire Department (RCOFD).



- Fire Protection. During final design, the long-term preservation/
 provision of access to the existing fire road grid for the Riverside
 County Fire Department (RCOFD) will be incorporated by the
 Riverside County Transportation Commission (RCTC) in the facility
 design, in consultation with RCOFD, California Department of
 Transportation (Caltrans), and local jurisdictions.
- **U&ES-5 Fire Protection.** During construction, the contractor will implement fuel modification techniques as required by the Riverside County Fire Department (RCOFD) in areas of fire hazard as determined by the RCOFD.
- **U&ES-6 Fire Protection.** To minimize the risk of wildfire during construction, the construction contractor shall ensure that all construction vehicles are equipped with fire extinguishers and shovels, and that all construction equipment is inspected to ensure it is in compliance with minimum fire safety standards. Inspections by the construction contractor will be documented in weekly reports to the Riverside County Transportation Commission (RCTC).
- **U&ES-7 Fire Protection.** Prior to completion of final design, the Riverside County Transportation Commission (RCTC) shall provide brush management zones in areas adjacent to existing reserves, the Multiple Species Habitat Conservation Plan (MSHCP) Conservation Area, and other undeveloped lands in accordance with Section 6.4 of the MSHCP.
- U&ES-8 Fire, Emergency Medical, and Law Enforcement. Prior to completion of final design, emergency call boxes will be identified on project plans and installed during construction along the Mid County Parkway (MCP) roadway in undeveloped areas of high and extreme fire hazard consistent with existing Riverside County Fire Department (RCOFD), California Department of Transportation (Caltrans), and/or local jurisdictions' policies on emergency call boxes.
- **U&ES-9** Fire, Emergency Medical, and Law Enforcement. Prior to and during construction, the Riverside County Transportation Commission (RCTC) and the construction contractor will coordinate all temporary ramp closures and detour plans with fire, emergency medical, and law

enforcement providers to minimize temporary delays in emergency response times as part of the Traffic Management Plan identified in Mitigation Measure TR-2, including the identification of alternative routes and routes across the construction areas for emergency vehicles developed in coordination with the affected agencies.

U&ES-10

Utilities. During final design, the Riverside County Transportation Commission (RCTC) shall prepare utility relocations plans for utilities anticipated to be relocated in consultation with the affected utility provider/owners. The Project Engineer will seek: (1) to avoid utility relocations; (2) if relocation is necessary, to relocate utilities across the MCP right of way or within other existing public right of ways and/or easements; (3) if relocation outside of existing or proposed public right of way and/or easements, to relocate in such a manner as to minimize environmental impacts as a result of construction and ongoing maintenance and repair activities.

Mitigation Measure TR-2 (Traffic Management Plan), which is described in Section 3.6, would reduce impacts to emergency services response times during construction.

This page intentionally left blank

3.6 Traffic and Transportation/Pedestrian and Bicycle Facilities

**\(\begin{align*}
 \]**

The information in this section is based on the *Traffic Technical Report* prepared by VRPA Technologies, Inc. (2008). The Southern California Association of Governments (SCAG) 2030 Regional Travel Forecasting Model (with refinements to reflect local conditions) was used to forecast future traffic conditions.

3.6.1 Regulatory Setting

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 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.

Caltrans and FHWA are committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

3.6.2 Affected Environment

For the traffic analysis, the MCP study area includes a corridor from the city of Corona at Interstate 15 (I-15) in the west to the city of San Jacinto at State Route 79 (SR-79) in the east (see previous Figure 1.1).

The quality and density of traffic flow in the MCP study area can be defined in terms of levels of service (LOS) from A to F. LOS describes the efficiency of traffic flow, how such conditions are perceived by those persons traveling in the traffic stream, and accounts for variables such as speed and travel time, freedom to maneuver, traffic interruptions, traveler comfort and convenience, and safety. LOS A indicates free traffic flow with low volumes and high speeds resulting in low densities, while LOS F indicates traffic volumes that exceed capacity and result in forced flow

operations at low speeds, resulting in high densities. According to the 2000 Highway Capacity Manual (HCM), LOS is categorized by two traffic parameters: uninterrupted and interrupted traffic flow. Uninterrupted flow facilities (e.g., freeways) do not have fixed elements such as traffic signals that cause interruptions in traffic flow. Interrupted flow facilities (e.g., arterial roadways) have fixed elements that cause an interruption in the flow of traffic, such as stop signs and signalized intersections. LOS for freeway facilities are defined and illustrated in Figure 3.6.1. LOS for signalized intersections is defined based on delay per vehicle as shown in Figure 3.6.2.



For design purposes, LOS C was considered to be the desirable operating condition during peak hours for roadways and intersections in the MCP study area. In cases where LOS C was considered to be infeasible, LOS D was considered to be an acceptable operating condition for the purpose of determining traffic impacts.

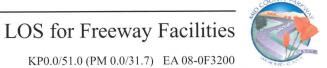
Each of the local jurisdictions within the study area has set its own LOS standards for peak-hour operating conditions along roadways and intersections, as documented in Circulation Elements of the General Plans for each agency. The LOS standard described above is considered to meet or exceed the intent of LOS standards set by the local agencies in the study area. These LOS standards are documented below.

- Riverside County: LOS C, with certain exceptions. LOS D may be allowed in community development areas at intersections of any combination of secondary highways, major highways, urban 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.
- **City of Corona:** LOS D on arterial streets, wherever possible. LOS E may be adopted on a case-by-case basis. LOS C may be adopted for local and collector streets in residential areas.
- City of Perris: LOS D for most locations, but LOS E at intersections of arterials and expressways with State Route 74 (SR-74), the Ramona-Cajalco Expressway, and Interstate 215 (I-215). LOS E may be allowed in the downtown to support transit-oriented development.
- City of San Jacinto: LOS D.

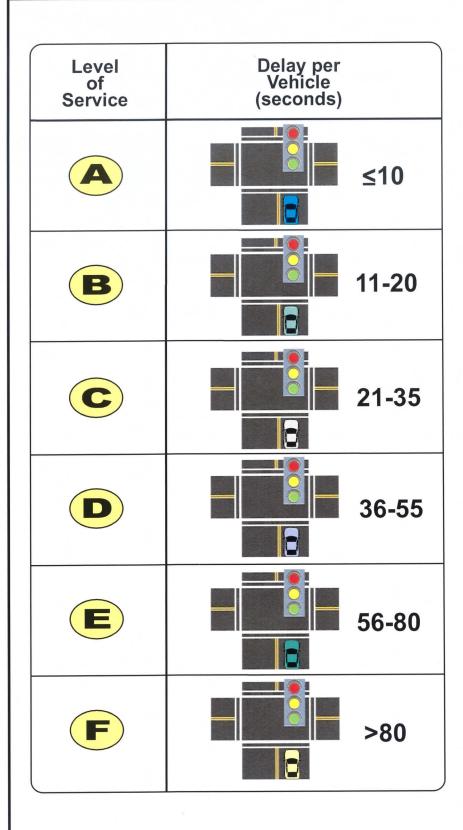
Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		70	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability. No delays
В		70	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted.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

FIGURE 3.6.1

 $SOURCE: Caltrans\ Standard\ Environmental\ Reference\ (www.dot.ca.gov/ser/forms.htm\#losgraphics)$



This page intentionally left blank



Factors Affecting LOS of Signalized Intersections

Traffic Signal Conditions:

- Signal Coordination
- Cycle LengthProtected left turn
- Timing
- · Pre-timed or traffic activated signal

Geometric Conditions:

- · Left- and right-turn lanes
- Number of lanes

Traffic Conditions:

- Percent of truck traffic
- Number of pedestrians

FIGURE 3.6.2





KP0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



This page intentionally left blank



In the case of Riverside County, it should be noted that the MCP is proposed to be built in an area of the county that is proposed for future development. While portions of the study area are in areas where LOS C is the current standard, the LOS D standard would be expected to apply to the entire study area for analysis of future conditions related to MCP traffic impacts.

3.6.2.1 Baseline Traffic Conditions

Baseline traffic conditions for existing year (2005) and design year (2035) were analyzed to determine traffic LOS and density without the MCP project. The following assumptions were made when calculating 2035 traffic without the MCP project.

- Freeways and state highways were assumed to be improved according to the SCAG 2004 Regional Transportation Plan (RTP). An exception was made in the case of a proposed roadway connection from Riverside County to Orange County along the Cajalco Road alignment. This improvement was the subject of a recent Major Investment Study (MIS) and was not considered to be far enough along in the project development process to be included in the analysis of the MCP project.
- Local roadways were assumed to be built out according to the Circulation Element of the General Plan of the appropriate local jurisdiction (Riverside County and the cities of Corona, Perris, and San Jacinto). In addition, the March Inland Port Ground Access Study (SCAG, prepared by Katz, Okitsu & Associates, June 28, 2004) was used in determining local roadway improvements near the March Inland Port at March Air Reserve Base. A draft Project Study Report for the I-215/Van Buren Boulevard interchange was reviewed to determine future local roadway improvements in this area.

Existing (2005) and design year (2035) baseline conditions for each freeway mainline, freeway interchange, and local intersection applicable in the MCP study area are described below.

State Highways

Interstate 15

In the MCP study area, I-15 is currently a six-lane freeway from Ontario Avenue south to Temescal Canyon Road with interchanges at: Ontario Avenue, El Cerrito Road, Cajalco Road, Weirick Road, and Temescal Canyon Road. In the existing condition, the average daily traffic on the I-15 between Temescal Canyon Road and State Route 91 (SR-91) ranges from 135,000 to 182,000 trips. In 2035, the forecasted



average daily traffic on the I-15 between Temescal Canyon Road and SR-91 ranges from 163,000 to 233,400 trips.

Table 3.6.A lists the existing (2005) and design year (2035) a.m. and p.m. peak-hour traffic LOS and density (defined as vehicles per mile per lane [vpmpl]) for I-15 ramps and mainline lanes between Ontario Avenue and Temescal Canyon Road. With the exception of a few LOS E conditions, the I-15 ramps and mainline lanes from Ontario Avenue to Temescal Canyon Road typically operate at LOS F during a.m. and p.m. peak hours in 2005 and are forecasted to degrade further under 2035 conditions.

Table 3.6.B lists the LOS and average delay for the a.m. and p.m. peak-hour LOS and average delay for existing (2005) and design year (2035) conditions for I-15 ramp intersections and other intersections near the freeway ramps. In 2005, 10 intersections operated worse than LOS D during a.m. peak hours and 14 intersections during p.m. peak hours. In 2035, 4 intersections will be operating worse than LOS D during a.m. peak hours and 6 intersections during p.m. peak hours. It should be noted that fewer intersections are expected to operate worse than LOS D in 2035 than in the base year of 2005. This is because roadway improvements are expected to occur in the study area through implementation of local General Plan Circulation Elements. It should also be noted that I-15 was assumed to include an additional high occupancy vehicle (HOV) lane in each direction in 2035 per the SCAG 2004 RTP.

Interstate 215

In the MCP study area, I-215 is currently a six-lane freeway from Van Buren Boulevard to Nuevo Road with interchanges at: Van Buren Boulevard, Oleander Avenue, Ramona Expressway, and Nuevo Road. In the existing condition, the average daily traffic on the I-215 from just south of Nuevo Road to Van Buren Boulevard ranges from 94,000 to 117,000 trips. In 2035, the average daily traffic on the I-215 from just south of Nuevo Road to Van Buren Boulevard is projected to range from 166,600 to 226,000 trips.

Table 3.6.A Existing (2005) and Design Year (2035) Freeway and Ramp Capacity Analysis: Interstate 15

	Γ	20	005			20	35	
Location	AM P	eak Hour	PM P	eak Hour	AM P	eak Hour	PM P	eak Hour
Location	LOS	Density	LOS	Density	LOS	Density	LOS	Density
	LUS	(vpmpl)	LUS	(vpmpl)	LUS	(vpmpl)	LUS	(vpmpl)
I-15 Mainline Northbound								
South of Temescal Canyon Road	[F]	46.2	[E]	41.1	[F]	47.5	[E]	42.6
Temescal Canyon Road Off-Ramp	[F]	50.8	[F]	45.2	[F]	52.3	[F]	46.8
Temescal Canyon Road On-Ramp	[F]	52.5	[F]	47.7	F	56.2	[F]	51.1
Temescal Canyon Road On-Ramp	[F]	47.7	[E]	43.4	[F]	51.1	[F]	46.5
to Weirick Road Off-Ramp								
Weirick Road Off-Ramp	[F]	52.5	[F]	47.7	[F]	56.2	[F]	51.1
Weirick Road On-Ramp	[F]	60.5	[F]	52.5	[F]	64.2	[F]	58.4
Weirick Road On-Ramp to Cajalco	[F]	55.0	[F]	47.7	[F]	58.4	[F]	53.1
Road Off-Ramp								
Cajalco Road Off-Ramp	[F]	60.5	[F]	52.5	[F]	64.2	[F]	58.4
Cajalco Road On-Ramp	[F]	64.8	[F]	55.3	[F]	69.2	[F]	62.5
Cajalco Road On-Ramp to El	[F]	58.9	[F]	50.3	[F]	62.9	[F]	56.8
Cerrito Road Off-Ramp								
El Cerrito Road Off-Ramp	[F]	64.8	[F]	55.3	[F]	69.2	[F]	62.5
El Cerrito Road On-Ramp	[F]	67.0	[F]	56.4	[F]	67.7	[F]	61.5
El Cerrito Road On-Ramp to	[F]	60.9	[F]	51.3	[F]	61.5	[F]	55.9
Ontario Avenue Off-Ramp								
Ontario Avenue Off-Ramp	[F]	67.0	[F]	56.4	[F]	67.7	[F]	59.3
Ontario Avenue On-Ramp	[F]	68.3	[F]	56.6	[F]	64.8	[F]	68.0
Ontario Avenue On-Ramp to	[F]	62.1	[F]	51.5	[F]	65.7	[F]	59.7
Magnolia Avenue Off-Ramp								
Magnolia Avenue Off-Ramp	[F]	68.3	[F]	56.6	[F]	72.3	[F]	65.7
Magnolia Avenue On-Ramp	[F]	69.0	[F]	62.8	[F]	81.1	[F]	73.8
North of Magnolia Avenue	[F]	62.7	[F]	57.1	[F]	73.8	[F]	67.1
I-15 Mainline Southbound	,,							
North of Magnolia Avenue	[F]	64.0	[F]	70.8	[F]	60.3	[F]	82.0
Magnolia Avenue Off-Ramp	[F]	70.4	[F]	77.9	[F]	66.4	[F]	90.1
Magnolia Avenue On-Ramp	[F]	51.3	[F]	64.4	[F]	53.8	[F]	73.0
Magnolia Avenue On-Ramp to	[F]	51.3	[F]	64.4	[F]	53.8	[F]	73.0
Ontario Avenue Off-Ramp								
Ontario Avenue Off-Ramp	[F]	56.4	[F]	70.8	[F]	59.1	[F]	80.3
Ontario Avenue On-Ramp	[F]	46.2	[F]	62.0	[F]	48.5	[F]	65.8
Ontario Avenue On-Ramp to El	[F]	46.2	[F]	62.0	[F]	50.3	[F]	68.4
Cerrito Road Off-Ramp								
El Cerrito Road Off-Ramp	[F]	50.8	[F]	68.2	[F]	55.4	[F]	75.2
El Cerrito Road On-Ramp	[F]	45.4	[F]	60.4	[F]	51.2	[F]	69.5
El Cerrito Road On-Ramp to	[F]	45.4	[F]	60.4	[F]	51.2	[F]	69.5
Cajalco Road Off-Ramp								
Cajalco Road Off-Ramp	[F]	50.0	[F]	66.4	[F]	56.3	[F]	76.5
Cajalco Road On-Ramp	(E)	43.1	[F]	58.1	[F]	47.8	[F]	64.9
Cajalco Road On-Ramp to Weirick	[E]	43.1	[F]	58.1	[F]	47.8	[F]	64.9
Road Off-Ramp							.=-	
Weirick Road Off-Ramp	[F]	47.4	[F]	63.9	[F]	52.6	[F]	71.4
Weirick Road On-Ramp	[E]	33.8	[F]	53.0	[E]	41.8	[F]	56.8
Weirick Road On-Ramp to	[E]	38.3	[F]	53.0	[E]	41.8	[F]	56.8
Temescal Canyon Road Off-Ramp								
Temescal Canyon Road Off-Ramp	[E]	42.7	[F]	58.3	[F]	46.0	[F]	62.5
Temescal Canyon Road On-Ramp	<u>[E]</u>	36.9	[F]	52.3	[E]	38.3	[F]	52.0
South Temescal Canyon Road	[E]	36.9	[F]	52.3	[E]	38.3	[F]	52.0

Source: Traffic Technical Report, VRPA Technologies, Inc., 2008.

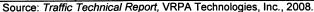
vpmpl = vehicles per mile per lane

^{[] =} unacceptable level of service (LOS)

I-15 = Interstate 15

Table 3.6.B Existing (2005) and Design Year (2035) Intersection Capacity Analysis: Interstate 15 Area

		20	005			20	35	
	<i>A</i>	M		P M		AM	P	M
Intersection	Peak	Hour	Pea	k Hour	Pea	k Hour	Peak	Hour
Intersection		Avg		Avg		Avg		Avg
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
		(sec)		(sec)		(sec)		(sec)
Magnolia Avenue and El Sobrante Road	[F]	>80.0	[F]	>80.0	[F]	>80.0	[F]	>80.0
Magnolia Avenue and I-15 SB Ramps	[F]	>80.0	[F]	>80.0	[F]	>80.0	[F]	>80.0
Magnolia Avenue and I-15 NB Ramps	[F]	>80.0	[F]	>80.0	[F]	>80.0	[F]	>80.0
Magnolia Avenue and Compton Avenue	[E]	76.3	[E]	70.7	[F]	>80.0	[E]	67.6
Ontario Avenue and California Avenue	[F]	>80.0	[F]	>80.0	С	33.5	D	35.3
Ontario Avenue and I-15 SB Ramps	D	44	[E]	73.3	В	17.0	Α	9.2
Ontario Avenue and I-15 NB Ramps	D	39.5	[F]	>80.0	С	20.3	С	21.9
Ontario Avenue and State Street	С	•	С	-	Α	7.8	Α	6.8
El Cerrito Road and Bedford Canyon Road	[F]	-	[F]	-	D	50.0	В	12.3
El Cerrito Road and I-15 SB Ramps	С	-	[E]	-	Α	8.8	В	12.8
El Cerrito Road and I-15 NB Ramps	[F]	-	[F]	-	С	24.9	С	31.1
El Cerrito Road and Temescal Canyon Road	Α	9.6	С	20.7	В	18.8	С	21.8
Cajalco Road and Bedford Canyon Road	Α	9.2	В	12.3	В	13.8	В	18.0
Cajalco Road and I-15 SB Ramps	С	23.8	D	37.3	С	21.9	D	39.4
Cajalco Road and I-15 NB Ramps	С	30	С	25.3	С	34.8	D	36.3
Cajalco Road and Temescal Canyon Road	D	40.5	D	39.7	D	43.7	[E]	57.6
Weirick Road and Knabe Road	С	•	F	-	D	36.2	[F]	>80.0
Weirick Road and I-15 SB Ramps	[F]	•	[F]	-	В	18.3	С	30.3
Weirick Road and I-15 NB Ramps	[F]		[F]	-	С	23.6	С	20.6
Weirick Road and Temescal Canyon Road	[E]	46.5	[F]	>80.0	С	21.1	Α	9.3
Temescal Canyon Road and Lawson Drive	С	-	С	-	В	19.9	В	15.6
Temescal Canyon Road and I-15 SB Ramps	С	30	С	29. 5	В	18.9	D	53.6
Temescal Canyon Road and I-15 NB Ramps	С	32.4	С	35.5	В	18.4	D	37.7



^{[] =} unacceptable level of service (LOS)

I-15 = Interstate 15

NB = northbound

SB = southbound

sec = seconds

Table 3.6.C lists the existing (2005) and design year (2035) a.m. and p.m. peak-hour LOS and density for I-215 ramps and mainline lanes from Van Buren Boulevard to Nuevo Road¹. Overall, the I-215 ramps and mainline lanes operated at LOS D or worse during a.m. and p.m. peak hours in 2005 and are projected to be the same LOS in 2035 with the exception of the Oleander Avenue on-ramp to southbound (SB) I-215, which operated at LOS C during the a.m. peak hour in 2005.



^{- =} not applicableAvg = average

As referenced in the beginning of this section, assumptions were made for other roadway improvements implemented by 2035 in the MCP study area; therefore for the 2035 conditions in Table 3.6.C, there is an additional on- and off-ramp at Placentia Avenue.

Table 3.6.C Existing (2005) and Design Year (2035) Freeway and Ramp Capacity Analysis: Interstate 215

		200				20	35	
Location	AM P	eak Hour	PM P	eak Hour	AM P	eak Hour	PM P	eak Hour
Location	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)
I-215 Mainline Northbound								
South of Nuevo Road	D	34.3	D	31.2	[F]	59.5	[F]	54.1
Nuevo Road Off-Ramp	[E]	37.7	D	34.3	[F]	65.5	[F].	59.5
Nuevo Road On-Ramp	(E)	38.6	D	34.0	[F]	67.4	[F]	61.2
Nuevo Road On-Ramp to	,-,	25.0	D	30.9				
Ramona Expressway Off-Ramp	[E]	35.2	ט ן	30.9	-	-	-	-
Nuevo Road On-Ramp to					(C)	64.2	(C)	55.7
Placentia Avenue Off-Ramp	-	-	-	-	[F]	61.3	[F]	55.7
Placentia Avenue Off-Ramp	-	-	-	-	[F]	67.4	[F]	61.2
Placentia Avenue On-Ramp	-	-	-	-	[F]	69.0	[F]	62.7
Placentia Avenue On-Ramp to		_	_		(5)	62.7		57.0
Ramona Expressway Off-Ramp	-	-	-	-	[F]	02.7	[F]	57.0
Ramona Expressway Off-Ramp	[E]	38.7	D	34.0	[F]	69.0	[F]	62.7
Ramona Expressway On-Ramp	[E]	37.9	[E]	38.2	[F]	77.1	[F]	70.1
Ramona Expressway On-Ramp to	D	34.4	D	34.8	[F]	70.1	[F]	63.7
Oleander Avenue Off-Ramp	י ו	34.4	ן ט	34.0		70.1		03.7
Oleander Avenue Off-Ramp	[E]	37.9	[E]	38.2	[F]	77.1	[F]	70.1
Oleander Avenue On-Ramp	[E]	39.0	[E]	40.4	[F]	87.9	[F]	79.9
Oleander Avenue On-Ramp to		35.4		36.7	(E)	79.9	[F]	72.6
Van Buren Blvd Off-Ramp	[E]	35.4	[E]	30.7	[F]	79.9		12.0
Van Buren Blvd Off-Ramp	[E]	39.0	[E]	40.4	[F]	87.9	[F]	79.9
Van Buren Blvd On-Ramp	[E]	37.9	[E]	39.2	[F]	80.3	[F]	73.0
North of Van Buren Blvd	D	34.5	[E]	35.7	[F]	73.0	[F]	66.3
I-215 Mainline Southbound								
North of Van Buren Blvd	D	33.9	[F]	45.6	[F]	59.7	[F]	81.1
Van Buren Blvd Off-Ramp	[E]	37.2	[F]	50.2	[F]	65.7	[F]	89.2
Van Buren Blvd On-Ramp	D	34.0	[F]	46.2	[F]	65.4	[F]	88.8
Van Buren Blvd On-Ramp to	D	34.0	(C)	46.2		65.4	(E)	88.8
Oleander Avenue Off-Ramp	ן ט	34.0	(F)	40.2	[F]	65.4	[F]	00.0
Oleander Avenue Off-Ramp	[E]	37.4	[F]	50.9	[F]	71.9	[F]	97.7
Oleander Avenue On-Ramp	С	25.6	[F]	45.1	[F]	57.3	[F]	77.9
Oleander Avenue On-Ramp to	D	32.8	[F]	45.1	[F]	57.3	[F]	77.9
Cajalco Road Off-Ramp				40.1		57.5		11.5
Cajalco Road Off-Ramp	[E]	36.0	[F]	49.6	[F]	63.1	[F]	85.7
Cajalco Road On-Ramp	D	31.4	[E]	42.5	[F]	51.3	[F]	69.7
Cajalco Road On-Ramp to Nuevo	D	31.4	[E]	42.5	-	_		
Road Off-Ramp	J	31.4	[-]	42.5				
Cajalco Road On-Ramp to	_	_	_	_	[F]	51.3	[F]	69.7
Placentia Avenue Off-Ramp		_						
Placentia Avenue Off-Ramp	-	-	-	-	[F]	56.5	[F]	76.7
Placentia Avenue On-Ramp	-	-	-	-	[F]	50.1	[F]	68.0
Placentia Avenue On-Ramp to	_			-	[F]	50.1	[F]	68.0
Nuevo Road Off-Ramp			-					
Nuevo Road Off-Ramp	D	34.5	[F]	46.8	[F]	55.1	[F]	74.8
Nuevo Road On-Ramp	D	31.7	[E]	41.3	[F]	48.7	[F]	66.2
South of Nuevo Road	D	31.7	[E]	41.3	[F]	48.7	[F]	66.2

Source: Traffic Technical Report, VRPA Technologies, Inc., 2008.

^{[] =} unacceptable level of service (LOS)
- = not applicable

I-215 = Interstate 215

vpmpl = vehicles per mile per lane

Table 3.6.D lists the LOS and average delay for the a.m. and p.m. peak-hour LOS and average delay for existing (2005) and design year (2035) conditions for I-215 ramp intersections and other intersections near the freeway ramps. In 2005, 7 intersections operated worse than LOS D during a.m. peak hours and 9 intersections during p.m. peak hours. In 2035, two additional intersections will be added at Placentia Avenue and the I-215 (Placentia Avenue/I-215 SB ramps and Placentia Avenue/I-215 northbound [NB] ramps). A total of 5 intersections will operate worse than LOS D during a.m., p.m., or both peak hours.

Table 3.6.D Existing (2005) and Design Year (2035) Intersection Capacity Analysis: Interstate 215 Area

		20	05			20	35	
	AM Pe	ak Hour	PM Pea	ak Hour	AM Pe	ak Hour	PM Pea	ak Hour
Intersection	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay
		(sec)		(sec)		(sec)		(sec)
Van Buren Boulevard and Harmon Street	· В	16.8	В	18.3	[F]	>80.0	[F]	>80.0
Van Buren Boulevard and I-215 SB Ramps	[E]	56.2	[F]	>80.0	В	11.1	A	3.6
Van Buren Boulevard and NB Ramps	[F]	>80.0	[F]	>80.0	D	37.3	[F]	>80.0
Oleander Avenue and Harvill Avenue	Α	9.4	Α	9.0	C	21.1	Α	9.4
Oleander Avenue and I-215 SB Ramps	С	31.4	С	31.8	U	22.2	С	26.6
Oleander Avenue and I-215 NB Ramps	С	32.6	D	44.1	E	69.7	D	43.9
Oleander Avenue and Western Way	Α	8.4	Α	8.7	В	13.0	В	10.4
Cajalco Road and Harvill Avenue	D	39.0	[F]	>80.0	D	40.6	D	46.6
Cajalco Road and I-215 SB Ramps	[F]	>80.0	[F]	>80.0	[F]	>80.0	[F]	>80.0
Cajalco Road and I-215 NB Ramps	[F]	>80.0	[F]	>80.0	[F]	>80.0	[F]	>80.0
Ramona Expressway and Webster Avenue	[F]	>80.0	[F]	>80.0	F	>80.0	[F]	>80.0
Placentia Avenue and Harvill Avenue	В	-	В	-	Α	7.6	С	21.2
Placentia Avenue and I-215 SB Ramps	-	-	-	-	В	11.2	В	13.5
Placentia Avenue and I-215 NB Ramps	-	-	-	-	Α	7.3	Α	9.5
Placentia Avenue and East Frontage Road	Α	8.7	Α	8.7	C	25.7	В	17.7
Nuevo Road and A Street	Α	8.1	Α	8.8	Α	6.7	Α	3.8
Nuevo Road and I-215 SB Ramps	D	41.9	[F]	>80.0	В	14.4	С	22.6
Nuevo Road and I-215 NB Ramps	[F]	>80.0	[F]	>80.0	Α	9.6	Α	2.5
Nuevo Road and Old Nuevo Road	[E]	58.1	[F]	>80.0	В	16.7	В	13.9

Source: Traffic Technical Report, VRPA Technologies, Inc., 2008.

[] = unacceptable level of service (LOS)

NB = northbound

- = not applicable

SB = southbound

Avg = average sec = seconds

I-215 = Interstate 215

State Route 79

In the MCP study area, SR-79 is currently a conventional two-lane, undivided highway. The MCP project assumes that before the MCP project is operational, the proposed SR-79 project, which is currently in the planning process and would realign SR-79 as an expressway from Domenigoni Parkway on the south to Ramona Expressway on the north, will be implemented; therefore, the SR-79 realignment project has been incorporated into design year baseline conditions for 2035.

Intersections

As previously discussed in Section 1.2.2.1, the MCP study area is focused along Cajalco Road and Ramona Expressway for analysis of capacity and transportation demand since it is the main existing west-east connecting route between SR-79 and I-15. As mentioned in Chapter 1, in its existing condition, Cajalco Road carries average daily traffic ranging from 9,210 trips near Lake Mathews to 19,050 trips near I-215. Ramona Expressway carries average daily traffic ranging from 24,450 trips near I-215 to 10,430 trips near SR-79. In 2035, these numbers will increase to 14,300 trips on Cajalco Road near Lake Mathews and 45,900 trips near I-215. Ramona Expressway will experience average daily traffic ranging from 62,900 trips near I-215 and 26,800 trips near SR-79.

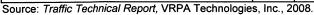
Intersections between I-15/I-215 and I-215/SR-79 that were analyzed existing (2005) and (2035) design year traffic conditions are described below.

Interstate 15 to Interstate 215

Between the I-15 freeway and the I-215 freeway, 17 existing intersections in the MCP study area were analyzed with most of them located on Cajalco Road. Table 3.6.E lists the LOS and average delay for the a.m. and p.m. peak hours for existing (2005) and design year (2035) conditions. In 2005, 4 intersections operated worse than LOS D during a.m. peak hour and 4 intersections during p.m. peak hour.

Table 3.6.E Existing (2005) and Design Year (2035) Intersection Capacity Analysis: Interstate 15 to Interstate 215 Area

		20	05			20	35	
	AM Pe	ak Hour	PM Pe	ak Hour	AM Pe	ak Hour	PM Pe	eak Hour
Intersection		Avg		Avg		Avg		Avg
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
		(sec)		(sec)		(sec)		(sec)
Cajalco Road and La Sierra Avenue	С	19.9	[F]	>80.0	-	-	-	
Lake Mathews Road and Cajalco Road	С	21.1	С	24.4	[F]	>80.0	[E]	56.1
Lake Mathews Road and Grande Vista Avenue	Α	-	Α	-	Α	3.5	Α	3.8
El Sobrante Road and Mockingbird Canyon Road	В	-	С	•	В	13.3	C	21.6
El Sobrante Road and Cajalco Road	[F]	>80.0	С	32.8	[F]	>80.0	C	26.7
Gavilan Road and Cajalco Road	[E]	48.6	[F]	>80.0	-	-	-	-
Wood Road and Cardinus Drive	Α	-	Α	•	В	11.0	В	11.0
Wood Road and Cajalco Road	C	27.8	С	24.1	[E]	62.7	[F]	>80.0
Wood Road and Rider Street	-	-	-	-	В	13.5	В	13.7
Alexander Street and Wells Street	Α	7.3	Α	8.8	•	-	-	-
Alexander Street and Burns Street		-	-	•	Α	8.4	Α	5.3
Alexander Street and Cajalco Road	[E]	-	[F]	•	ם	45.0	[E]	68.9
Alexander Street and Sounder Street	Α	7.1	Α	7.0	•	-	-	-
Alexander Street and Hunter Street	-	-	-	-	Α	6.6	Α	7.8
Clark Street and Dawes Street	-	-	-	-	C	23.8	Α	7.7
Clark Street and Cajalco Road	[F]	>80.0	[F]	80.0	D	45.1	[F]	>80.0
Clark Street and Elmwood Drive	-	-	-	-	С	24.3	Α	7.8



^{[] =} unacceptable level of service (LOS)

Avg = average

- = not applicable

sec = seconds



In 2035, 3 intersections will operate worse than LOS D during a.m. peak hours and 4 intersections during p.m. peak hours.

Interstate 215 to State Route 79

Between the I-215 freeway and SR-79, 12 existing intersections were analyzed, with most of them along Ramona Expressway. Nineteen (19) additional intersections were analyzed in the future (2035) condition that reflect the addition of new roadways in this area consistent with City and County General Plans. Six existing intersections will no longer exist in the future condition.

Table 3.6.F lists the LOS and average delay for the a.m. and p.m. peak hours for existing (2005) and design year (2035) conditions. In 2005, 4 of the 12 existing intersections operated worse than LOS D during a.m. peak hours and 7 intersections during p.m. peak hours. In 2035, 9 intersections will operate worse than LOS D for a.m. peak hours and 11 intersections during p.m. peak hours.

Bicycle and Pedestrian Facilities

Bicycle travel is accommodated in the MCP study area through the use of designated bikeways and existing roadways. The Riverside County General Plan Circulation Element designates Class I bikeways for bicycle and pedestrian travel on a separate, paved right of way that is completely separated from streets or roadways, with minimal cross-flow from motorists. Class II bikeways provide a striped lane for one-way travel along a roadway or street. Class I/Regional (Combination) trails provide a connection to all major bodies of water and are open to both pedestrians and bicycles. In addition, the City of Corona designated Class III bikeways as designated bike routes noted by signs along roadways but without separate striping. Figure 3.6.3, General Plan Trails, provides the locations of these bicycle facilities in the MCP study area.

Pedestrian facilities include sidewalks, walkways, crosswalks, pedestrian trails, and multipurpose trails. Sidewalks, walkways, and crosswalks are located throughout the MCP study area in urban and suburban areas where the roadway frontage is developed. Pedestrian trails, such as the County of Riverside's multipurpose trail designation, are also shown on Figure 3.6.3.

Table 3.6.F Existing (2005) and Design Year (2035) Intersection Capacity Analysis: Interstate 215 to State Route 79 Area

		20	05			20	35	
	A	M	F	PM	Α	M	F	PM
Intersection	Peak	Hour	Peal	k Hour	Peak	Hour	Peak	Hour
Intersection		Avg		Avg		Avg		Avg
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
		(sec)		(sec)		(sec)		(sec)
Perris Boulevard and Perry Street	-	-	-	-	В	19.6	С	20.6
Perris Boulevard and Ramona Expressway	[F]	>80.0	[F]	>80.0	[F]	>80.0	[F]	>80.0
Perris Boulevard and Dawes Street	-	-	-	-	С	28.4	С	27.1
Perris Boulevard and Morgan Street	D	-	[E]	-	-	-	-	-
Evans Road and Perry Street	-	-	-	-	С	22.0	В	17.6
Evans Road and Ramona Expressway	[F]	>80.0	[F]	>80.0	[E]	60.7	[E]	58.7
Evans Road and Dawes Street	-	-	-	-	С	32.9	С	27.5
Bernasconi Road and New Street	-	-	-	-	В	12.7	С	26.9
Bernasconi Road and Ramona Expressway	-	-	-	-	[F]	>80.0	[F]	>80.0
Bernasconi Road and Orange Avenue	-	-	-	-	В	15.2	В	13.8
Reservoir Avenue and Frontage Road	-	-	-	-	Α	7.3	Α	7.9
Reservoir Avenue and Ramona Expressway	-	-	-	-	[F]	>80.0	[F]	>80.0
Reservoir Avenue and 9th Street	Α	-	Α	-	С	24.8	В	19.1
Town Center Boulevard and Marvin Road	-	-	-	-	В	11.5	В	13.1
Town Center Boulevard and Ramona Expressway	-	-	-	-	[F]	>80.0	[F]	>80.0
Town Center Boulevard and 5th Street	-	-	-	-	С	34.8	[E]	72.4
Park Center Boulevard and Marvin Road	-	-	-	-	В	10.8	С	30.4
Park Center Boulevard and Ramona Expressway	-	-	-	-	[F]	>80.0	[F]	>80.0
Park Center Boulevard and New Street	-	-		-	В	14.4	[F]	>80.0
Ramona Expressway and Rider Street	D	44.0	[F]	>80.0	-	-	-	-
Ramona Expressway and Lakeview Avenue	С	-	D	-	-	-	<u> </u>	-
Ramona Expressway and Hansen Avenue	D	-	[F]	-	-	-		-
Ramona Expressway and Bridge Street	С	-	D	-		-	-	-
Warren Road and Marvin Road	-	-	-	-	С	22.0	С	21.4
Warren Road and Ramona Expressway	[F]	>80.0	[F]	>80.0	[F]	>80.0	[F]	>80.0
Warren Road and Record Road	-	-	-	-	С	22.3	Α	9.3
Gilman Springs Road and SR-79 SB Ramps	В		С	-	Α	7.9	В	18.5
Gilman Springs Road and SR-79 NB Ramps	D	-	С	-	С	29.2	D	45.9
Ramona Expressway and Sanderson Avenue	[F]	>80.0	[F]	>80.0	_	-		-
Ramona Expressway and SR-79 SB Ramps	-	-	_	-	[E]	60.8	[F]	>80.0
Ramona Expressway and SR-79 NB Ramps	-	-	_	-	[F]	>80.0	[F]	>80.0

Source: Traffic Technical Report, VRPA Technologies, Inc., 2008.

Avg = average NB = northbound

SB = southbound

sec = seconds

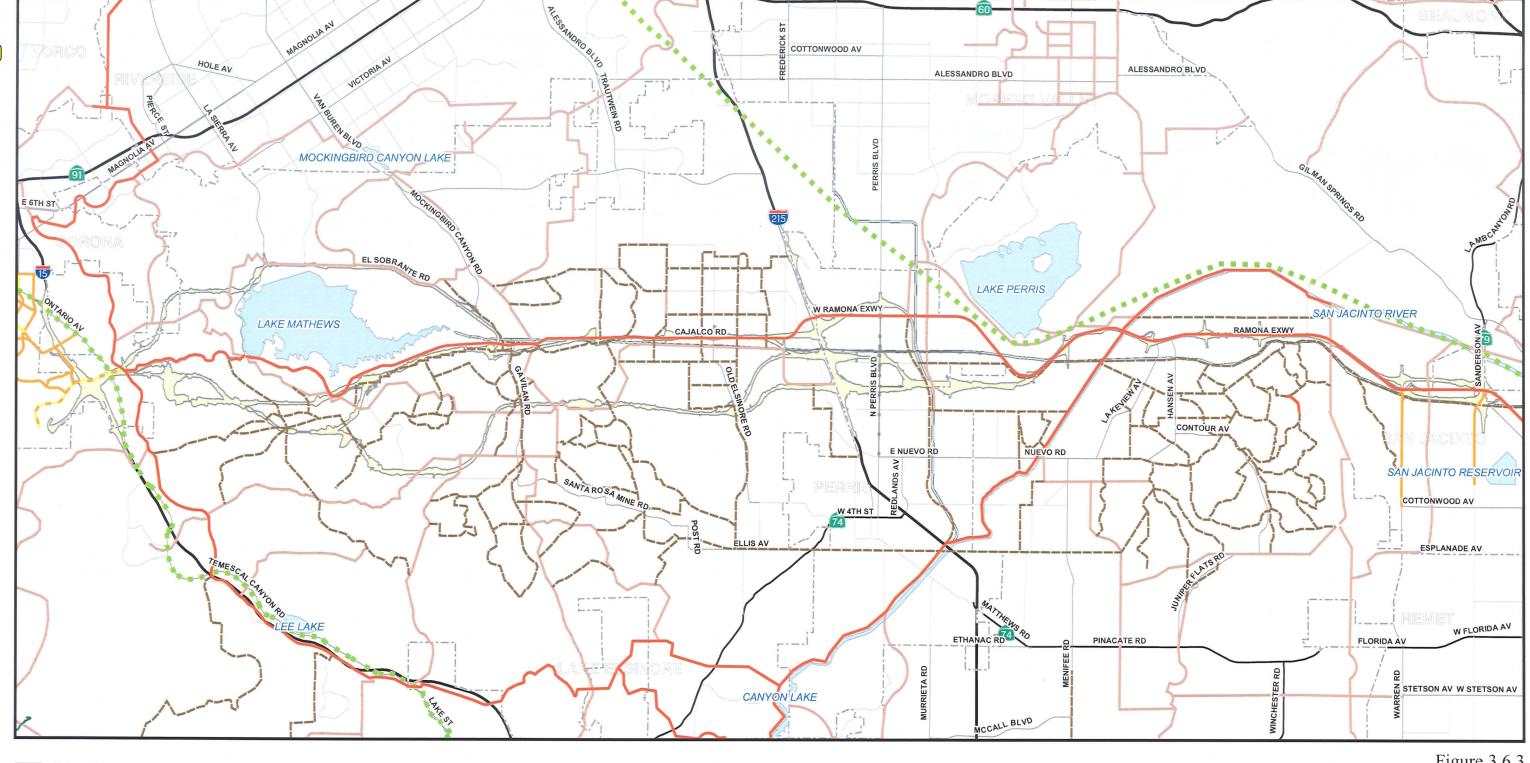
SR-79 = State Route 79

^{[] =} unacceptable level of service (LOS)

^{- =} not applicable

This page intentionally left blank





Right-of-Way (All Alternatives) • • • Historic City General Plan Trails --- Community **County General Plan Trails** — National Forest or Park / BLM — Class II ---- Regional Hiking, Bicycle, Equestrian —— Class I ---- Regional --- Class II/III ---- Urban Bicycle --- Community —— Class III

Figure 3.6.3

SOURCE: TBM (2006), Jacobs Engineering (2/2007), RBF / Transcore (06/03)

0	6,250	12,500	25,000 Feet
0	1,900	3,800	7,600 Meters

General Plan Trails KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

3.6.3 Environmental Consequences

3.6.3.1 Permanent Impacts

Build Alternatives

The MCP Build Alternatives are described earlier in this document in Section 2.4, Alternatives. Section 2.4 includes discussions of the proposed MCP project mainline, system, and service interchange locations, lane geometry, and design variations applicable for each MCP Build Alternative. Except where noted below for I-15 and I-215, most of the freeways, ramps, and intersections within the MCP study area are expected to operate at acceptable LOS in the horizon year of 2035 for all of the MCP Build Alternatives and design variations.

Interstate 15

Due to right of way and funding constraints, the I-15 freeway mainline is expected to experience traffic congestion between SR-91 and Temescal Canyon Road for 2035 No Build and 2035 Build conditions for all alternatives and design variations. However, in the area from Ontario Avenue to Weirick Road, the project proposes to add lanes to I-15. With the additional lanes and the added traffic attributed to the project, the MCP Build Alternatives result in improved traffic operations as compared with the MCP No Build Alternative. In the area south of Weirick Road, the MCP Build Alternatives do not add a substantial amount of traffic to the I-15 mainline in comparison to the MCP No Build Alternative.

The segment of I-15 from Ontario Avenue to SR-91, including the I-15/SR-91 interchange, is also expected to experience traffic congestion for both the MCP No Build and Build Alternatives. Although no improvements are proposed by the project in this area, traffic added by the project will contribute to LOS F conditions that are expected in the 2035 No Build scenario.

Due to right of way constraints, the interchange of I-15 and Magnolia Avenue and the Magnolia Avenue/El Sobrante Road intersection are expected to experience traffic congestion in the horizon year of 2035 for the No Build and all of the MCP Build Alternatives and design variations. Traffic levels for the MCP Build Alternatives are not substantially higher than traffic levels for the MCP No Build Alternative, and the traffic impacts of the project are considered to be minimal at this location.







Interstate 215

Due to right of way and funding constraints, the I-215 freeway mainline from Van Buren Boulevard to Nuevo Road is expected to experience traffic congestion in the horizon year of 2035 for the No Build and all of the Build Alternatives and design variations for the MCP project. Traffic levels for the MCP Build Alternatives are not substantially higher than traffic levels for the MCP No Build Alternative, and the traffic impacts of the project are considered to be minimal along I-215.

The intersections in the vicinity of I-215 are projected to operate at LOS D or better for both a.m. and p.m. peak hours, with the exception of the Van Buren Boulevard and I-215 NB ramp intersection under Alternative 9, which is projected to operate at LOS E in the p.m. peak hour. Since this intersection is projected to operate at LOS F under the MCP No Build Alternatives, the project is not considered to have an adverse traffic impact at this location.

Mid County Parkway

Tables 3.6.G and 3.6.H summarize the projected a.m. and p.m. peak-hour LOS and traffic volume for the eastbound (EB) and westbound (WB) MCP project ramps and mainline lanes in 2035 for all of the MCP Build Alternatives. As shown in Tables 3.6.F and 3.6.G, all ramps and mainline lanes along the MCP project are projected to operate at LOS D or better for Alternative 9.

Intersections between I-15 and SR-79

Tables 3.6.I and 3.6.J summarize the projected a.m. and p.m. peak-hour LOS and traffic volumes for the MCP study area intersections between I-15 and I-215 and between I-215 and SR-79, respectively, for the MCP Build Alternatives in 2035. Table 3.6.I indicates that all intersections between I-15 and I-215 in the MCP study area are projected to operate at a satisfactory LOS of D or better. Similarly, as shown in Table 3.6.J, the LOS between I-215 and SR-79 intersections is projected to be at or above satisfactory LOS D for all five MCP Build Alternatives.





Table 3.6.G 2035 MCP Mainline Eastbound Traffic Condition

**************************************		Alterna				Alterna				Altern				Altern				Alterna		
MCP Mainline Segment	AM Pe	ak Hour	PM Pe	ak Hour	AM Pea	k Hour	PM Pea		AM Pea	k Hour	PM Pe	ak Hour	AM Pea		PM Pe	ak Hour	AM Pea	ak Hour	PM Pe	ak Hour
(Eastbound)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)	LOS	Density (vpmpl)
I-15 to Estelle Mountain Road	С	19.4	В	16.1	С	19.4	В	16.1	В	15.6	В	13	В	15.6	В	13	С	19.4	В	16.1
Estelle Mountain Road Off-Ramp	C	21.4	В	17.7	C	21.4	В В	17.7		- 13.0	-	- 13		- 13.0		- 10	C	21.4	В	17.7
Estelle Mountain Road On-Ramp	 c	25.1	C	21.1	C	24.6	C	20.6	D	30.5	C	25.7	D	30.5	С	25.7		33.5	<u>D</u>	27.3
Estelle Mountain Road On-Ramp to Lake Mathews Drive Off-Ramp	 c	22.8	C	19.2	C	22.4	č	18.7	D	27.7	C	23.4	D	27.7	C	23.4	D	30.4	C	24.8
Lake Mathews Drive Off-Ramp	Č	25.1	<u> </u>	21.1	C	24.6	$\frac{\sigma}{c}$	20.6	<u>D</u>	30.5	C	25.7	D	30.5	C	25.7	D	33.5	D	27.3
Lake Mathews Drive On-Ramp	_ c	24.5	C	20.4	C	24.2	Č	20.3	D	30.1	C	25.5	D	29.9	C	25.2	D	32.0	C	25.6
Lake Mathews Drive On-Ramp to El Sobrante Road Off-Ramp	C	22.2	C	18.5	C	22.0	č	18.4	D	27.3	C	23.1	D	27.2	C	22.9			<u> </u>	
Lake Mathews Drive On-Ramp to Old Elsinore Road Off-Ramp	_	-	-	-	-	-	-				-	-	-	-	-		D	29.1	С	23.3
Old Elsinore Road Off-Ramp	-	-	-	-	-	- 1	-	-	-	-	-	-	-	-	-	- 1	D	32.0	Ċ	25.6
Old Elsinore Road On-Ramp	•	-	-	-	-	-	-	-	-	-	-	- 1	-	-	-	-	D	26.5	Α	6.7
El Sobrante Road Off-Ramp	С	24.5	С	20.4	C	24.2	С	20.3	D	30.1	С	25.5	С	19.9	В	16.8	-	-	-	-
El Sobrante Road On-Ramp	D	26.7	D	27.2	D	26.5	D	27.2	С	23.3	С	23.4	С	24.6	С	23.2	-	-	-	-
El Sobrante Road On-Ramp to Wood Road Off-Ramp	С	24.3	С	24.7	С	24.1	С	24.7	С	21.2	С	21.3	С	22.4	С	21.1	-	-	-	-
Wood Road Off-Ramp	D	26.7	D	27.2	D	26.5	D	27.2	С	23.3	С	23.4	С	24.7	С	23.2	-	-	_	-
Wood Road On-Ramp	D ·	27.1	D	27.6	۵	27.0	D	27.7	С	24.3	С	24.3	С	25.6	С	24.1	-	-	-	-
Wood Road On-Ramp to Alexander Street Off-Ramp	С	24.6	С	25.1	С	24.5	С	25.2	С	22.1	С	22.1	С	23.3	С	21.9	-	-	-	-
Alexander Street Off-Ramp	D	27.1	D	27.6	D	27.0	D	27.7	С	24.3	C	24.3	С	25.6	C	24.1	-	-	-	-
Alexander Street On-Ramp	D	28.1	D	28.6	D	27.6	D	28.4	С	25.3	C	25.3	D	26.7	С	25.1		-	-	-
Alexander Street On-Ramp to Clark Street Off-Ramp	C	25.5	С	26.0	C .	25.1	С	25.8	С	23.0	O	23.0	С	24.3	C	22.8	<u> </u>	-	-	-
Clark Street Off-Ramp	D	28.1	D	28.6	D	27.6	D	28.4	С	25.3	С	25.3	D	26.7	С	25.1	-	-	-	-
Clark Street On-Ramp	D	28.5	D	28.5	D	28.1	D	28.4	D	26.1	С	26.0	D	28.5	D	26.3	-	-	-	-
Clark Street On-Ramp to I-215	<u> </u>	25.9	C	25.9	С	25.5	С	25.8	С	23.7	С	23.6	С	26.0	С	23.9	<u> </u>	-	-	-
Old Elsinore Road Off-Ramp to I-215 Off-Ramp	-	-		-	-	-		-	-	-	-	-		-	-	-	C	24.1	C	20.1
-215 Off-Ramp	D	28.5	D	28.5	D	28.1	D	28.4	D	26.1	С	26.0	D	28.5	D	26.3	D	26.5	<u>C</u>	22.1
-215 On-Ramp	<u>B</u>	17.3	C	19.8	В	17.0	С	19.7	В	16.2	С	18.4	C	18.3	С	18.6	C	20.8	<u> </u>	19.8
-215 to Perris Boulevard Off-Ramp	С	22.7	D	31.3	С	22.2	D	30.8	С	21.5	D	29.7	G	23.0	D	29.2	-	-	-	-
-215 On-Ramp to Evans Road Off-Ramp	-	 -			-					-	<u> </u>	-		-			B	15.8	<u> </u>	19.9
Perris Boulevard Off-Ramp Perris Boulevard On-Ramp	С	24.9	<u>D</u>	34.4	C	24.4	D	33.9	<u>C</u>	23.6	D	32.6	<u>C</u>	25.3	D	32.1	В	16.4	B	14.9
Perris Boulevard On-Ramp to Evan Road Off-Ramp	<u>B</u>	17.4	<u> </u>	25.4	<u>C</u>	22.1	<u>D</u>	32.6	<u>C</u>	21.1	D	30.9	<u>C</u>	23.3	D	30.3	Α	7.5	A	5.8
Evans Road Off-Ramp	В	15.8	<u> </u>	23.1	C	20.1	<u>D</u>	29.6	C	19.1	D	28.1	<u>C</u>	21.2	D	27.5	<u>-</u>	17.4	-	
Evans Road On-Ramp	B C	17.4	<u>C</u>	25.4	C	22.1	D	32.6	C	21.1	D	30.9	<u> </u>	23.3	D	30.3	B	17.4	C	21.9
Evans Road On-Ramp to Ramona Expressway Off-Ramp		22.0	D D	32.5 29.5	C	21.8	D	32.2	C	20.7	D	30.4	C	23.1	D D	29.9	<u> </u>	23.0	D	28.8
Ramona Expressway Off-Ramp	<u>-</u>	20.0	<u>_</u>	29.5	<u>C</u>	19.9	D	29.2	C C	18.8 20.7	D D	27.7 30.4	C C	21.0 23.1	D	27.2 29.9	C C	20.9	D D	26.2
Ramona Expressway On-Ramp	<u> </u>	 		-					C	21.7	D	31.9	C	24.1	D D	31.3	C	23.0	D	29.8
Ramona Expressway On-Ramp to Bernasconi Road Off-Ramp		20.5		30.3	C	20.2	- D	29.8	C	19.7	D	29.0	C	22.0	D D	28.5	C	21.5	D	27.1
Bernasconi Road Off-Ramp		22.6	D D	33.3	C	22.3	D	32.8	C	21.7	D	31.9	<u>C</u>	24.1	D	31.3	- C	23.7	D	29.8
Bernasconi Road On-Ramp	_ č _	22.2	<u>D</u>	32.9	C	22.2	D	32.7	C	19.4	D	29.5	 C	21.8	D	29.0	C	23.2	D	29.3
Bernasconi Road On-Ramp to Reservoir Avenue Off-Ramp	 c	20.2	D D	29.9	C	20.2	D	29.7	В	17.6	D	26.9	- C	19.8	D D	26.4	C	21.1	D	26.6
Reservoir Avenue Off-Ramp	 c	22.2	D	32.9	C	22.2	D	32.7	- -	11.0		20.9	<u>C</u>	21.8	D	29.0	C	23.2	D	29.3
Reservoir Avenue On-Ramp		20.3	D D	27.7	C	19.9	D	27.1	-	-	<u> </u>		C	19.1	C	22.8	C	21.7	D	27.8
Reservoir Avenue On-Ramp to Town Center Boulevard Off-Ramp		18.4	C	25.2	C	18.1	c	24.6	В.	15.2	C	21.2	В В	17.4	C	20.7	C	19.8	C	25.2
Fown Center Boulevard Off-Ramp		20.3		27.7	C	19.9	_ 6	27.1	B	16.7	C	23.3	C	19.1	C	22.8	C	21.7	D	27.8
Fown Center Boulevard On-Ramp		24.1	<u>D</u>	32.9		23.9	D	32.5	C	20.5	<u>D</u>	28.5	$\frac{c}{c}$	23.0	<u>D</u>	28.0	C	24.3	D	29.5
Fown Center Boulevard On-Ramp to Park Center Boulevard Off-Ramp	C	21.9	D	29.9	 c	21.8	D	29.5	- C	18.6	C	25.9		20.9		25.5	C	22.1	D	26.9
Park Center Boulevard Off-Ramp	C	24.1	D	32.9	C	23.9	D	32.5	C	20.5	D	28.5	$\frac{c}{c}$	23.0	D	28.0	C	24.4	D	29.5
Park Center Boulevard On-Ramp	Č	21.6	D	29.5	C	21.4	D	29.0	C	19.1	D	26.6	C	21.5	D	26.0	C	22.6	D	26.1
Park Center Boulevard On-Ramp to Warren Road Off-Ramp	Č	19.7	D	26.9	C	19.4	D	26.4	В	17.4	C	24.2	 c	19.5	C	23.6	C	20.5	C	23.7
Varren Road Off-Ramp	Č	21.6	D	29.5	C	21.4	D	29.0	C	19.1	D	26.6	 C	21.5	D	26.0	Č	22.6	D	26.1
Varren Road On-Ramp	Č	19.8	D	27.0	C	19.7	D	26.8	В	17.0	C	23.8	C	19.4	C	23.2	C	20.2	C	22.6
Varren Road On-Ramp to SR-79	B	18.0	C	24.6	В	17.9	C	24.4	В	15.4	C	21.6	<u>B</u>	17.6	Č	21.0	Č	18.3	Č	20.6
Source: Traffic Technical Report, VRPA Technologies, Inc., 2008.] = unacceptable level of service (LOS) = not applicable -15 = Interstate 15 -215 = Interstate 215 MCP = Mid County Parkway SR-79 = State Route 79 pmpl = vehicles per mile per lane																				



Table 3.6.H 2035 MCP Mainline Westbound Traffic Condition

		Altern	ative 4			Altern	ative 5			Altern	ative 6		l	Alterna	ative 7			Alterna	ative 9	
MCP Mainline Segment	AM Pe	ak Hour		ak Hour	AM Pe	ak Hour		eak Hour	AM Pe	ak Hour		ak Hour	AM Pe	ak Hour		ak Hour	AM Pe	ak Hour		ak Hour
(Westbound)	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
SR-79 to Warren Road	1	(vpmpl)		(vpmpl)		(vpmpl)		(vpmpl)		(vpmpl)		(vpmpl)		(vpmpl)		(vpmpl)		(vpmpl)		(vpmpl)
Warren Road Off-Ramp	C	22.1	C	19.9	C	21.9	C	19.9 21.9	C	18.9	В	17.3 19.0	C	21.3		18.1	C	19.4	C	18.9
Warren Road On-Ramp				21.9	<u> </u>	24.1				20.8	C		D C	23.5	C	19.9				20.8
Warren Road On-Ramp to Park Center Boulevard Off-Ramp		26.6	C	24.0	C	26.1	<u> </u>	23.8	C	23.4	^C	21.3		26.0	<u> </u>	22.2	C	23.4	C	22.7
Park Center Boulevard Off-Ramp	C D	24.1 26.5	C	21.8 24.0	D	23.8 26.1	C	21.6	C	21.2	C	19.4 21.3	C	23.7 26.0	<u> </u>	20.2	C	21.2 23.4	C	20.6
Park Center Boulevard On-Ramp		29.6	D	26.7	D D	29.2	C	26.6		25.4	C	21.3	D D	27.8	C	22.2 23.8	D	26.5	C	22.7 25.5
Park Center Boulevard On-Ramp to Town Center Boulevard Off-Ramp	D	26.9	C	24.3	D D	29.2	D C	26.6	C	25.1	C	22.9	C	25.3	C	23.8	С	20.5	D	25.5
Town Center Boulevard Off-Ramp	l D	29.6	b C	26.7	D	29.2	D	26.6	C	25.1	C	22.9	D	27.8	C	23.8	C	24.4	D	29.5
Town Center Boulevard On-Ramp	C	24.9	C	22.5	C	24.3	C	22.1	C	20.4	C	18.7	C	23.2	C	19.6	C	22.4	D	27.2
Town Center Boulevard On-Ramp to Reservoir Avenue Off-Ramp	 c	22.7	č	20.4	C	22.1	C	20.1	C	18.6	В	17.0	C	21.1	В.	17.8	C	22.4	C	21.1
Reservoir Avenue Off-Ramp	 c	24.9	c	22.5	C	24.3	C	22.1	c	20.4	C	18.7	C	23.2	С	19.6	C	24.5	Č	23.2
Reservoir Avenue On-Ramp	 6	29.6	c	24.6	<u>D</u>	29.4	C	24.7	D	26.0	c	21.6	D	28.7	C	22.6	<u> </u>	27.8	Č	25.6
Reservoir Avenue On-Ramp to Bernasconi Road Off-Ramp	 	26.9	C	22.4	D	26.8	C	22.4	C	23.7	C	19.7	 	26.1	C	20.5	C	25.3	Č	23.3
Bernasconi Road Off-Ramp	1 5	29.6	Č	24.6	D	29.4	č	24.7	D	26.0	C	21.6	D D	28.7	C	22.6	<u> </u>	27.8	č	25.6
Bernasconi Road On-Ramp	T D	29.9	C	25.1	D D	29.4	A	24.7	D	28.0	C	24.2	D D	30.8	C	25.2	D	28.2	<u> </u>	26.2
Bernasconi Road On-Ramp to Ramona Expressway Off-Ramp	+ 5	27.2	C	22.8	D	26.8	Ĉ	22.5	C	25.5	C	22.0	- 5	28.0	C	22.9	C	25.7	Č	23.8
Ramona Expressway Off-Ramp	D	29.9	C	25.1	D	29.5	C	24.7	D	28.0	$\frac{c}{c}$	24.2	<u> </u>	30.8	C	25.2	<u> </u>	28.2	D	26.2
Ramona Expressway On-Ramp	1 5	29.2	C	24.4	D	28.9	C	24.3	D	26.7	- c	23.1	D	29.5	- C	24.0	D	27.3	C	25.4
Ramona Expressway On-Ramp to Evans Road Off-Ramp	1 5	26.5	C	22.2	D	26.3	Č	22.1	C	24.3	C	21.0	D	27.0	00	21.8	C	24.9	Č	23.1
Evans Road Off-Ramp	 5	29.2	C	24.4	<u> </u>	28.9	c	24.3	Ď	26.7	C	23.1	D	29.7	00	24.0	D	27.3	Č	25.4
Evans Road On-Ramp	C	22.8	C	19.3	D	29.3	Č	24.6	D	27.2	C	23.5	D	30.1	C	24.2	C	20.8	Č	19.2
Evans Road On-Ramp to I-215 Off-Ramp	 	-		- 10.0	-	-		24.0		-	-	-				-	C	18.9	В	17.5
Evans Road On-Ramp to Perris Boulevard Off-Ramp	С	20.7	В	17.6	D	26.7	C	22.4	С	24.7	С	21.4	D	27.1	C	22.0		- 10.0		17.0
Perris Boulevard Off-Ramp	l č	22.8	C	19.3	D	29.3	č	24.6	Ď	27.2	C	23.5	Ď	29.8	C	24.2	С	20.8	С	19.2
Perris Boulevard On-Ramp	<u> </u>	29.3	- ŏ	26.7	D	28.8	D	26.2	D	27.2	Č	25.4	D	29.1	C	25.9	Ď	32.6	Ď	31.9
Perris Boulevard On-Ramp to I-215	D	26.6	c	24.3	D	26.2	C	23.8	C	24.7	Č	23.1	D	26.5	C	23.6	-	-	-	-
I-215 Off-Ramp	D	29.3	D	26.7	D	28.8	D	26.2	D	27.2	C	25.4	D	29.1	C	25.9	D	32.6	D	31.9
I-215 On-Ramp	В	18.0	С	25.1	В	17.8	Ċ	24.6	В	15.5	C	23.1	C	18.5	С	23.4	В	14.7	C	22.6
I-215 On-Ramp to Old Elsinore Road Off-Ramp	-		-	-	-	-	_	-	-	-		-	-	-	-	-	В	17.7	D	26.1
Old Elsinore Road Off-Ramp	1 -	-	-	-	-	-	-	-	-	1 -	-	-	-		-	-	С	19.4	D	28.7
Old Elsinore Road On-Ramp	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	С	23.0	D	29.1
Old Elsinore Road On-Ramp to Lake Mathews Drive	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	С	20.9	D	32.4
1-215 On-Ramp to Clark Street	С	20.6	D	28.3	С	20.5	D	27.9	С	19.9	D	26.1	С	21.1	D	26.8	-	-	-	-
Clark Street Off-Ramp	-	-	-	-	-	-	-	-	-	-	_	-	С	23.2	D	29.5	-	-	-	-
Clark Street On-Ramp	-	-	-	-	-	-	-	-	-	-	-	-	С	22.4	D	28.0	-	-	-	-
Clark Street to Alexander Street Off-Ramp	С	23.4	D	28.4	С	23.2	D	27.9	С	22.0	С	25.7	С	20.4	С	25.5	-	-	-	
Alexander Street Off-Ramp	С	25.7	D	31.2	C	25.5	D	30.7	С	24.2	D	28.3	С	22.4	D	28.0	-	-	-	-
Alexander Street On-Ramp	С	24.9	D	30.1	C	24.9	D	30.0	С	23.3	D	27.1	С	20.7	D	26.9	-	-	-	-
Alexander Street On-Ramp to Wood Road Off-Ramp	С	22.6	D	27.4	C	22.7	D	27.3	С	21.2	С	24.6	С	19.6	С	24.4	-	-	-	-
Wood Road Off-Ramp	С	24.9	D	30.1	C	24.9	D	30.0	С	23.3	D	27.1	С	21.5	D	26.9	-	-	-	-
Wood Road On-Ramp	С	24.5	D	29.6	C	24.4	D	29.4	С	22.5	C	26.0	С	20.7	C	25.8	-	-	-	-
Wood Road On-Ramp to El Sobrante Road Off-Ramp	С	22.2	D	26.9	C	22.2	D	26.7	C	20.4	C	23.6	С	18.8	C	23.4	-	-	-	-
El Sobrante Road Off-Ramp	С	24.5	D	29.6	С	24.4	D	29.4	С	22.5	С	26.0	С	20.7	С	25.8	-	-	-	-
El Sobrante Road On-Ramp	С	18.3	D	27.2	С	18.2	D	26.9	С	22.9	D	33.6	С	22.7	D	33.4	-	-	-	-
El Sobrante Road On-Ramp to Lake Mathews Drive Off-Ramp	В	16.7	С	24.7	В	16.6	С	24.4	С	20.8	D	30.6	С	20.6	D	30.4	-	-	-	<u> - </u>
Lake Mathews Drive Off-Ramp	С	18.3	D	27.2	С	18.2	D	26.9	С	22.9	D	33.6	С	22.7	D	33.4	С	23.0	D	29.6
Lake Mathews Drive On-Ramp	С	19.0	D	27.9	С	18.6	D	27.3	С	23.1	D	34.1	С	23.1	D	34.1	С	24.6	D	29.9
Lake Mathews Drive On-Ramp to Estelle Mountain Road Off-Ramp	В	17.3	С	25.4	В	16.9	С	24.8	С	21.0	D	31.0	С	21.0	D	31.0	С	22.3	D	33.8
Estelle Mountain Road Off-Ramp	С	19.0	D	27.9	С	18.6	D	27.3	С	23.1	D	34.1	С	23.1	D	34.1	С	24.6	D	29.9
Estelle Mountain Road On-Ramp	В	16.0	С	23.7	В	16.0	С	23.7	-	-	-	-	-	-	-	-	В	16.0	С	23.7
Estelle Mountain Road On-Ramp to I-15 Source: Traffic Technical Report, VRPA Technologies, Inc., 2008	В	14.5	С	21.6	В	14.5	С	21.6	В	11.7	В	17.5	В	11.7	В	17.5	В	14.5	С	21.6

Source: Traffic Technical Report, VRPA Technologies, Inc., 2008.
- = not applicable
I-15 = Interstate 15
I-215 = Interstate 215

LOS = level of service
MCP = Mid County Parkway
SR-79 = State Route 79
vpmpl = vehicles per mile per lane



Table 3.6.I 2035 MCP Intersection Traffic Condition: Interstate 15 to Interstate 215

		Altern	ative 4			Altern	ative 5			Altern	ative 6			Altern	ative 7			Altern	ative 9	
MCP Intersections	AM Pe	ak Hour	PM Pe	ak Hour	AM Pe	ak Hour	PM Pe	ak Hour	AM Pe	ak Hour	PM Pe	ak Hour	AM Pe	ak Hour	PM Pe	ak Hour	AM Pe	ak Hour	PM Pe	ak Hour
I-15 to I-215	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)																
Estelle Mountain Road and Cajalco Road	Α	8.6	В	13.1	Α	9.1	В	10.6	Α	9.4	В	10.3	В	13.3	В	11.9	Α	9.46	В	10.8
Lake Mathews Drive and MCP WB Ramps	С	26.9	С	24.1	С	24.8	С	21.6	С	22.1	С	28.2	С	26.9	С	23.8	С	28.0	С	25.0
Lake Mathews Drive and MCP EB Ramps	В	14.4	С	29.4	В	12.1	С	20.5	В	12.1	D	40.2	В	13.2	С	27.1	В	13.9	С	23.4
Lake Mathews Drive and Winford Street	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		В	19.0	В	19.0
Lake Mathews Road and Grande Vista Avenue	A	7.4	Α	8.3	Α	9.5	В	10.3	В	10.1	В	11.5	Α	9.1	В	11.7	-	-	-	-
El Sobrante Road and La Sierra Avenue	-	-	-	-	-	-	-	-	В	12.7	В	13.5	В	13.6	В	16.6	-	-	-	-
El Sobrante Road and Mockingbird Canyon Road	В	16.0	С	26.5	В	15.7	С	27.2	В	17.6	С	24.9	С	23.7	D	49.8	-	-	-	-
El Sobrante Road and MCP WB Ramps	С	23.5	С	22.8	С	23.7	С	25.3	С	21.2	С	29.8	С	23.7	С	26.6	-			-
El Sobrante Road and MCP EB Ramps	D	47.6	С	24.2	D	44.2	С	24.2	С	26.3	Α	9.3	В	19.1	В	14.1	-	-	-	-
El Sobrante Road and Pfeifer Way	В	16.8	В	15.4	В	17.4	С	20.1	В	11.1	В	16.3	В	13.8	В	19.9	-	-	-	-
Wood Road and Cardinus Drive	Α	7.9	В	11.9	Α	8.1	Α	9.6	Α	8.0	В	13.0	В	11.4	В	12.7	-	-	-	-
Wood Road and MCP WB Ramps	Α	8.1	Α	8.4	Α	8.7	В	12.0	A	9.3	В	19.0	В	15.5	С	21.6	-	-	-	-
Wood Road and MCP EB Ramps	В	10.2	В	10.7	В	11.2	В	10.0	В	10.3	В	12.7	В	14.2	В	13.3	-	-	-	-
Wood Road and Rider Street	В	11.1	Α	9.9	В	10.9	В	11.4	В	10.9	В	17.3	В	19.8	В	16.2	-	-	-	-
Alexander Street and Burns Street	Α	4.9	Α	2.9	Α	4.5	Α	2.8	Α	4.5	Α	2.5	Α	4.5	Α	2.9	-	-	-	-
Alexander Street and MCP WB Ramps	Α	7.7	Α	7.7	Α	6.0	Α	5.6	Α	6.7	Α	6.5	Α	7.8	Α	6.3	-	-	-	-
Alexander Street and MCP EB Ramps	В	10.2	Α	7.5	Α	9.1	Α	8.3	В	9.2	Α	6.7	Α	9.5	Α	6.4	-	-	-] -
Alexander Street and Hunter Street	Α	7.4	Α	7.6	Α	6.8	Α	7.6	Α	6.9	Α	7.7	Α	7.0	Α	7.5	-	-	_	-
Clark Street and Dawes Street	Α	7.3	Α	8.3	Α	8.3	Α	8.0	Α	7.8	. А	8.4	Α	9.8	Α	8.7	-	_	-	-
Clark Street and MCP WB Ramps	Α	3.8	Α	5.2	Α	4.4	Α	5.9	Α	4.1	Α	5.1	В	10.3	В	12.0	-	-	-	i -
Clark Street and MCP EB Ramps	В	12.1	В	16.4	В	11.8	С	21.4	В	12.4	В	16.5	В	15.4	С	20.1	-	-	-	-
Clark Street and Elmwood Drive	• A	7.6	Α	8.0	Α	8.9	Α	8.9	Α	9.0	Α	8.2	В	12.8	В	10.1	-	-	-	-
Old Elsinore Road and Orange Avenue	-	-	-	-	-	-	-	-	-	_	-	-	-	-	-	-	Α	7.7	В	11.5
Old Elsinore Road and MCP WB Ramps	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	Α	9.9	В	15.9
Old Elsinore Road and MCP EB Ramps	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	В	19.3	D	37.7
Old Elsinore Road and Michael Road	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	Α	7.9	В	10.8

Source: Traffic Technical Report, VRPA Technologies, Inc., 2008.
- = not applicable
EB = eastbound
I-15 = Interstate 15 I-15 = Interstate 15
I-215 = Interstate 215
LOS = level of service
MCP = Mid County Parkway
vpmpl = vehicles per mile per lane
WB = westbound



Table 3.6.J 2035 MCP Intersection Traffic Condition: Interstate 215 to State Route 79

MCP Intersections I-215 to SR-79	Alternative 4				Alternative 5			Alternative 6			Alternative 7			Alternative 9							
	AM Pe	AM Peak Hour		PM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	
Perris Boulevard and Markham Street	В	17.7	С	22.5	-	- '-	-	-	В	17.5	С	22.9	-		-	- 1	_	-	-		
Perris Boulevard and Morgan Street	-	-	-	-	С	10.0	В	13.0	-	-	-	<u> </u>	В	15.3	В	16.6	-	-	-	-	
Perris Boulevard and MCP WB Ramps	Α	7.3	Α	6.4	В	15.1	В	17.7	Α	8.1	Α	5.1	В	13.8	С	21.2	С	20.7	С	21.6	
Perris Boulevard and MCP EB Ramps	В	10.7	В	12.8	В	17.1	С	22.8	В	11.7	В	14.8	В	16.6	C	22.3	C	20.7	Ċ	21.6	
Perris Boulevard and Placentia Avenue	-	-		-	С	27.6	С	33.3	-	-	-	-	С	28.5	С	32.3	С	23.9	С	26.7	
Perris Boulevard and Orange Avenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	54.4	С	27.4	
Perris Boulevard and Ramona Expressway	С	29.4	D	37.2	-	 	_	-	С	29.8	D	37.6	-	-	-	-	-	-	-	-	
Evans Road and Rider Street	С	21.8	D	41.3	С	21.9	С	25.9	C	22.0	C	24.5	С	22.2	С	25.1	С	23.9	С	25.4	
Evans Road and MCP WB Ramps	Ā	4.5	A	9.2	Ā	5.4	A	6.7	Ā	4.7	Ā	5.6	Ā	5.8	Ā	6.2	Ā	9.0	Ä	8.9	
Evans Road and MCP EB Ramps	A	7.2	A	8.8	Ā	8.0	A	9.6	Ā	6.9	A	6.3	Ā	6.7	Ā	5.7	A	6.8	A	7.4	
Evans Road and Orange Avenue	В	16.3	D	37.1	В	17.5	В	19.6	В	15.4	В	17.8	В В	16.3	В	19.9	В	16.9	C	20.3	
Ramona Expressway and Rider Street	В	17.5	В	19.6	В	18.9	C	20.2	В	17.4	C	20.4	В	17.5	В	19.8	В	15.9	В	19.1	
Ramona Expressway and MCP WB Ramps	Ā	2.7	Ā	2.3	Ā	2.0	Ā	2.3	Ā	3.1	Ā	2.9	Ā	3.8	Ā	2.6	Ā	2.2	Ā	2.3	
Ramona Expressway and MCP EB Ramps	A	4.8	A	6.6	Ā	1.4	A	1.7	Ā	1.4	A	1.7	Ā	5.9	A	8.1	A	3.7	A	6.2	
Ramona Expressway and Orange Avenue	C	26.8	C	33.4	C	26.6	Ĉ	33.0	Ĉ	25.2	Ĉ	33.4	Ĉ	27.1	C	33.2	C	29.3	C	31.0	
Bernasconi Road and New Street	A	8.4	Ā	7.6	Ā	8.4	Ā	7.2	Ä	8.1	Ā	7.5	Ă	7.1	Ā	7.9	Ā	8.5	Ā	7.4	
Bernasconi Road and MCP WB Ramps	A	7.4	A	7.3	Â	4.0	A	3.9	Â	3.3	A	4.8	Â	7.8	A	8.1	A	6.9	Â	7.5	
Bernasconi Road and MCP EB Ramps	A	8.5	A	7.1	A	5.2	A	4.2	Â	5.6	A	4.4	Â	10.0	A	8.9	A	8.0	A	7.3	
Bernasconi Road and Orange Avenue	A	8.5	A	9.7	Â	8.3	Â	9.6	A	8.3	A	9.5	A	7.3	A	9.5	A	8.7	Â	9.7	
Reservoir Avenue and Frontage Road	A	8.1	Â	8.1	A	7.5	A	8.4	A	8.2	A	9.5	A	9.1	A	9.2	A	8.5	Â	9.4	
Reservoir Avenue and MCP WB Ramps	B	14.9	В	16.4	В	15.4	B	15.7	B	12.6	В	14.5	B	18.5	B	19.5	В	16.8	B	12.1	
Reservoir Avenue and MCP EB Ramps	T A	7.7	B	12.7	Ā	7.0	В	12.0	Ä	7.7	В	13.6	Ä	9.2	В	17.5	Ā	7.6	B	10.6	
Reservoir Avenue and 9th Street	B	19.6	В	18.1	Ĉ	20.1	C	20.1	Ĉ	21.0	В	18.0	B	19.9	C	21.1	B	19.0	В	19.2	
Town Center Boulevard and Marvin Road	H B	12.8	B	18.3	C	31.3	В	17.8	В	12.3	В	16.2	Č	21.2	C	20.2	В В	16.7	В	15.8	
Town Center Boulevard and MCP WB Ramps	T A	7.1	В	11.2	Ā	7.2	В	11.1	A	6.6	Ā	9.3	В	12.8	В	12.9	B	8.7	A	8.6	
Town Center Boulevard and MCP EB Ramps	A	8.3	Ā	9.1	Â	8.0	Ā	7.1	Â	8.5	Â	6.6	Ā	7.9	A	8.4	A	5.8	A	7.2	
Town Center Boulevard and 5th Street	D	40.3	D	44.0	D	40.8	D	38.1	D	40.8	D	41.3	6	38.9	D D	38.8	$\frac{\hat{c}}{c}$	34.3	- 2	33.1	
Park Center Boulevard and Marvin Road	B	11.5	B	11.8	В	11.1	В	11.0	Ä	9.8	Ā	9.5	B	14.4	В	12.4	<u>B</u>	10.8	A	9.7	
Park Center Boulevard and MCP WB Ramps	B	13.4	B	10.9	B	12.8	В	12.1	B	12.6	B	11.2	B	18.4	B	15.8	В В	12.6	R	10.2	
Park Center Boulevard and MCP EB Ramps	B	10.9	B	18.9	В	12.1	C	22.2	Ā	8.5	В	13.8	В	13.8	B	17.1	В	12.0	B	18.5	
Park Center Boulevard and New Street	B	10.2	B	11.1	В	10.7	B	12.6	B	10.5	В	11.3	В	13.3	B	14.4	<u>B</u>	10.2	l B	10.8	
Warren Road and Ramona Expressway	B	14.0	Ä	5.4	В	11.4	Ā	7.5	В	11.4	Ā	7.9	C	20.6	A	5.7	В	14.0	l Ä	9.4	
Warren Road and MCP WB Ramps	T A	7.7	Â	7.9	Ā	8.4	Â	9.5	Ā	6.3	Â	6.8	В	11.6		12.6	A	7.7	A	8.3	
Warren Road and MCP EB Ramps	 	9.7	B	12.5	Â	8.8	B	17.0	A	8.2	В	11.5	В	15.0	В	19.1		12.2	B	12.7	
Warren Road and Record Road	 	6.3	B	10.8	Â	5.3	В	11.5	Â	5.8	B	10.6	A	6.5	B	13.0	Ā	6.1	A	9.1	
Gilman Springs Road and SR-79 SB Ramps	1 A	9.4	B	15.0	Â	9.5	В	16.3	Â	9.8	В	16.4	B	13.7	C	21.2		9.4	B	15.0	
Gilman Springs Road and SR-79 NB Ramps	 	13.6	Ä	9.5	Â	7.9	Ä	4.7	Â	8.7	A	5.2	В	18.5	В	11.3		13.9	A	9.6	
MCP and Sanderson Avenue	B	18.7	l ĉ	30.5	c	23.7	C	32.6	c	23.7	Ĉ	32.5	C	24.2	C	30.5	В В	18.8	Ĉ	33.3	
MCP and SR-79 SB Ramps	B	10.7	В	11.9	В	14.7	В	12.9	В	14.7	В	12.8	В	14.3	В	13.7	В В	11.1	В	11.7	
MCP and SR-79 NB Ramps	B	4.5	A	4.0	A	6.5	A	5.1	A	6.5	A	5.3	A	5.7	<u>В</u>	4.2	<u>В</u>	4.2	A	4.2	
MCP and Ramona Expressway	 	20.9	D	47.6	B	18.8	C	26.4	B	18.8	C	26.1	B	19.7	C	34.5	C	25.5	C	34.5	
Source: Traffic Technical Report, VRPA Technologies, Inc.	1 -	1 20.8		47.0	L D	10.0		20.4		10.0		20.1	<u> </u>	19.7		34.5		25.5	<u> </u>	1 34.5	

Source: Traffic Technical Report, VRPA Technologies, Inc., 2008.
- = not applicable
EB = eastbound

I-215 = Interstate 215
LOS = level of service
MCP = Mid County Parkway

NB = northbound SB = southbound SR-79 = State Route 79

vpmpl = vehicles per mile per lane WB = westbound

Local Circulation and Access

Local circulation will also be permanently impacted by implementation of the MCP project. Appendix I, Attachment G of this EIR/EIS lists the types of road modifications that will result from the MCP project (e.g., cul-de-sacs of existing through streets, widening and/or realigning of local streets, road closures, and realigning interchanges).



All MCP Build Alternatives involve closure of Cajalco Road from Gavilan Road to La Sierra Avenue. This would require residents at Lake Mathews Estates to use the MCP to travel west to connect to I-15 instead of Cajalco Road as they do today. Under Alternatives 4 and 5, there would be an interchange at Lake Mathews Drive near Cajalco Road. In Alternative 9, there would be an interchange near the existing intersection of Lake Mathews Road and Winford Road. Under Alternatives 4, 5, 6 and 7, motorists will be required to travel east to the MCP/Lake Mathews Drive interchange, resulting in an increased travel time of approximately five minutes. To access destinations in the El Sobrante Road/La Sierra Avenue area, motorists will be required to travel east to El Sobrante Road, then west to La Sierra Avenue, increasing travel time by approximately 10 minutes.

For Alternative 9, rather than accessing the I-15/Cajalco Road area by traveling directly west on Cajalco Road, motorists would travel south to the MCP, then west to the I-15/Cajalco Road area. This rerouting would result in a maximum 8 km (5 mi) increase in travel distance, and a maximum 10 minute increase in travel time. Depending on the destination, motorists may choose alternate routes, such as I-215, Mockingbird Canyon Road, El Sobrante Road, and La Sierra Avenue. A detailed comparison of travel distances and times is difficult due to the diverse range of travel origins and destination routes. However, comparison of the traffic forecasts from the MCP No Build Alternative with Alternative 9 does not indicate any significant change in travel patterns along any particular route of travel.



In addition to the Cajalco Road closure discussed above, the closure of ramps at the I-15/El Cerrito Road interchange will also affect local circulation and travel time. For vehicles traveling northbound from I-15/Cajalco Road to I-15/El Cerrito Road, additional travel time due to these ramp closures is estimated at 1 minute under the full interchange condition and 4.6 minutes with implementation of the half diamond interchange. For vehicles traveling southbound along local streets from the I-15/El Cerrito Road interchange area to the I-15/Cajalco Road interchange area, travel time

would also be 1 minute under the full interchange condition but would increase to 2.6 minutes with implementation of the half diamond.

Bicycle and Pedestrian Facilities

The MCP project will provide facilities for bicycles and pedestrians in locations where local streets will cross the MCP. These facilities will be designed to be consistent with the local General Plan Circulation Element. In addition, existing and planned bike routes and trails are being considered in the design of the MCP project, and provisions are being made so that bike routes and trails can use the planned overcrossings and undercrossings to cross the MCP project where existing and/or planned features exist. All pedestrian facilities shall be designed to meet or exceed ADA requirements.

As shown on Figure 3.6.3, there are numerous planned bicycle, equestrian, and hiking trails within the MCP study area. A Class I (off-road) trail is planned for the entire length of Cajalco Road and Ramona Expressway, where the MCP Build Alternatives would remove portions of these two roads. The planned trail will need to be relocated either immediately adjacent to the MCP right of way or to a parallel west-east arterial highway. Both of these options are feasible and can be implemented but cannot be definitively determined until a preferred alternative is adopted and more detailed design initiated for the MCP project.

The overall effects of the MCP project on pedestrian and bicycle travel include the following:

- Because the MCP project is proposed to be a limited access facility, access will
 only be allowed in certain locations. In some areas, this will tend to cause
 increased travel distances for certain trips made by walking and bicycling.
- The MCP project will provide for roadway connections across the MCP facility, which would include bicycle and pedestrian facilities that will facilitate walking and bicycle trips at those locations.

The net effect of the MCP project is that travel by walking and bicycling will not substantially change as the result of implementation of the project.

Regional Travel Demand

In the regional travel forecasting model that was used in analyzing the traffic impacts of the MCP project, the future land use forecasts were the same with and without the project. SCAG develops its land use forecasts through analysis of regional trends that

do not change when transportation facilities are added or subtracted from the roadway network. Therefore, the overall land use and trip generation at a regional level will remain the same, and no new vehicle trip generation will occur.

Information regarding vehicle miles traveled (VMT) in the MCP study area is shown in Table 3.6.K.



Table 3.6.K Vehicle Miles Traveled within the MCP Study Area

Alternative	Auto VMT	Truck VMT	Total VMT		
2035 No Build	20,301,797	2,275,548	22,577,345		
2035 Alternative 4	21,119,400	2,431,261	23,550,661		
2035 Alternative 5	20,901,144	2,360,719	23,261,863		
2035 Alternative 6	21,055,447	2,395,875	23,451,322		
2035 Alternative 7	21,009,188	2,394,374	23,403,562		
2035 Alternative 9	21,043,604	2,430,599	23,474,203		

Source: Iteris, 2007.

MCP = Mid County Parkway VMT = vehicle miles traveled

The increase in VMT associated with the project is considered to be associated with drivers who choose the MCP over shorter, but more congested routes of travel, as compared with the No Project scenario. A comparison of delay and levels of service in the Build and No Build scenarios (Tables 3.6A through 3.6L) consistently shows less delay and reduced travel times associated with the Build scenarios. Therefore, travel would not actually be induced by the MCP project, but some trips that would already be made on other facilities would be expected to be diverted to the MCP facility, either because they would experience shorter travel distances, shorter travel times, or both.

No Build Alternatives

Alternative 1A is a No Project/No Action Alternative (additional detail is provided in Section 2.4.1, Alternative 1A). With respect to traffic conditions and Alternative 1A, there would be no improvements to west-east travel on Cajalco Road and the Ramona Expressway; therefore, there will be no impact on traffic circulation. The design year 2035 traffic conditions described above in Section 3.6.2.1 for the MCP study area would be the same under MCP Alternative 1A for 2035.

Table 3.6.L Alternative 1B Intersection Capacity Analysis: Interstate 15 to Interstate 215 Area

	2035							
Interpostion	AM Pe	ak Hour	PM Peak Hour					
Intersection	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)				
Lake Mathews Road and Cajalco Road	C*	24.2	B*	15.7				
Lake Mathews Road and Grande Vista Avenue	Α	3.2	Α	4.3				
El Sobrante Road and Mockingbird Canyon Road	В	16.5	B*	15.7				
El Sobrante Road and Cajalco Road	D*	37.0	B*	17.1				
Wood Road and Cardinus Drive	В	13.2	В	14.4				
Wood Road and Cajalco Road	C*	30.78	C*	28.9				
Wood Road and Rider Street	В	19.05	С	20.6				
Alexander Street and Burns Street	Α	8.4	Α	5.3				
Alexander Street and Cajalco Road	B*	14.6	C*	21.9				
Alexander Street and Hunter Street	Α	6.6	Α	7.8				
Clark Street and Dawes Street	A*	7.8	В	11.8				
Clark Street and Cajalco Road	C*	21.5	C*	28.3				
Clark Street and Elmwood Drive	A*	8.3	В	12.5				
Perris Boulevard and Perry Street	В	17.5	B*	17.5				
Perris Boulevard and Ramona Expressway	[F]	>80.0	[F]	>80.0				
Perris Boulevard and Dawes Street	С	25.4	С	23.2				
Evans Road and Perry Street	B*	19.6	В	15.8				
Evans Road and Ramona Expressway	D*	46.7	D*	45.8				
Evans Road and Dawes Street	С	30.4	С	23.8				
Bernasconi Road and New Street	В	16.5	С	33.8				
Bernasconi Road and Ramona Expressway	C*	30.1	C*	31.2				
Bernasconi Road and Orange Avenue	В	16.7	В	18.7				
Reservoir Avenue and Frontage Road	Α	7.3	Α	7.9				
Reservoir Avenue and Ramona Expressway	A*	41.5	[E*]	60.1				
Reservoir Avenue and 9th Street	С	24.8	В	19.1				
Town and Center Boulevard and Marvin Road	В	11.5	В	15.1				
Town and Center Boulevard and Ramona Expressway	D*	44.2	[E*]	62.2				
Town and Center Boulevard and 5th Street	С	34.8	[E]	72.4				
Park Center Boulevard and Marvin Road	С	23.4	С	28.2				
Park Center Boulevard and Ramona Expressway	D*	45.1	[F]	>80.0				
Park Center Boulevard and New Street	В	17.0	C*	20.7				
Warren Road and Marvin Road	С	26.6	С	33.6				
Warren Road and Ramona Expressway	[F]	>80.0	(F)	>80.0				
Warren Road and Record Road	B*	13.2	Α	9.8				
Gilman Springs Road and SR-79 SB Ramps	Α	7.9	В	18.5				
Gilman Springs Road and SR-79 NB Ramps	С	29.2	D	45.9				
Ramona Expressway and SR-79 SB Ramps	[E]	60.8	[F]	>80.0				
Ramona Expressway and NB Ramps	[F]	>80.0	[F]	>80.0				

Source: Traffic Technical Report, VRPA Technologies, Inc., 2008.

Avg = average

I-15 = Interstate 15

I-215 = Interstate 215 NB = northbound

SB = southbound

sec = seconds

Alternative 1B is also a No Project/No Action Alternative. As with Alternative 1A, Alternative 1B represents 2035 traffic demand on the planned street network; however, unlike Alternative 1A, Alternative 1B includes improvements to Cajalco Road and Ramona Expressway as required by the Riverside County General Plan (additional detail is provided in Section 2.4.2, Alternative 1B).

^{* =} improvement in LOS from design year 2035 existing conditions

^{[] =} unacceptable level of service (LOS)

Changes to traffic circulation under Alternative 1B as compared to the 2035 designed year discussed above in Section 3.6.2.1 would be minimal. The freeway mainlines and interchanges, as well as the intersections in the vicinity of the freeway mainlines, would not be impacted; therefore, the LOS and delay conditions would still apply under Alternative 1B. However, the intersections between I-15/I-215 and I-215/SR-79 would be impacted under Alternative 1B since improvements to Cajalco Road and Ramona Expressway would be implemented. Table 3.6.L describes the LOS for the intersections between I-15/I-215 and I-215/SR-79 under Alternative 1B in 2035. While some intersections would improve in LOS, there are still several that would be below the acceptable LOS standards.

Discussion of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species, including species and habitats associated with wetlands and other waters, are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 Temescal Wash Area Design Variation (TWS DV), which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV.

The analysis in the MSHCP EIR/EIS included consideration of the potential impacts on traffic and transportation because of the potential for the MSHCP Conservation Area to disrupt, disallow the establishment of, or require unique design elements of some planned facilities and programs that support various modes of transportation. However, the MSHCP EIR/EIS concluded that the MSHCP would not result in adverse impacts to existing or planned transportation facilities. Based on the analysis of impacts of the MCP related to traffic and transportation, which is discussed above in this document, the impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts on traffic and transportation beyond that previously analyzed.

3.6.3.2 Temporary Impacts

Build Alternatives

During construction, the MCP project would result in temporary impacts to traffic circulation due to traffic diversions resulting from local road closures and temporary ramp and mainline lane closures. As is typical with major highway improvements, many of the details of the construction process will be determined in the design plan of the project. However, the available information on construction staging is documented in the *Draft Project Report* (Jacobs Civil Engineering, 2008).

A Traffic Management Plan (TMP) will be implemented for the MCP project in order to construct the project in a cost-efficient and timely manner with minimal interference to the traveling public. In addition to the TMP, each of the local agencies where the project is located has specific procedures for allowing construction to occur on roadways within its jurisdiction. During the construction of the project, roadway closures and detours will need to be approved by the local agencies, and steps will need to be taken to minimize the traffic impacts of the construction. This interagency process is expected to result in reduction of construction traffic impacts.

No Build Alternatives

Under the MCP No Build Alternatives, the temporary traffic circulation impacts discussed above for the MCP Build Alternatives would not occur for the MCP project. Temporary traffic circulation impacts are expected to be more limited for the other transportation improvement projects included in the MCP No Build Alternatives because, with the exception of the SR-79 Realignment project, these other projects improve existing highways.



3.6.4 Avoidance, Minimization, and/or Mitigation Measures

\(\big|

The MCP project will provide mobility benefits by providing an efficient west-east connection between and through Corona, Perris, and San Jacinto. As discussed previously in this section, the MCP Build Alternatives will not cause a substantial increase in traffic in relation to the existing and projected traffic load and capacity of the street system; however, implementation of the project would cause temporary and permanent impacts to the LOS at several intersections and on the I-15 mainline between Ontario Avenue and SR-91.

To mitigate the long-term traffic impact described above for I-15 between Ontario Avenue and SR-91, the following mitigation measure will be implemented and would apply to all MCP Build Alternatives:

TR-1

During final design, the Riverside County Transportation Commission (RCTC) shall conduct a study to determine the most beneficial and cost-effective transportation improvements that will mitigate the traffic impacts of the Mid County Parkway (MCP) project on Interstate 15 (I-15) and on the I-15/State Route 91 (SR-91) interchange. Prior to the opening of any segment of the project that substantially impacts traffic operations along I-15, RCTC shall implement the transportation improvements recommended by the study. It is not feasible to conduct this study now, because RCTC has initiated two other transportation projects on I-15 and SR-91 that may impact this section at I-15. The performance standard for this mitigation measure is to achieve level of Service (LOS) "D" or better on this section of I-15.

Potential improvements are listed below for the three separate facilities that would be substantially impacted by the project, the I-15 mainline, the I-15 northbound to SR-91 westbound ramp, and the SR-91 eastbound to I-15 southbound ramp:

Potential I-15 Mainline Improvements

\

Provide an additional general purpose lane in each direction of travel from the Ontario Avenue interchange to the SR-91 interchange. This improvement would provide level of service (LOS) F conditions in 2035 with a density of 57.6 vehicles per mile per lane (vpmpl) with the project and mitigation, as



- compared to the 2035 No Build condition of LOS F and a density of 73.0 vpmpl.
- Provide an additional high occupancy toll (HOT) lane in each direction of travel from the Ontario Avenue interchange to the SR-91 interchange. This improvement would provide LOS F conditions in 2035 with a density of 68.3 vpmpl with the project and mitigation, as compared to the 2035 No Build condition of LOS F and a density of 73.0 vpmpl.
- Convert the planned high occupancy vehicle (HOV) lanes proposed for the I-15 freeway to HOT lanes, and add an additional HOT lane in each direction of travel from the Ontario Avenue interchange to the SR-91 interchange. The overall result would be to provide two HOT lanes in each direction of travel. This improvement would provide LOS F conditions in 2035 with a density of 65.4 vpmpl with the project and mitigation, as compared to the 2035 No Build condition of LOS F and a density of 73.0 vpmpl.

Potential I-15 Northbound to SR-91 Westbound Ramp Improvements

- Widen the ramp to provide a continuous two-lane connection from I-15 northbound to SR-91 westbound. This improvement would provide LOS E conditions in 2035 with a density of 44.0 vpmpl with the project and mitigation, as compared to the 2035 No Build condition of LOS F and a density of 86.5 vpmpl.
- Provide a direct HOV-to-HOV connector from I-15
 northbound to SR-91 westbound. This improvement would
 provide LOS F conditions in 2035 with a density of 74.8 vpmpl
 with the project and mitigation, as compared to the 2035 No
 Build condition of LOS F and a density of 86.5 vpmpl.
- Provide a direct HOT-to-HOT connector from I-15 northbound to SR-91 westbound. This improvement would provide LOS F conditions in 2035 with a density of 70.4 vpmpl with the project and mitigation, as compared to the 2035 No Build condition of LOS F and a density of 86.5 vpmpl.

Potential SR-91 Eastbound to I-15 Southbound Ramp Improvements

- Widen the ramp to provide an additional general purpose lane.
 This improvement would provide LOS D conditions in 2035 with a density of 32.6 vpmpl with the project and mitigation, as compared to the 2035 No Build condition of LOS F and a density of 48.1 vpmpl.
- Provide a direct HOV-to-HOV connector from SR-91
 eastbound to I-15 southbound. This improvement would
 provide LOS E conditions in 2035 with a density of 41.6 vpmpl
 with the project and mitigation, as compared to the 2035 No
 Build condition of LOS F and a density of 48.1 vpmpl.
- Provide a direct HOT-to-HOT connector from SR-91
 eastbound to I-15 southbound. This improvement would
 provide LOS E conditions in 2035 with a density of 39.1 vpmpl
 with the project and mitigation, as compared to the 2035 No
 Build condition of LOS F and a density of 48.1 vpmpl.

To mitigate construction-related traffic impacts, the following mitigation measure will be implemented and would apply to all MCP Build Alternatives.

- Prior to construction, the Riverside County Transportation
 Commission (RCTC) will prepare a Traffic Management Plan (TMP)
 in consultation with the California Department of Transportation
 (Caltrans) and affected local jurisdictions that will consist of, but not
 be limited to, the following standard measures to alleviate traffic
 inconvenience caused by construction activities.
 - **Traffic Control:** This project will require traffic control elements such as lane/shoulder closures and temporary signing/striping on Interstate 15 (I-15) and Interstate 215 (I-215).
 - Construction Zone Enhanced Enforcement Program
 (COZEEP): Through coordination with Caltrans and the
 California Highway Patrol (CHP), this program was developed to
 provide a safer work zone for both construction workers and the
 motoring public. The program uses two CHP officers who enforce
 lane closures and also provide a visual deterrent to errant/speeding
 vehicles.

- Public Awareness Campaign (PAC): Although the majority of the major closures will occur at night, vehicles traveling through the construction zone will likely experience longer than normal delays. To reduce these delays and confusion to the monitoring public during construction activities, the RCTC will implement a PAC. The purpose of the PAC is to keep the surrounding community abreast of the project's progress and construction activities that could affect their travel plans. Mailers/flyers, local newspaper advertising, local radio information, public meetings, a project Web site, and e-mail, as appropriate, will be used to disseminate this information.
- **Signing:** Post information signing on I-15, I-215, and the local arterials prior to and during construction to inform motorists of delays, ramp or lane closures, and alternate travel routes.
- **Pedestrian Access:** Provide a pedestrian detour plan to accommodate sidewalk closures.
- Business Access: Provide a plan to maintain access to businesses.
- **Haul Routes:** Identification of designated haul routes in consultation with the affected local jurisdictions.
- **Haul Routes:** Limiting construction truck and haul traffic to designated routes only.
- Construction Scheduling (start/stop times, major materials deliveries, export hauling, etc.): Shall be scheduled to avoid a.m. and p.m. peak traffic periods on adjacent streets so that the majority of construction-related traffic occurs outside of peak commuting times.
- **Signage:** Coordinate with Caltrans and local agencies to ensure that signage for haul routes, detour routes, and public information is consistent.
- TR-3 Prior to completion of final design, the Riverside County
 Transportation Commission (RCTC) will coordinate with each
 affected local jurisdiction to determine an appropriate rerouting of any
 planned trail that would be impacted by the Mid County Parkway
 (MCP) project. Rerouting of trails shall be done to maintain continuity
 and connectivity of the regional trail system.

3.7 Visual/Aesthetics

The information in this section is based on the MCP *Visual Impact Assessment* (VIA) (LSA Associates, Inc., 2008).

3.7.1 Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA) 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 U.S.C. 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of NEPA [23 U.S.C. 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 Section 21001(b)]

3.7.2 Affected Environment

3.7.2.1 Visual Environment

The MCP study area includes or is adjacent to commercial, industrial, agricultural, habitat reserve, and residential land uses, and local roads as well as major highways (i.e., Interstate 15 [I-15], Interstate 215 [I-215], and State Route 79 [SR-79]). The primary viewer groups in the MCP study area are motorists, pedestrians, bicyclists, and residents, as well as employees and patrons of commercial land uses.

3.7.2.2 Landscape Units

Landscape units are relatively homogeneous combinations of landform and land cover that recur throughout the region. A landscape unit is a portion of the regional landscape and can be thought of as an outdoor room that exhibits a distinct visual character. A landscape unit will often correspond to a place or district that is commonly known among local viewers. Landscape units were identified throughout the MCP study area and are listed below.

Lake Mathews Landscape Unit

This landscape unit includes views of Lake Mathews and the areas immediately surrounding the lake. Lake Mathews, located at 413 meters (m) (1,355 feet [ft]) in elevation, is a man-made lake formed by damming (Cajalco Dam) a naturally occurring valley at the head of Cajalco Canyon on the west side of the lake. Cajalco Dike is along the north side of the lake. The area surrounding the lake is an irregular plateau with gently rolling hills and tributary channels. Existing Cajalco Road, El Sobrante Road, and La Sierra Avenue provide views of the lake. This landscape unit also includes developed land, particularly residential land uses.

Rolling Hills Landscape Unit

Lower elevation mountains (less than 730 m [2,400 ft] elevation) and rolling hills distinguish this landscape unit. The vegetation communities most prominent in this landscape unit are Riversidean Upland Sage Scrub, nonnative grassland, cropland, and grove/orchard. A portion of the Lake Mathews-Estelle Mountain Reserve south of Lake Mathews is in the Rolling Hills Landscape Unit. This landscape unit also includes moderately rugged slopes and well-cut drainage channels, particularly west of Lake Mathews.

Peninsular Juniper Woodland, Scrub, and Chaparral Landscape Unit

The vegetation communities of Peninsular Juniper Woodland, Scrub, and Chaparral combined with elevations generally above 610 m (2,000 ft) and little development give this landscape unit a unique, rugged appearance. The Harford Springs Wildlife Reserve is part of this landscape unit, located south of Cajalco Road along Gavilan Road. Gavilan Peak and the Gavilan Plateau are located west of Gavilan Road. The San Bernardino Mountains and the San Jacinto Mountains are visible to the north and east, respectively. Mead Valley to the north is also visible from this landscape unit.

Mead Valley Landscape Unit



Mead Valley is located from approximately Gavilan Road to I-215. The elevation ranges from approximately 500 to 550 m (1,600 to 1800 ft) elevation. Cajalco Road runs westeast through the valley and parallel to the Colorado River Aqueduct. Land uses typical to this landscape unit are residential and light commercial. Several streets that intersect Cajalco Road lead to residential developments and add a traffic component to this landscape unit. Mountain views are located to the north and south from Mead Valley. Mead Valley is separated from Perris Valley by low hills along the eastern margin.

Perris Valley Landscape Unit

The Perris Valley Landscape Unit is located between I-215 and Lakeview Avenue. Geologically, Perris Valley is an approximately 7-kilometer (km) (4.5-mile [mi]) wide alluvial-filled basin that extends from Moreno Valley on the north to Menifee Valley on the south. This unit includes views of the Bernasconi Hills, a distinguishing topographical feature in the northeastern portion of the valley. The Bernasconi Hills separate Perris Valley from the San Jacinto Valley. Similar to the Mead Valley Landscape Unit, Perris Valley includes considerable residential and commercial development, roads, and associated traffic. The elevations in this landscape unit range from approximately 430 to 750 m (1,420 to 2,450 ft).

San Jacinto Valley Landscape Unit

Farmlands, fields, Ramona Expressway, and rural residential land use characterize the San Jacinto Valley Landscape Unit between Lakeview Avenue and SR-79. The rural residential land uses are located both north and south of the Ramona Expressway. Mountains are visible to the northeast (the San Jacinto Mountains) and the south (the Lakeview Mountains). Elevations in this landscape unit range from approximately 430 to 450 m (1,420 to 1,480 ft); thus, the unit is relatively flat. The San Jacinto River floodplain is located within a northeast-trending valley between Perris Valley and the San Jacinto Valley, bordered by the Bernasconi Hills on the west and the Lakeview Mountains on the southeast. The San Jacinto River flows toward the Elsinore Valley, approximately 32 km (20 mi) to the southwest. The San Jacinto Valley is an alluvial valley along the northwest-trending San Jacinto fault zone.

Freeway Landscape Units

The I-15 and I-215 freeways within the MCP study area represent the Freeway Landscape Units. The I-15 Freeway Landscape Unit includes views of I-15, a six-lane, north-south direction highway. It is bounded by the Santa Ana Mountains on the west and the northwest-trending Temescal Valley on the east. Bedford Wash is perpendicular to I-15, south of Cajalco Road. I-15 in the MCP study area is relatively straight and is at an approximate elevation of 275 m (900 ft). Similar to I-15, I-215 is also a north-south direction highway and is relatively straight within the MCP study area. I-215 in the MCP study area is bounded by Mead Valley on the west and Perris Valley on the east. Heavy traffic flow, interchanges, and surrounding commercial and residential development characterize both the I-15 and I-215 Freeway Landscape Units.



3.7.2.3 Topography

The topography in the MCP study area includes flat lands, hills, and mountains. Topography in the project area is diverse, with rolling hills in the west that transition to flat, open, ruderal and agricultural lands in the San Jacinto Valley in the east. The elevation generally increases from west to east, from approximately 230 m (750 ft) near I-15 to 457 m (1,500 ft) above mean sea level (amsl) near SR-79. There are several high peaks, up to 720 m (2,361 ft) amsl, within the project area.

3.7.2.4 Plant Communities

Large portions of the MCP study area contain plant communities and are absent of man-made structures. The locations and types of plants in a viewshed generally contribute to its visual character. The predominant plant communities in the MCP study area are nonnative grassland, Riversidean sage scrub, and chaparral. There are also extensive areas of agricultural land. Plant communities and other land cover categories in the MCP study area are described in more detail in Section 3.17, Natural Communities.

3.7.2.5 Effects of Weather and Air Pollution

Precipitation and temperature affect the appearance of the landscape units in the MCP study area. From December to May, plants are usually greener than from June to November. Summer months are typically dry and produce landscape palettes of browns and tans, while winter months tend to provide enough precipitation to trigger plant growth, turning the landscape green. The MCP study area photographs used in the VIA were taken in wet and dry seasons to show how the landscapes are influenced by the amount of precipitation.

The visual quality in western Riverside County is sometimes degraded by the presence of smog. Smog is ozone (O₃) and ground-level pollutants that produce a haze. The human environment, weather conditions, and topography influence the presence and severity of smog. Smog in western Riverside County is typically more visible during the warmer, dryer summer and fall months than in winter and spring. The photographs in this section display various air quality conditions.

3.7.2.6 Methodology

This section summarizes the methodology and terminology used to assess visual impacts of the MCP Build Alternatives. More details on the methodology are available in the *Visual Impact Assessment* (LSA Associates, Inc., 2008). The visual impact analysis followed the methodology prescribed in the publication *Visual Impact Assessment for*





Highway Projects (FHWA, August 1981). The following six principal steps were carried out to assess the visual impacts of the proposed MCP Build Alternatives:

- 1. Define the existing visual environment.
- 2. Identify key views for visual assessment.
- 3. Analyze existing visual resources (visual quality and visual character) and viewer groups.
- 4. Depict the visual appearance of project alternatives and viewer response.
- 5. Assess the visual impacts of project alternatives.
- 6. Propose methods to avoid, minimize, and/or mitigate adverse visual impacts.

The visual impacts of the MCP Build Alternatives were determined by assessing the existing visual resources, the visual resource change due to the project, and predicting viewer response to that change. The degree of visual quality in a view was evaluated using the following FHWA descriptive terms:

- **Vividness:** Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns (e.g., Niagara Falls is a highly vivid landscape component).
- Intactness: Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes and natural settings (e.g., a two-lane road that meanders through the countryside).
- Unity: Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape (e.g., an English or Japanese garden).

The levels of visual impact are described as follows:

- Low: Minor adverse change to the existing visual resource with low viewer response to a change in the visual environment.
- Moderate: Moderate adverse change to the visual resource with moderate viewer response.
- **Moderately High:** Moderate adverse visual resource change with high viewer response or high adverse visual resource change with moderate viewer response.
- **High:** Excessive adverse visual 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.

3.7.2.7 Key Views

To evaluate the visual effects of the MCP Build Alternatives, specific views were selected that represent the various landscape units throughout the MCP study area, the visual resources, and a number of sensitive viewer perspectives. Selection of the key views was based on the following criteria:

- Areas that would have the most substantial changes from project implementation, such as elevated highway structures or other structures such as sound walls or retaining walls, system or service interchanges, and areas with large cut-and-fill slopes
- 2. Areas where there are existing visual aesthetic resources, such as:
 - Existing visual resources according to the General Plans of the county of Riverside and the cities of Corona, Perris, and San Jacinto
 - Scenic vistas
 - Scenic Roads. There are no state, county or locally designated scenic roads in the MCP study area. However, the following road segments are State or County Eligible Scenic Highways according to the Riverside County General Plan (2003):
 - o I-15 is a State Eligible Scenic Highway from State Route 91 (SR-91) to SR-79, which includes the project segment of I-15.
 - La Sierra Avenue, El Sobrante Road, and Cajalco Road near Lake Mathews, and Ramona Expressway east of I-215 are County Eligible Scenic Highways in the project segments of those roads.
- 3. Populated areas with consideration of residential land uses, in particular
- 4. Representative views from each proposed MCP Build Alternative

Key views represent the primary viewer groups (residents, motorists, pedestrians, and bicyclists) that could be affected by the project. In the VIA technical report, 29 key views were selected to represent the visual quality of typical existing landscape units in the MCP study area that would be modified by the proposed MCP project. Visual simulations were prepared for all 29 key views. The 29 key views are listed and briefly described in Table 3.7.A. In the VIA, every proposed MCP Build Alternative was represented by a key view, and almost all of the segments were represented. In general, a project segment that resulted in the most visual change to an existing view was selected for analysis over a segment with less visual impact. A representative selection of 17 key views with visual simulations from the VIA are included in this section of the EIR/EIS. The key view numbering in the EIS/EIR is not continuous because it coincides with the VIA technical

Key			
View		Alternative(s)	
Š.	Description of Photo Location and View	Shown in View Simulation	Segment Analyzed
1	Southbound I-15 at the Cajalco Road off-ramp	All Build Alternatives	TWS
2	Eagle Glen Parkway looking east at the Cajalco Road overcrossing	All Build Alternatives	TWS
8	Glen Road looking northeast at I-15 and Cajalco Road	All Build Alternatives	LMS
4	Cajalco Road looking south at hills	4, 5, 9	TWS
2	El Sobrante Road at McAllister looking west toward La Sierra Avenue and the residential land use	6,7	LMN-GP
	on north side of El Sobrante		
9	Lake Mathews Drive looking north at Cajalco Road	4,5	LMS
7	Descanso Drive looking west at hills	9	FS
8	Malta Place looking west/northwest at rural residential	4,5	TWS
6	ast of El Sobrante Road (Mockingbird Ca		LMN-GP
	Roads		
10	Cajalco Road looking east toward the Wood Road intersection	4, 5, 6, 7	/W
11	Residential land use (under construction) in the northeast corner of Wood Road and Cajalco Road	6	FS
	looking south		
12	Alexander Street looking north at Cajalco Road	4, 5, 6, 7	MV
13	Clark Street looking south at Cajalco Road	4, 5, 6, 7	MV
14	West of Gavilan Road looking northeast at hills	6	FS
15	Orange Avenue east of Brown Street looking south at hills	6	FS
16	Northbound I-215 looking toward the Cajalco/Ramona overcrossing	4,6	PD
17	Behind Val Verde Elementary School on Indian Avenue looking north-northwest at I-215	9	PP-D
18	South of Paragon Park on Spectacular Bid Street looking north	9	PP-D
19	Eastern terminus of Ensenada Drive looking northeast at open space	5, 7, 9 DV	RD
20	Perris Boulevard, north of Ramona Expressway looking north at proposed Perris Blvd Interchange	4,6	PD
21	Ramona Expressway looking south at Perris Storm Drain	4,6	PD
22	Looking west at the Perris Storm Drain and residential construction	4,6	PD
23.4	Evans Road looking south at Placentia Avenue	All Build Alternatives	RD and PP-D
2007	I salisanus de de Boursan Estado Como de promoco de production	All Build Alternatives	13
\$	Looking West at Kamona ExpressMay Irom open merus (area or proposed residential development)	All During Alternatives	
25	South of Ramona Expressway near Bernasconi Road looking west at open fields and	All Build Alternatives	PS
	Bernasconi Hills		
26	Davis Road looking southwest at Ramona Expressway	All Build Alternatives	PS .
27	Ramona Expressway looking east at planned Town Center Boulevard	All Build Afternatives	S
28	Warren Road looking north at Ramona Expressway	All Build Afternatives	SJS
29	SR-79 looking south at Ramona Expressway	All Build Alternatives	SJN

Source: Visual Impact Assessment, LSA Associates, Inc., 2008.

Source: *Visual Impact Assessment*, Lon Assessments.

Several alternatives share some of the same segments.

Several alternatives share some of the same segments.

BI Several alternatives share some of the same segments.

BI Several alternatives share some of the same segments.

BI Several alternatives share some of the same segments.

PP-D = Placentia Avenue/Perris Boulevard Depressed

PP-D = Placentia Avenue/Perris Boulevard Depressed

PP-D = Placentia Avenue/Perris Boulevard Depressed

RD = Rider Street

SJN = San Jacinto North

SJN = San Jacinto South

1-15 = Interstate 215

LMN-GP = Lake Mathews North General Plan

TWS = Temescal Wash Area

MV = Mead Valley PD = Perris Drain



report key view numbering and, as noted above, only 17 of the 29 key views in the VIA are discussed here. All key views analyzed are shown in the VIA, which is available for review at RCTC, Caltrans District 8, and other locations listed on the General Information page of this EIR/EIS, and at www.midcountyparkway.org.

Key View 2

The existing setting photograph for Key View 2 is shown in Figure 3.7.1. The viewpoint location is at the intersection of Eagle Glen Parkway and Bedford Canyon Road west of I-15 and faces east. The agricultural area south of Eagle Glen Parkway is in an area planned for residential development. The visual character for Key View 2 is urban/rural (developed land use adjacent to agricultural land use). Motorists are the primary viewer group of this key view. Citrus and palm trees on the south side of Eagle Glen Parkway and mountains in the background are aesthetic features in the view. Encroachments in the view include the vehicle traffic and the signals/light poles; however, these elements are not the main focus of the view.

People exposed to this view are primarily motorists driving on Eagle Glen Parkway. The exposure time for motorists is brief, approximately 15 seconds, or the time it takes to drive from Bedford Canyon Road to I-15 on Eagle Glen Parkway. Bedford Canyon Road leads to existing residential land uses where some residents (not shown in photo) could have views of the hills on the east side of I-15 from the second story of their houses. The overall viewer exposure level is low to moderate. Viewer sensitivity and awareness are low for Key View 2.

Key View 3



The existing setting photograph for Key View 3 is shown in Figure 3.7.2. The view is from Glen Road, which is located west of I-15 and south of the Cajalco Road/I-15 interchange. The view faces northeast toward I-15 and the hills east of I-15. The existing visual character of Key View 3 is a combination of rural, agricultural, and urban elements. The orchards in the foreground of the view are part of an area proposed for future residential development. I-15 and the commercial land uses at I-15 and Cajalco Road are in the middle-ground and encroach on the view.

The primary viewer group from Key View 3 is rural residential. Rural residential land uses are located at higher elevations and south and west of the Key View 3 photo point. The photo point for Key View 3 is approximately 610 m (2,000 ft) southwest of the project limits, and the residential land uses are farther southwest from the photo









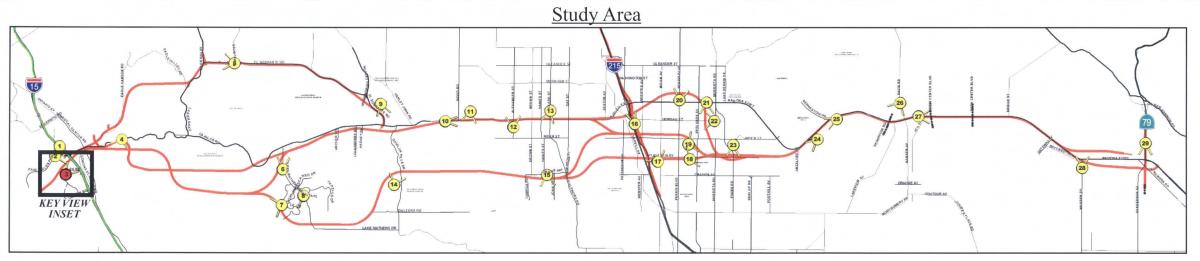
Existing Conditions: Looking east from Eagle Glen Parkway

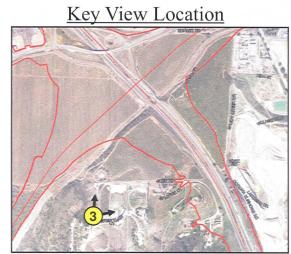
Visual Simulation: All MCP Build Alternatives

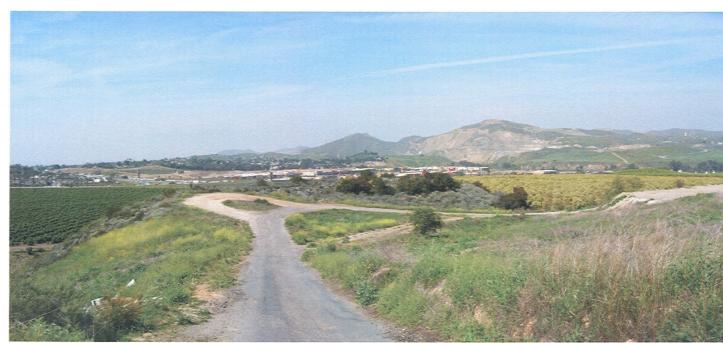
Figure 3.7.1

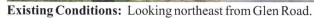


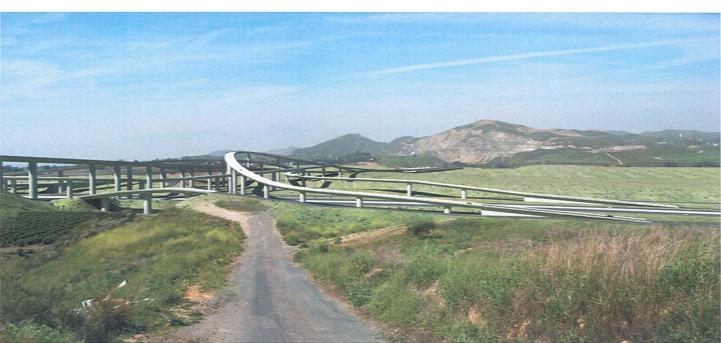
Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures











Visual Simulation: All MCP Build Alternatives





Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



point. Some of the residences located off of Weirick Road and Glen Road are situated in valleys where there are no views of the project site at all. The overall viewer exposure level is low to moderate.

Key View 4



The existing setting for Key View 4 is shown in Figure 3.7.3. The photograph was taken from Cajalco Road approximately 1.6 km (1.0 mi) east of I-15, and the view is facing south. The existing view is of green rolling hills located south of Cajalco Road. In the distance on the right (to the west), there is commercial land use at Cajalco Road and I-15 and the Santa Ana Mountain range. The existing view has a high visual quality rating. The view has excellent vividness, limited encroachments, and a high unity factor because of the well-defined hills with some rock outcroppings.

Motorists traveling on Cajalco Road are the primary viewer group for Key View 4. Drivers do not commonly stop to look at this view because Cajalco Road in this area is a winding, two-lane road with few turn-outs. This segment of Cajalco Road is scenic for motorists. The overall level of viewer exposure is moderate. The viewer sensitivity is moderate to high. Key View 4 exemplifies the rural character of this portion of the MCP study area.

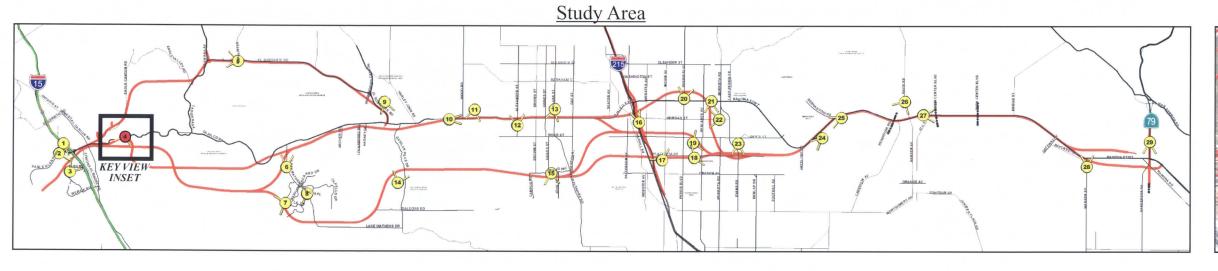
Key View 7

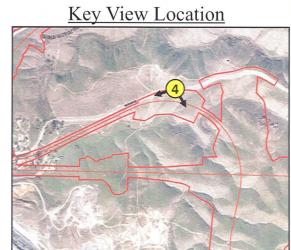
The existing setting for Key View 7 is shown in Figure 3.7.4. The photograph was taken from Descanso Drive and faces west. The existing visual character in this key view and the surrounding area is rural residential and open space. The existing view has a moderately high visual quality rating. The features that define the vividness of Key View 7 are the open space and rolling hills in the background. The hills and the skyline complement one another, creating a high unity rating. There are few manmade structures to disrupt the harmony of the natural landscape in this view.

The viewer group at Key View 7 is rural residential. The overall level of viewer exposure is moderately high for residents. Descanso Drive is part of a semirural setting. Viewer sensitivity for residents with views of the project area is moderate to high, as the adjoining natural open space is an important amenity for residents in this area.

Key View 10

The existing setting for Key View 10 is shown in Figure 3.7.5. The photograph was taken from Cajalco Road and faces east toward Wood Road. The existing view has a moderately low visual quality rating with the vividness, intactness, and unity features







Existing Conditions: Looking south from Cajalco Road



Visual Simulation: MCP Alternatives 4, 5, and 9

Figure 3.7.3



Chantar 2	Affa ata d		F	^	and Milimatian I	11
Unabler 3	Allected	Environment.	⊏nvironmentai	Consequences.	and Mitigation I	vieasiires







Existing Conditions: Looking west from Descanso Drive

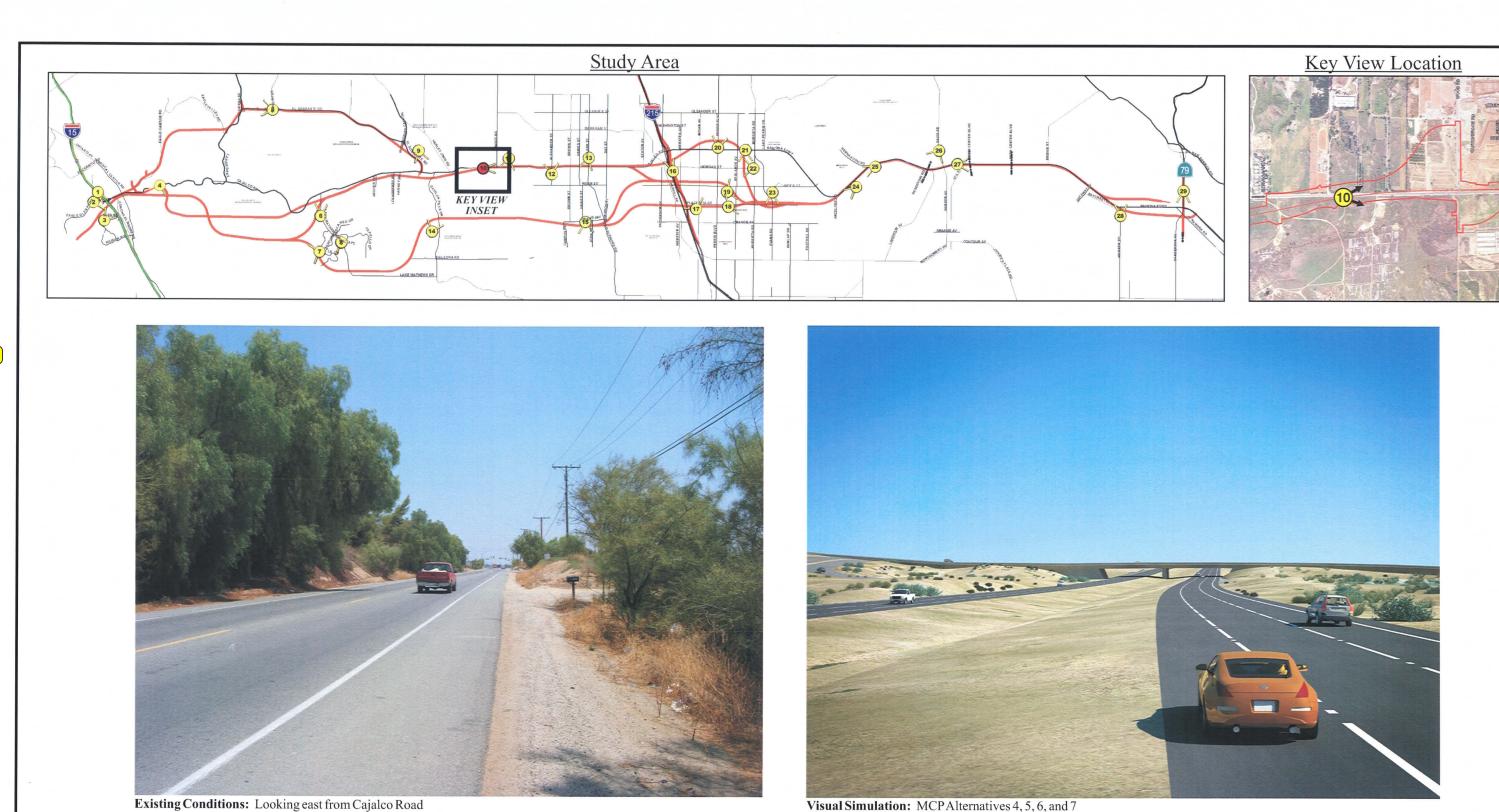


Visual Simulation: MCPAlternative 9

Figure 3.7.4



Chapter 3 Affected Environment, E	Environmental Consequences	and Mitigation Measures
-----------------------------------	----------------------------	-------------------------



Visual Simulation: MCPAlternatives 4, 5, 6, and 7





hapter 3 Affected Environmen	Environmental Consequences.	and Mitigation Measures
------------------------------	-----------------------------	-------------------------

each rated moderately low. The positive visual features in Key View 10 are the cluster of trees on the north side of the road and the simplicity of having only a few components. The utility poles and wires reduce the intactness of the view. Also, traffic is heavy along Cajalco Road, particularly during morning and evening rush hours.

Motorists are the primary viewer group at Key View 10. Cajalco Road in Key View 10 is not a designated local or State scenic road, and there is no known local or cultural significance to this view. However, viewer activity and awareness to this view is moderate to high because of the number of local residents from Mead Valley, Lake Mathews Estates, Mockingbird Canyon, and Gavilan Hills who use this segment of Cajalco Road. Therefore, viewer sensitivity to this view is moderate to high.

Key View 14

The existing setting and view simulation for Key View 14 are shown in Figure 3.7.6. This key view photograph is taken from west of Gavilan Road in the Harford Springs Wildlife Reserve (Reserve) and faces northeast. The existing visual character in this key view and the surrounding area is parkland/open space. The existing view has a high visual quality rating with the vividness, intactness, and unity features each rated high. Visual features in Key View 14 are the colorful vegetation and granitic boulders in the foreground and the mountains in the background, which create a distinct horizon. The view does not have any substantial encroachments.

The viewer group for this view would include people hiking or working in the Reserve. The overall level of viewer exposure is low to moderate. This view is part of the Reserve, which is known for its natural beauty and wildlife habitat. Viewer activity and sensitivity to this view is high because it is part of a public reserve area.

Key View 17

The existing setting for Key View 17 is shown in Figure 3.7.7. The photograph was taken from behind Val Verde Elementary School (located on Indian Avenue) in the city of Perris. The view faces north-northwest. The existing visual character in this key view and the surrounding area is transitioning from rural to urban land uses. The existing view has a moderately low visual quality rating. The canopied picnic area is a man-made feature in the view. The asphalt, chain link fence, and I-215 in the background encroach upon the intactness of the view. Key View 17 is not a scenic view, but it is viewed from a sensitive land use (the school).



Figure 3.7.6



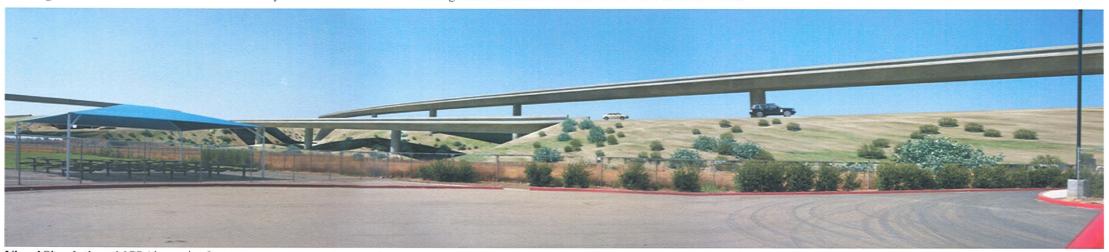
Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures







Existing Conditions: Behind Val Verde Elementary School on Indian Avenue looking northwest and north toward I-215 and Placentia Avenue



Visual Simulation: MCPAlternative 9

Figure 3.7.7



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

School children, school employees, and people dropping off children are exposed to this view. The overall level of viewer exposure is low to moderate. Key View 17 is from a public school within an urbanizing area. Viewer sensitivity is considered high due to the type of viewers (school children, school staff, and parents) and their proximity to the proposed MCP right of way.

Key View 18

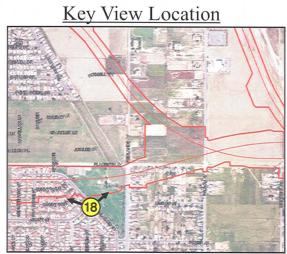
The existing setting for Key View 18 is shown in Figure 3.7.8. Key View 18 faces north toward Paragon Park from Spectacular Bid and Chant Street in the city of Perris. The visual character for Key View 18 is suburban. The existing visual quality of this view is rated moderately high with all the features rated the same. The view is of a community park (Paragon Park) from a residential street. The key features in the view include the large grassy areas, trees, and distant mountains. Handball and tennis courts and a fire station are also part of this view. The intactness of this view is hindered slightly by the parking areas and street sign. The unity is also rated moderately high because the components in the view (i.e., the grass and trees) complement one another to create a harmonious scene typical of a suburban park.

Residents and park users are the primary viewer groups at this key view. The viewing duration is relatively short for park users and permanent for some residents. Viewer exposure level is moderate. Because the view includes a park, viewer sensitivity is high.

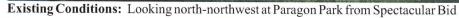
Key View 19

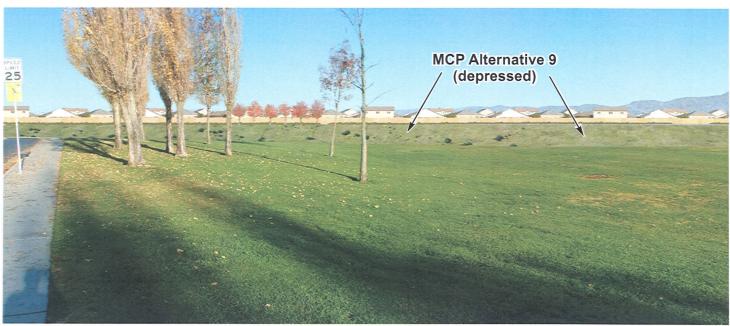
The existing setting for Key View 19 is shown in Figure 3.7.9. The photograph was taken from the eastern terminus of Ensenada Drive in the city of Perris. The view faces northeast. The existing view is given a moderate visual quality rating. The open field in the foreground and Bernasconi Hills in the background are the pleasing visual features in this view. The dirt road and concrete structure with graffiti encroach upon the intactness of the view. Since the photograph was taken in 2006, this area has been graded for residential development.









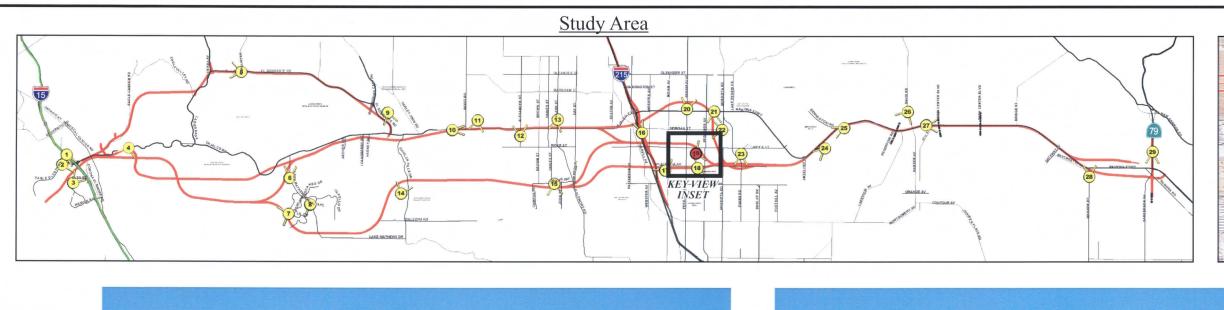


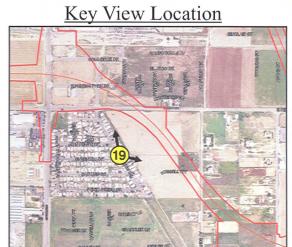
Visual Simulation: MCP Alternative 9 (MCP is depressed below existing ground level at this location)

Figure 3.7.8

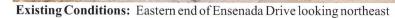


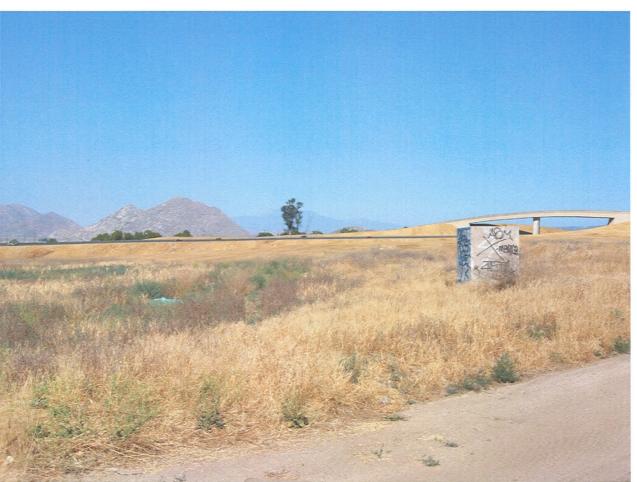
Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures











Visual Simulation: MCPAlternatives 5, 7, and 9 (design variation)





Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

Residents are the viewer group for Key View 19. The level of viewer exposure is high. Key View 19 is in a developing suburban area. Viewer sensitivity is high because of high activity and awareness.

Key View 22

The existing visual setting for Key View 22 is shown in Figure 3.7.10. The photograph in Key View 22 faces west toward the Perris Valley storm drain and a residential construction site. The existing visual quality of this view is given a low rating. The vividness of this view consists of the mountains and the residential area with clusters of trees in the background. The foreground is of low visual quality because of the disturbed condition of the storm channel with piles of trash and construction debris visible in the middle-ground. Therefore, the intactness of this view is also considered low. The presence of the manmade encroachments, such as the construction site and utility poles and wires, reduces the unity of the view by adding non-aesthetic visual elements.

The viewer group is the future residents who will live in the area once the residential construction is completed (but prior to construction of the MCP). The overall level of viewer exposure would be high. The viewer sensitivity is also high due to the close proximity (as little as 15 m [50 ft]) of the future residential units to the proposed MCP project.

Key View 23B

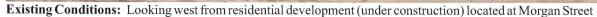
The existing visual setting for Key View 23B is shown in Figure 3.7.11. The photograph in Key View 23B is south-facing from Evans Road as it leads into Placentia Avenue. The existing visual character is semirural. The existing visual quality of this view is rated moderately low. The vividness of this view is derived from the large cluster of trees and strips of vegetation located on both sides of Placentia Avenue. The intactness of this view is considered low due to the presence of utility poles, the dirt road, and the construction site on the west side of Evans Road. The overall unity of this view is moderately low due to the lack of harmonious patterns between the man-made and natural elements.

The viewer groups are drivers and residents. The overall level of viewer exposure is moderate. Viewer activity and awareness are moderate for local drivers and high for residents, thereby making viewer sensitivity moderate for drivers, particularly local residents, and high for any residents who would have views of the new interchange and widened local streets.











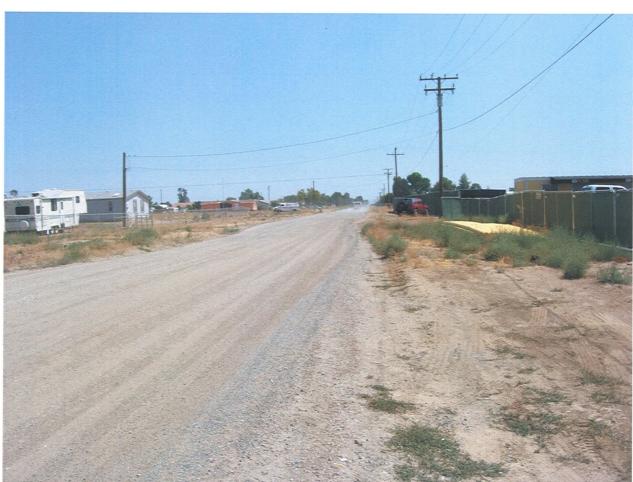
Visual Simulation: MCP Alternatives 4 and 6

Figure 3.7.10











Existing Conditions: Old Evans Road looking south at Placentia Avenue

Figure 3.7.11



Key View 24

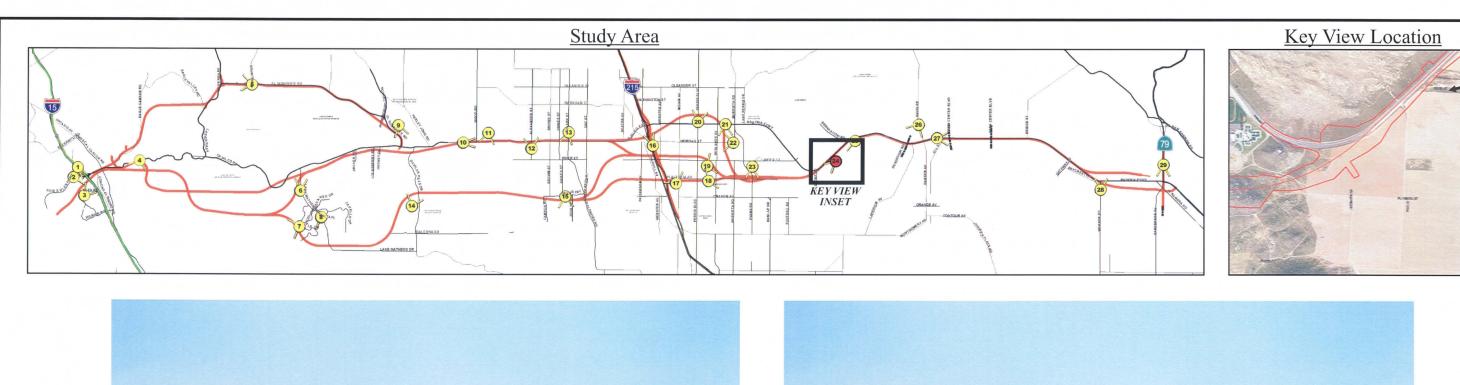
The existing visual setting for Key View 24 is shown on Figure 3.7.12. The photograph in Key View 24 is a southwest-facing view of the Ramona Expressway from the fields, which is land approved for residential development. The existing visual character is rural farmland. The existing visual quality is moderate. The vividness of this view is enhanced by the grassland vegetation and the McCanna Hills in the background (approximately 1.6 km [1.0 mi] from the viewpoint). The intactness of this view is moderate due to the presence of the utility poles lining Ramona Expressway. The unity rating is also moderate because the view is comprised of flat grassland surfaces that are balanced by the contrasting hills in the horizon.

The viewer group is currently farmworkers. Future viewers in the area include new residents of houses that will be built prior to the construction of the MCP project. The overall level of viewer exposure is currently low for farmworkers but moderate in the future for future residents. The current activity and awareness of Key View 24 are low. Because the area is planned for residential development, future activity and awareness will be high. Viewer sensitivity will increase as residents move into the area.

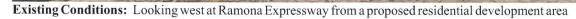
Key View 25

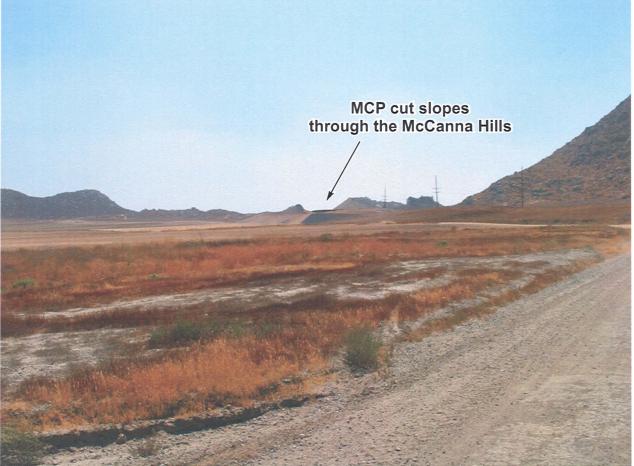
The existing visual setting for Key View 25 is shown on Figure 3.7.13. The photograph in Key View 25 is a southwest-facing view of fields and Bernasconi Hills from south of Ramona Expressway in an area approved for residential development. The existing visual character is rural farmland. The existing visual quality of this view is moderate due to the aesthetically pleasing character of the landscape. The vividness of this view is defined by the green fields in the foreground and hills in the background. The intactness of this view is moderate, reduced by the visible utility poles that traverse the middle of the photo and the visibility of Ramona Expressway. The overall harmony of this view results in a moderate unity rating.

The viewer group is currently farmworkers. Future viewers in the area include new residents of houses that will be built prior to the construction of the MCP project. The overall level of viewer exposure is currently low for farmworkers but moderate in the future for future residents. The current activity and awareness of Key View 25 are low. However, because the area is planned for residential development, future activity and awareness will be high. Viewer sensitivity will increase as residents move into the area.

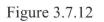








Visual Simulation: All MCP Build Alternatives



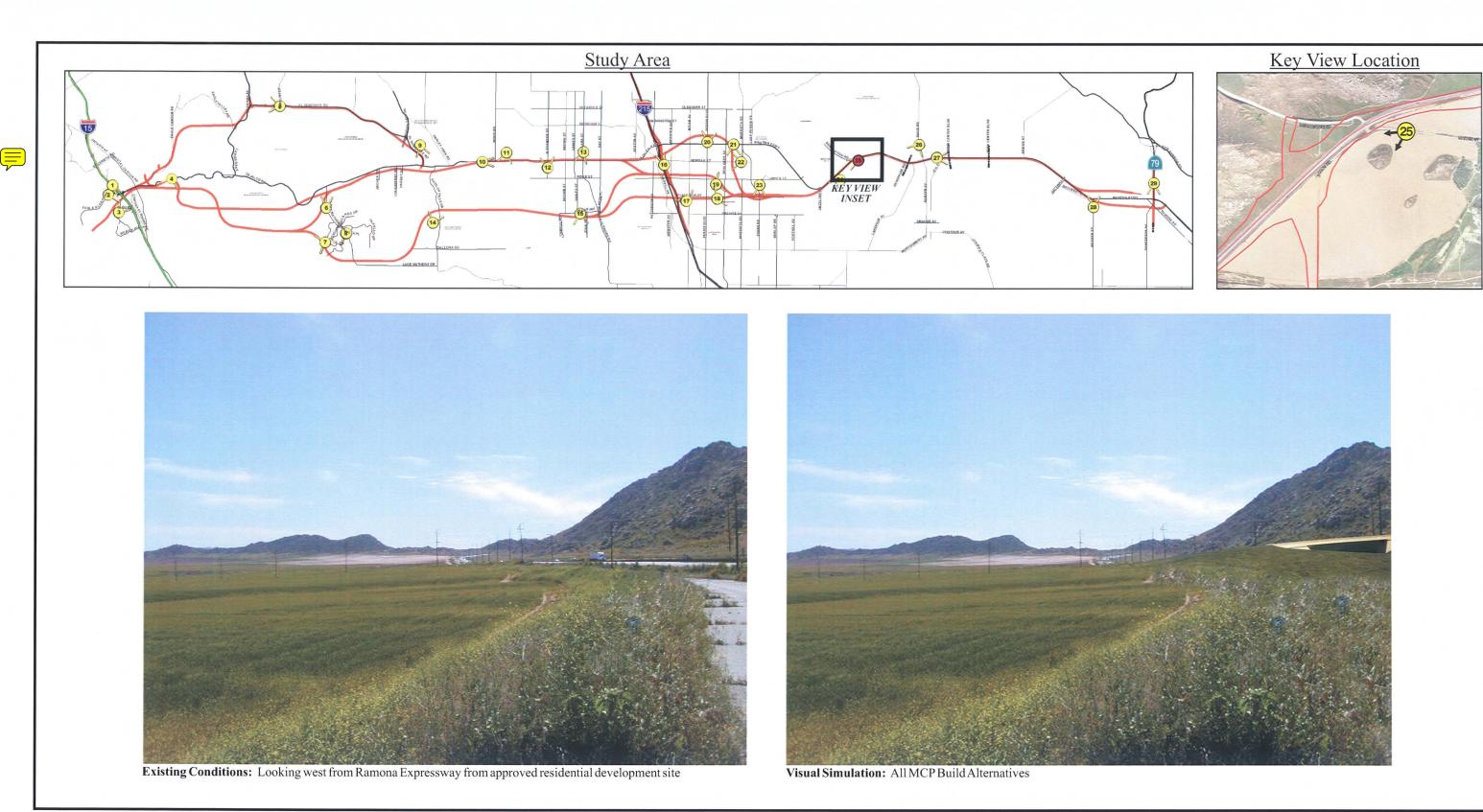


Figure 3.7.13

Key View 26

The existing visual setting for Key View 26 is shown in Figure 3.7.14. The photograph in Key View 26 is a southwest-facing view of Ramona Expressway from Davis Road. The existing visual character is rural farmland. The existing visual quality of this view is rated moderately high because the natural landscape creates an aesthetically pleasant composition. The vividness of this view is moderate due to the presence of the fields in the foreground as well as the cluster of trees and mountains in the background. There are no visible man-made encroachments; therefore, the intactness of the view is also rated moderate. The overall unity of this view is moderate. The mountains create a pleasant contrast to the fields, while the cluster of trees enhances the natural setting of this landscape.

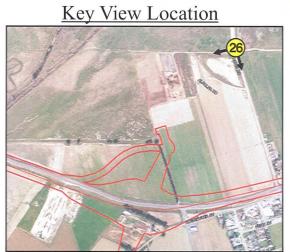
The viewer group is currently farmworkers. Future viewers in the area would be new residents of houses that are proposed for construction. The overall level of viewer exposure is currently low for farmworkers but moderate in the future for future residents. The current activity and awareness of Key View 26 are low. However, because the area is proposed for residential development, future activity and awareness will be high. Viewer sensitivity will increase as residents move into the area.

Key View 27

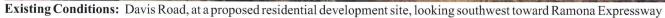
The existing visual setting for Key View 27 is shown in Figure 3.7.15. The photograph in Key View 27 is an east-facing view from Ramona Expressway at planned Town Center Boulevard. The existing visual character is rural farmland. The existing visual quality of this view is rated moderately low due to its proximity to an existing road. The vividness of this view is comprised of the mountains and cluster of trees in the background. The intactness in this view is moderately low due to the presence of the utility poles on the south side of Ramona Expressway. The unity is rated slightly higher than the other features because the view is mainly of a highway, which is a consistent feature in this view.

The viewer group includes existing motorists traveling on Ramona Expressway and future motorists traveling on the MCP. The overall level of viewer exposure is moderate. The viewer sensitivity is moderate. Existing motorists travel through an area that is currently agricultural but will undergo substantial development in the next 20 to 30 years.







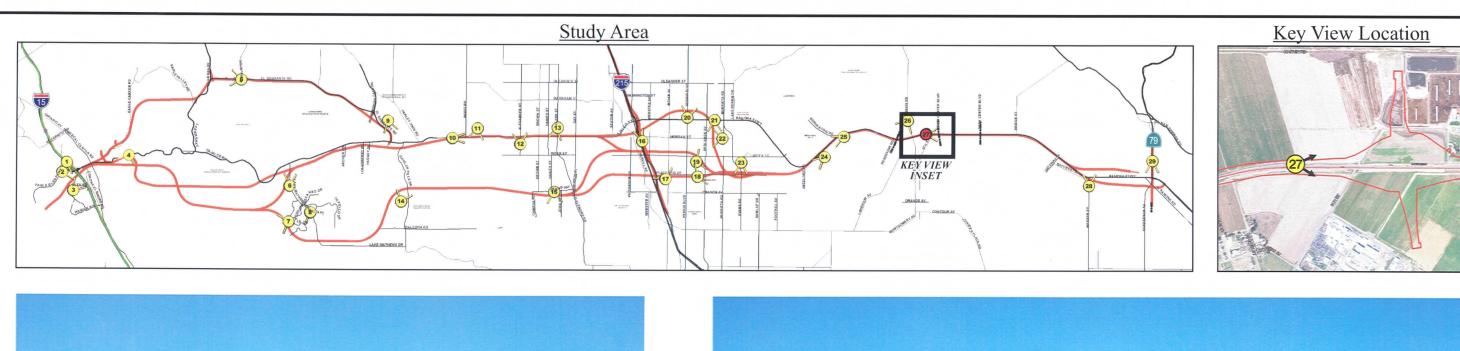




Visual Simulation: All MCP Build Alternatives











Existing Conditions: Ramona Expressway facing east

Visual Simulation: All MCP Build Alternatives with planner

Figure 3.7.15

Key View 28

The existing setting for Key View 28 is shown in Figure 3.7.16. Key View 28 faces north toward the Ramona Expressway from Warren Road in the city of San Jacinto. The visual character for Key View 28 is semirural. The existing visual quality of this view is rated low. Warren Road is the central component in this view. The key visual features in the view are the farmland, the house, and the mountains in the distance.

The intactness of this view is encroached upon by trash on the side of Warren Road, street signs, and utility poles and wires. The unity is also rated low because there is little or no compositional harmony to the view.

Local drivers are the primary viewer groups at this key view. The viewing duration is short, viewer exposure level is low, and the view does not have high activity. Therefore, viewer sensitivity is low.

Key View 29

The existing setting for Key View 29 is shown in Figure 3.7.17. The photograph in Key View 29 is a south-facing view from SR-79 toward its intersection with the Ramona Expressway. The existing visual quality of this view is rated moderately low because viewers mostly see the road, agricultural fields, and a very distant view of the mountains. The vividness of this view includes mountains in the background and a cluster of trees on the west side of SR-79. The intactness and unity of this view are relatively low because of the presence of utility poles on the west side of SR-79.

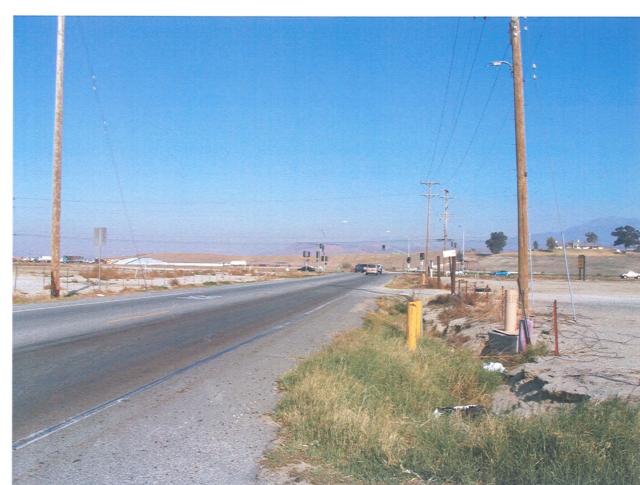
The viewer group includes existing and future motorists on SR-79. The overall level of viewer exposure is moderate. The viewer sensitivity is moderate. Existing motorists travel through an area that is currently agricultural but will undergo substantial development in the next 20–30 years.

3.7.3 Environmental Consequences

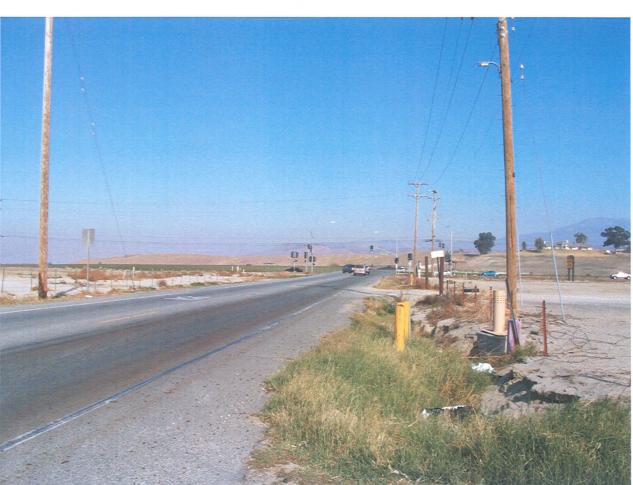
For all MCP Build Alternatives, long-term impacts would result from the permanent alteration of the visual environment through construction of the highway and associated bridges, interchange structures, retaining walls, and sound walls.







Existing Conditions: Warren Road looking north at Ramona Expressway

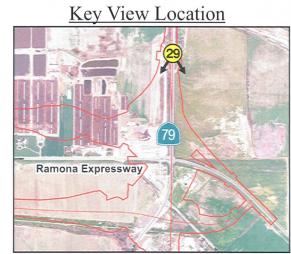


Visual Simulation: All MCP Build Alternatives with the SJS segment

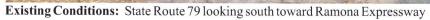
Figure 3.7.16













Visual Simulation: All MCP Build Alternatives with the SJN segment

Figure 3.7.17



Table 3.7.B, Existing and Future Visual Quality, provides the visual quality ratings of the key views for all Build Alternatives, including points of view from the road and of those people with a view of the road. The overall visual quality rating (from 1 to 7 or very low to very high) is an average of the three criteria ratings (i.e., vividness, intactness, and unity). The use of these evaluative criteria helps to establish an existing baseline to evaluate effects on visual quality.

Table 3.7.B Existing and Future Visual Quality

	Existing Visual Quality			Future Visual Quality				Difference	
Key View	Vividness (V)	Intactness (I)	Unity (U)	Existing (E) Visual Quality ([V+I+U]/3)	Vividness (V)	Intactness (I)	Unity (U)	Proposed (P) Visual Quality ([V+I+U]/3)	from Existing Visual Quality (P-E)
1	2	2	3	2.3	2	2	3	2.3	-0.0
2	3.5	3	3.5	3.3	3	2	3.5	2.8	-0.5
3	4	4	4	4	3.5	3.5	3.5	3.5	-0.5
4	6	6	6	6	5	4	6	5	-1.0
5	4	3.5	3.5	3.7	4	4	4	4	+0.3
6	3.5	3	3.5	3.3	3	3.5	3	3.2	-0.1
7	5	5	4	4.7	3.5	3.5	3.5	3.5	-1.2
8	4.5	3.5	4	4	4.5	3.5	4	4	0.0
9	5	5	5	. 5	5	4.5	5	4.8	-0.2
10	4	3	3.5	3.5	3.5	3	3.5	3.3	-0.2
.11	3	3.5	3.5	3.3	3.0	3	3.5	3.2	-0.1
12	2.5	2	3	2.5	2	2	3.5	2.5	0.0
13	2	2.5	2.5	2.3	2	2	2.5	2.2	-0.1
14	6	6	6	6	6	3	5	4.7	-1.3
15	5	5	5	5	5	4.5	4	4.5	-0.5
16	2	2.5	2.5	2.3	2	2	2	2	-0.3
17	3	3	3	3	3	2	3	2.7	-0.3
18	5	5	5	5	4	5	5	4.6	-0.4
19	4	4	4	4	4	3.5	4	3.8	-0.2
20	3	2.5	3	2.8	2.5	2	3	2.5	-0.3
21	3	3	4	3.3	2.5	2	3	2.5	-0.8
22	3	2	2.5	2.5	2	1.5	2	1.8	-0.7
23 A	3	3	3	3	3	2.5	3	2.8	-0.2
23B	3	3	3	3	3	2.5	3	2.8	-0.2
24	4	4	4	4	4	3.5	4	3.8	-0.2
25	4	4	4	4	4	3	4	3.7	-0.3
26	5	5	5	5	4.5	4	4.5	4.3	-0.7
27	3	3	3.5	3.2	2	2	3	2.3	-0.9
28	2	2	2	2	2	2	2	2	-0.0
29	3	3	2.5	2.8	2	1.5	2	1.8	-1.0

Source: Visual Impact Assessment, LSA Associates, Inc., 2008.

Rating Scale: 1.0–7.0 (1 = very low, 2 = low, 3 = moderately low, 4 = moderate, 5 = moderately high, 6 = high, 7 = very high)

BI Shading and bold italic text denote key views from the *Visual Impact Assessment* that were used for this Environmental Impact Report/Environmental Impact Statement.



The future visual quality ratings are based on a conceptual idea of what the views would look like with the MCP project. The change in overall visual character at project build out is the difference between the "Existing Visual Quality" rating and the "Future Visual Quality" rating. For example, if the overall existing visual quality rating was 6 and the proposed rating is 5, then the difference from existing would be -1.0. A negative number indicates an adverse visual impact to the existing visual setting. The greater the negative number the more substantial the visual impact (e.g., a -1.0 rating would have more visual impact than a -0.4). A positive number represents a beneficial effect in the visual setting with implementation of the proposed project.

3.7.3.1 Permanent Impacts

Build Alternatives

Key View 2

The visual simulation of Key View 2 is shown in Figure 3.7.1. The visual simulation for Key View 2 shows the MCP project (all Build Alternatives) in the central and background views. The foreground intersection, the palm trees, and some of the orchards in Key View 2 do not change from the existing to the proposed conditions. However, the elevated ramps associated with the MCP interchange at I-15 are visible. The view's vividness and intactness are reduced with the MCP project, thereby reducing the overall visual quality slightly. The foreground of this view is proposed for residential development.

The visual character for Key View 2 would remain urban/rural (developed land use adjacent to agricultural land use) with implementation of the MCP project. Because there is little change to the visual character, the viewer response to the change in visual character would be low.

Key View 2 Impact Summary

The level of adverse visual impact to Key View 2 would be low to moderate because the view itself is of moderately low visual quality and the viewer response and sensitivity are low to moderate.

Key View 3

The visual simulation for Key View 3 is shown in Figure 3.7.2. The MCP project (all Build Alternatives) components shown in the visual simulation are the interchange at I-15 and the various ramps associated with it. The interchange blocks views of the distant mountains and the commercial land uses on the east side of I-15. The

interchange also alters the foreground view by introducing elevated structures to the horizon. The visual quality is reduced with the MCP project. The land west and east of I-15 in this view is proposed for residential development.

The visual character would become more urban with implementation of the MCP project because large elevated transportation structures have been added to the view. Due to the substantial change from an at-grade highway to a multilevel interchange structure at Key View 3, viewer sensitivity to this view is considered moderate. Viewer response to the change in visual character to this key view would be low to moderate because the levels of viewer exposure and viewer sensitivity are also considered low to moderate.

Key View 3 Impact Summary

The level of adverse visual impact from the MCP project would be low to moderate because the visual quality is reduced and viewers would have a low to moderate response to the changes.

Key View 4

The view simulation for Key View 4 is shown in Figure 3.7.3. The visual simulation shows the road design for MCP Build Alternatives 4, 5, and 9, which includes bridge structures along the hillsides. The future visual quality rating decreases to moderately high because of the decrease in intactness with the addition of the road and associated elevated structures. This area is proposed for residential development.

The visual character for Key View 4 would be altered substantially with introduction of the MCP project. The scenic natural setting would now include a highway and associated elevated structures. Cut and fill required to build the MCP project would also change the land mass in this area due to the steep topography. The proposed design makes extensive use of bridges to minimize cut and fill requirements in this area. Viewer response to the change in visual character at this key view would be high due to the high level of exposure and sensitivity. East of the area shown in Key View 4, motorists on the MCP would experience brief distant views of the El Sobrante Landfill, which is located 0.8 km (0.5 mi) south of the MCP. Based on currently approved phases, the landfill would eventually be several hundred feet above existing ground level in this area. These brief distant views of the landfill are not expected to be adverse as the landfill is a modern sanitary landfill with open space/reserve lands acting as a visual buffer between the landfill and the MCP project.



Key View 4 Impact Summary

The level of adverse impact to the visual setting in Key View 4 under the MCP project is high. The viewer exposure and sensitivity to the change is moderate to high.

Key View 7



The view simulation for Key View 7 is shown in Figure 3.7.4. The visual simulation shows Alternative 9 traversing the base of the hills. The visual quality for Key View 7 would reduce to moderate with implementation of the MCP project. To maintain highway grades per state design standards, the MCP project would be constructed on fill. The visual simulation shows that the MCP roadway is higher in elevation than the western terminus of Descanso Drive. Therefore, the MCP project would create a visual barrier to the view of the hills, and vehicles would be seen traveling on the MCP roadway where there was no such activity before. There is no future development planned for this area.

Residents with views of the project area would have a permanent view of the MCP project. With implementation of the MCP project, the visual character would change, becoming less rural, with an added urban element, the MCP structure. Viewer response to the change in visual character would be moderate to high due to the levels of exposure and sensitivity.

Key View 7 Impact Summary

The level of adverse impact to the visual setting in Key View 7 is moderate to high because it would be built in a rural residential area where residents would have a permanent view of a new road structure. The visual quality is reduced to moderate with the project, and the visual character would become less rural.

Key View 10

The view simulation for Key View 10 is shown in Figure 3.7.5. The visual simulation shows the changes to Cajalco Road at Wood Road under Alternatives 4, 5, 6, and 7. The existing visual character in this key view and the surrounding area is semi-rural. With implementation of the MCP, the existing visual character in this scene would change to look more urban. Viewer response to the change in visual character would be moderate/high because of moderate/high viewer exposure and sensitivity.

Key View 10 Impact Summary

The level of adverse impact to the visual setting in Key View 10 under Alternatives 4, 5, 6, and 7 would be moderate. Although the view itself would

change substantially as shown in the visual simulation, the overall visual quality rating would change moderately. Vividness would decrease and unity would improve slightly. Viewer (motorist) response to the changes would be moderate to high.

Key View 14

The view simulation for Key View 14 is shown in Figure 3.7.6. The visual quality rating would decrease primarily because of the reduction in the intactness rating resulting from the introduction of the large bridge structures. Currently, there is no future development proposed for this area. Areas in the distant views are both proposed and approved for residential development.

With implementation of the MCP (Alternative 9), the visual character would still be parkland/open space, but would be degraded due to the introduction of a major highway and associated structures. Viewer response to the change in visual character would be high when combined with high viewer exposure and sensitivity.

Key View 14 Impact Summary

The level of adverse impact to the visual setting in Key View 14 would be high because the visual quality would decrease to a moderate to high rating, and the viewer response to the changes would be high.

Key View 17

The view simulation for Key View 17 is shown in Figure 3.7.7. The visual simulation shows Alternative 9 and its interchange at I-215. The visual quality rating decreases substantially with implementation of the MCP project. The new, elevated road structures associated with the new MCP/I-215 interchange would be visible in this view from the school area, creating new encroachments on the intactness of the view. Currently there is no future residential development proposed for this area. However, the areas surrounding Placentia Avenue and I-215 in this key view are designated Commercial Retail and Business Park in the Riverside County General Plan.

With implementation of the MCP project, the visual character would appear more urban. Viewer response to the change in visual character would be high considering the levels of exposure and sensitivity of the viewer group. From this viewpoint, the MCP project would create a visual barrier low on the northwestern horizon. Because the view already includes I-215, the character would be altered minimally.

Key View 17 Impact Summary

The level of adverse impact to the visual setting in Key View 17 would be high because of the addition of an elevated structure associated with the interchange on I-215 next to a school. Viewers would not have permanent views of the proposed view (i.e., these would only be daytime views during outdoor school activities or if the school playgrounds were used outside of school hours). Through the landscape plan described later in Mitigation Measure VIS-2, RCTC will work with the Val Verde School District to provide landscaping that will help screen the views of the MCP/I-215 interchange from the school. The view with the MCP project would have a moderately low visual quality rating due to its close proximity to the MCP/I-215 interchange.

Key View 18

The view simulation for Key View 18 is shown in Figure 3.7.8. Although not readily visible in the visual simulation, the MCP project (Alternative 9) would result in acquisition of approximately 50 percent of the park. The MCP project is not visible from this view because it is depressed below grade beyond the grass in the foreground. Implementation of the MCP project would alter the view by removing several park elements, including handball and tennis courts and parking areas. The visual quality would be adversely affected due to the reduction of the park size and removal of some of the park's amenities. Currently there are future additional residential developments proposed for the surrounding area.

The visual character for Key View 18 would remain suburban with implementation of the proposed MCP project. However, the visual character would degrade because of the division and alteration of the park and the foreshortened view of parkland amenities.

Key View 18 Impact Summary

The level of adverse impact to the visual setting in Key View 18 would be moderate. The visual quality and character would be reduced because of the change to the park, and viewer exposure and viewer sensitivity would be moderate to high. Replacement parkland and facilities would be provided on the north side of the MCP project, on the east side of Redlands Avenue, to compensate for the loss of parkland.





Key View 19

The visual simulation for Key View 19 is shown in Figure 3.7.9. The visual simulation shows Alternatives 5, 7, and 9 (Rider Design Variation) and the associated elevated structure. The visual quality rating decreases slightly with implementation of the project. The proposed Redlands Avenue overcrossing structure over the MCP would be visible in this view from the residential area, creating a new encroachment on the intactness of the view. The cluster of homes, mobile homes, and trees in the middle-ground would be removed by the project. Residential development is approved and proposed in this area, north and south of Rider Street. Residents of future houses planned for this area would experience similar effects on their views of the area.

With implementation of the MCP, the existing semi-rural visual character would become more urban by introducing a major highway facility where none was planned previously. The MCP would create a visual barrier between the residential area and the field and distant mountains. Viewer response to the change in visual character would be high considering the levels of exposure and sensitivity.

Key View 19 Impact Summary

The level of adverse impact to the visual setting in Key View 19 would be high because of the addition of a highway with an elevated structure in a semirural setting. Viewer exposure and sensitivity to this view are high.

Key View 22

The visual simulation for Key View 22 is shown in Figure 3.7.10. The visual simulation shows Alternatives 4 and 6 with the raised profile of the highway in the foreground. Implementation of the proposed project would partially block the distant view of the mountains and would shift the viewer's attention from a graded/disturbed landscape to a dominant manmade structure. The unity of this landscape would improve; however, the overall visual quality rating for this view is still considered low because it lacks aesthetically pleasing visual elements. Residential development is approved (and under construction) in the foreground and proposed in the background, west of Redlands Avenue.

Under the proposed MCP project, the visual character at Key View 22 would change from rural/open space to semi-urban because of the addition of a large elevated roadway structure. The viewer response to the change in visual character would be

high because of the close proximity of the future residential land uses to the elevated road structure.

Key View 22 Impact Summary

The level of adverse visual impact of the MCP project at Key View 22, or from any similar setting along the Perris Valley storm drain where there is adjacent residential land use, would be high due to a reduction in all of the visual rating criteria.

Key View 23B

The visual simulation for Key View 23B is shown in Figure 3.7.11. Implementation of the proposed MCP project (all Build Alternatives) would require acquisition of some residential parcels where a new partial-diamond/partial-cloverleaf interchange would be constructed. Evans Road would be widened and paved, and the new highway and ramps would be elevated over the existing road.

The visual character would change to become more urban with implementation of the proposed MCP project as well as ongoing land development in the area. The viewer response to the change in visual character would be moderate for drivers. The road may be limited in aesthetically pleasing features, but local drivers are sensitive to changes to the area. Viewer response to the changes would be high for residents with views of the project because they would have a permanent view of a new elevated highway structure.

Key View 23B Impact Summary

The future visual quality would be less in rating than the existing visual quality due to the introduction of a new, large transportation structure in the area. Both residents and drivers would be subject to the adverse visual effects of the MCP project in this area. The level of adverse visual impact would be moderate.

Key View 24

The visual simulation for Key View 24 is shown on Figure 3.7.12. The future visual quality of this view remains almost the same as the existing setting, although the intactness of the view diminishes slightly. The cut of the MCP project (all Build Alternatives) through the McCanna Hills is visible but not overwhelming. The MCP project does not result in visual encroachments because it blends into the overall viewshed.

Although the visual simulation in Figure 3.7.12 shows the surrounding area as rural farmland, the visual character will change to suburban as housing tracts are developed in the area. Viewer response to the change in character resulting from MCP project implementation would be high due to the moderate viewer exposure and high sensitivity related to the future residential uses.

Key View 24 Impact Summary

The level of adverse visual impact at Key View 24 is low to moderate, related to the slight reduction in the intactness of the view resulting from the cuts through the McCanna Hills.

Key View 25

The visual simulation for Key View 25 is shown on Figure 3.7.13. The photograph in Key View 25 is a southwest-facing view of fields and Bernasconi Hills from south of Ramona Expressway in an area approved for residential development. The natural elements remain unchanged with the exception of the visible structure in the right side of the visual simulation that would be part of the MCP/Bernasconi Road interchange. This area is approved for residential development. With implementation of the MCP project (all Build Alternatives), visual quality of this view is slightly lower than the existing visual quality due to the addition of the man-made encroachments. However, the overall composition of this view is still harmonious and the landscape cohesive.

The visual character with the MCP project would be slightly altered to appear more urban. The visual character would change to suburban as housing tracts are developed in the area. Viewer response to the change in visual character would be high due to the moderate viewer exposure and high sensitivity related to the planned future residential uses.

Key View 25 Impact Summary

The level of adverse visual impact at Key View 25 is moderate to high, due to high sensitivity for future residents and a reduction in visual quality with the introduction of the interchange structure into the viewshed.

Key View 26

The visual simulation for Key View 26 is shown in Figure 3.7.14. The visual simulation shows the proposed MCP project (all Build Alternatives) with the raised profile of Ramona Expressway in the background. Implementation of the proposed project would result in a lower visual quality rating due to the encroachment of the

MCP project into the middle-ground that removes some trees and partially blocks the view of the mountains in the background. However, the unity of this view is only slightly reduced compared to the existing setting because all MCP elements blend into the natural environment, thus maintaining its natural form and line.

The visual character with the proposed project would slightly alter the character to appear more urban with the parkway. The visual character would further change to suburban as housing tracts are developed in the area.

Key View 26 Impact Summary

The level of adverse visual impact would be moderate when considering the reduction in the overall visual quality and the high viewer sensitivity of probable future residential land uses.

Key View 27



The visual simulation for the Key View 27 is shown in Figure 3.7.15. The visual simulation shows the proposed MCP project (all Build Alternatives) with the new Town Center Boulevard overcrossing and elevated on- and off-ramps. Implementation of the MCP project would partially block the view of the mountains and residential area in the background. The overall visual quality would be lower in rating due to the greater width of the MCP roadway compared to the existing Ramona Expressway and the new overcrossing, which is the dominant man-made structure in the foreground. The unity of the view is only slightly reduced because the overcrossing blends with the hills and mountains.

Although the visual simulation in Figure 3.7.15 shows the surrounding area as rural farmland, the visual character would change to suburban as housing tracts are developed in the area. Viewer response to the change in character is moderate because of the moderate viewer exposure and sensitivity.

Key View 27 Impact Summary

The level of adverse visual impact at Key View 27 is moderate and due primarily to a much wider highway facility than what exists today as well as the introduction of a new structure into the viewshed. The overall visual quality rating declines with implementation of the MCP project.

Key View 28

The visual simulation for Key View 28 is shown in Figure 3.7.16. An interchange would be constructed to connect the MCP roadway to Warren Road, south of the

Ramona Expressway. Implementation of the MCP project (all Build Alternatives) would change Key View 28 very little. Viewers would see an increase in traffic activity because of the new MCP roadway. The future visual quality would remain the same as the existing visual quality. Future residential development is proposed for this area east of Warren Road. The County's General Plan designates this area for light industrial and agricultural land uses.

The visual character for Key View 28 would change from semirural to semi-urban with implementation of the proposed MCP project and planned land development in the area. Viewer response to the change would be low because viewer exposure and sensitivity are low.

Key View 28 Impact Summary

The level of the adverse visual impact from the MCP project would be nominal because of minimal changes to the visual quality and character, and low viewer exposure and sensitivity.

Key View 29

The visual simulation for Key View 29 is shown in Figure 3.7.17. The visual simulation shows the MCP/SR-79 system interchange. Implementation of the MCP project (all Build Alternatives with SJN Design Variation) would block the distant view of the mountains and require removal of the tree cluster on the side of SR-79. The future visual quality would be lower in rating due to the dominance of the interchange structures in the foreground and wider highway. Residential development is proposed for this area. Also, commercial, light industrial, and conservation land uses are designated for this area in the Riverside County General Plan.

The visual character would change from a rural four-lane highway to a major system interchange. Viewer response to the change would be low to moderate because of the moderate exposure and low sensitivity to the view.

Key View 29 Impact Summary

The level of adverse visual impact at Key View 29 would be high due to the introduction of a system interchange that would be approximately 15 m (50 ft) high.

Other Visual Impacts

Light, Glare, Shade, and Shadow

Existing urban and suburban areas within the MCP study area receive light at night from traffic, street lighting, and lighted parking lots; signalization at the intersections and freeway on- and off-ramps; and commercial zone and limited light sources from residential development. Existing lighting on streets and freeways would be modified or relocated as part of the MCP project. Safety lighting would also be provided along the MCP roadway in existing developed areas and at interchanges.



Light and glare would increase as a result of the MCP project in those areas that are currently open space or are rural in character. Specifically, the MCP project would increase light and glare in the open space (habitat reserve) areas south of Lake Mathews (Alternatives 4, 5, and 9), in the Gavilan Hills area (Alternative 9), and in the open space/agricultural areas between the McCanna Hills and SR-79 (all MCP Build Alternatives). To minimize this effect, no lighting would be provided along the highway alignment, with safety lighting provided only at the service interchanges. To minimize light spill into adjoining areas, light fixtures would be designed with hoods that would direct light downward to only those areas requiring illumination for safety purposes. In these areas, there would be an adverse effect to area residents near the MCP roadway where the light from vehicles traveling at night would encroach on viewers' enjoyment of the night sky in this area.

All MCP Build Alternatives from Lake Mathews Drive to their eastern terminus, are located within Zone B of the Mt. Palomar Nighttime Lighting Policy Area. According to County of Riverside Ordinance No. 655, Section I, Zone B is defined as the area within the 72 km (45 mi) radius and the 24 km (15 mi) radius (the perimeter of Zone A) centered on the Palomar Observatory. The MCP Build Alternatives would introduce new sources of light that could impact the Palomar Observatory. Adherence to County of Riverside Ordinance No. 655, Regulating Light Pollution for Zone B, would be required to minimize adverse impacts to the nighttime use of the Palomar Observatory. General requirements of the ordinance include: (1) use of low-pressure sodium lamps, (2) shielding of all outdoor light fixtures, (3) limited hours of operation on light fixtures, and (4) use of downcast lighting fixtures to illuminate outside advertising displays.

The MCP Build Alternatives would create new sources of shadow and shade associated with fill slopes, bridges, and other structures. These shade and shadow

effects are considered minimal because very few, if any, sensitive viewers would be within shade or shadow footprints.



Implementation of the MCP project may be attractive to the billboard industry due to opportunities to install billboards adjacent to the highway, which would be an indirect impact of the MCP project. In Riverside County, billboards are regulated under Article XIX of the Riverside County Zoning Ordinance. As stated in Section 19.1 of this ordinance, the intent of the ordinance is to provide sign control that safeguards the life, health, property, and public welfare of Riverside County residents by providing the means to adequately identify businesses and other sign users, by prohibiting, regulating and controlling the design, location and maintenance of signs, and by providing for the removal and limitation of sign use. This ordinance would avoid, minimize, and mitigate any adverse visual impacts resulting from a potential demand for billboards or other outdoor signage along the MCP project.

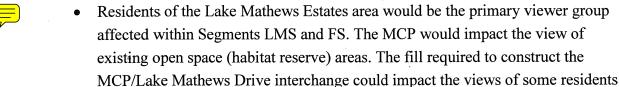
Summary of Visual Impacts for All Build Alternatives

All of the MCP Build Alternatives would result in both short-term and long-term visual impacts. Short-term impacts would occur during the construction period, while long-term impacts would result from the permanent alteration of the visual environment through construction of the highway and associated bridges, interchange structures, retaining walls, and sound walls.

Alternative 4 (South of Lake Mathews/North Perris) Visual effects of Alternative 4 are summarized below:

- At its western terminus with I-15, the primary visual impact of Alternative 4 is associated with the multi-level MCP/I-15 systems interchange structure, as seen in the visual simulations in Key Views 2 and 3. The affected viewer groups are motorists and residential areas west of I-15. In this area, the TWS-C design variation would have more adverse visual impacts as a result of the removal of more existing buildings and vegetation (both ornamental and ruderal) due to the greater right of way required for this design variation.
- Moving easterly, adverse visual impacts occur in the LMS Segment as a result of cut and fill slopes in an existing open space area, as well as through the introduction of large bridge structure. In order to meet design standards, the MCP requires structures totaling almost 2,000 m (6,500 ft) in length to climb the grade from I-15 easterly. Motorists on the LMS Segment would experience brief distant views of future phases of the El Sobrante Landfill.

Other adverse visual impacts within LMS include the introduction of a major transportation facility within an existing open space (habitat reserve) area. This impact would only be experienced by a limited number of viewers. However, the visual impact is substantial to those viewers who seek to preserve open space areas.



in the immediate vicinity of the interchange.

- As shown in the visual simulation for Key View 10, the MCP would substantially change the visual character of the Mead Valley area. An existing 2-4 lane rural arterial (Cajalco Road) would be replaced by a 6-8 lane limited access highway. Structures necessary for interchanges would impact the views of some residents in the immediate vicinity of the proposed interchanges at Wood Road, Alexander Street, and Clark Street. Despite the fact that pedestrian access would be maintained as sidewalks, Alternative 4 would create visual barriers between neighborhoods located north and south of Cajalco Road, thereby reducing community connectivity.
- In the north Perris area (PD Segment), the MCP would traverse existing agricultural lands, as well as encroaching upon some residential and commercial land uses. The MCP will add a major transportation facility in an area that is rapidly developing; therefore, the visual character would not change that much for affected viewer groups (motorists and some residents). The MCP/I-215 systems interchange would introduce a major multi-level structure within this segment.
- As shown in the visual simulation in Key View 22, some of the most substantial visual impacts occur within the PD Segment, where the MCP would be constructed on an elevated structure almost 4,000 m (13,000 ft) long that would be visible to existing and future residents of this developing residential area in Perris.
- In the western portion of the SJ Segment, the visual effects of the MCP will be experienced by a relatively small number of existing motorists, residents, and farm workers; however, as this area continues to develop, an increasing number of residents would be exposed to views of the highway. This segment requires a cut section through the McCanna Hills (see Key View 24).
- As shown in the visual simulations for Key Views 25–27, the primary visual effect of the MCP in the SJ Segment is the introduction of a major transportation





- facility (including local service interchanges) into an existing agricultural area. As this area continues to develop, an increasing number of residents would be exposed to views of the highway.
- At its eastern terminus with SR-79, the primary visual impact of Alternative 4 is associated with the multi-level MCP/SR-79 systems interchange structure, as seen in the visual simulation in Key View 29. The affected viewer groups would be motorists and a few scattered residences and businesses in the vicinity of the proposed interchange.
- Key Views 28 and 29 show visual simulations of Alternative 4 in the SJN
 Segment. Visual effects resulting from the SJS design variation would be similar
 to those of the SJN Segment due to the similarity of visual character and affected
 viewer groups in the area.

Alternative 5 (South of Lake Mathews/South Perris)

The visual impacts of Alternative 5 are the same as those described above for Alternative 4, except for the segments that go through the city of Perris (i.e., Segments C1 and RD are used in Alternative 5 instead of Segment PD, which is used in Alternatives 4 and 6). The visual impacts associated with these segments are described below.

- In Segment C1, the MCP would impact the visual environment by introducing a major transportation facility into the landscape where none was planned previously. Sensitive viewers include residents in the Mead Valley area (in the western portion of this segment). As in Segment PD, the MCP/I-215 systems interchange would introduce a major multi-level structure within this segment. Since the land uses in the area near the interchange are primarily commercial industrial properties, there are a limited number of sensitive viewers in this area.
- In Segment RD (as with Segment C1), the MCP would impact the visual environment by introducing a major transportation facility into the landscape where none was planned previously. Sensitive viewers include existing and future residents, particularly in the eastern portion of this segment. The proposed service interchange at Perris Boulevard introduces a structure that may impact the views of some residents in the immediate vicinity of the interchange.

Alternative 6 (General Plan North and South of Lake Mathews/North Perris) and Alternative 7 (General Plan North and South of Lake Mathews/South Perris)

At the MCP/I-15 interchange and from El Sobrante Road easterly to SR-79, the visual impacts of Alternative 6 are the same as Alternative 4, and the visual impacts of Alternative 7 are the same as Alternative 5. Visual impacts associated with the General Plan roadway alignments west of El Sobrante Road and north and south of Lake Mathews that are part of Alternatives 6 and 7 are described below.

- Extending easterly from Temescal Wash, the Lake Mathews North General Plan Segment (LMN-GP) would require extensive cut and fill and the construction of six bridge structures ranging in length from 200 m (650 ft) to over 400 m (1,300 ft). A large portion of this segment would be constructed in very steep topography. Due to lack of development in this area, very few sensitive viewers would be exposed to this view. From the La Sierra Avenue/El Sobrante Road intersection easterly to the Cajalco Road/ El Sobrante Road intersection, the visual impacts would be minimal since the MCP generally follows an existing road alignment.
- Within the Lake Mathews South General Plan Segment (LMS-GP), Cajalco Road would be constructed on a new alignment through existing open space (habitat reserve) areas. The visual effect of this alternative would only be experienced by a limited number of viewers in this area. However, those viewers have a high sensitivity since they are typically either reserve managers or visitors. From Lake Mathews Drive to El Sobrante Road, the visual effects of the widening/realignment of Cajalco Road would be similar to what would occur under the LMS Segment in Alternatives 4 and 5.

Alternative 9

Visual effects of Alternative 9 are summarized below.

- At its western terminus with I-15, the primary visual impact of Alternative 9 is associated with the multilevel MCP/I-15 system interchange structure, as seen in the visual simulations in Key Views 2 and 3 (Figures 3.7.1 and 3.7.2). The affected viewer groups are motorists and residential areas west of I-15.
- Moving easterly, adverse visual impacts occur in the LMS Segment as a result
 of cut-and-fill slopes in an existing open space area, as well as through the
 introduction of large bridge structures shown in the Key View 4 visual simulation.
 In order to meet design standards, the MCP project requires structures totaling

- almost 2,000 m (6,500 ft) in length to climb the grade from I-15 easterly. Motorists on this section of the MCP project would experience brief distant views of future phases of the El Sobrante Landfill.
- Other adverse visual impacts within the LMS Segment include the introduction of a major transportation facility within an existing open space (habitat reserve) area. This impact would only be experienced by a limited number of viewers; however, the visual impact is substantial to those viewers.
- As shown in the visual simulation for Key View 7 (Figure 3.7.4), existing residents in the Lake Mathews Estates community would experience adverse visual effects due to the addition of the MCP project and several large cut-and-fill slopes in the open space (habitat reserve) areas that are visible to existing residents. While Alternative 9 TWS DV is routed south of existing residential areas, it would still be visible to some residents within this area.
- Continuing easterly, the MCP is routed north of the existing Harford Springs
 Wildlife Reserve. As shown in the visual simulation for Key View 14 (Figure
 3.7.6), users in the Harford Springs Wildlife Reserve would see portions of the
 MCP roadway and structures.
- Residences in the Gavilan Hills area just east of Harford Springs Reserve would
 have limited views of the MCP roadway, as it is located several hundred feet
 below the ridgeline in this area. Residents with northward-facing views in this
 area may be able to see the MCP roadway from some viewing angles within their
 houses or backyards. The MCP roadway would be visible from some rural
 residences in the area just east of the Gavilan Hills, resulting in adverse visual
 impacts for those residents.
- The MCP connection to I-215 would introduce a major multilevel system interchange structure. As shown in the visual simulation in Key View 17 (Figure 3.7.7), this structure would be highly visible from the Val Verde Elementary School, resulting in an adverse visual impact for the school viewer group.
- Through the city of Perris, Alternative 9 would introduce a major transportation facility into the visual environment where none was previously planned. As shown in the visual simulation of Key View 18 (Figure 3.7.8), much of the MCP roadway would not be visible since it is proposed to be constructed below existing ground level between Evans Road and I-215.
- South of Lake Perris, the visual effects of the MCP project would be experienced by a relatively small number of existing motorists, residents, and farmworkers; however, as this area continues to develop, an increasing number of residents









- would be exposed to views of the highway. As shown in Key View 24 (Figure 3.7.12), this segment requires a cut section through the McCanna Hills.
- As shown in the visual simulations for Key Views 25, 26, and 27 (Figures 3.7.13, 3.7.14, and 3.7.15, respectively) the primary visual effect of the MCP in the San Jacinto (SJ) Segment is the introduction of a major transportation facility (including local service interchanges) into an existing agricultural area. As this area continues to develop, an increasing number of residents would be exposed to views of the highway.
- At its eastern terminus with SR-79, the primary visual impact of Alternative 9 TWS DV is associated with the multilevel MCP/SR-79 system interchange structure, as seen in the visual simulation in Key View 29 (Figure 3.7.17). The affected viewer groups would be motorists and a few scattered residences and businesses in the vicinity of the proposed interchange.
- Compared to the adverse visual impacts of the other MCP Build Alternatives, Alternative 9 would result in greater visual change to the existing visual setting due to the higher grading quantities and amount of cut and fill slopes required to construct this alternative. However, because it is routed through less populated areas between I-15 and I-215, Alternative 9 does not impact as many sensitive viewers as Alternatives 4–7.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, Alternative 1A would not change the existing visual setting and would, therefore, not create visual impacts to the MCP study area. Therefore, permanent visual impacts in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than for the Build Alternatives.

Under Alternative 1B, the MCP project would not be constructed, but both Cajalco Road and Ramona Expressway would be constructed to their ultimate width and alignment as shown in the Riverside County General Plan. The widening of Ramona Expressway between I-215 easterly to SR-79 would include some removal of agricultural land but would not include the construction of any interchange structures in this area. The effects of widening and realigning Cajalco Road and El Sobrante Road in the area from I-15 west to the existing Cajalco Road/El Sobrante Road intersection would result in the same visual effects as MCP Build Alternatives 6 and 7. Through Mead Valley, the widening of Cajalco Road to its General Plan



Circulation Element width would result in the removal of mature ornamental vegetation as well as some existing residences and businesses but would not include the construction of any interchange structures in this area.

Discussion of Impacts Relative to MSHCP Amendment

Visual/aesthetics was determined not to be a topic of concern and therefore was not analyzed in the MSHCP EIR/EIS. An amendment to the MSHCP to provide coverage for Alternative 9 TWS DV (the Locally Preferred Alternative) would not change the conclusion of the MSHCP EIR/EIS as it relates to visual and aesthetics.

3.7.3.2 Temporary Impacts

Build Alternatives

Short-term visual impacts would occur to sensitive viewers during the construction period, and include views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of the MCP roadway and structures, construction vehicles, and construction staging areas. Construction activities are temporary, and the adverse visual impacts related to construction activity would cease after completion of construction. The effects of vegetation clearing would gradually improve over time as landscaping for the MCP project matures.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, there would be no temporary visual impacts along these roadways under Alternative 1A.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. Under Alternative 1B, temporary visual impacts would be expected to be less than the MCP Build Alternatives since it would widen existing Cajalco Road and Ramona Expressway rather than constructing a new highway on a new alignment in many areas. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as MCP Build Alternatives 6 and 7, since these alternatives implement the General Plan roadway alignments in this area.

3.7.4 Avoidance, Minimization, and/or Mitigation Measures

As discussed above, the MCP project would result in impacts to scenic vistas and scenic resources, degradation to the existing visual character and quality in the project area, and the creation of new sources of light and glare. Mitigation measures have been identified and are described below to avoid, minimize, or reduce the adverse visual impacts that may result from the construction and operation of the MCP project. While these measures will reduce the impacts of the MCP project, there will still be a residual visual impact due to the introduction of a major new highway into the visual landscape of the MCP study area. These measures would apply to all MCP Build Alternatives.

- VIS-1 Prior to construction, the Riverside County Transportation Commission (RCTC) will locate construction and staging areas within public rights of way and within the maximum project disturbance footprint defined for the Mid County Parkway (MCP).
- Prior to construction, the Riverside County Transportation
 Commission (RCTC) will prepare a Landscape Plan that will be
 incorporated into the final design of the Mid County Parkway (MCP)
 project. RCTC or local entities will be responsible for long-term
 maintenance of the roadside landscaping until such time as California
 Department of Transportation (Caltrans) assumes responsibility for the
 MCP if it is designated as a State Highway. Highway planting is
 warranted on new highways where adjacent properties are developed
 at the time the highway is accepted. The Landscape Plan shall be
 submitted for review and approval by the Caltrans District 8
 Landscape Architect. The Caltrans District 8 Landscape Architect
 shall approve the parts of the Landscape Plan applicable to State
 Highway right of way.

The Landscape Plan will include the following components:

- Incorporation of applicable procedures and requirements as detailed in the publication Caltrans *Highway Design Manual*, Section 902.1, Planting Guidelines (November 2001), and any applicable local agency requirements.
- Identification of areas within the project limits for revegetation, including landscaping for graded areas with plant species



- consistent with adjacent vegetation and enhancement of new project structures (ramps, sound walls, and retaining walls) to the extent feasible.
- Planting of trees, shrubs, and groundcover along the MCP and at interchange locations to enhance the existing visual planting character of the area.
- Planting of drought-resistant plants along the MCP so as to be consistent with Metropolitan Water District guidelines, which promote the use of xeric (adapted to arid conditions) landscaping techniques. The irrigation design and implementation practices will also conform to the water conservation measures established in Assembly Bill 325, the Water Conservation in Landscaping Act of 1990 (in effect January 1, 1993). Plants shall also be durable in relation to urban pollutants such as smog.
- Incorporate soil erosion control planting (groundcover, native grasses, wildflowers) into the embankments and within the areas of steeper slopes. Vegetation planted adjacent to walls will not be highly sensitive to shadow and shade. All plantings will be drought-resistant and in areas where shade occurs most of the day, shadow-resistant to ensure plant longevity and the sustainable use of water resources.
- Incorporate slope rounding and contour grading to minimize the slopes and visually soften grade changes.
- VIS-3 Prior to completion of the final design, the Riverside County
 Transportation Commission (RCTC) will require that the Project
 Engineer minimize removal of existing mature trees. If removal of
 mature trees cannot be avoided, additional landscape improvements
 will be incorporated into the final design. The replacement ratio of any
 trees removed shall be determined in consultation with the California
 Department of Transportation (Caltrans) District 8 Landscape
 Architect.
- VIS-4 Prior to completion of the final design, the Riverside County
 Transportation Commission (RCTC) will require that the Project
 Engineer incorporate attractive walls, medians, and other visually
 pleasing hardscape in the project design.

VIS-5

Prior to completion of the final design, the Riverside County
Transportation Commission (RCTC) will include aesthetic
enhancements for soundwalls in the final design. The design of
soundwalls requires compliance with California Department of
Transportation (Caltrans) standards for sound attenuation, safety
requirements, and other pertinent standards. The design of soundwalls
requires compliance with the Caltrans *Highway Design Manual*standards and aesthetic treatments shall be reviewed by the Caltrans
District 8 Landscape Architect. The Caltrans District 8 Landscape
Architect shall approve the design of any soundwalls within State
highway right of way. The soundwalls should include the following
features:

- Attractive, decorative elements such as local art shall be incorporated into soundwall design in order to increase the visual quality of the area and to provide an expression of the regional "sense of place."
- Areas in front of soundwalls shall be landscaped, where landscaping can be accommodated within the public right of way, including trees, shrubs, and vines (depending upon the space available), to break the visual monotony, soften the appearance of soundwalls, and deter graffiti.

VIS-6

Prior to completion of the final design, the Riverside County
Transportation Commission (RCTC) will include aesthetic
enhancements for retaining walls in the project design. Attractive,
decorative elements such as local art shall be incorporated into
architectural treatment wall design to increase the visual quality of the
area and to provide an expression of the regional "sense of place." The
retaining walls along the Mid County Parkway (MCP) or interchange
off- and on-ramps will require compliance with California Department
of Transportation (Caltrans) standards for safety.



VIS-7

Prior to completion of final design, a lighting plan will be prepared by the Riverside County Transportation Commission (RCTC) for approval by California Department of Transportation (Caltrans)

District 8 in areas under State jurisdiction and for approval by the County or the affected Cities within their jurisdictions. The lighting

fixtures will be designed to minimize glare on adjacent properties and into the night sky. Lighting will be shielded with nonglare hoods and focused within the Mid County Parkway (MCP) project right of way.

VIS-8

Prior to completion of final design, a Mid County Parkway (MCP) Corridor Master Plan will be prepared by the Riverside County Transportation Commission (RCTC). In preparing the MCP Corridor Master Plan, RCTC shall coordinate with the County and affected Cities for the portions of the project within their respective jurisdictions. RCTC shall also involve the California Department of Transportation (Caltrans) in the Context Sensitive design process for the MCP Corridor Master Plan. The MCP Corridor Master Plan will include a design template for aesthetic features applied to any structures throughout the MCP corridor. The purpose of the MCP Corridor Master Plan is to create consistency in aesthetic design throughout the length of the MCP corridor. The Master Plan will be designed in conjunction with the landscape plan for the MCP.

This page intentionally left blank

3.8 Cultural Resources



The information in this section is based on the following technical reports:

- Archaeological Survey Report (LSA Associates, Inc. 2008)
- Extended Phase I Survey Report (LSA Associates, Inc. 2008)
- Historic Resource Evaluation Report (LSA Associates, Inc. 2008)
- Preliminary Determinations of Eligibility and Findings of Effect (LSA Associates, Inc., 2008)

3.8.1 Regulatory Setting

"Cultural resources" as used in this document refers to all historical and archaeological resources, regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act of 1966, as amended, (NHPA) 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 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, Federal Highways Administration (FHWA), SHPO, and Caltrans went into effect for Caltrans 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 Caltrans.

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

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as California 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 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 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.

3.8.2 Affected Environment

A records search, pedestrian survey, test excavations, and Native American consultation were conducted to identify prehistoric and historical cultural resources that may be eligible for listing in the National Register and California Register of Historical Resources (California Register). All studies were completed in accordance with Section 106 of the NHPA and CEQA. As such, this project is designed to meet the requirements of reporting archaeological investigations as required under both CEQA and 36 CFR 800 of the NHPA.

The area of potential effects (APE) for the MCP project defines the geographic area within which the proposed project has the potential to directly or indirectly affect historic properties, if such properties exist. The APE boundary is the maximum extent of all direct and indirect project impacts. The APE was mapped based on the maximum disturbance limits anticipated for MCP Alternatives 4, 5, 6, 7, and 9 combined.

The direct APE is based on the horizontal and vertical extent of anticipated ground-disturbing activities and contains approximately 2,065 hectares (ha) (5,100 acres [ac]). The indirect APE refers to effects of the project on cultural resources in the surrounding environment. Indirect effects may extend beyond the project's footprint to encompass visual, audible, or atmospheric intrusions; shadow effects; vibrations from construction activities; or change in access or use.

Delineation of the APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects. Consistent with Caltrans policy, the APE for this project was established as the area of direct impact, within which all permanent and temporary project impacts would occur, as well as additional areas to account for potential indirect effects. The area of direct impact became the direct APE to be used for archaeological studies. The direct APE was expanded to include additional areas to account for potential indirect effects such as those listed above.

Therefore, the limits of the indirect APE vary according to the nature of the resource and indirect impact being considered.

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 PRC Section 5097.98 and California Code of Regulations Section 15064.5 if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendant (MLD). At this time, the person who discovered the remains will contact the District Environmental Branch Chief or the District Native American Coordinator (Gwyn Alcock, 909/383-4045) 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.

3.8.2.1 Eligible Cultural Resources within the Area of Potential Effects

Pursuant to 36 CFR 800.4(b)(2) and 800.5(a)(3) and Section XII of the PA that allow for phasing the identification, evaluation, determination of eligibility (DOE) and FOE processes, FHWA applied the phased identification and evaluation of National Register resources. The "phased" approach can be applied to projects where alternatives consist of corridors or large land areas where access is limited. It allows agencies, with FHWA approval, to defer the evaluation of certain archaeological sites until after circulation of the Draft Environmental Document (DED), when the alternatives are refined or access is gained.

On May 23, 2007, FHWA, State Historic Preservation Office (SHPO), Caltrans, and RCTC met to discuss applying the "phased" approach to the MCP project. The approach was finalized between the agencies in letters from FHWA dated August 13, 2007, and SHPO dated June 27, 2008. This correspondence and other documentation regarding the "phased" approach that has been applied to the MCP project can be found in Appendix J. The information in this section is based on the *Preliminary Determinations of Eligibility and Findings of Effect* (Preliminary DOE/FOE) (LSA, 2008). The Preliminary DOE/FOE is a result of the May 23, 2007, meeting and is a streamlining tool that presents a preliminary, yet valid, DOE and FOE for all of the



cultural resources located in the proposed Alternative 9; it is also the basis for the findings presented in the Draft EIR/EIS. There is a commitment from the FHWA, Caltrans, and RCTC that further documentation fulfilling all requirements of both Section 106 of the NHPA and CEQA for Alternative 9 will be completed in order to meet the requirements for the Final EIR/EIS and Record of Decision. The Preliminary DOE/FOE was submitted by FHWA to the SHPO on August 1, 2008. The SHPO concurred on the Preliminary DOE/FOE on August 28, 2008 (See Appendix J for a copy of this letter).



For this Draft EIR/EIS, only those cultural resources affected by the Locally Preferred Alternative (Alternative 9 TWS DV) are being evaluated, with the exception of historic properties that qualify as Section 4(f) properties, which are being evaluated for all of the project alternatives. CEQA and PRC Section 5024 require state agencies to identify and preserve state-owned historical resources that are eligible for the National Register.



Identification efforts were made for cultural resources on all MCP Build Alternatives. These efforts included, research, field survey, and consultation with Indian Tribes and historic groups. However, under the Section 106 "phased" approach, only archaeological resources within the Alternative 9 TWS DV underwent Phase II excavation to determine eligibility for listing in the National Register. Built environment properties were evaluated for all project alternatives. The level of effort accomplished for the Alternative 9 TWS DV and all other MCP Build Alternatives is adequate for the purposes of Section 106 and CEQA and ensures that no state-owned historical resources are located within the APE that are eligible for the National Register. CEQA does not require that alternatives to the project (the Locally Preferred Alternative) be analyzed at the same level of detail as the project itself; therefore, the phased approach for Section 106 compliance also satisfies the requirements of CEQA.



Six cultural resources within the MCP APE were identified as potentially eligible for inclusion in both the National and California Registers. Four of these are in Alternative 9 TWS DV. Three other sites were identified as being within the APE of Alternative 9 TWS DV but will be protected by designation as Environmentally Sensitive Areas (ESAs) to be fenced off, avoided, and monitored during construction. Two historic resources were determined to be eligible as historical resources for the purposes of CEQA only, but they are outside the APE of Alternative 9 TWS DV (please refer to Chapter 4 for further details on the CEQA Evaluation of these two

resources). Table 3.8.A lists 11 cultural resources within Alternative 9, as well as those resources not in Alternative 9 but that were evaluated for the purposes of Section 4(f). As previously noted, the built environment (nonprehistoric archaeological resources) was evaluated for all alternatives. A discussion of each resource follows.

Table 3.8.A Eligible Cultural Resources in the Area of Potential Effects

Resources Determined Significant	Section 4(f) Property	Significant under NEPA/CEQA	Alternatives
P-33-1512, Prehistoric Quarry Site	No	NEPA/CEQA	9
P-33-1649, Prehistoric Quarry, ESA	No	Assumed Eligible ¹ /Avoided	9
P-33-1650/33-16687, Prehistoric Quarry Site	No	NEPA/CEQA	9
P-33-4759/H, Cajalco Tin Mine District	Yes	NEPA/CEQA	1B, 6, and 7
P-33-7640, C.B. Bullock House	No	CEQA	4 and 6
P-33-12230, Prehistoric Habitation Site, ESA	No	Assumed Eligible ¹ /Avoided	9
P-33-13791, Prehistoric Village Site	Yes	NEPA/CEQA	4, 5, 6, and 7
P-33-16598, Multi-use Prehistoric Site	Yes	NEPA/CEQA	1B, 4, 5, 6, 7, and 9
P-33-16679, Multi-use Prehistoric Site	No	NEPA/CEQA	9
LSA-JCV531-S-207, ESA	No	Assumed Eligible ¹ /Avoided	9
CBJ (Burrows) Dairy	No	CEQA	1B, 4, 5, 6, 7, and 9

Stipulation VIII.C.3 of the Programmatic Agreement Among the Federal Highway Administration, and the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (PA) provides that archaeological sites protected by ESAs established and enforced in accordance with Attachment 5 of the PA may, for the purposes of this specific undertaking, be considered eligible under NEPA and CEQA without subsurface excavation and/or surface collection. Sites that are assumed eligible have the same status for the purposes of this document as the NEPA and/or CEQA eligible properties listed above.

CEQA = California Environmental Quality Act ESA = Environmentally Sensitive Area

NEPA = National Environmental Policy Act

National Register/California Register Eligible Resources P-33-1512

The site contains numerous fine-grained porphyritic monzogranite (igneous) quarry source outcrops with thousands of flaked stone artifacts and debitage. Well over half of this site is outside of the APE, and only the portion of the site located within the APE was tested in order to avoid unnecessary disturbance to other areas of the site. The area within the APE on average measures approximately 200 meters (m) (656)



feet [ft]) from southwest to northeast by 100 m (328 ft) northwest to southeast. The site is disturbed by a four-wheel-drive dirt road that begins at the top of the hill in the northern portion of the site and runs roughly southwest through the site. The road has visibly displaced boulder outcrops and artifacts on the site. This road appears to have been recently used, and all-terrain vehicle traffic in the area is a consistent problem. The road connects with a major dirt road that runs roughly east to west near the southernmost portion of the site; this east-west road has been graded, and this activity has destroyed some of the site integrity in the southern portion of the site. Sparse modern trash is recorded on the surface of the site, including glass, plastic, and shotgun casings.

The site is a good example of prehistoric quarrying activities for the region. Although there are numerous quarry sites in western Riverside County, Site P-33-1512 stands out as unique from this group of quarry sites due to its differing source material and the presence of biface preforms, scraper planes, and utilized flakes that were all found on the site surface, suggesting that there was more than just raw material procurement occurring at the site. Research questions relating to site structure and function can be addressed for P-33-1512.

Based on the findings of the Preliminary DOE/FOE, the site has yielded data to help address specific research issues and still has the potential to yield further data; therefore, it was determined to be eligible for the National and California Registers under Criterion D/4 and is considered a historic property under the NHPA.

P-33-1650/P-33-16687

Site P-33-1650/P-33-16687 is a quarry site with two loci containing flakes, cores, hammerstones, and quartzite source outcrops. Locus 33-1650 encompasses approximately 6,000 square meters (m²) and was originally recorded as an individual site previous to the MCP project (Desautels 1980). In 2005, during the MCP Phase I survey, Site P-33-16687 was identified approximately 40 m (130 ft) east of P-33-1650. It was found to be nearly identical in size to the previously recorded site. The two sites were combined into one site with two loci, thereby creating a very large quarry site.

While the physical integrity of Site P-33-1650/P-33-16687 has been compromised from erosional factors such as the exfoliation of source outcrops, which have erased some of the signatures of past quarrying activities, and the deflation of the soils within the site area, the site soils still contain a density of subsurface deposit, most of

which is found in the first 20 centimeters (cm) (8 inches [in]) of soils below the surface. Bioturbation from small animals is noted across the surface and subsurface of the site and impairs the site condition, although not enough to preclude the site from conveying important information regarding prehistoric quarrying behaviors. A representative sample of the site features and lithic reduction scatters from the site has been tested, and the data yielded from this work appear to contribute to an evaluation of site eligibility for the National and California Registers under Criterion D/4. A larger sample of lithic material from the site is required to ensure that the research topics, particularly on-site function, are properly addressed. Site P-33-1650/P-33-16687 was determined to be eligible for the National and California Registers and that it be considered a historic property under the NHPA.

P-33-4759/H (CA-RIV-4759/H), the Cajalco Tin Mine District

The Cajalco Tin Mine District is a historic mining district composed primarily of land on which the Temescal Tin Mine is located. The district consists of "an expansive square mile distribution of vertical and inclined shafts, adits, trenches, tailings piles, exploratory excavations, a network of roads, and historical trash deposits surrounding a [45-acre] main mining complex next to the prominent Cajalco Hill" (Selverston 1997). Although no standing structures remain, the mine still retains elements of operations dating from the Civil War era. At the height of activity, the Cajalco Tin Mine was dense with buildings and mining excavation.

The current survey relocated parts of the District as well as the main mining complex and mapped and photographed an additional two trenches not included in the original District boundary. These trenches were included within the boundary of the main mining complex. The District now encompasses an area of approximately 228 ha (563 ac), while the main mining complex encompasses an area of approximately 10 ha (26 ac). The Cajalco Tin Mine District is located within the current MCP APE, but is not located in the proposed right of way for Alternative 9 TWS DV.

The Cajalco Tin Mine District has been evaluated in previous studies and has been determined to be eligible for the National and California Registers under Criteria A/1, C/3, and D/4. It is a designated California Point of Historical Interest (1968) and is listed in the State Historic Resources Inventory with an Office of Historic Preservation status code of 7L, indicating that the designation needs to be reevaluated using current standards. An undated State Historic Resources Inventory form assigned it an Office of Historic Preservation status code of 5S, indicating it is individually significant at the local level. Finally, this site was resurveyed in 1997 and



assigned a status code of 3S on the site record, indicating the Cajalco Tin Mine remains recommended as eligible for the National Register as an individual property through survey evaluation. This Office of Historic Preservation status code does not yet appear in the Directory of Historic Properties. The Cajalco Tin Mine was shown to be at least 100 years old, and the remaining features and deposits appear to retain sufficient integrity to provide important information (Selverston et al. 1997:25).

P-33-13791 (CA-RIV-7843)

This site is a complex village site and consists of numerous bedrock milling stations, a quartz quarry, possible rockshelters, lithic manufacture areas, and traditional cultural properties that include at least two cupule rocks. The current site boundary encompasses approximately 2 square kilometers (km²) (494 ac), contains a wide variety of activity areas, and has a total of 52 loci including 48 previously recorded sites.

Three of these previously recorded sites (P-33-816, P-33-817, and P-33-818) are now considered loci of this site and are located within the current MCP direct APE, but not in Locally Preferred Alternative 9 TWS DV. Specific descriptions of these loci are as follows:

- Locus 33-816. This locus is a habitation locus and a Traditional Cultural Property. The locus measures 173 × 119 m (570 × 390 ft) and contains 2 cupule rocks, as well as 19 other outcrops with 81 milling slicks and mortars. The cupule rocks contain 99 and 31 cupules, respectively. Additionally, the locus contains midden and surface artifacts, including two flake tools and a small scatter of flakes. Phase II testing was not conducted at this locus, as it is not in Locally Preferred Alternative 9 TWS DV.
- Locus 33-817. This locus is a habitation locus that contains 29 milling slicks on 15 granitic outcrops, and 1 milky quartz flake. Additionally, dark sediment exists in a small protected area amid several large granitic boulders, which are thought to make up a possible rock shelter. A historical component to this locus was also recorded. It consists of scattered refuse such as bottle glass fragments, two of which contain maker's marks dating 1920–1960, and three separate United States Geological Survey Benchmarks dating 1931, 1950, and 1960. Both aspects of the historical component are considered exempt from evaluation under the PA (Attachment 4, Properties Exempt from Evaluation). The benchmarks are considered exempt, as they are isolated historic monuments that fall under Property Type 1, minor, ubiquitous, or fragmentary infrastructure elements.



Although these benchmarks are more than 50 years old, they are not potentially important and do not contribute to the significance of a larger historic property such as a district or landscape. The scattered refuse is also exempt from evaluation, as it is an isolated refuse scatter that lacks specific associations with a primary resource (Attachment 4, Properties Exempt from Evaluation).

Disturbance to the locus includes several dirt roads, disking, and modern trash. Observed sediment is decomposing granitic material. Surface artifact density is negligible since there are only 11 surface artifacts at this locus, which has an area of approximately 7,320 m². Phase II testing was not conducted at this locus, as it is not in the Locally Preferred Alternative 9 TWS DV.

• Locus 33-818. This locus is a prehistoric milling station with artifacts that measures 129 × 83 m (423 × 272 ft). The main concentration of the locus contains 26 milling slicks on 11 granitic boulders, a small lithic scatter consisting of 10 flakes of green metasedimentary (felsite) and milky quartz material, and a small artifact scatter that contains one battered cobble and four pieces of metavolcanic debitage. Artifacts were found in subsurface soils during MCP Extended Phase I Survey Report (XPI) excavations within locus boundaries. An additional two milling outcrops that contain a total of 3 milling slicks on 2 granitic boulders, and no surface artifacts, are located directly south of this locus. Construction of a private residence has removed several previously recorded milling features. The ground surface has been extensively graded, and modern debris associated with the production of clay fountains and garden statuary is scattered across the site. Site sediment is decomposing granitic material. Artifact density is a maximum of 3 items per square meter. Phase II testing was not conducted at this locus, as it is not in the Locally Preferred Alternative 9 TWS DV.

This site was determined to be eligible for the National and California Registers under Criterion D/4 and is considered a historic property under the NHPA. Additionally, several individual loci at this site have been recommended as Traditional Cultural Properties and include at least two cupule rocks.

P-33-16598 (CA-RIV-8712)

This is a large and deeply buried multi-use prehistoric site that measures approximately 336,000 m² (33.6 ha [83 ac]). The entire site is within the APE, but only a portion of the site is within the proposed right of way (direct APE), and this portion measures approximately 2.8 ha (7 ac) or 29,000 m². The site is situated on a land formation that has been deep-ripped and plowed for agriculture for many years.





Many surface artifacts, especially in the central and northern portions of the site, may be displaced from their original provenience by repeated agricultural plowing activities across the site in combination with extensive trenching activities that displaced soil and artifacts during work for the Inland Feeder Project (Susan Goldberg, personal communication, 2007). However, the site appears to be relatively intact below the plow zone. Trenching and excavation at the site has uncovered what appear to be several levels of occupation, with radiocarbon dates associated with intact features as deep as 4 m (13 ft) containing ceramics that date to approximately 8,000 years before present (BP). Trench excavations on the site revealed that a more dense deposit of artifacts is present on the southern and central portions of the site; northern trenches within and near the MCP direct APE, albeit limited, indicate a drastic drop-off in site density.

Rock art in the form of pictographs and cupules are present at the southern portion of the site, Locus A (RIV-393); the style of the pictographs suggests that they are of the San Luis Rey style (Rockman and Lerch 2005:5.12), which is associated with the San Luis Rey II Period, dating from AD 1750 to 1850. Mid-19th century ethnographic accounts by early settlers in the Lakeview area confirm the presence of Native Americans living in the region (Rockman and Lerch 2005).

The site has been previously recommended as eligible for the National Register (Rockman and Lerch 2005).

Based on this prior work as well as the survey work for the MCP project, this site as a whole was determined to be National Register-eligible under Criteria A, C, and D and also eligible for listing in the California Register under Criteria 3 and 4.

P-33-16679

This site is a prehistoric milling station site that was recorded during the Phase I survey as containing flaked stone artifacts and two internal loci that, overall, measured 135×148 m (443×486 ft). Disturbances recorded at the site included the natural weathering and exfoliation of the milling slicks and several motorcycle tracks that crossed the site with a deeply rutted turnaround just outside the site boundary. Additionally, there are several outcrops not containing cultural elements that are graded and broken, as well as a dump of what appears to be fire retardant adjacent to the northern edge of the site. The grading continues in a straight line along the northern edge of the site and looks to be a firebreak.

The results of the Preliminary DOE/FOE indicate that the wide variety of artifacts, including several materials that are imported to the region, as well as groundstone and bedrock milling features, found on the site suggests that the site should be reclassified from a milling station site with surface artifacts to a "habitation" site. The site currently has at least one item that suggests a relative date for the site. One projectile point appears to fit into the Elko series, which has a large date range from 1500 BC to approximately 700 AD. The presence of larger bifaces, while not period-specific, suggests an older technological tradition usually associated with the hunting of large game. It was found that the site appears to have been occupied through time roughly 254 BC to 559 AD (Intermediate Period). This site appears to be older than those sites that can be dated in the region; based on the temporal overlap of manufacture dates from artifacts found nearby, Sites P-33-16678 and P-33-16680 may date to roughly the Late Prehistoric Period (AD 500 to 1769).

Even with the moderate amount of disturbance, because of the high percentage of subsurface artifacts compared to other similar sites in the region as well as the presence of several temporally diagnostic artifacts found during Phase II work, and the possibility that more diagnostic artifacts may be recovered through additional excavations, the site retains future research value with regard to questions in the settlement pattern, subsistence base, chronology, and gendered behavior domains. Therefore, Site P-33-16679 was determined to be eligible for both the National Register and the California Register under Criterion D/4. This site is considered a historic property under the NHPA.

3.8.3 Environmental Consequences

3.8.3.1 Permanent Impacts

As the lead federal agency for the project, FHWA recommended a phased identification, evaluation, and FOE as allowed under Section XII of the PA (see letters dated August 13, 2007, and June 27, 2008, in Appendix J). Cultural resources studies were prepared as required by 36 CFR Part 800; the regulations implementing Section 106; and, specifically, 36 CFR Part 800 4.5, which discusses the identification of historic properties and assessment of adverse effects, and 36 CFR 800.4 (b)(2), which pertains to the phased identification approach.



In cooperation with the RCTC and Caltrans, FHWA has identified Alternative 9 TWS DV as the Locally Preferred Alternative. Therefore, this section addresses the effects of Alternative 9 TWS DV on cultural resources, as well as impacts to Section 4(f)

properties in all other alternatives. Four resources that are eligible for listing in the National Register and California Register are at least partially within the APE, and at least partially within the proposed MCP right of way for Alternative 9 TWS DV. These are:

- P-33-1512 (partially within the proposed MCP right of way and partially within the APE);
- P-33-1650/P-33-16687 (partially within the proposed MCP right of way and completely within the APE);
- P-33-16598 (partially within the proposed MCP right of way and completely within the APE); and
- P-33-16679 (partially within the proposed MCP right of way and completely within the APE).

Three resources in Alternative 9 TWS DV are recommended for protection and avoidance through designation as ESAs: P-33-1649, P-33-12230, and LSA-JCV531-207. All three of these resources are located within the APE. The southeasternmost corner of Site P-33-1649 is located partially within the proposed MCP right of way. Site P-33-12230, Locus B, is located immediately adjacent and south of the proposed MCP right of way. Approximately half of Site LSA-JCV531-S-207 is located partially within the proposed MCP right of way. The project would have no Adverse Effect on properties that are protected by ESAs. These resources are addressed below in Section 3.8.4.1, Avoidance Measures.

National Register Eligible Resources

P-33-1512

Alternative 9 TWS DV would result in the physical destruction of the southern third of P-33-1512, with the exception of the southernmost tip. Therefore, there would be an adverse effect to this site (historic property) under NEPA.

P-33-1650/P-33-16687

Alternative 9 TWS DV would result in the physical destruction of roughly the eastern 60 percent of the site. Therefore, there would be an adverse effect to this site (historic property) under NEPA.

P-33-16598

Alternative 9 TWS DV would result in the physical destruction of the northeastern 7 percent of P-33-16598. The area that would be impacted is highly disturbed and does not contribute to the overall site eligibility for the National or California



Registers. Therefore, the direct effect would not be adverse to the site (historic property) under NEPA.

P-33-16679

Alternative 9 TWS DV would result in the physical destruction of 95 percent of P-33-16679. Therefore, there would be an adverse effect to this site (historic property) under NEPA.

Section 4(f) Historic Sites

Three National Register eligible resources within the APE for the MCP project would also qualify for protection under Section 4(f): P-33-4759/H (Cajalco Tin Mine District), P-33-13791 (CA-RIV-7843), and P-33-16598 (CA-RIV-8712). Of these, only P-33-16598 would result in use of a Section 4(f) property because it is located in the Locally Preferred Alternative. Please refer to Appendix B, Section 4(f) Evaluation.

Consultation

FHWA initiated consultation with the SHPO in March 2007, including a meeting on May 23, 2007 that included RCTC and Caltrans (see meeting minutes in Appendix J). The consultation resulted in SHPO concurrence on applying a phased approach to the MCP project, including making preliminary DOEs and FOEs to facilitate early public review of the Draft EIR/EIS, and also identification of Alternative 9 TWS DV as the likely Locally Preferred Alternative.

Native American consultation was conducted for the MCP project as required by Section 106 of the NHPA. Consultation was initiated as part of the Phase I survey for the MCP project in February 2005 when 43 tribes/individuals, as recommended by the NAHC, were contacted by letter and telephone. Consultation was conducted again in anticipation of the XPI survey in May and November 2006. The XPI consultation in November 2006 included eight parties identified during the previous consultation processes as having a continued interest in the project. These parties included Mr. Alvino Siva, the Cahuilla Band of Indians (Cahuilla), the Cupa Cultural Center, the Gabrieleno/Tongva San Gabriel Band of Mission Indians (Gabrieleno/Tongva-San Gabriel), the Morongo Band of Mission Indians (Morongo), the Pechanga Band of Luiseño Indians (Pechanga), the Ramona Band of Cahuilla Indians (Ramona), and the Soboba Band of Luiseño Indians (Soboba). As the Phase I survey effort neared completion and the XPI survey approached, all of these parties were contacted by telephone between the dates of November 27, 2006, and December 13, 2006. The

phone calls were to inform the parties of the status of the project and determine what level of involvement they would prefer as the project progressed. Of the eight groups contacted, two declined further involvement for various reasons: the Cupa Cultural Center and Mr. Siva. The six remaining tribes participated in various aspects of the project and were consulted throughout. On November 21, 2007, Mr. Sam Dunlap, a Native American from the Gabrielino-Tongva Tribe (Gabrielino-Tongva), who was included in the initial 2005 consultation for the MCP project but originally declined further consultation, requested involvement in the monitoring of the current testing program. Mr. Dunlap became formally involved with the remaining consultation for the MCP project on November 21, 2007.

Senate Bill 18 ([SB18]: Burton) requires local planning agencies to consult with California Native American tribes during the preparation, updating, or amendment of General/Specific Plans. Although SB18 consultation is not required for RCTC's or FHWA's approval of the MCP project, SB18 consultation will be undertaken by the County and the affected cities as part of their future General Plan amendment actions to incorporate the adopted MCP alignment into their respective General Plan Circulation Elements.

As part of the preparation of the *Historic Resource Evaluation Report* (LSA, 2008), consultation with other potentially interested parties was also conducted. The following were contacted via letter, electronic mail, or telephone call to identify known historic land uses and the locations of research materials pertinent to the project area:

- Norco Historical Society letters sent June 14 and July 8, 2005, and May 25, 2006. No response to date.
- Hemet-San Jacinto Genealogical Society letters sent June 14 and July 8, 2005.
 August 30, 2006, Mary Allred requested additional information. Information sent October 24, 2006. Follow-up letter sent November 5, 2006. No response to date.
- Perris Valley Historical Society letters sent June 14 and July 8, 2005, and May 25, 2006. Additional information was requested in June 2006. Telephone message left with Society on October 24, 2006. Additional follow-up with Katie Keyes in December 2006.
- Pioneer Historical Society of Riverside letters sent June 14 and July 8, 2005, and May 25, 2006. Erin Gettis requested additional information, which was e-mailed to her on June 28, 2005. No response to date.



- Riverside Genealogical Society letters sent June 14 and July 8, 2005, and May 25, 2006. No response to date.
- Winchester Historical Society of Pleasant Valley letters sent June 14 and July 8, 2005, and May 25, 2006. No response to date.
- Corona Historic Preservation Society telephone message left January 17, 2007; letter sent January 18, 2007. No response to date.
- Joe Toth (possible relative of current owner) letter sent on December 28, 2006. No response to date.

Interviews were conducted with the following persons:

- Katie Keyes, Perris Valley Historical & Museum Association, e-mail communications, December 11, 21, and 26, 2006.
- John Vrsalovich, Metropolitan Water District, telephone communication, November 7, 2006.
- Tim Skrove, Western Municipal Water District representative for the Lake Mathews region, e-mail and telephone conversations, November 6, 2006.
- Steve Lech, local historian and Riverside County Park Planner, e-mail and telephone communications, December 11, 2006, and February 2007.
- Kim Johnson, local historian and former Riverside County Department of Parks and Recreation employee, telephone communication, December 2006.
- Lori Norris, Riverside County Historical Commission, e-mail communication, October 24, 2006.
- Mary Allred, Hemet-San Jacinto Genealogical Society, e-mail communication, October 24, 2006.
- Kevin Hallaran, Riverside Municipal Museum, e-mail communication, December 5–7, 2006.
- Bill Bell, Banning Public Library, e-mail communication, December 5 and 6, 2006.
- Dave Reynolds, Mead Valley Community Center, personal communication, October 24, 2006.

Discussion of Impacts Relative to MSHCP Amendment

Cultural resources were determined not to be a topic of concern and therefore were not analyzed in the MSHCP EIR/EIS. An amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not change the conclusion of the MSHCP EIR/EIS as it relates to cultural resources.

3.8.3.2 Temporary Impacts

Build Alternatives

Impacts to cultural resources would result from construction of any of the MCP Build Alternatives, not from operation of the facility itself. Impacts to cultural resources are considered permanent, not temporary, as discussed above.

No Build Alternatives

As discussed above, impacts to cultural resources are considered permanent, not temporary. Although the MCP project would not be built under the No Build Alternatives, impacts to cultural resources identified in the MCP project cultural resource studies (P-33-13791, P-33-4759/H, and P-33-16598) could result from construction of the other transportation improvement projects included in the No Build Alternatives, specifically improvements to Cajalco Road, Ramona Expressway, and a future arterial north of Lake Mathews.

3.8.4 Avoidance, Minimization and/or Mitigation Measures

3.8.4.1 Avoidance Measures

ESAs are locations of identified resources within a project APE that are to be protected by avoidance or restrictions on construction activities. These sites are typically flagged off or fenced and monitored during project construction. The use of ESAs to avoid impacts is proposed for three eligible sites at least partially within the MCP direct right of way and completely within the APE: P-33-1649, P-33-12230, and LSA-JCV531-S-207. These three sites have not been evaluated for either the National Register or California Register, but are assumed eligible for the purposes of this specific undertaking in accordance with the Section 106 PA. Concurrence for use of ESAs to avoid impacts to sites was received from the Native American Tribes consulted as part of the Section 106 process. Further archaeological excavations are not recommended because the sites would be avoided through the use of an ESA, and excavations would result in unnecessary disturbance to the site.



In addition to the three sites discussed above whose eligibility for the National Register is assumed for the MCP project and that will be protected with the designation of an ESA, there are a total of three additional National Register eligible sites that will be partially protected through the use of ESAs for the portions of sites that can be avoided. Sites P-33-1512, P-33-1650/P-33-16687, and P-33-16598 are all located only partially within the proposed right of way of Alternative 9 TWS DV. In order to avoid unnecessary disturbances to the areas, the portions that are located outside of the area of direct construction-related impacts will be further protected with the use of an ESA. As previously discussed, no data recovery excavations are recommended in those protected areas to avoid unnecessary disturbance to the sites.



An ESA Action Plan will be attached to the *Historic Property Survey Report*.

Assumed Eligible ESA Sites

P-33-1649 (CA-RIV-1649)

This site is a prehistoric quarry site located at an elevation of 1,005 ft above mean sea level (amsl) and covers the entire north-facing edge of a brush-covered ridge. This site consists of several outcrops of gray quartzite source material that were originally recorded during the Phase I identification survey as black in color. The southern boundary of the site extends only a few meters into the proposed right of way of Alternative 9 TWS DV. The site is located completely within the APE.

The construction plans in the area where the site extends into the proposed right of way show that the area is proposed to be bridged. The proposed westbound on-ramp bridge would have single piers aligned in the middle width of the bridge (each bent has only one pier), and there are no piers proposed to be located within the site boundaries. The closest piers are located approximately 50 ft away from the western edge of the site and approximately 100 ft away from the eastern boundary. As such, Site P-33-1649 has been designated as ESA and would be avoided by the project. The ESA boundary would be properly designated on all construction plans. The site area would be fenced or flagged off, and all ground disturbing activities would be monitored by a qualified archaeologist and Native American monitor.

P-33-12230 (CA-RIV-6989)

This habitation site comprises two distinct loci. Locus A, the southernmost locus is located approximately 61 m (200 ft) south of the proposed right of way of Alternative 9 TWS DV and was not tested or evaluated as part of this project. Locus B measures 8 by 17 m (26 by 56 ft) and is situated in the northern portion of the site on a



southeast-trending slope just above an intermittent drainage that separates the two loci. Locus B contains two milling slicks on two outcrops in a 100 m² area, and this locus is located immediately adjacent to the proposed right of way.

Based on the level of work conducted during the Phase II fieldwork, the northern site boundary of 33-12230 around Locus B has been refined due to the presence of shallow soils with no potential for subsurface deposits and negative Shovel Test Pits (STPs). This adjustment to the northern site boundary removes the site from the proposed right of way of Alternative 9 TWS DV.

The site boundary is approximately 6 m (20 ft) from the closest construction fill boundary line shown on the engineering plans, and the closest feature outcrop is just over 8 m (26 ft) from that same fill line. With this distance, the site has been designated an ESA and would be avoided by the project. The site is located completely within the APE and it will be fully protected by an ESA, but it is not in the area of direct construction-related impacts. The ESA boundary would be properly designated on all construction plans. The site area would be fenced and all ground disturbing activities would be monitored by a qualified archaeologist and a Native American monitor.

LSA-JCV531-S-207

This site is located in a low-lying alluvial area near several large boulder outcrops and consists of three rock-ring features that, due to their location within the Pinacate Mining District, are considered historic in origin. Two of these circular features (Features 1 and 2) appear intact, measuring approximately 1.25–1.5 m in diameter, and the third ring (Feature 3) is partial with the rocks forming a semi-circle, indicating that it was originally circular in shape. This third partial ring measures approximately 1.25 m in diameter.

Because there is a 51 ft (15.5 m) buffer between the northern site boundary and the construction cut line, this site has been designated an ESA and would be avoided by the project. The site is located completely within the APE. The ESA boundary would be properly designated on all construction plans. The site area would be fenced or flagged off, and all ground-disturbing activities in the vicinity of the ESA would be monitored by a qualified archaeologist.





Eligible Sites to be Protected by ESAs

P-33-1512 (CA-RIV-1512)

The portion of Site P-33-1512 that is adjacent and north of the proposed Alternative 9 TWS DV right of way is recommended for further protection with the designation of an ESA in accordance with the Caltrans Section 106 Programmatic Agreement. The northern 66 percent of the site shall be protected from any possible project impacts via the use of fencing during project construction and the presence of an archaeological monitor and a Native American monitor. No collection or excavation shall be conducted here unless plans change to include disturbance of this area.

P-33-1650/P-33-16687 (CA-RIV-1650/CA-RIV-8739)

The portion of Site P-33-1650/P-33-16687 that is adjacent to the proposed Alternative 9 TWS DV right of way is recommended for further protection with the designation of an ESA in accordance with the Caltrans Section 106 Programmatic Agreement. The western half of the site shall be protected from any possible project impacts via the use of fencing during project construction and the presence of an archaeological monitor and a Native American monitor. No collection or excavation shall be conducted here unless plans change to include disturbance of this area.

P-33-16598 (CA-RIV-8712)

The portion of Site P-33-16598 that is adjacent to the proposed Alternative 9 TWS DV right of way is recommended for further protection with the designation of an ESA in accordance with the Caltrans Section 106 Programmatic Agreement. The site shall be protected from any possible project impacts via the use of fencing during project construction and the presence of an archaeological monitor and a Native American monitor during all ground disturbing activities in the area of Site P-33-16598.

3.8.4.2 Mitigation Measures

The ability and nature of avoidance and minimization of adverse effects to Sites P-33-1512, P-33-1650/P-33-16687, and Site P-33-16679 are not fully known at this time; therefore, mitigation measures are proposed based on current Alternative 9 TWS DV plans. Mitigation for site P-33-16598 is proposed based on direct effects to the portion of the site that is in Alternative 9 TWS DV.

AR-1 During final design the Riverside County Transportation Commission (RCTC), in consultation with California Department of Transportation (Caltrans), State Historic Preservation Officer (SHPO), and interested



Native American tribes shall prepare an Archaeological Monitoring Plan (AMP). The AMP shall establish procedures for archaeological resource surveillance, and procedures for temporarily halting or redirecting work to permit identification, sampling, and evaluation of archaeological resources. At a minimum, the AMP shall:

- Require an archaeologist to be present during construction activities in native soils;
- Require a Native American representative to be present during construction activities in native soils;
- Require the archaeologist and tribal representative to be present at the pre-grading conference to explain the established procedures in the AMP;
- Establish a protocol for the discovery of new archaeological resources;
- Requires that the protocol for the unanticipated discovery of human remains is followed. 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 shall be contacted. Pursuant to PRC Section 5097.98 and California Code of Regulations Section 15064.5, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendant (MLD). At this time, the person who discovered the remains will contact the District Environmental Branch Chief or the District Native American Coordinator (Gwyn Alcock, 909/383-4045) 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; Require monthly archaeological monitoring status reports;
- Require a final archaeological monitoring report;
- Establish a curation facility for collected archaeological material; and
- Maintain Environmentally Sensitive Areas (ESAs) during construction near three sites (P-33-1649, P-33-12230, and LSA-JCV531-S-207) as detailed in the ESA Action Plan.



P-33-1512. The ability and nature of avoidance and minimization of adverse effects to Site P-33-1512 are not known at this time; therefore, mitigation measures are proposed based on current Alternative 9 Temescal Wash Area Design Variation (TWS DV) plans.

- Prior to the start of construction at this location, data recovery shall be conducted at this site for all portions of the site within the area of potential effects (APE). Although the southern tip of the site is south of, and not within, the right of way, data recovery shall be conducted here because of the loss of physical and legal continuity between the northern (66 percent of the total site area) and southern (10 percent of the total site area) portions of the site. The data recovery shall attempt to exhaust all research potential that Site P-33-1512 has to offer. Methods shall include, but not be limited to, 1-square-meter units, surface collection grids, extensive research into site function, settlement patterns, etc. Nondestructive, noncollection, and nonexcavation mapping and analysis shall be conducted in the northern 66 percent of the site in order to adequately characterize the entire site in data recovery. Native American tribes shall be consulted throughout the data recovery process. Disposition arrangements shall be agreed to prior to initiating any data recovery efforts.
- The portion of the site that is adjacent and north of the proposed Alternative 9 right of way shall be further protected with the designation of an ESA in accordance with the Caltrans Section 106 Programmatic Agreement. The northern 66 percent of the site shall be protected from any possible project impacts via the use of fencing during project construction and the presence of an archaeological monitor and a Native American monitor. No collection or excavation shall be conducted here unless plans change to include disturbance of this area.

P-33-1650/P-33-16687. The ability and nature of avoidance and minimization of adverse effects to Site P-33-1650/P-33-16687 are not known at this time. Therefore, mitigation measures are proposed based on current Alternative 9 TWS DV plans.



- Prior to the start of construction at this location, data recovery shall be conducted at this site for all portions of the site within the right of way (the eastern 60 percent of the total site area). The data recovery shall attempt to exhaust all research potential that Site P-33-1650/P-33-16687 has to offer. Methods shall include, but not be limited to, 1-square-meter units, surface collection grids, extensive research into site function, settlement patterns, etc. Nondestructive, noncollection, and nonexcavation mapping and analysis shall be conducted in the western 40 percent of the site in order to adequately characterize the entire site in data recovery. Native American tribes shall be consulted throughout the data recovery process. Disposition arrangements shall be agreed to prior to initiating any data recovery efforts.
- The portion of the site that is adjacent to the proposed Alternative 9 right of way shall be further protected with the designation of an ESA in accordance with the Caltrans Section 106 Programmatic Agreement. The western half of the site shall be protected from any possible project impacts via the use of fencing during project construction and the presence of an archaeological monitor and a Native American monitor. No collection or excavation shall be conducted here unless plans change to include disturbance of this area.

P-33-16598. The following mitigation is proposed for Site P-33-16598 based on direct effects to the portion of the site that is in Alternative 9 TWS DV.

• The portion of the site that is adjacent to the proposed Alternative 9 right of way shall be further protected with the designation of an ESA in accordance with the Caltrans Section 106 Programmatic Agreement. The site shall be protected from any possible project impacts via the use of fencing during project construction and the presence of an archaeological monitor and a Native American monitor during all ground disturbing activities in the area of Site P-33-16598.

P-33-16679. The ability and nature of avoidance and minimization of adverse effects to Site P-33-16679 are not known at this time.

Therefore, mitigation measures are proposed based on current Alternative 9 plans.

• Prior to the start of construction at this location, data recovery shall be conducted for all portions of this site, including the small portion of the southern tip of Locus A, which is outside of the right of way. Although the southern tip of the site is south of and not within the right of way, data recovery shall be conducted here because of the loss of association with the larger portion of the site. The data recovery shall attempt to exhaust all research potential that Site P-33-16679 has to offer. Methods shall include, but not be limited to, 1-square-meter units, trench-and-block excavation, and extensive research into site function, settlement patterns, etc. Native American tribes shall be consulted throughout the data recovery process. Disposition arrangements shall be agreed to prior to initiating any data recovery efforts.

This page intentionally left blank

PHYSICAL ENVIRONMENT

3.9 Hydrology and Floodplains

The information in this section is based on the following technical reports:

- Floodplain Evaluation Report (LSA Associates, Inc., 2008)
- Location Hydraulic Study, Mid County Parkway Project, San Jacinto North Segment (CH2M Hill, 2007)
- Location Hydraulic Study, Mid County Parkway Project, San Jacinto South Segment (CH2M Hill, 2007)
- Location Hydraulic Study, Mid County Parkway Project, Perris Valley Storm Drain Bridge (CH2M Hill, 2007)
- Location Hydraulic Study, Mid County Parkway Project, San Jacinto Bridge at Lakeview (CH2M Hill, 2007)
- Drainage Report for Mid County Parkway from I-15 to I-215 (RBF Consulting, 2008)

3.9.1 Regulatory Setting

Executive Order 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 requirements for compliance are outlined in 23 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."



3.9.2 Affected Environment

3.9.2.1 Watershed Description

The MCP project area is located in Riverside County within the Santa Ana River Watershed and the San Jacinto Valley Watershed (Figure 3.9.1). The San Jacinto River is considered a tributary of the Santa Ana River, although it usually terminates at Lake Elsinore. However, during high rainfall years, Lake Elsinore overflows into Temescal Creek and then into the Santa Ana River. The United States Environmental Protection Agency (EPA) considers both watersheds to be separate, but for some regulatory purposes (such as National Pollution Discharge Elimination System [NPDES] permits, Drainage Area Management Plans, etc.), the San Jacinto River Watershed is considered a sub-watershed of the Santa Ana River Watershed. The San Jacinto River and Santa Ana River Watersheds are treated as separate watersheds in this EIR/EIS. The Santa Ana River Watershed is approximately 7,252 square kilometers (sq km) (approximately 2,800 square miles [sq mi]) (including the San Jacinto Valley Watershed) and extends approximately 154 kilometers (km) (96 miles [mi]) from its headwaters to where it drains into the Pacific Ocean.²

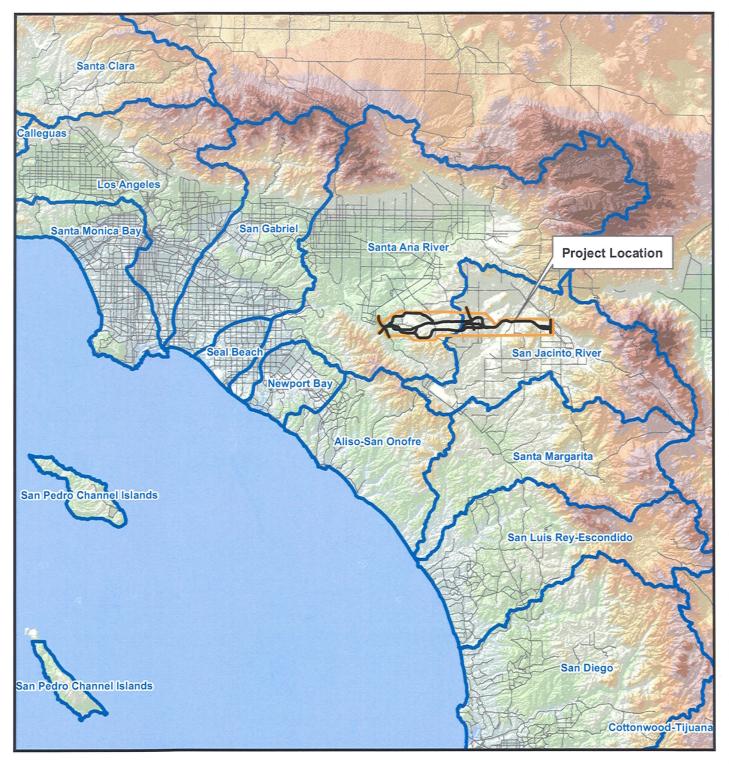
The primary receiving water for surface water and runoff within the western portion of the MCP study area is Temescal Wash, which flows to the Santa Ana River (Reach 3) and, ultimately, the Pacific Ocean. Surface water and runoff from the central portion of the MCP study area drains to Cajalco Creek and Lake Mathews. Surface water and runoff from the eastern portion of the MCP project area drains to the San Jacinto River, which discharges into Canyon Lake and, ultimately, into Lake Elsinore.

3.9.2.2 Floodplain Description

The Federal Emergency Management Agency (FEMA) has prepared Flood Insurance Rate Maps (FIRMs) that delineate flood zones based on estimated flood risk. Zone A is the FEMA designation for areas of 100-year flood where base flood elevations and flood hazard factors have not been determined. Zone A1-A30 is the designation for areas of the 100-year flood in which base flood elevations and flood hazard factors

United States Geological Survey (USGS), 2006, National Water Quality Assessment Program—Santa Ana Basin, ca.water.usgs.gov/sana_nawqa/env_set.html.

² Santa Ana Watershed Project Authority (SAWPA), www.sawpa.org.



Legend Figure 3.9.1
Watershed

Mid County Parkway Alignments
MCP Study Area

SOURCE: California Resource Agency (1999), ESRI (2004), Jacobs Engineering (02/2007).

0	6.25	12.5	25	Miles	
0	10	20	40	Kilometers	

Watershed Boundaries KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



have been determined. Zone X is the designation for areas determined to be outside the 500-year floodplain.

The following floodplains shown on the current FIRMs could be impacted by the MCP project. Applicable Letter of Map Revision are also included in the discussion. The floodplain discussion proceeds north to south and west to east. All relevant FIRMs are provided in Appendix M of this EIR/EIS. Figures 3.9.2a and 3.9.2b present an overview of the 100-year, FEMA-mapped floodplains within the MCP study area.

Temescal Wash

The Temescal Wash floodplain is a mapped Zone A1 floodplain, and includes the Temescal Wash, El Cerrito Road, and Bedford Canyon Wash floodplains. Temescal Wash flows northward on the east side of Interstate 15 (I-15). The Temescal Wash floodplain at Cajalco Road is approximately 520 meters (m) (1,705 feet [ft]) wide. The existing Cajalco Road Bridge across the wash is approximately 55.5 m (172 ft) long and 9.1 m (30 ft) wide. The bridge is supported by four pier walls without debris noses. This bridge is a substantial constriction in the Temescal Wash floodplain and causes the water surface to rise approximately 1.2 m (4 ft) across the width of the bridge.

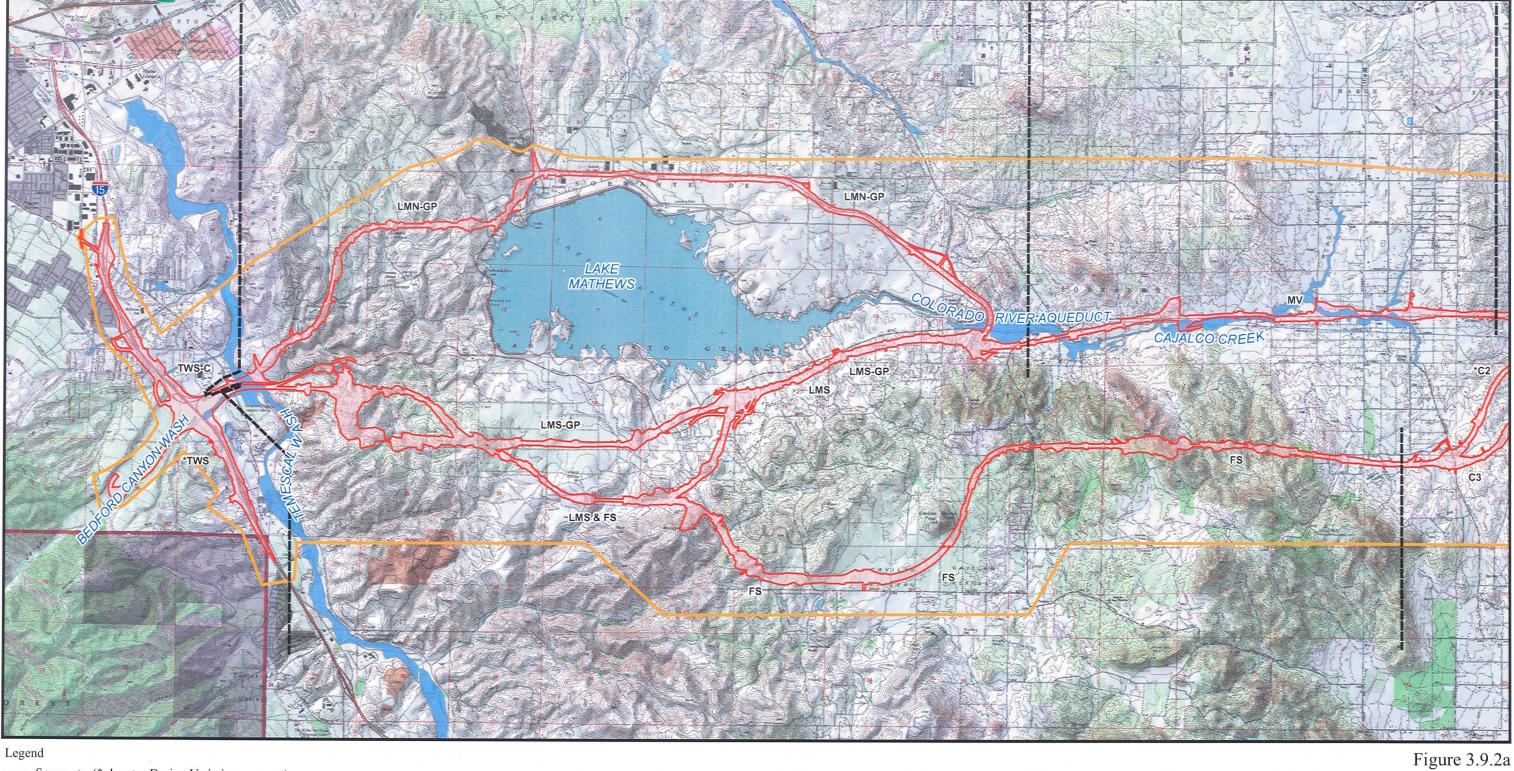
Bedford Canyon Wash

A tributary to Temescal Wash, Bedford Canyon Wash is a mapped Zone A floodplain from the east side of Interstate 15 (I-15) to its confluence with Temescal Wash. Flood elevation for this area is defined on the FIRM as "flooding between 0.3 m and 0.9 m (1 and 3 ft) by approximate methods." No official Base Flood Elevation has been established for Bedford Canyon Wash.

Cajalco Creek

Cajalco Creek is within a mapped Zone A floodplain. From its headwaters in the northeast portion of the Estelle Mountains, Cajalco Creek flows westerly through the Mead Valley and into Lake Mathews. Recent improvements at Cajalco Road and El Sobrante Road include a dam and detention basin. Because of these improvements, a Letter of Map Revision has been issued that amends the floodplain to the north side

A debris nose is a stand-alone wall located next to the pier wall on the upstream side that prevents loose rocks or other large debris carried by the current from directly hitting and damaging the pier wall.



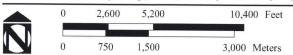
--- Segments (* denotes Design Variation segment)

Right-of-Way (All Alternatives)

Study Area

Special Flood Hazard Areas (100-Year Floodplain)

SOURCE: USGS, Jacobs Engineering (02/2007), FEMA Q3 Flood Data (1995); FEMA Flood Insurance Rate Map (1980, revised 1996)





Chapter 3	Affected Environment,	Environmental	Consequences,	and Mitigation	Measures
-----------	-----------------------	---------------	---------------	----------------	----------



Legend

--- Segments (* denotes Design Variation segment)

Right-of-Way (All Alternatives)

Study Area

Special Flood Hazard Areas (100-Year Floodplain)

SOURCE: USGS, Jacobs Engineering (02/2007), FEMA Q3 Flood Data (1995); FEMA Flood Insurance Rate Map (1980, revised 1996)









hapter 3 Aff	fected Environment,	Environmental	Consequences,	and Mitigation Measures	
--------------	---------------------	---------------	---------------	-------------------------	--

of Cajalco Road at El Sobrante Road. From approximately 185 m (605 ft) west of to 95 m (310 ft) east of Harley John Road, the Cajalco Creek floodplain straddles Cajalco Road. Cajalco Road and Cajalco Creek diverge east of Harley John Road. Approximately 1.75 km (1.1 mi) farther east, the creek and road converge again. At Wood Road, and easterly for 1.5 km (0.94 mi), the creek lies on the south side of the road, adjacent to the toe of the existing slope. The creek crosses to the north side of Cajalco Road just west of Barton Road. The floodplain is approximately 265 m (870 ft) wide at this point. Roughly 170 m (560 ft) east of Alexander Street, Cajalco Creek returns to flow against the north side of Cajalco Road. At Brown Street, the floodplain crosses to the south side of Cajalco Road and then lies on both sides of the road to a point 200 m (660 ft) east of Clark Street.

Perris Valley Storm Drain

The Perris Valley Storm Drain is within a mapped Zone A1 floodplain. The Perris Valley Storm Drain collects runoff from the City of Moreno Valley, the City of Perris, and unincorporated Riverside County, and then drains into the San Jacinto River. The total tributary drainage area served by the Perris Valley Storm Drain is approximately 220 sq km (85 sq mi). Topographical relief ranges from steep foothill terrain to mild sloping valley terrain.

San Jacinto River

The San Jacinto River is within a mapped Zone X floodplain. The San Jacinto River originates approximately 48.7 km (20.4 mi) east-southeast of the MCP study area in the San Jacinto Mountains and flows through the area from the east. The section of the San Jacinto River floodplain that parallels the MCP study area has a natural curving watercourse that supports a moderate amount of low-lying vegetation, including native grasses, shrubs, and trees along the low-flow channel. The San Jacinto River floodplain is approximately 1,500 m (approximately 4,921 ft) wide and flat and is dominated by low brush grasses and farmland.

3.9.2.3 Beneficial Uses

Floodplains and wetlands in their natural or relatively undisturbed state serve water resource values (e.g., natural moderation of floods, water quality maintenance, groundwater recharge), living resource values (e.g., fish, wildlife, plant species), and cultural resource values (e.g., open space, archaeological, historical natural beauty, scientific study, outdoor education, recreation). Beneficial uses for surface waters are defined in the Santa Ana River Basin Water Quality Control Plan as various ways that water can be used for the benefit of people and/or wildlife. Examples of beneficial

uses include municipal and domestic water supply (MUN); agricultural water supply (AGR); industrial service supplies (IND); industrial process supply (PROC); groundwater recharge (GWR); water contact recreation (REC1); non-contact water recreation (REC2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); rare, threatened, or endangered species habitat (RARE); and spawning habitat (SPWN). Table 3.10.A, presented later in Section 3.10, Water Quality and Storm Water Runoff, lists the beneficial uses of surface waters within the MCP study area that may be affected by the MCP project.

3.9.3 Environmental Consequences

3.9.3.1 Permanent Impacts

Build Alternatives

Floodplain Encroachment

A transverse encroachment would result from construction, or placement of fill, in the base floodplain perpendicular to the direction of flow. Impacts associated with a transverse encroachment would include bridge piers, abutments, and flood control improvements constructed within the base floodplain. A longitudinal encroachment would result from a bridge, levee, or road constructed parallel to the existing floodplain. A longitudinal encroachment may require realignment or channelization of an existing creek, thereby affecting more of the floodplain area than a transverse encroachment. Transverse and longitudinal encroachments of the floodplain are discussed below, by segment first, and then summarized by alternative alignment. If more than one encroachment would occur within a segment, each encroachment is discussed separately. Segments differentiated by a design variation are discussed together if the design variation does not substantially change the impact to the floodplain.

Table 3.9.A summarizes the floodplain encroachment by segment for each MCP Build Alternative. These encroachments are discussed in detail below. However, the base floodplain within the following segments would not be affected by any of the MCP Build Alternatives and therefore would not create any impacts related to floodplains. Consequently, they are not discussed further in this section.



- Far South (FS) Segment
- Connector Perris 1 (C1), Connector Perris 2 (C2), and Connector Perris 3 (C3) Segments
- Rider Street (RD) Segment

Table 3.9.A Summary of Proposed Transverse and Longitudinal Floodplain Encroachments by Segment and Build Alternative

Alternative								MC	MCP Segments	ments								
Number	Aiternative Name	TWS-C TWS	TWS	LMS	LMN-GP	LMS-GP	≥	FS	C1	C 5	ខ	S C	8	PP-D	PP-E	ſS	SJN	SJS
4	South of Lake Mathews/ North Perris (Drain)	끧	TE	뮐	N/A	N/A	LE	N/A	N/A	N/A	N/A	TE	N/A	N/A	N/A	TE	LE	LE
ß	South of Lake Mathews/ South Perris (at Rider Street)	21	TE	Ä	N/A	N/A	LE	N/A	NE	N/A	N/A	N/A	NE	N/A	N/A	TE	LE	9
9	General Plan North and South of Lake Mathews/ North Perris (Drain)	31	TE	N/A	TE	11	TE	N/A	N/A	N/A	N/A	2	N/A	N/A	N/A	正	ш	삨
2	General Plan North and South of Lake Mathews/ South Perris (at Rider Street)	TE	TE	N/A	TE	Ŧ	9	N/A	N N	A/A	Ą N	Ą Z	ШZ	A/A	N/A	2	3	E
6	Far South/ Placentia Avenue	11	TE	N/A	N/A	N/A	N/A	R	N/A	뷜	빌	N/A	Ä	밀	밑	쁘	ᄪ	9
Course land	Source: Jacobe June 2008																	

MCP Segment Abbreviations: Source: Jacobs, June 2006.

C1 = Connector Perris 1

C2 = Connector Perris 2 (Design Variation) C3 = Connector Perris 3

LE = Longitudinal Encroachment NE = No Encroachment TE = Transverse Encroachment N/A = Not Part of Alternative

FS = Far South

LMN-GP = Lake Mathews North General Plan

LMS = Lake Mathews South Segment LMS-GP = Lake Mathews South General Plan

MV = Mead Valley

PD = Perris Drain

PP-D = Placentia Avenue/Perris Boulevard Depressed PP-E = Placentia Avenue/Perris Boulevard Elevated Grade (Design Variation) RD = Rider Street

SJ = San Jacinto

SJN = San Jacinto North
SJS = San Jacinto South
TWS = Temescal Wash Area (Design Variation)
TWS-C = Temescal Wash Area with Collector-Distributor Roads



3.9-13

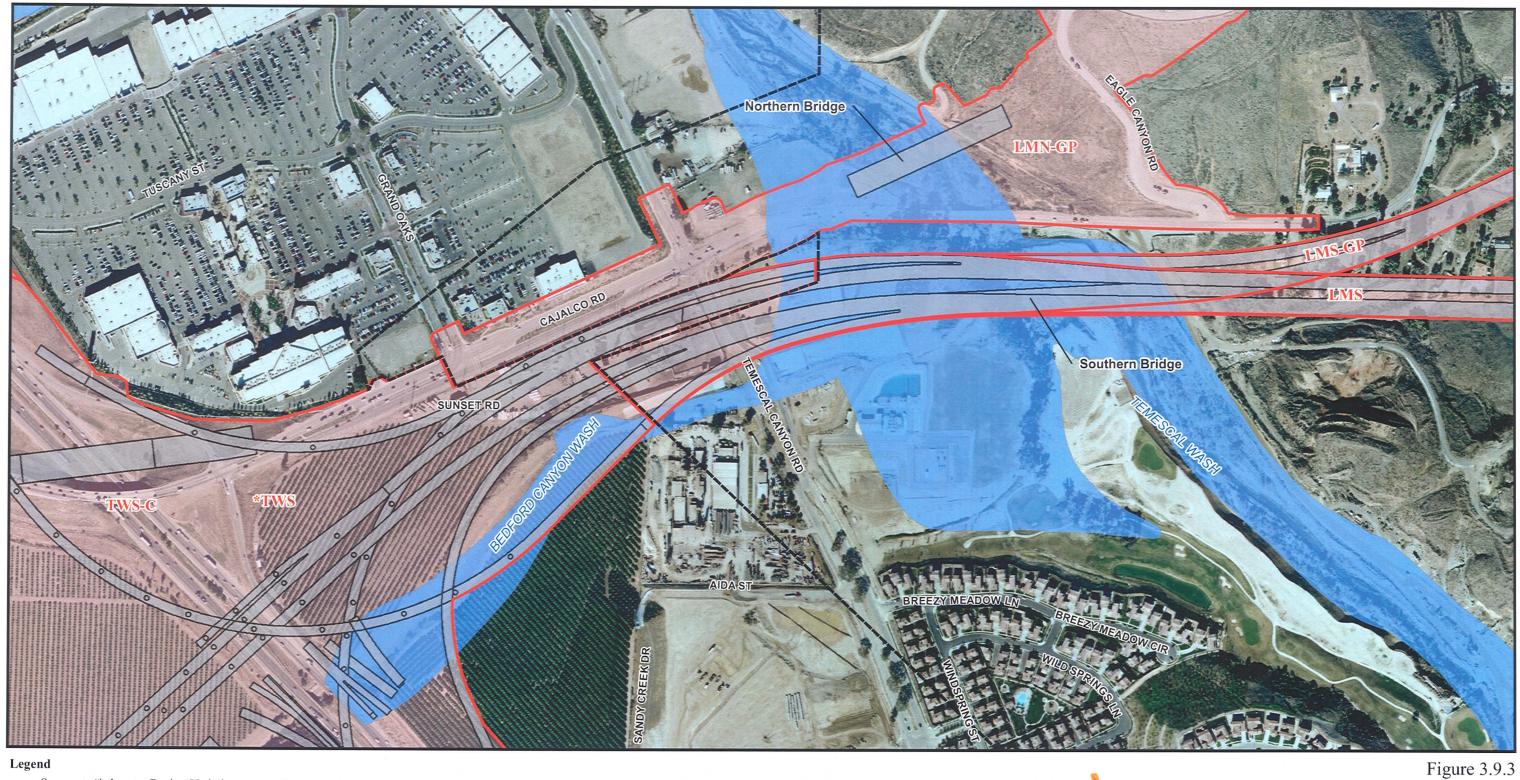
Temescal Wash Area with Collector-Distributor Roads (TWS-C)/Temescal Wash Area (TWS) Segment

Two crossings of the Temescal Wash floodplain are proposed in the Temescal Wash Area. The northern bridge is proposed along the northern general plan alignment as a realignment of the existing Cajalco Road (see the Lake Mathews North General Plan [LMN-GP] Segment). Three 100-year floodplains are mapped in the Temescal Wash Area: Temescal Wash, El Cerrito Road, and Bedford Canyon Wash. The El Cerrito Road and Bedford Canyon Wash floodplains would be spanned by the proposed bridges, and no encroachment would occur. The proposed southern bridge in the TWS-C/TWS Segment is a high-elevation flyover connection with I-15 south of the existing Cajalco Road alignment. This bridge spans three segments: the TWS-C/TWS, the Lake Mathews South General Plan (LMS-GP), and the Lake Mathews South (LMS). Figure 3.9.3 shows the location of the proposed bridge in relation to the segment boundaries. The southern bridge over the Temescal Wash floodplain in the TWS-C/TWS Segment is a transverse crossing of the 100-year floodplain. No embankments would be constructed in the floodplain, and no longitudinal encroachment would occur at these two bridges.

The northbound-to-eastbound, southbound-to-eastbound, and westbound-to-southbound connectors to and from I-15 would cross over the Bedford Canyon Wash floodplain. Two of the connectors are flyovers and would have little to no floodplain impact. The principal floodplain impact would occur from the northbound I-15 to the eastbound MCP connector.

Because the wash is restricted under the existing I-15 bridge, the width of the floodplain is a result of the rapid expansion and deceleration of the flow as it exits the bridge. Bridge abutments and drainage outfall structures would need to be placed within the 100-year floodplain. To protect the proposed bridge, there would likely be some embankment/levees constructed between the I-15 bridge and the proposed bridge as well as scour protection at the two new abutments. Channelization would be designed to retain the 100-year floodplain between the banks of the wash without diminishing the flood protection upstream of the improvements. The proposed bridge is not a longitudinal encroachment. A Letter of Map Revision will be necessary to redefine the floodplain map for the affected portions of Bedford Canyon Wash. The Letter of Map Revision would show that the 100-year flow is conveyed between the bridges and does not increase the water surface elevation downstream of the project.





Legend

-

--- Segment (* denotes Design Variation segment)

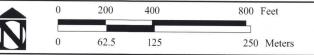
Right-of-Way (All Alternatives)

Study Area

Bridges (All Alternatives)

Special Flood Hazard Areas (100-Year Floodplain)

SOURCE: USGS, Jacobs Engineering (02/2007), FEMA Flood Insurance Rate Map (1980, revised 1996), Air Photo USA (02/06)



Temescal Wash KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3	Affected Environment,	Environmental	Consequences,	and Mitigation	Measures
-----------	-----------------------	---------------	---------------	----------------	----------

Lake Mathews South (LMS) Segment

As described above and shown in Figure 3.9.3, the proposed Temescal Wash southern bridge spans three segments: the TWS-C/TWS, the LMS-GP, and the LMS. The bridge over the Temescal Wash floodplain in the LMS Segment is a transverse crossing of the 100-year floodplain. No embankments would be constructed in the floodplain, and no longitudinal encroachment would occur.

Lake Mathews North General Plan (LMN-GP) Segment

The western abutment of the northern bridge in the LMN-GP Segment would be constructed within the floodplain. Bridge abutments in the floodplain are not considered a longitudinal floodplain encroachment. The eastern abutment of the northern bridge would be outside of the mapped floodplain in the LMN-GP Segment. The proposed northern bridge over the Temescal Wash floodplain in the LMN-GP Segment is a transverse crossing of the 100-year floodplain, and no longitudinal encroachment would occur.

Lake Mathews South General Plan (LMS-GP) Segment

As described above and shown in Figure 3.9.3, the eastern terminus of the proposed Temescal Wash southern bridge is in the LMS-GP Segment. The southern bridge over the Temescal Wash floodplain in the LMS-GP Segment is a transverse crossing of the 100-year floodplain. No embankments would be constructed in the floodplain, and no longitudinal encroachment would occur.

Mead Valley (MV) Segment

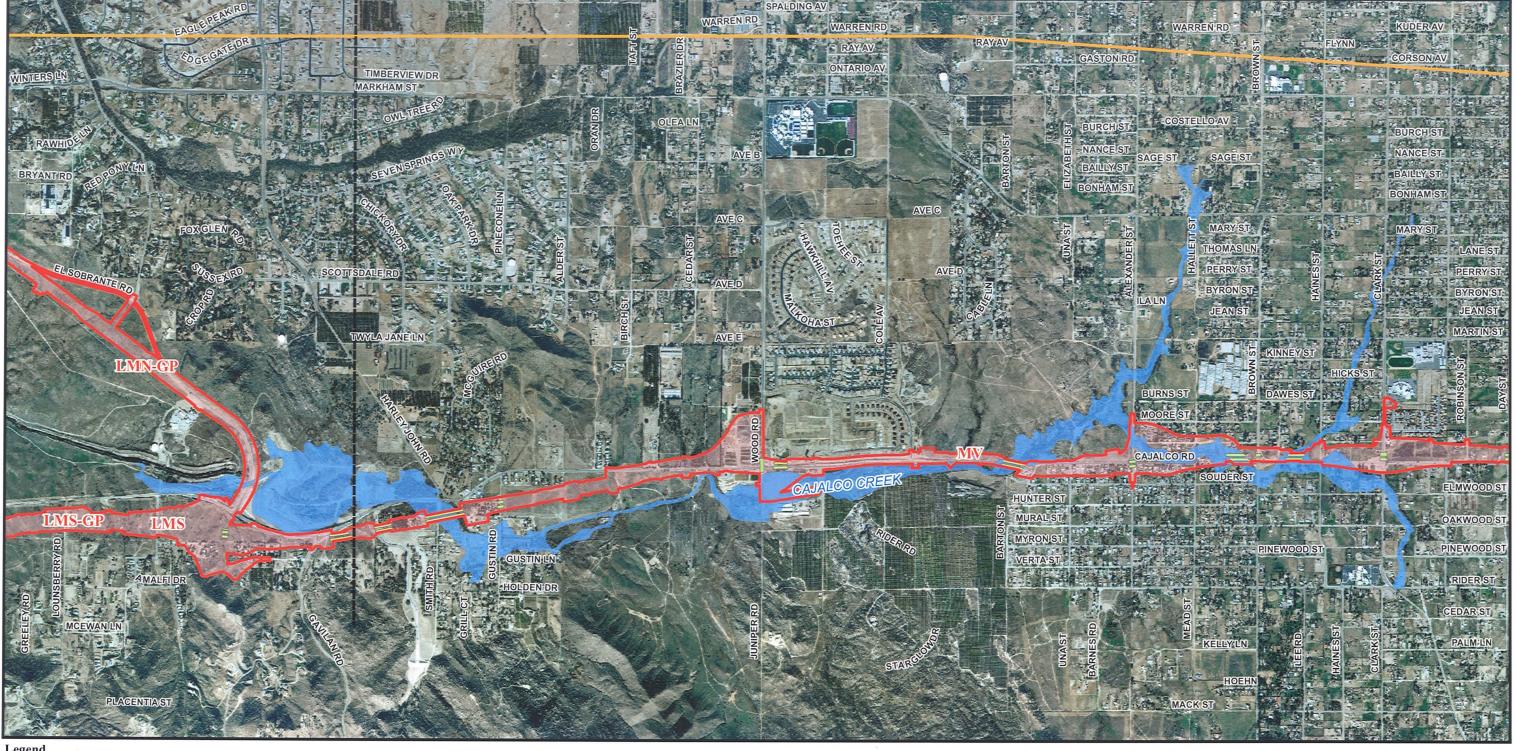
The existing Cajalco Creek floodplain and proposed bridges under MCP Build Alternatives 4–7 are shown in Figure 3.9.4. The proposed bridge over Cajalco Creek at Smith Road in the MV Segment is a transverse crossing of the 100-year floodplain and would be designed to span the 100-year floodplain. The bridge deck would be approximately 7.5 m (25 ft) above the existing ground at the lowest point. No embankments would be constructed in the floodplain, and no longitudinal encroachment would occur.

Between Clark Avenue and Alexander Road (Station 288+00 to Station 335+00)

At this location under Alternatives 4–7, the MCP project would longitudinally encroach into the existing 100-year floodplain of Cajalco Creek at several locations within an approximately 47 m (154 ft) segment between Clark Avenue and Alexander Road (Figure 3.9.4). In this area, the MCP project would be







Legend

--- Segments

Right-of-Way (All Alternatives)

Study Area

Bridges - Alternatives 4, 5, 6 and 7

Special Flood Hazard Areas (100-Year Floodplain)

SOURCE: TBM (2007), Jacobs Engineering (02/2007), LSA (2007), FEMA Q3 Flood Data (1995); FEMA Flood Insurance Rate Map (1980, revised 1996), Air Photo USA (02/06)

	0	1,000	2,000	4,000 Feet
N	0	300	600	1,200 Meters

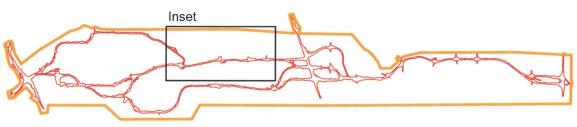


Figure 3.9.4



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

constructed using a series of bridges and viaducts along Cajalco Creek that would be designed to span the floodplain to the extent practical. Retaining walls and levees would be used to minimize impacts to the floodplain in areas where Cajalco Creek is longitudinally adjacent to the MCP project. Channelization of Cajalco Creek would be required from Alexander Street to Brown Street.

Perris Drain (PD) Segment

There would be no longitudinal encroachment within the floodplain of the Perris Valley Storm Drain in the PD Segment because the MCP project would be on structure for the entire length of the floodplain in this area. No embankments would be constructed in the floodplain. Bridge piers may result in a transverse encroachment of the floodplain in this segment. The proposed bridge location with respect to the existing base floodplain is shown in Figure 3.9.5.

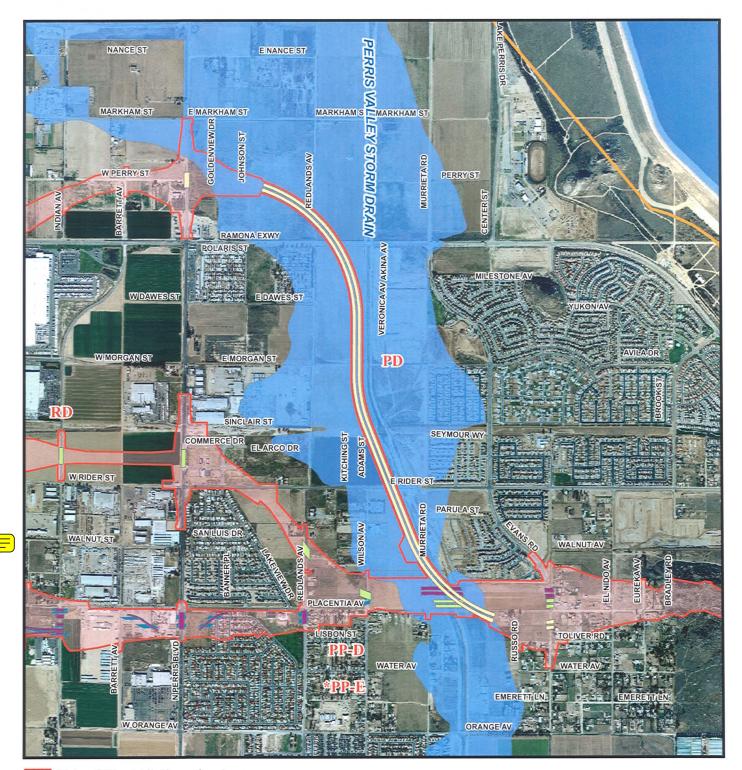
Placentia Avenue/Perris Boulevard Depressed (PP-D) and Placentia Avenue/Perris Boulevard Elevated (PP-E) Segments

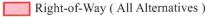
There would be no longitudinal encroachment within the floodplain at this location because the bridge would span the Perris Valley Storm Drain at a skew angle of approximately 21 degrees (see Figure 3.9.5). No embankments would be constructed in the floodplain, and no longitudinal encroachment would occur. Bridge piers and abutments may result in a transverse encroachment of the floodplain in this segment.

San Jacinto (SJ) Segment

There are two floodplain crossings of the San Jacinto River in the SJ Segment. The first is at the San Jacinto Bridge west of Lakeview Avenue. This bridge over the San Jacinto River is a transverse crossing of the 100-year floodplain. No embankments would be constructed in the floodplain, and no longitudinal encroachment would occur. Figure 3.9.6 shows the existing floodplain and the proposed bridge over the San Jacinto River west of Lakeview Avenue.

The second floodplain crossing in this segment is a roadway encroachment east of Lakeview Avenue. According to the current FEMA FIRMs for this area, the MCP project would encroach into the floodplain east of the Lakeview Avenue bridge in the SJ Segment. However, according to the Riverside County Flood





Study Area

Special Flood Hazard Areas (100-Year Floodplain)

Bridges - Alternatives 4 and 6

Bridges - Alternatives 5, 7 and 9

Bridges - Alternative 9

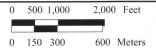
Design Variation PPE Bridges - Alternative 9

Figure 3.9.5

(* denotes Design Variation segment)

SOURCE: TBM (2007), Jacobs Engineering (2007), FEMA Q3 Flood Data (1995); FEMA Flood Insurance Rate Map (1980, revised 1996), Air Photo USA (2006)

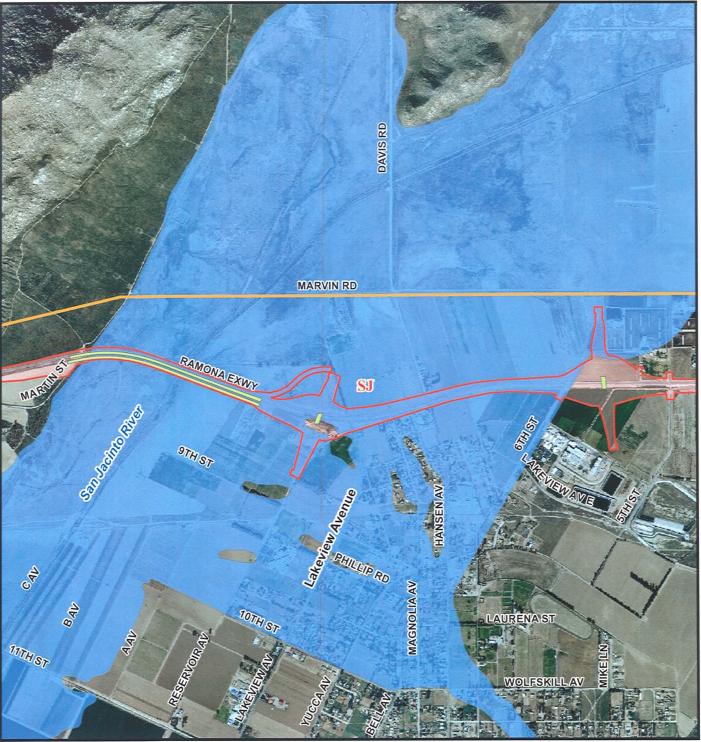




Perris Valley Storm Drain

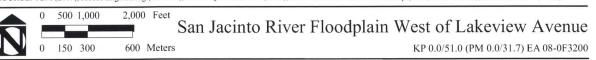
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200







SOURCE: TBM (2007), Jacobs Engineering (02/2007), FEMA Q3 Flood Data (1995); FEMA Flood Insurance Rate Map (1980, revised 1996), Air Photo USA (02/06)



Control District (RCFCD),¹ a future reservoir is planned to be constructed near Lakeview Avenue that would remove the 100-year floodplain from the area east of Lakeview Avenue. Therefore, no longitudinal encroachment would occur in this area after the reservoir is completed. The RCFCD has not established a schedule for construction of this reservoir. Bridge piers may result in a transverse encroachment of the floodplain in this segment.

San Jacinto North (SJN) Segment

There are three floodplain crossings of the San Jacinto River floodplain in the SJN Segment. The first is a roadway encroachment where the MCP project would be constructed on elevated ground approximately 3 to 8 m (10 to 26 ft) above the existing ground. As shown in Figure 3.9.7, the MCP roadway in this area would longitudinally encroach into the existing 100-year floodplain of the San Jacinto River in an approximately 4.8 km (3.0 mi) segment, extending westerly from State Route (SR-79) to Warren Road. The proposed MCP design would provide a minimum freeboard (distance between the water surface and the bottom of the bridge deck) of 1.47 m (4.82 ft).

The second floodplain crossing is at the Sanderson Avenue bridge crossing of the San Jacinto River. The existing San Jacinto River crossing at Sanderson Avenue is a four-lane bridge approximately 21 m (69 ft) wide and 374 m (1,226 ft) long. The MCP project would widen the existing Sanderson Avenue Bridge to 34.8 m (114.2 ft). The proposed widening of the Sanderson Avenue Bridge would result in a longitudinal floodplain encroachment because the abutments would be constructed within the floodplain. The existing condition at this bridge provides at least 0.3 m (1.0 ft) of freeboard during the 100-year storm event. The widened bridge constructed for the MCP project would be similar in orientation to the existing Sanderson Avenue bridge and would provide a minimum freeboard of 0.23 m (0.75 ft). Figure 3.9.7 shows the location of the proposed bridge widening.

The third floodplain crossing results from the SR-79 connector bridges encroachment. The MCP project proposes two connector bridges to SR-79 in the SJN Segment (Figure 3.9.7). The SR-79 southbound/MCP westbound bridge would be 1,081 m (3,547 ft) long and 11.7 m (38.4 ft) wide. The SR-79 northbound/MCP westbound bridge would be 1,555 m (5,102 ft) long and 13.2 m (43.3 ft) wide. The proposed connector bridges would result in a longitudinal

¹ Floodplain Evaluation Report, Mid County Parkway, LSA Associates, Inc., 2008.





Segments (* denotes Design Variation segment)

— Cut — Fill

Right-of-Way (All Alternatives)

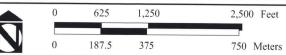
ternatives)

Study Area
Bridges - All Alternatives

Bridges - Design Variation SJN*

Special Flood Hazard Areas (100-Year Floodplain)

SOURCE: USGS, Jacobs Engineering (02/2007), FEMA Flood Insurance Rate Map (1980, revised 1996), Air Photo USA (02/06)





San Jacinto River at Mid County Parkway/ State Route 79 Interchange KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



Figure 3.9.7

Chapter 3 A	Affected Environment.	Environmental Consequences,	and Mitigation Measures
-------------	-----------------------	-----------------------------	-------------------------

floodplain encroachment because the abutments would be constructed within the floodplain. The minimum freeboard at the proposed westbound connector is 0.96 m (3.15 ft). The minimum freeboard at the proposed eastbound connector bridge is 0.91 m (2.99 ft).

San Jacinto South (SJS) Segment

There are three floodplain crossings of the San Jacinto River in the SJS Segment. The first is a roadway encroachment where the MCP project would be constructed on elevated ground approximately 3 to 8 m (10 to 26 ft) above the existing ground. As shown on Figure 3.9.7, the MCP roadway in this area would longitudinally encroach into the existing 100-year floodplain of the San Jacinto River in an approximately 4.8 km (3.0 mi) segment, extending westerly from SR-79 to Warren Road. The proposed MCP design would provide a minimum freeboard of 1.21 m (3.97 ft).

The second crossing is at the Sanderson Avenue Bridge crossing of the San Jacinto River. The existing San Jacinto River crossing at Sanderson Avenue is a four-lane bridge approximately 21 m (69 ft) wide and 374 m (1,226 ft) long. The MCP project would widen the existing Sanderson Avenue Bridge to 34.8 m (114.2 ft). The proposed widening of the Sanderson Avenue Bridge would result in a longitudinal floodplain encroachment because the abutments would be constructed within the floodplain. The existing condition at this bridge provides at least 0.3 m (1.0 ft) of freeboard during the 100-year storm event. The widened bridge constructed for the MCP project would be similar in orientation to the existing Sanderson Avenue bridge and would provide a minimum freeboard of 0.28 m (0.92 ft). Figure 3.9.7 shows the locations of the proposed bridge widening.

The third floodplain crossing results from the SR-79 connector bridges encroachment. The MCP project includes two proposed connector bridges to SR-79 in the SJS Segment (Figure 3.9.7). The SR-79 southbound/MCP westbound bridge would be 1,247 m (4,091 ft) long and 11.7 m (38.4 ft) wide. The SR-79 northbound/MCP westbound bridge would be 1,623 m (5,325 ft) long and 9.6 m (31.5 ft) wide. The proposed connector bridges would result in a longitudinal floodplain encroachment because the abutments would be constructed within the floodplain.

Comparison of Alternatives

As discussed above and shown previously in Table 3.9.A, Alternative 6 would result in the most floodplain encroachments (five transverse and five longitudinal). Alternatives 5 and 9 would result in the fewest floodplain encroachments (two transverse and five longitudinal for Alternative 5, and three transverse and four longitudinal for Alternative 9).

Transverse Floodplain Encroachments

Alternatives 4, 5, and 9 would avoid the transverse encroachment of the Temescal Wash floodplain associated with construction of the northern bridge in the LMN-GP Segment.

All of the alternatives would result in a transverse encroachment of the Bedford Canyon Wash floodplain between I-15 and Temescal Wash.

Alternatives 4 and 6 are the only MCP Build Alternatives that involve a transverse encroachment of the Perris Valley Storm Drain floodplain in the PD Segment (associated with bridge piers constructed in the floodplain). Alternatives 5, 7, and 9 would avoid this impact.

Alternative 9 is the only MCP Build Alternative that would create a transverse encroachment of the Perris Valley Storm Drain in the PP-D and PP-E Segments. Alternative 9 avoids the transverse encroachment of the Temescal Wash floodplain associated with construction of the northern bridge in the LMN-GP Segment and the transverse encroachment of the Perris Valley Storm Drain floodplain in the PD Segment.

All of the MCP Build Alternatives would create a transverse encroachment of the San Jacinto River floodplain west of Lakeview Avenue.

Longitudinal Floodplain Encroachments

All of the MCP Build Alternatives (4, 5, 6, 7, and 9) would result in a similar longitudinal encroachment of the floodplain of the San Jacinto River in the SJN and SJS Segments caused by the construction of the elevated roadway, connector bridge embankments, and the Sanderson Avenue bridge widening. None of the MCP Build Alternatives avoid this encroachment.

Alternatives 4, 5, 6, and 7 would result in longitudinal encroachment of the floodplain of Cajalco Creek in the MV Segment at several locations within an



approximately 47 m (154 ft) segment between Clark Avenue and Alexander Road. The proposed roadway is a series of bridges and viaducts along Cajalco Creek that would be designed to span the floodplain to the extent practical. Retaining walls and levees would be used to minimize impacts to the floodplain in areas where Cajalco Creek is longitudinally adjacent to the MCP project. Channelization of Cajalco Creek would be required from Alexander Street to Brown Street.

Alternative 9 would avoid the longitudinal encroachment to the floodplain of Cajalco Creek in the MV Segment and would therefore result in the least longitudinal encroachment impacts to existing floodplains. However, Cajalco Road in the MV Segment is currently overtopped by the 100-year flow in Cajalco Creek, and Alternative 9 would not have the beneficial effect of improving the existing flooding condition in this area.

Emergency Response

The MCP project would improve the transportation network in the area and would alleviate existing service interruptions caused by flooding because the MCP facility would be elevated higher than the existing facilities. The MCP project would enhance the ability to move fire protection and emergency service resources from one area to another by providing a reliable roadway network. Operation of the MCP project would not result in interruption of emergency services or routes and would improve access throughout the region during a flood event.

Risks to Life and Property

The implementation of the proposed MCP project would result in a minimal change in the capacity of the San Jacinto River, Cajalco Creek, Temescal Wash, and Perris Valley Storm Drain to carry water by placing piers in these waterways and would improve existing flooding conditions in the MCP project area by providing improved highway crossings of these floodplains. The channelization of a small segment of Bedford Canyon Wash would protect the bridge abutments of the proposed northbound I-15 to eastbound MCP connector and would not reduce upstream flood protection or increase downstream water elevation. The proposed MCP project would result in a minimal increase in flood heights and flood limits. This minimal increase would not result in any substantial change in flood risks or damage to life or property.



Natural and Beneficial Floodplain Values

The beneficial uses of surface waters within the MCP study area that may be affected by the MCP project are listed in Table 3.10.A in Section 3.10 of this EIR/EIS. There are no defined present beneficial uses within the MCP study area that would be directly affected by the MCP project. Only intermittent uses have been defined within the MCP study area, most likely because the water courses in the area experience seasonal, intermittent flow and are dry in the summer. Impacts to natural and beneficial floodplain values include direct impacts caused by grading, construction, and operation of the MCP project. MCP project impacts to wetlands and other waters of the United States are discussed in Section 3.18, Wetlands and Other Waters. Project impacts to water quality and beneficial uses are discussed in Section 3.10, Water Quality and Storm Water Runoff. Bridge abutments and piers would be located to avoid or minimize impacts to jurisdictional waters of the United States to the greatest extent feasible, thus preserving natural resource values. Compensatory mitigation for impacts to wetlands and other floodplain values would help to reduce impacts to water resource beneficial floodplain values. In addition, earthen-channel bottoms would be retained to the extent practical to provide flood protection for adjacent areas. Therefore, implementation of the MCP project would not result in substantial impacts to natural and beneficial floodplain values.

No Build Alternatives

Under Alternative 1A, the MCP project would not be constructed. Planned improvements in the regional and local circulation system, as accounted for in the adopted Riverside County General Plan, RCTC's Measure A program, and other adopted plans and policies, would be implemented assuming 2035 land use conditions. Alternative 1B is the same as Alternative 1A but includes implementation of Cajalco Road and Ramona Expressway, consistent with the Riverside County General Plan Circulation Element.

Individual projects in the MCP No Build Alternatives may result in floodplain encroachment. New roadway projects such as the SR-79 Realignment project would likely result in similar impacts to existing floodplains as those identified for the MCP Build Alternatives, while projects that widen existing facilities (e.g., I-15 Widening and I-215 Widening projects) are less likely to result in any floodplain encroachments.



The MCP No Build Alternatives would not have the beneficial effect of alleviating existing transportation service interruptions caused by flooding. Although some

projects included in the MCP No Build Alternatives may enhance the ability to move fire protection and emergency service resources from one area to another, they would not provide the benefit of a regional transportation facility like the MCP project.

Risks to Life or Property

The MCP No Build Alternatives include measures to improve the transportation network and would likely improve existing flooding conditions in areas where existing roadway encroachments into existing floodplains are improved.

Under the MCP No Build Alternatives, impacts to natural and beneficial floodplain values include direct impacts caused by grading, construction, and operation of the projects proposed in the city and county General Plan Circulation Elements. For these projects, it is assumed that proposed bridge abutments and piers would be located to avoid or minimize impacts to jurisdictional waters of the United States to the greatest extent feasible, thus preserving natural resource values. Compensatory mitigation for impacts to wetlands and other floodplain values would be required by regulatory agencies to reduce impacts to water resource beneficial floodplain values. In addition, earthen-channel bottoms would be retained to the extent practical to provide flood protection for adjacent areas. Therefore, implementation of the MCP No Build Alternatives is not expected to result in substantial impacts to natural and beneficial floodplain values.

Discussion of Impacts Relative to MSHCP Amendment

Hydrology and floodplains was determined not to be a topic of concern and was therefore not analyzed in the Multiple Species Habitat Conservation Plan (MSHCP) EIR/EIS. An amendment to the MSHCP to provide coverage for Alternative 9 TWS DV (the Locally Preferred Alternative) would not change the conclusion of the MSHCP EIR/EIS related to hydrology and floodplains.

3.9.3.2 Temporary Impacts

Build Alternatives

The possibility of erosion during construction of the MCP project is discussed in detail later in Section 3.10, Water Quality and Storm Water Runoff. Best Management Practices (BMPs) would be used to control erosion during construction. The construction BMPs would be described in the Storm Water Pollution Prevention Plan and illustrated on the construction plans. Existing general drainage patterns would be maintained during construction, although temporary detours around facilities undergoing reconstruction would occur. Temporary detention basins would

be used, if necessary, to prevent localized flooding. The BMPs used to control direct impacts would be effective at controlling indirect impacts related to erosion, drainage patterns, and flooding during construction of the MCP project.

No Build Alternatives

Under the MCP No Build Alternatives, the MCP project would not be constructed, and temporary impacts to hydrology and floodplains would not occur. However, construction of other projects that would occur under the MCP No Build Alternatives would result in similar temporary impacts to those described for the MCP project.

3.9.4 Avoidance, Minimization, and/or Mitigation Measures

Discussions of each affected floodplain are described in Section 3.9.3, Environmental Consequences. Measures to minimize impacts to these floodplains were considered as part of the design of the MCP project and were described in detail previously in Chapter 2.0, Project Description, of this EIR/EIS. These project design features include the following: (1) elevated flyover bridges and a series of viaducts and culverts have been incorporated into project plans and designed to span the floodplains in the MCP study area to the maximum extent practical; (2) retaining walls and levees have been designed to minimize impacts to the floodplain in areas where the proposed roadway would be longitudinally adjacent to the base floodplain; (3) earthen-channel bottoms would be retained to the extent practical to provide flood protection for adjacent areas; and (4) bridge abutments and piers have been incorporated into project plans to avoid or minimize impacts to jurisdictional waters of the United States, thus preserving natural resource values (see Appendix I, Attachment D, for additional detail regarding considerations during bridge design for waters and wetlands).

Compensatory mitigation for impacts to wetlands and other floodplain values would help to reduce impacts to water resource beneficial floodplain values, as described in Section 3.18, Wetlands and Other Waters.

Water quality and flood control basins would be used to lessen impacts to water quality and beneficial uses, as described in Section 3.10, Water Quality and Storm Water Runoff.

3.10 Water Quality and Storm Water Runoff



The information in this section is based on the *Water Quality Assessment Report* (LSA Associates, Inc., 2007).

3.10.1 Regulatory Setting

Section 401 of the Clean Water Act (CWA) requires water quality certification from the State Water Resources Control Board (SWRCB) or from a Regional Water Quality Control Board (RWQCB) when the project requires a CWA Section 404 permit to dredge or fill within a water of the United States.

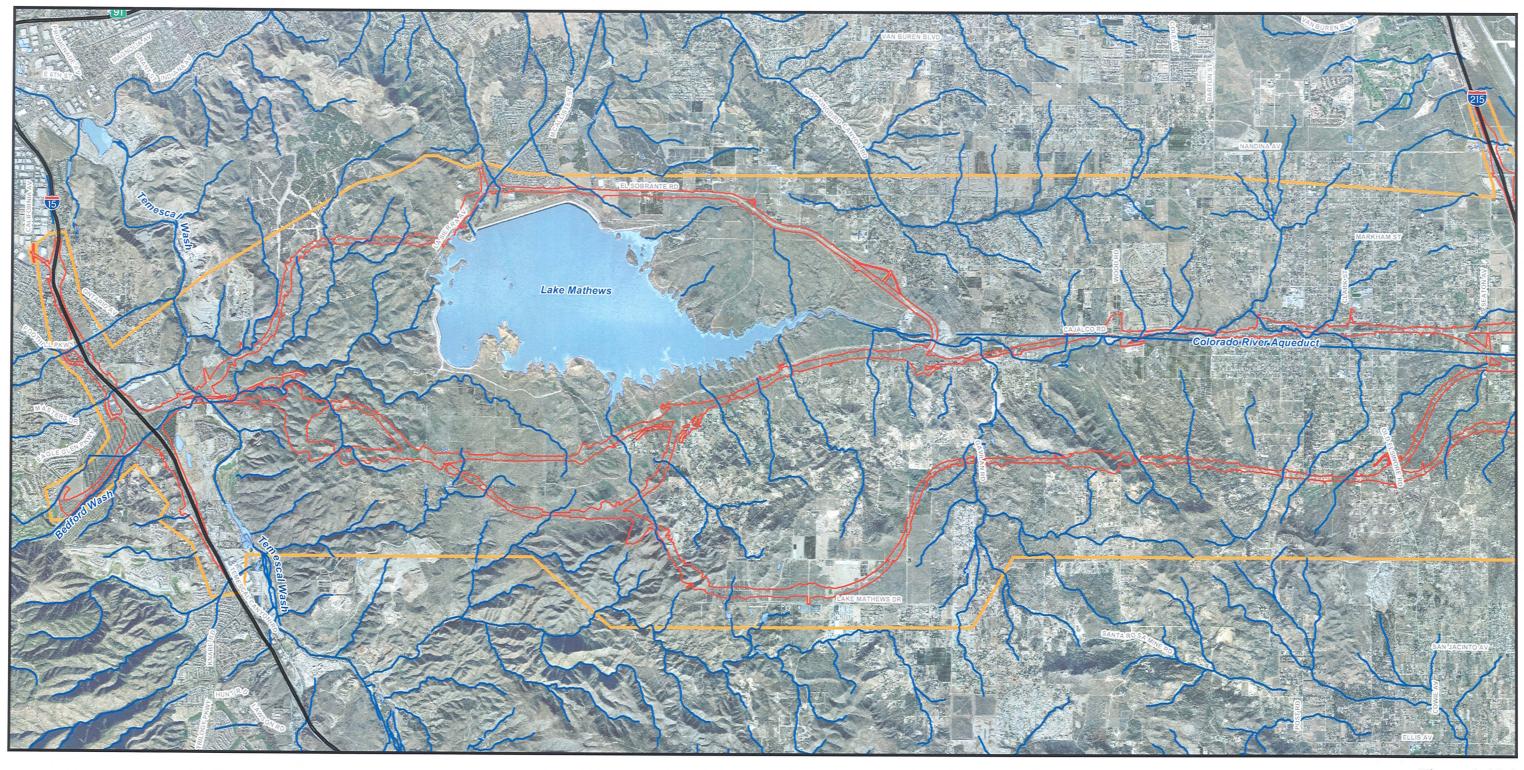
Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency (EPA) has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The SWRCB has developed and issued a statewide NPDES permit to regulate storm water discharges from all California Department of Transportation (Caltrans) activities on its highways and facilities. Caltrans construction projects are regulated under the Statewide permit, and projects performed by other entities on Caltrans right of way (encroachments) are regulated by the SWRCB's Statewide General Construction Permit. All construction projects over 0.4 hectare (ha) (1.0 acre [ac]) require a Storm Water Pollution Prevention Plan (SWPPP) to be prepared and implemented during construction. Caltrans activities less than 0.4 ha (1.0 ac) require a Water Pollution Control Program.

3.10.2 Affected Environment

3.10.2.1 Surface Water

Surface waters in the project area are shown in Figure 3.10.1. The project area is located in Riverside County within the Santa Ana River Watershed and the San Jacinto River Watershed (see previous Figure 3.9.1). The EPA considers both watersheds to be separate, but for some regulatory purposes (such as NPDES permits, Drainage Area Management Plans, etc.), the San Jacinto River Watershed is considered a sub-watershed





Legend

Lake/ Pond / Reservoir
Stream / River

Right-of-Way (All Alternatives)

MCP Study Area

Figure 3.10.1 Sheet 1 of 2

SOURCE: Air Photo USA (2006). TBM (2006), Jacobs Engineering (2/2007), LSA (2006)

0	2,650	5,300	10,600 Feet
0	750	1,500	3,000 Meters

Surface Waters
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

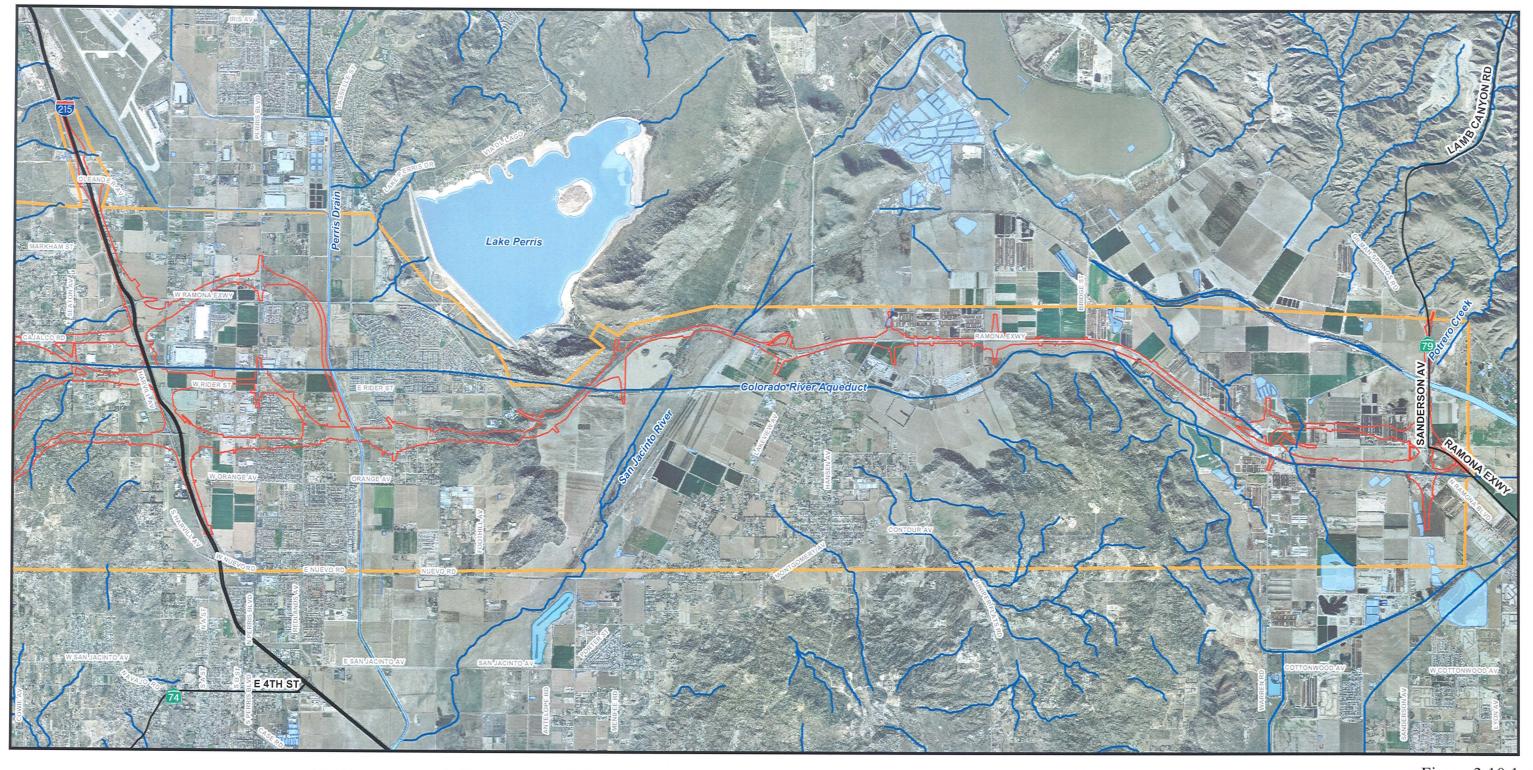


Figure 3.10.1 Sheet 2 of 2

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (2/2007), LSA (2006)

Lake/ Pond / Reservoir Right-of-Way (All Alternatives)

0 2,650 5,300 10,600 Feet 0 750 1,500 3,000 Meters

Legend

- Stream / River

Surface Waters
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

MCP Study Area

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

of the Santa Ana River Watershed. Because these two watersheds present different water quality concerns, they are treated as separate watersheds in this EIR/EIS.

The boundaries of the San Jacinto River Watershed and the Santa Ana River Watershed lie just west of I-215. The eastern part of the project area is in the San Jacinto River Watershed, and the western part of the project area is in the Santa Ana River Watershed (see previous Figure 3.9.1).

Both watersheds are divided into several sub-watersheds. The purpose of hydrologic boundaries is to designate the area within a larger watershed that drains in a particular direction to a particular water body. The project location falls into the following sub-watersheds:

- Santa Ana River Watershed
 - Middle Santa Ana River Hydrologic Area
 - Arlington Sub-Watershed
 - Temescal Sub-Watershed
 - Lake Mathews Hydrologic Area
 - Cajalco Sub-Watershed
 - Bedford Sub-Watershed
- San Jacinto River Watershed
 - Perris Hydrologic Area
 - Perris Valley Sub-Watershed
 - Lakeview Sub-Watershed
 - San Jacinto Hydrologic Area
 - Gilman Hot Springs Sub-Watershed
 - Hemet Sub-Watershed

Santa Ana River Watershed

Within the project area, the primary receiving water is Temescal Wash, which flows to the Santa Ana River (Reach 3) and, ultimately, the Pacific Ocean. Runoff from the project area also drains to Bedford Wash and Lake Mathews. The Santa Ana River Watershed is approximately 7,252 square kilometers (sq km) (2,800 square miles [sq mi]) (including the San Jacinto River Watershed) and extends about 155 kilometers (km) (96 miles [mi]) from its headwaters to where it drains into the Pacific Ocean.

San Jacinto River Watershed

The San Jacinto River is considered a tributary of the Santa Ana River, although it usually terminates at Lake Elsinore. On rare occasions, during high rainfall years, Lake Elsinore overflows into Temescal Creek, which ultimately flows to the Santa Ana River. The San Jacinto River is a permanent stream and runs east to west within the project area. Typical flows range from 16 cubic feet per second (cfs) in the winter to less than 1 cfs during the dry season. The San Jacinto River has a drainage area of approximately 1,857 sq km (717 sq mi), and it extends about 95 km (59 mi) from its headwaters in the San Jacinto Mountains to where it drains into Canyon Lake and then into Lake Elsinore. Also within the San Jacinto River Watershed is Lake Perris, a 939 ha (2,320 ac) reservoir that is part of the State Water Project aqueduct system.

Surface Water Beneficial Uses

Beneficial uses of water are defined in the Santa Ana RWQCB's Santa Ana River Basin Water Quality Control Plan (Basin Plan) (Santa Ana Regional Water Quality Control Board 2005) as the various ways that water can be used for the benefit of people and/or wildlife. Examples of beneficial uses include municipal and domestic water supply (MUN), agricultural water supply (AGR), industrial service supplies (IND), industrial process supply (PROC), groundwater recharge (GWR), water contact recreation (REC1), noncontact water recreation (REC2), warm freshwater habitat (WARM), cold freshwater habitat (COLD), wildlife habitat (WILD), rare, threatened, or endangered species habitat (RARE), and spawning habitat (SPWN).

Beneficial uses of surface waters for the Santa Ana River, San Jacinto River, and associated tributaries and lakes in the project area are shown in Table 3.10.A.

Surface Water Quality Objectives

As required by the Porter-Cologne Water Quality Act, the Santa Ana RWQCB has developed water quality objectives for waters within its jurisdiction to protect the beneficial uses of those waters and has published them in the Basin Plan. The Basin Plan also establishes implementation programs to achieve these water quality objectives and requires monitoring to evaluate the effectiveness of these programs. Water quality objectives must comply with the state antidegradation policy (State Board Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.



Table 3.10.A Beneficial Uses in the Santa Ana River, San Jacinto River, and Associated Tributaries and Lakes

	MCN	AGR	<u>N</u>	PROC	GWR	REC1	REC2	WARM	COLD	WILD	RARE	SPWN
Santa Ana River												
Reach 2 – 17th Street in Santa Ana to Prado Dam	+	×			×	×	×	×		×	×	
Reach 3 – Prado Dam to Mission Blvd. in Riverside	+	×			×	×	×	×		×	×	
Bedford Canyon Creek	+											
Lake Mathews	×	×	×	×	×	×	×	×		×	×	
San Jacinto River												
Reach 3 – Canyon Lake to Nuevo Road	+				_	_				_		
Reach 4 – Nuevo Road to North- South Mid-Section Line, T4S/R1W-S8	+	_			-		_	_		_		
Reach 5 – North-South Mid-Section Line, T4S/R1W-S8, to Confluence with Poppet Creek	+											
Temescal Wash												
Reach 1A – Santa Ana River Confluence to Lincoln Ave.	+	×	×		×	×	×	×		×	×	×
Reach 1B – Lincoln Ave. to Riverside Canal	+				×	×		×		×		
Reach 2 – Riverside Canal to Lee Lake	+	_			_		_					
Lake Perris	×	×	×	×	×	×	×	×	×	×		
			41.00	0 1	1000							

Source: Water Quality Control Plan, Santa Ana Regional Water Quality Control Board, 2005. x = Present or Potential Beneficial Use

3.10-9



⁼ Intermittent Beneficial Use

^{+ =} Excerpted from MUN (waterbodies not designated because they meet certain exception criteria)
AGR = agricultural water supply
COLD = cold freshwater habitat

GWR = groundwater recharge IND = industrial service supplies MUN = municipal and domestic water supply PROC = industrial process supply

RARE = rare, threatened, or endangered species habitat REC1 = water contact recreation REC2 = noncontact water recreation SPWN = spawning habitat WARM = warm freshwater habitat WILD = wildlife habitat

Surface water quality objectives for all inland waters are listed in Table 3.10.B. Water quality objectives established in the Basin Plan for the Santa Ana River and San Jacinto River (reaches within the project area), Lake Mathews, and Lake Perris are listed in Table 3.10.C.

Table 3.10.B Surface Water Quality Objectives for All Inland Waters

Constituent	Concentration
Algae	Shall not contribute to excessive algal growth.
	Shall not result in coloration of the receiving waters, fish, shellfish, or other surface
Color	water resources.
Dissolved Oxygen	Shall not be less than 5.0 mg/L.
Floating Material	Shall not cause nuisance or adversely affect beneficial uses.
Metals	Shall not exceed site-specific objectives based on hardness.
0.1 1 0	Shall not cause nuisance, adversely affect beneficial uses, create visible film on
Oil and Grease	water surface, or coat objects in the water.
рH	Shall not be depressed below 6.5 nor raised above 8.5.
Radioactivity	Shall not be present in concentrations that are deleterious to life forms.
Solids	Shall not cause nuisance or adversely affect beneficial uses.
Settleable Material	Shall not cause nuisance or adversely affect beneficial uses.
Sulfides	Shall not be increased as a result of controllable water quality factors.
Surfactants	Shall not contain concentrations that result in foam or adversely affect aquatic life.
Suspended Material	Shall not cause nuisance or adversely affect beneficial uses.
	Shall not cause nuisance, adversely affect beneficial uses, or cause undesirable
Tastes and Odors	tastes or odors to edible organisms.
Toxicity	Shall not adversely affect beneficial uses.
Turbidity	 Shall not adversely affect beneficial uses and: Where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases shall not exceed 20 percent. Where natural turbidity is between 50 and 100 NTU, increases shall not exceed 10 NTU. Where natural turbidity is greater than 100 NTU, increases shall not exceed 10 percent.
Not to be exceeded levels	
Ammonia	Based on calculations, not to exceed a four-day average of 0.098 mg/L as N.
Coliform	 MUN waters, total coliform less than 100 organisms/100 mL. REC-1 waters, fecal coliform log mean less than 200 organisms/100 mL and no more than 10% of the samples exceeding 400 organisms/100 mL for any 30-day period. REC-2 waters, fecal coliform average less than 2000 organisms/100 mL and no more than 10% of the samples exceeding 4000 organisms/100 mL for any 30-day period.
Boron	0.75 mg/L.
Chlorine, Residual	0.1 mg/L.
Methylene Blue Activated Substances	0.05 mg/L.

Source: Water Quality Control Plan, Santa Ana Regional Water Quality Control Board, 2005.

mg/L = milligrams per liter mL = milliliter

Table 3.10.C Maximum Concentrations (mg/L) Applicable to the Santa Ana and San Jacinto Rivers, Lake Mathews, and Lake Perris

Inland Surface Stream	TDS	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand
San Jacinto River						T	
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-S8, to Confluence with Poppet Creek	300	140	30	25	3	40	12
Santa Ana River	I		l		<u> </u>		
Reach 2 – 17th St. in Santa Ana to Prado Dam	650						
Reach 3 – Prado Dam to Mission Blvd. in Riverside	700	350	110	140	10,000	150	30
Temescal Creek Reach 1A – Santa Ana River Confluence to Lincoln Ave.	800	400	100	200	6	70	
Lake Mathews	700	325	100	90		290	
Lake Perris	220	110	50	55	1	45	

Source: Water Quality Control Plan, Santa Ana Regional Water Quality Control Board, 2005.

mg/L = milligrams per liter TDS = total dissolved solids

-- = no established objective

In addition, because California had not established a complete list of acceptable water quality criteria for toxic pollutants, EPA Region IX established numeric water quality criteria for toxic constituents in the form of the California Toxics Rule (CTR).

California 303(d) Impaired Waters

There are no impaired surface waters in the project area; however, several downstream receiving waters are listed on the 2002 303(d) impaired waters list for California. Lake Elsinore is listed for nutrients, organic enrichment/low dissolved oxygen, sedimentation/siltation, and unknown toxicity. Reach 3 of the Santa Ana River is listed for pathogens, and Canyon Lake is listed for nutrients and pathogens. San Jacinto River and Temescal Wash are not 303(d) listed.

The 2006 303(d) impaired waters list for California was approved by the SWRCB on October 25, 2006. On March 8, 2007, the EPA partially disapproved California's 2004–2006 303(d) list; that is, it disapproved the state's omission of impaired waters that met federal listing regulations or guidance. The EPA is adding 64 waters and 37 associated pollutants to the state's 303(d) list. The 2006 303(d) list shows Lake



Elsinore as impaired for polychlorinated biphenyls (PCBs) and unknown toxicity, Reach 2 of the Santa Ana River as impaired for metals, and Canyon Lake as impaired for pathogens. San Jacinto River and Temescal Wash are not listed on the 2006 303(d) list.

3.10.2.2 Groundwater Hydrology

Groundwater basins in the project area are shown in Figure 3.10.2. The project area is located in the Temescal and Bedford (Upper Temescal I) sub-basins of the Upper Santa Ana Groundwater Basin in the west and in the Hemet, San Jacinto-Intake and Upper Pressure, San Jacinto-Lower Pressure, Lakeview, Perris North, and Perris South I sub-basins of the San Jacinto Groundwater Basin in the east.

Water in the San Jacinto Groundwater Basin is confined in the eastern part of the basin between the Claremont and Casa Loma faults. The basin consists of alluvium-filled valleys and underlying canyons bordered by steep bedrock hills and mountains. The thickness of the deposits ranges from 61 to 305 meters (m) (200 to 1,000 feet [ft]), with a maximum depth of 274 m (900 ft) in the west and north and greater than 1,524 m (5,000 ft) in the east. Natural groundwater recharge is mainly from percolation of the San Jacinto River and its tributaries. In dry years, artificial discharge from infiltration ponds in the upper watershed and from percolation in Lake Perris can exceed natural discharge. Historically, groundwater flowed toward the course of the San Jacinto River and westward out of the basin. Groundwater extraction has resulted in localized reversed flow patterns and groundwater depressions.

Water in the Temescal Groundwater Sub-basin of the Upper Santa Ana Groundwater Basin is bound by the Chino Sub-basin on the north, the El Sobrante de San Jacinto and La Sierra Hills on the east, the Santa Ana Mountains on the west, and the Elsinore Groundwater Basin on the south. Water-bearing materials are primarily alluvium deposited by streams draining the Santa Ana Mountains. Natural groundwater recharge is mainly from percolation of precipitation and infiltration from streams. Groundwater flows toward the center of the basin, then northeast toward the Santa Ana River.

In the project area, depth to groundwater is variable and ranges from 1.5 to 78 m (5 to 256 ft) below ground surface. During borings conducted as part of the geotechnical studies of the proposed MCP project, groundwater was encountered at depths ranging from 3.4 to 14.6 m (11 to 48 ft) below ground surface.

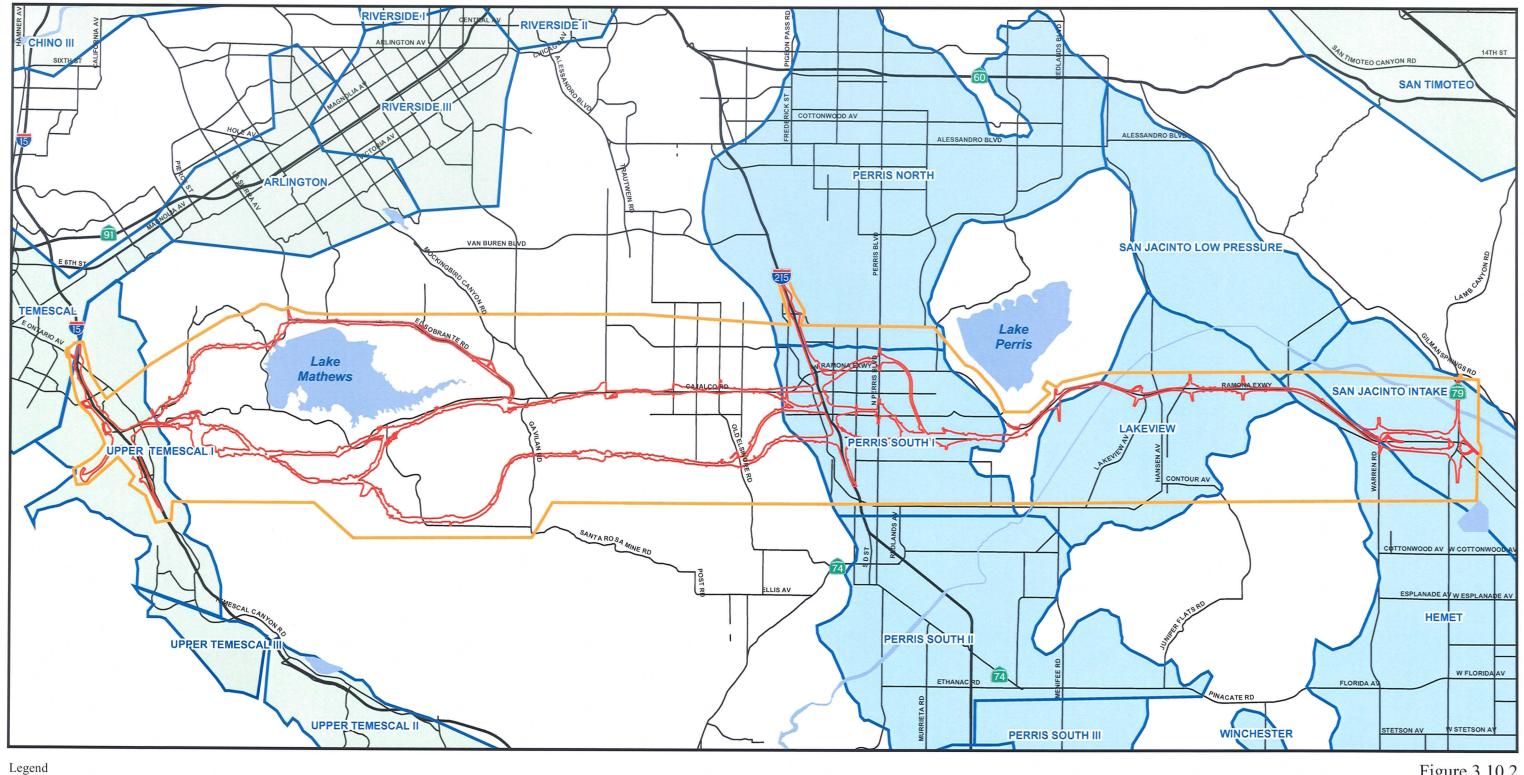


Figure 3.10.2

SOURCE: SAWPA (2006) Jacobs Engineering (2/2007), LSA (2006)

San Jacinto Groundwater Basin Upper Santa Ana Groundwater Basin

Groundwater Sub-basins

Groundwater Basins

20,000 Feet 10,000 1,500 6,000 Meters

Groundwater Basins KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Right-of-Way (All Alternatives)

MCP Study Area

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

Groundwater Beneficial Uses

The beneficial uses for the Santa Ana and San Jacinto Basins, as designated by the Basin Plan, are listed below.

- Municipal (MUN): Includes uses of groundwater for community, military, municipal, or individual water supply systems.
- Agricultural Supply (AGR): Includes uses of groundwater for farming, horticulture, or ranching. These uses include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
- Industrial Service Supply (IND): Includes uses of groundwater for industrial activities that do not depend primarily on water quality, such as mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.

Groundwater Quality Objectives

Groundwater quality objectives, as established in the Basin Plan, for the San Jacinto River and Santa Ana River Watersheds are provided in Table 3.10.D.

Table 3.10.D Groundwater Quality Objectives (mg/L)

Groundwater Basin	TDS	Hardness	Sodium	Chloride	Nitrate-N	Sulfate
	Uppe	r Santa Ana	River Basin			
Bedford (Upper Temescal I)	840	440	80	100	9	200
Temescal	840	440	120	180	9	160
	Sa	n Jacinto Riv	er Basin			
San Jacinto-Lower Pressure	800	380	120	100	3	330
Perris North	300	100	70	90	3	15
Perris South I	1000					
Lakeview	500	190	80	160	2	25
San Jacinto-Intake and Upper Pressure	350	145	50	35	5	40
Hemet	600	300	80	80	4	215

Source: Water Quality Control Plan, Santa Ana Regional Water Quality Control Board, 2005.

3.10.3 Environmental Consequences

3.10.3.1 Permanent Impacts

Build Alternatives

Pollutants of concern during operation of a transportation facility include sediment, trash, petroleum products, metals, and chemicals. The increase in impervious area increases the volume of runoff during a storm, which would more effectively

mg/L = milligrams per liter TDS = total dissolved solids

^{-- =} no established objective

transport pollutants to receiving waters and also may lead to downstream erosion. There would be an increase in impervious area with implementation of the project; therefore, there would be an increase in the volume of runoff during a storm and a subsequent increase of pollutant loading to receiving waters. Total new pavement area varies from 152 to 180 ha (376 to 445 ac) in the San Jacinto River Watershed and from 131 to 177 ha (324 to 437 ac) in the Santa Ana River Watershed, depending on the alternative. In the two watersheds combined, Alternatives 4 and 5 would add 311 ha (769 ac) of new pavement, Alternatives 6 and 7 would add 357 ha (882 ac) of new pavement, and Alternative 9 would add 299 ha (739 ac) of new pavement. The MCP project would not increase industrial discharges.

Implementation of the project would require new cut-and-fill slopes, which in turn increase the possibility for erosion. Where possible, new slopes would be 1:4 or flatter. In mountainous areas, slopes would be 1:2 or flatter. Areas with existing slopes greater than 1:2 are assumed to have steeper slopes after project construction. Acreage of existing slopes that are 1:2 or greater, where erosion could be the greatest, is 18.6 ha (45.9 ac) for Alternative 4, 17.9 ha (44.2 ac) for Alternative 5, 22.5 ha (55.5 ac) for Alternative 6, 21.8 ha (53.9 ac) for Alternative 7, and 35.9 ha (88.7 ac) for Alternative 9.

Design Pollution Prevention and Treatment Best Management Practices (BMPs) would be incorporated into the MCP project to minimize impacts to water quality during operation of the MCP. The following Design Pollution Prevention BMPs would be implemented as part of the MCP project:

- Downstream Effects. Increased erosion from increased runoff flows would be
 minimized using erosion control measures such as rock slope protection, as
 necessary. In the Santa Ana River Watershed, flows would be carried in roadside
 vegetated swales and pipes that would exit to unlined channels.
- Slope Surface Protection. New cut-and-fill slopes could increase the possibility for erosion. This would be minimized using erosion control measures such as rock or vegetative slope protection, as necessary.



^{1:4} slope refers to a slope where the "run" is four times greater then the "rise."

 ^{1:2} slope refers to a slope where the "run" is two times greater then the "rise."
 A 1:2 slope is steeper than a 1:4 slope.

- Concentration Flow Conveyance Systems. Where cut slopes are steeper than 1:4, asphalt concrete dikes, tow or fill ditches, and downdrains/overside drains would be used to control runoff and minimize gullies and scour. Direct surface runoff would be intercepted and existing cross drains modified.
- **Preservation of Existing Vegetation.** The project would require removal of existing vegetation; however, it would be preserved where feasible. All disturbed vegetation on graded slopes would be replaced with an erosion control mix.

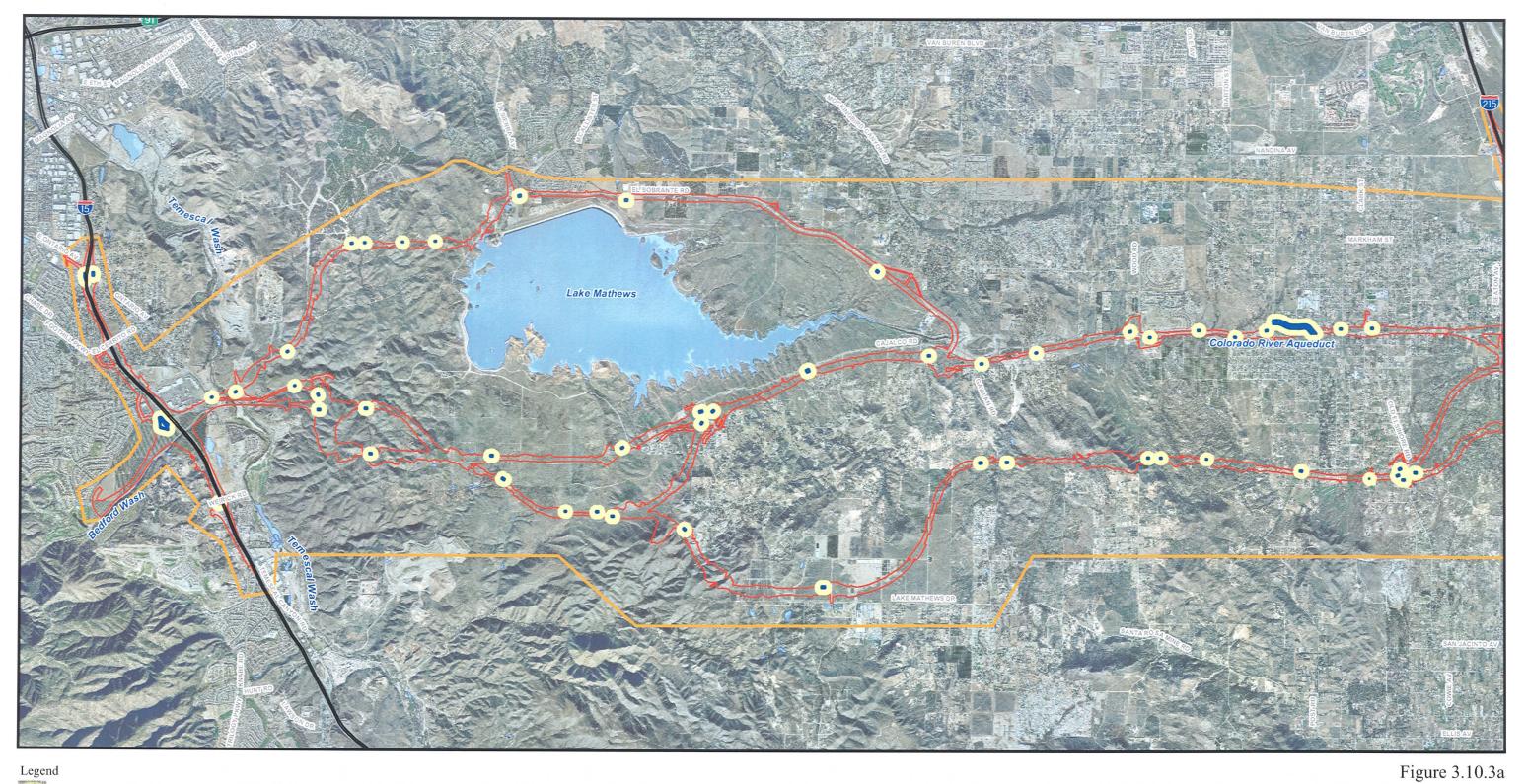
Permanent Treatment BMPs would be incorporated into the MCP project. Treatment BMPs are measures designed to remove pollutants from storm water runoff prior to discharge to receiving waters. Runoff from the MCP project would drain to Treatment BMPs, with the exception of the Santa Ana River Watershed, where drainage from the central 3 m (9.8 ft) of roadway would rain to a median ditch. Treatment BMPs to be incorporated into the project include biofiltration swales, detention basins, and Austin sand filters. The proposed locations of Treatment BMPs are shown in Figure 3.10.3. Where possible, runoff from the parkway would flow to roadside swales and then to other treatment devices. It is anticipated that detention basins would be located within on/off-ramp infields and along the parkway. All Treatment BMPs would be maintained by the underlying local jurisdictions, except for areas within State highway right of way, which would be maintained by Caltrans.

In the San Jacinto River Watershed, the lengths of bioswales that have been identified to be incorporated into the MCP project range from 225 to 1,600 m (739 to 5,250 ft). In the Santa Ana River Watershed, biofiltration swales would also be incorporated wherever possible. It is anticipated that biofiltration strips and swales would be incorporated along the majority of the MCP project alignment within the Santa Ana River Watershed, particularly in areas of steep terrain where detention basins are not feasible.

Detention basins may be substituted for infiltration basins, extended detention basins, and/or Austin sand filters, based on site conditions. Selection of final BMPs requires further site-specific investigation as well as groundwater and geotechnical data. In the San Jacinto River Watershed, the number of basins range from 35 to 41, depending on the alternative. In the Santa Ana River Watershed, the number of basins range from 19 to 30, depending on the alternative.



Austin sand filters are designed to detain runoff in a sedimentation chamber where heavy sediments and floatables are removed. Austin sand filters are open, at-grade, and do not contain a permanent pool of water.



SOURCE: Air Photo USA(2006), TBM (2006), Jacobs Engineering (2/2007), LSA (2006) * Blue area represents actual BMP, while yellow is used to highlight location of the BMP.

						9.77
	0	2,650	5,300		10,600	Feet
N						
	0	750	1,500	3.	,000 Me	eters

Proposed BMP Location*

Proposed BMP Locations
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Right-of-Way (All Alternatives)

MCP Study Area

Chapter 3	Affected Environment,	. Environmental	Consequences.	and Mitigation	Measures
Citapici C	/ II/OOLOG EII/II OIII/OIR		00,,000 quo,,000,	and magainen	

This page intentionally left blank

3.10-20



Legend

Proposed BMP Location*

Right-of-Way (All Alternatives) MCP Study Area

Figure 3.10.3b

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (2/2007), LSA (2006) * Blue area represents actual BMP, while yellow is used to highlight location of the BMP.

0	2,650	5,300	10,600 Feet
0	750	1,500	3,000 Meters

Proposed BMP Locations
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

The MCP project would not use permanent pumping devices to extract groundwater for the roadway operation. The BMPs proposed for this project, most notably infiltration devices, would result in increased infiltration in some areas. Extended detention basin and infiltration basin design would be consistent with the Caltrans Project Planning and Design Guide to protect groundwater quality. At least 3 m (10 ft) separation between the bottom of the extended detention basins and infiltration basins and the normal groundwater level would be provided to provide the necessary buffer to protect groundwater quality.

A volume-based pollutant loading model was used to assess storm water quality impacts associated with the MCP project. The empirical modeling approach was adapted from the Simple Method. Additional details of the modeling approach can be found in the Water Quality Assessment Report (LSA Associates, Inc., 2007). Modeling was performed for total suspended solids (TSS), total phosphorus, nitrate, total copper, total lead, and total zinc. These constituents were selected based on the availability of storm water runoff concentrations for the various constituents and land uses, as well as treatment efficiencies of the proposed BMPs. The modeling results predict that the concentration² of TSS, total phosphorus, nitrate, total copper, total lead, and total zinc after project implementation would be lower than or comparable to existing conditions. The exception is total lead in the San Jacinto Watershed, which is predicted to increase slightly (Table 3.10.E). Table 3.10.F shows the change in total loading³ by alternative and design variation. Although the concentration of pollutants in runoff from the MCP project is predicted to be comparable to or lower than existing condition, the total annual pollutant loading (with the exception of TSS) is predicted to increase due to the increase in the volume of storm water runoff from the additional impervious surface area.

To increase pollutant removal, infiltration basins and biostrips would be substituted for detention basins and bioswales. Runoff would initially flow to roadside swales and then to other treatment devices, as specified in Mitigation Measure WQ-4.



Schueler, T.R. 1987. Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs.

² Concentration is the amount of pollutant present in a given volume of water.

Pollutant loading is the total quantity of pollutants in storm water runoff. Pollutant loading is calculated on an annual basis in this analysis.

Table 3.10.E Change in Pollutant Concentration (mg/L) Compared to Existing Conditions

	Existing Conditions	Post-Project Conditions			
Santa Ana Watershed					
Total Suspended Solids	113–117	17–26			
Total Phosphorus	0.37-0.45	0.27–0.28			
Nitrate	0.97–1.0	0.86-0.89			
Total Copper	0.025-0.029	0.013-0.016			
Total Lead	0.035-0.039	0.010-0.018			
Total Zinc	0.14-0.16	0.05-0.07			
	San Jacinto Watershed				
Total Suspended Solids	88–135	41–42			
Total Phosphorus	0.29-0.95	0.29-0.29 ¹			
Nitrate	0.90-1.02	0.93-0.93 ¹			
Total Copper	0.025-0.031	0.021-0.021			
Total Lead	0.013-0.030	0.031-0.031			
Total Zinc ²	0.06-0.20	0.10-0.10 ¹			

Source: Water Quality Assessment Report, LSA Associates, Inc., 2007.

mg/L = milligrams per liter



Table 3.10.F Change in Pollutant Loading (lbs/yr) Compared to Existing Conditions

Alternative	Total Suspended Solids	Total Phosphorus	Nitrate	Total Copper	Total Lead	Total Zinc
Alt. 4 Base Case	-17,857	113	566	- 8	14	31
Alt. 4 SJN DV	-18,636	115	536	8	13	29
Alt. 4 TWS DV	-17,777	113	565	8	14	31
Alt. 5 Base Case	-15,300	110	565	9	14	33
Alt. 5 SJN DV	-16,079	112	534	8	13	30
Alt. 5 TWS DV	-15,220	110	563	9	14	33
Alt. 6 Base Case	-21,199	155	717	10	14	34
Alt. 6 SJN DV	-21,978	158	687	10	13	32
Alt. 6 TWS DV	-21,055	155	716	10	14	35
Alt. 7 Base Case	-18,642	153	716	10	14	36
Alt. 7 SJN DV	-19,421	155	685	10	13	33
Alt. 7 TWS DV	-18,498	152	715	10	14	36
Alt. 9 Base Case	-16,870	112	624	8	13	24
Alt. 9 RD DV	-16,842	118	638	8	13	26
Alt. 9 PP-E DV	-15,905	108	610	8	12	23
Alt. 9 SJN DV	-17,649	114	593	8	12	21
Alt. 9 TWS DV	-16,796	111	623	8	13	24

Source: Water Quality Assessment Report, LSA Associates, Inc., 2007.

Note: The data presented in this table represents the difference between existing and developed conditions with BMPs. A negative value indicates a decrease in pollutant loading from an existing to a developed condition. A positive value indicates an increase in pollutant loading with project implementation.

BMPs = Best Management Practices

DV = Design Variation

lbs/yr = pounds per year

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

RD = Rider Street

SJN = San Jacinto North

TWS = Temescal Wash Area

The results for these pollutants were the same for all segments; therefore, there is no range of results.

² Total zinc in the San Jacinto segment was modeled as increasing from 0.061 mg/L to 0.104 mg/L with project implementation. The total zinc concentration in all other segments was modeled as decreasing with project implementation.

The TSS concentrations shown in Table 3.10.F would decrease with implementation of treatment devices. With implementation of infiltration basins, bioswales, and roadside swales in conjunction with other treatment devices, the MCP project is not expected to result in a violation of any TSS water quality standards (as shown in Tables 3.10.C and 3.10.D) or waste discharge requirements or otherwise substantially degrade water quality. Therefore, no adverse impacts related to TSS in storm water runoff are anticipated with implementation of any of the Build Alternatives.

Nitrate and total phosphorus loading are anticipated to increase post-project compared with existing conditions; however, nitrate and total phosphorus concentrations are anticipated to decrease. Even though the concentrations (measured in milligrams per liter [mg/L]) are anticipated to decrease, loading (measured in pounds per year) increases because of the increase in total volume of runoff from the new impervious surface. In addition, no nutrient water quality objectives would be exceeded due to the project. There is no numeric target level for phosphorus in the Basin Plan; however, the narrative objective for nutrients that promote excessive algae growth is "Waste discharges shall not contribute to excessive algal growth in inland surface receiving waters." The low predicted total phosphorus concentration (0.27 to 0.29 mg/L) in post-project storm water runoff is not expected to promote aquatic growth. The only water quality objective for nitrate (10 mg/L as N) is applicable only to waters used for municipal supply. Although waters in the project area are not used for municipal supply, the storm water runoff from the project is anticipated to be substantially lower (0.86 to 0.93 mg/L) than the water quality objective and is not expected to promote excessive algal growth. Because there are no impaired waters or total maximum daily loads (TMDLs) in the project area, the pollutant concentrations would decrease, and the concentrations would be below the water quality objectives of the Basin Plan, no adverse impacts would occur from any increase in nitrate and total phosphorus loading.

Copper, lead, and zinc loadings are anticipated to increase with implementation of the MCP project. The anticipated range of total metal concentrations from the proposed Build Alternatives are shown in Table 3.10.G and are compared with CTR acute water quality criteria. Acute criteria represent the concentration of a pollutant that an organism can be exposed to for a short period of time without harmful effects. Chronic criteria represent the concentration of a pollutant that an organism can be exposed to for an extended period of time (considered to be 4 days in the CTR). Due to the intermittent nature of storm water runoff in Southern California, the acute criteria are more applicable than chronic criteria. Therefore, acute criteria are used for

Table 3.10.G Anticipated Total Metals Concentrations Compared with Water Quality Criteria

	Range of Concentration from the MCP Project with BMPs (mg/L)	California Toxics Rule (CTR) Acute Criteria (mg/L) ^{1,2}
Copper	0.013-0.021	0.0179-0.0325
Lead	0.010-0.031	0.114-0.255
Zinc	0.05-0.10	0.150-0.256

Sources: California Toxics Rule, EPA, 2000; California Department of Transportation BMP Retrofit Pilot Program, Caltrans, 2001.

1 CTR criteria were calculated using a hardness of 130 mg/L.

BMPs = Best Management Practices

MCP = Mid County Parkway

mg/L = milligrams per liter

analysis purposes. As shown in Table 3.10.G, the implementation of BMPs as part of the MCP project is anticipated to reduce lead and zinc concentrations in runoff to below CTR criteria. The predicted total copper concentrations in storm water in the San Jacinto Watershed are higher than the calculated CTR criteria. However, the implementation of additional treatment (infiltration basins, biostrips, and roadside swales) would be expected to decrease the total copper loading to below the CTR criteria. Therefore, no adverse impacts related to total metals in storm water runoff are anticipated with implementation of the MCP project.

With implementation of the mitigation measures presented below in Section 3.10.4, no adverse impacts to water quality are anticipated to result from implementation of the MCP project. Implementation of additional treatment devices would reduce total annual loading from the MCP project to below that shown in Tables 3.10.F and 3.10.G, although loading may not be reduced to below existing conditions. However, there are no impaired waters or TMDLs in the project area, so an increase in loading would not violate any waste discharge requirements. In addition, with additional treatment, the concentration of pollutants in runoff from the project area is anticipated to decrease to below existing conditions, and no water quality objectives would be exceeded due to the project.

Removal of waters of the United States and riparian ecosystems could result in adverse impacts to water quality. The functions, or integrity, of the identified waters of the United States and riparian ecosystems in each MCP project alternative were assessed at a watershed level using a suite of hydrologic, water quality, and habitat integrity indicators. Refer to Section 3.18, Wetlands and Other Waters, for a more detailed discussion.

Acute concentration equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects. In deriving the acute criteria, organisms were exposed to pollutant concentrations for 24 to 48 hours.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Treatment and Design Pollution Prevention BMPs would be constructed for roadway improvement projects consistent with Caltrans and SWRCB policies and guidelines. However, because Cajalco Road and Ramona Expressway would remain as they are today, runoff from these roadways would remain untreated.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. Under Alternative 1B, Treatment and Design Pollution Prevention BMPs would be constructed for roadway improvement projects consistent with Caltrans and SWRCB policies and guidelines. Water quality impacts would be expected to be similar for the MCP Build Alternatives because Treatment and Design Pollution Prevention BMPs would be implemented under both scenarios.

Discussions of Impacts Relative to MSHCP Amendment

Water Quality and Storm Water Runoff was determined not to be a topic of concern and was therefore not analyzed in the Multiple Species Habitat Conservation Plan (MSHCP) EIR/EIS. An amendment to the MSHCP to provide coverage for Alternative 9 TWS DV (the Locally Preferred Alternative) would not change the conclusion of the MSHCP EIR/EIS related to water quality and storm water runoff.

3.10.3.2 Temporary Impacts

Build Alternatives

Pollutants of concern during construction include sediment, trash, petroleum products, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality and aquatic habitats.

Construction of the project would require the disturbance of existing soils resulting from construction staging, grading of the new roadway and interchanges, and grading of the resulting cut/fill slopes. Total disturbed area would range from 401 to 449 ha (991 to 1,100 ac) in the San Jacinto River Watershed and 492 to 543 ha (1,216 to 1,342 ac) in the Santa Ana River Watershed, depending on the alternative. In the two watersheds combined, Alternative 4 would disturb 910 ha (2,249 ac), Alternative 5 would disturb 944 ha (2,333 ac), Alternative 6 would disturb 958 ha (2,368 ac), Alternative 7 would disturb 992 ha (2,452 ac), and Alternative 9 would disturb 923 ha (2,281 ac) of soil.



Construction in the vicinity of surface waters, including construction and widening of bridges, would require special consideration to prevent adverse direct impacts to surface water. That is, since the bridges would be constructed within and above surface water, there is a greater possibility for pollutants to enter the waters from bridge construction than from road construction, which is separated from surface water by land. Alternatives 4 and 5 would result in 68 stream crossings, Alternative 6 would result in 76 stream crossings, Alternative 7 would result in 74 stream crossings, and Alternative 9 would result in 51 stream crossings. The TWS design variation would decrease the number of stream crossings by 6 for all the MCP Build Alternatives. The SJN design variation would not change number of stream crossings compared to the base case. The C2 design variation would decrease the number of stream crossings by 2, and PPE design variations would increase the number of stream crossings by 2 for Alternative 9.

Alternatives 6 and 7 and their design variations would be constructed over the greatest number of streams and would therefore have the greatest possibility for pollutants to enter the waters during bridge construction. Alternative 9 and the Alternative 9 design variations cross the fewest streams and would therefore have the least possibility for pollutants to enter the waters during bridge construction.

Bridge construction may necessitate more frequent inspections and more deliberate work processes, etc., with respect to water quality protection. BMPs applicable to bridge projects include diversion of creek water around the work area, implementation of debris-catching devices on construction equipment, as well as embankment protection/stabilization.

Groundwater dewatering (the removal of groundwater from a construction site and its discharge into surface water) may be necessary during construction. Locations of groundwater dewatering activities have not yet been identified but are expected in areas of deep excavation and/or shallow groundwater. Dewatering activities could introduce sediment and other pollutants to surface waters. Groundwater dewatering activities are subject to the requirements of the SWRCB De Minimus Permit (Order No. R8-2003-0061). To ensure that water quality objectives are not violated, the De Minimus Permit established pollutant concentrations that the dewatered groundwater cannot exceed if discharged to surface waters. The De Minimus Permit also establishes water quality monitoring and reporting requirements that would be complied with during construction of the MCP. Compliance with the De Minimus Permit's effluent limitations, monitoring requirements, and reporting requirements, as

stipulated in Mitigation Measure WQ-2, would minimize impacts to water quality during dewatering.

Construction Site BMPs are required to be implemented using Best Available Technology/Best Control Technology (BAT/BCT). Proposed BMPs would be described in the SWPPP and illustrated on the construction plans. Construction Site BMPs would be implemented to minimize water quality impacts during construction. RCTC would ensure that Construction Site BMPs are properly designed, implemented, and maintained as presented in Mitigation Measure WQ-1; therefore, no temporary adverse water quality impacts would occur.

No Build Alternatives

Under the No Build Alternatives, projects with construction activities exceeding 0.4 ha (1.0 ac) would be subject to the requirements of *National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity (General Permit)* Order No. 99-08-DWQ, NPDES No. CAS000002. These projects would be required to prepare a SWPPP or a Water Pollution Control Program and to implement Construction Site BMPs using BAT/BCT to minimize water quality impacts during construction. The agencies responsible for the No Build improvements would ensure that Construction Site BMPs are properly designed, implemented, and maintained for each individual project, as required under the General Permit; therefore, no adverse water quality impacts would occur under the No Build Alternatives.

3.10.4 Avoidance, Minimization, and/or Mitigation Measures

As part of the Caltrans Project Delivery Storm Water Management Program described in the Storm Water Management Plan (SWMP), selected Construction Site, Design Pollution Prevention, and Treatment BMPs would be incorporated into the final design of the MCP project, including infiltration basins and biostrips. The Caltrans SWMP would be implemented in accordance with the Caltrans NPDES permit. Therefore, compliance with the standard requirements of the SWMP and NPDES permits (as detailed in Mitigation Measures WQ-1, WQ-2, WQ-3, and WQ-4) would reduce potential for short-term and long-term impacts, so implementation of the project would not result in adverse impacts to water quality.

The following mitigation measures would apply to all MCP Build Alternatives.

WQ-1

Prior to and during construction, the Riverside County Transportation Commission (RCTC) will comply with the provisions of the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit)* Order No. 99-08-DWQ, NPDES No. CAS000002, and any subsequent permit or individual permit if required by the Regional Water Quality Control Board (RWQCB) as they relate to construction activities for the project, including dewatering. This will include submitting a Notice of Intent (NOI) to the State Water Resources Control Board (SWRCB) at least 30 days prior to the start of construction; preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP); and submitting a Notice of Termination to the Santa Ana Regional Water Quality Control Board (RWQCB) upon completion of construction and stabilization of the site.

WQ-2

Prior to and during construction, the Riverside County Transportation Commission (RCTC) will comply with the provisions of the *General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality*, Order No. R8-2003-0061 National Pollutant Discharge Elimination System (NPDES) No. CAG998001, as they relate to discharge of non-storm water dewatering wastes for the project. This will include submitting to the Santa Ana Regional Water Quality Control Board (RWQCB) a Notice of Intent (NOI) at least 60 days prior to the start of construction, notification of discharge at least 5 days prior to any planned discharges, and monitoring reports by the 30th day of each month following the monitoring period.

WQ-3

Prior to completion of final design, the Riverside County
Transportation Commission (RCTC) will follow the procedures
outlined in the California Department of Transportation's (Caltrans)
Storm Water Quality Handbooks, Project Planning and Design Guide
for implementing Design Pollution Prevention and Treatment Best
Management Practices (BMPs) for the project. This will include
coordination with the Santa Ana Regional Water Quality Control
Board (RWQCB) with respect to feasibility, maintenance, and



monitoring of Treatment BMPs as set forth in Caltrans *Statewide Storm Water Management Plan*.

Prior to completion of final design, the Riverside County

Transportation Commission (RCTC) will identify opportunities where infiltration basins and biostrips can be used in lieu of detention basins and bioswales. As a part of final design, opportunities to convey storm water runoff to bioswales or biostrips before conveying it to infiltration basins, detention basins, or sand filters will be identified and included in project plans.

3.11 Geology/Soils/Seismic/Topography



The information in this section is based on the *Preliminary Geotechnical Design Report* (Kleinfelder, 2008.)

3.11.1 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.

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. The current policy is to use the anticipated Maximum Credible Earthquake (MCE), from young faults in and near California. The MCE is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

The Alquist-Priolo Earthquake Fault Zoning Act was passed by the State of California in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Seismic Hazards Mapping Act, passed in 1990, addresses nonsurface fault rupture earthquake hazards, including liquefaction and seismically induced landslides.

The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones¹) around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities and counties and state agencies for their use in planning and controlling new or renewed construction.

-

¹ "Earthquake Fault Zones" were called "Special Studies Zones" prior to January 1, 1994.

3.11.2 Affected Environment

California comprises 11 geomorphic provinces as defined by the California Department of Mining. The MCP study area is located within the Peninsular Ranges Geomorphic Province. The Peninsular Range province is a series of mountain ranges separated by northwest-trending valleys running parallel to faults branching from the San Andreas fault. The Peninsular Ranges extend south to Mexico and are bordered by the Transverse Ranges on the north, the Colorado Desert on the east, and the Pacific Ocean on the west.

3.11.2.1 Local Geology/Topography

There are no designated National Natural Landmarks within the MCP study area.

As shown in Figure 3.11.1, the far western portion of the MCP study area is located within the northwest-trending Temescal Valley, bounded by the Santa Ana Mountains on the west and the east by the Perris Block (a structural geologic block bounded by faults and fault systems).

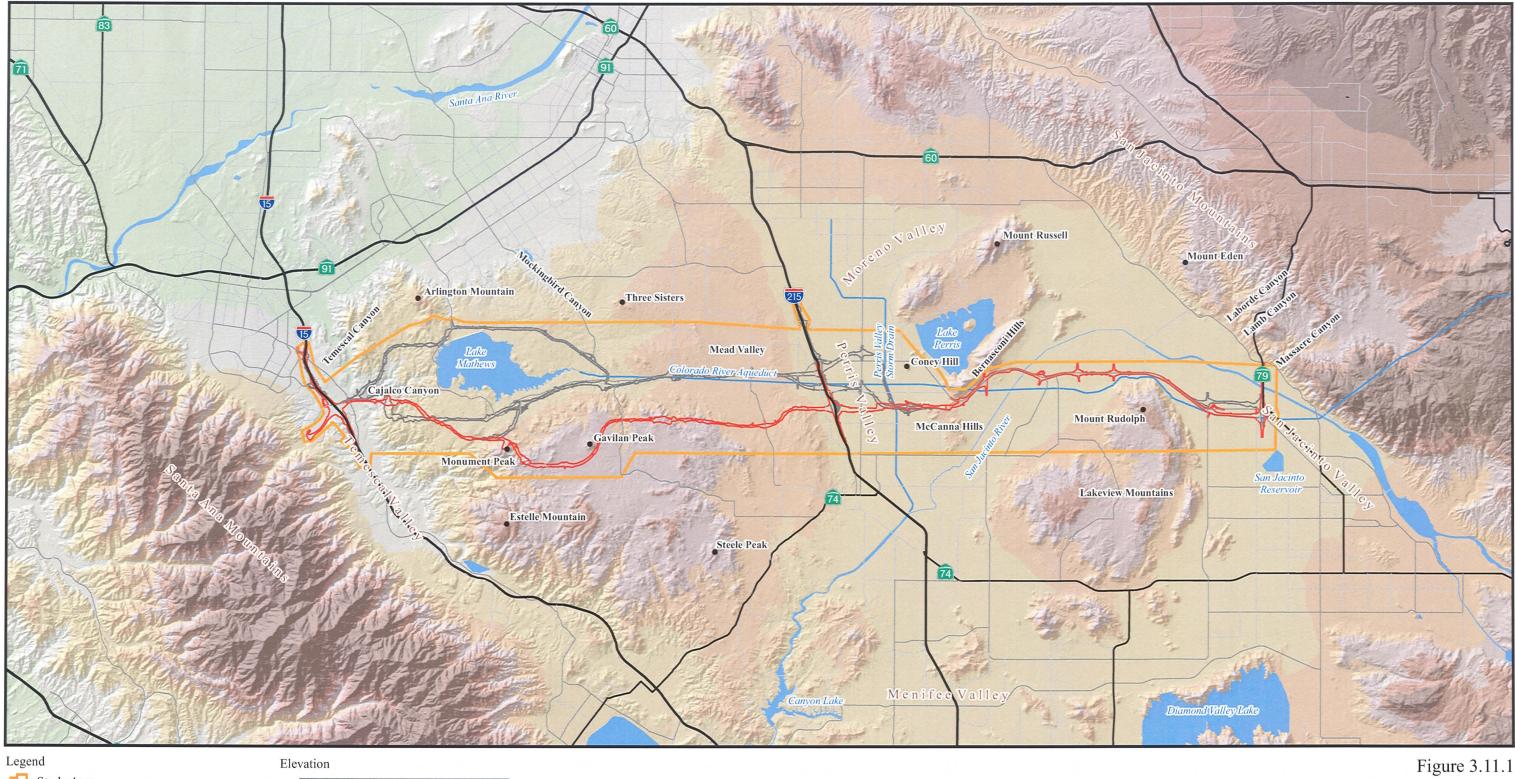
Natural landmarks help define the topography of the MCP study area, which ranges from moderately rugged to gently rolling hills in the west, transitioning to flat, open, ruderal and agricultural lands in the east.

The most distinct landmarks within the western portion of the MCP study area include Monument Peak and Gavilan Peak, part of the Gavilan Hills. Monument Peak is 744 meters (m) (2,442 feet [ft]) above sea level, while Gavilan Peak, which is about 5 kilometers (km) (3 miles [mi]) east of Monument Peak, is 711 m (2,333 ft) above sea level.

Continuing east in the MCP study area, the Bernasconi Hills are a distinct natural landmark of the Lake Perris area. Trending northeast and located approximately 9 km (6 mi) northeast of Perris, the elevation of the Bernasconi Hills is approximately 808 m (2,647 ft) above sea level.

The McCanna Hills lie south of Lake Perris, directly south of the Ramona Expressway. These are relatively low lying hills with an elevation of approximately 518 m (1,700 ft) above sea level.

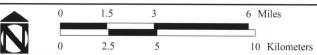
The northern portion of the Lakeview Mountains is one of the most distinctive landmarks in the eastern MCP study area. Mount Rudolph, a prominent feature at the northerly end of the range, rises to an elevation of 791 m (2,595 ft) above sea level.





Study Area Right-of-Way (Alternative 9) Right-of-Way (Alternatives 4,5,6 and 7)

SOURCE: USGS (2006), Jacobs Engineering (2/2007), TBM (2007)



Landforms and Topographic Features
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

The topography from Temescal Valley eastward to Lake Mathews is characterized as mountainous terrain with moderately rugged slopes and well-cut drainage channels. Lake Mathews is a man-made lake formed by damming a naturally occurring valley at the head of Cajalco Canyon. The area surrounding the lake is an irregular plateau with gently rolling hills and tributary channels.



The area just east of Lake Mathews and on the western side of Perris Valley is characterized by moderate relief and gently rolling hills. Mead Valley is located in this area, separated from the Perris Valley by low hills along the eastern margin.

Perris Valley is a 6 to 8 km (4 to 5 mi) wide, alluvial-filled basin that extends from Moreno Valley on the north to Menifee Valley on the south. The Bernasconi Hills define the eastern border of the Perris Valley, separating it from the San Jacinto Valley.

The San Jacinto River floodplain is located within a northeast-trending valley between Perris Valley and the San Jacinto Valley, bordered by the Bernasconi Hills on the west and the Lakeview Mountains on the southeast. The San Jacinto River flows toward the Elsinore Valley approximately 32 km (20 mi) to the southwest.

The eastern end of the MCP study area is within the San Jacinto Valley. The San Jacinto Valley is an alluvial valley along the San Jacinto fault zone.

3.11.2.2 Faulting/Seismicity

The entire southern California region is seismically active due to the influence of several earthquake fault systems resulting from interaction between the Pacific and North American crustal plates. An active fault is defined by the State of California as a "sufficiently active and well defined fault that has exhibited surface displacement within the last 11,000 years." A potentially active fault is defined by the State as a "fault with a history of movement between 11,000 and 1.6 mya" (million years ago). These active and potentially active faults are capable of producing seismic shaking within the MCP study area that could be damaging to bridges and other structures. Figure 3.11.2 illustrates the major fault zones in the MCP study area.

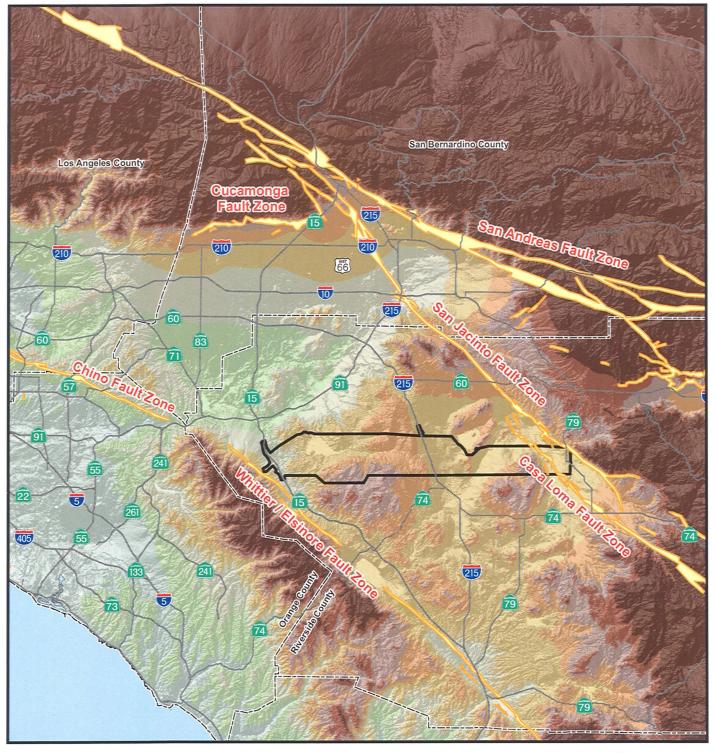
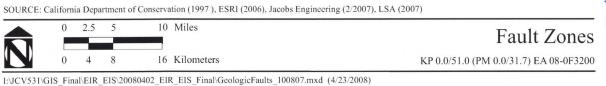


Figure 3.11.2 Legend

Fault Zone Mid County Parkway Study Area County Boundary



This page intentionally left blank

There are several major active fault zones capable of generating ground shaking during a seismic event which could impact the MCP study area: the San Jacinto fault zone (which includes the Casa Loma fault), located near the eastern end of the MCP study area; and the Whittier/Elsinore fault zone, located near the western end of the MCP study area. Other faults capable of generating ground shaking that would affect the MCP study area include the San Andreas, Chino, and Cucamonga faults. Table 3.11.A summarizes the five major active faults that could impact the MCP study area.

Table 3.11.A Active Faults in the Mid County Parkway Study Area

Fault/Fault Zone	Distance from Site – East End, mi (km)	Distance from Site – West End, mi (km)	Maximum Moment Magnitude (Mw)	Maximum Historic Earthquake Magnitude (Mw) with year	Probability of Occurrence in 100 years
San Jacinto/	0.2 (0.3) -	20.8 (33.4)	6.75	7.0 (1918)	High
Casa Loma	19.0 (30.6)				
San Andreas	15.1 (24.3)	29.2 (47.0)	7.75	8.0+ (1857)	High
Whittier-Elsinore	23.2 (37.4)	2.8 (4.5)	7.5	6.0 (1910)	Moderate-High
Chino	32.4 (52.1)	2.9 (4.7)	6.5	Unknown	Unknown
Cucamonga	35.2 (56.6)	24.2 (38.9)	7.0	5.2 (1990)	High

Source: Preliminary Geotechnical Design Report, Kleinfelder, 2008.

km = kilometers

mi = miles

The San Jacinto fault zone extends from the Cajon Pass north of San Bernardino trending southeast to the California-Mexico border and beyond. Near the east end of the MCP study area, the San Jacinto fault consists of a number of fault segments and numerous fissures associated with crustal movement. The Casa Loma fault, a segment of the San Jacinto fault zone, crosses the eastern portion of the MCP study area. The Casa Loma fault was exposed in an aqueduct excavation southeast of the intersection of Warren Road and Ramona Expressway, and is considered active by the State of California. The fault is also included within the Alquist-Priolo Earthquake fault zone.



The Elsinore fault is located approximately 2.4 km (1.5 mi) southwest of the existing I-15/Cajalco Road interchange. The Elsinore fault is one of the largest in southern California, and historically has been one of the quietest. This fault is part of the greater Whittier-Elsinore fault system that extends from the Los Angeles Basin, south to the California/Mexico border and beyond. In the MCP study area, this fault zone is a series of northwest-trending faults forming the boundary between the Santa Ana Mountains on the west and Temescal Valley on the east.

3.11.2.3 Landslides

Landslides constitute a major geologic hazard because they are widespread and cause substantial damage to life and property. Expansion of urban and recreational developments into hillside areas leads to more people that are threatened by landslides each year. Landslides commonly occur in connection with other major natural disasters such as earthquakes, volcanoes, wildfires, and floods. Steep, bare slopes; clay-rich rock; deposits of stream or river sediment; and heavy rains can also cause landslides.

The average annual precipitation in the MCP study area is low, about 26.6 centimeters (cm) (10.5 inches [in]) annually. Natural slopes susceptible to instability occur primarily in the mountainous western half of the MCP study area and within the Bernasconi Hills. No known landslides have been mapped along or adjacent to the proposed MCP Build Alternatives in the MCP study area. The primary stability issue for bedrock slopes in the MCP study area is the possibility of rock fall on steep slopes. While the bedrock is generally steeply inclined, it is favorable for overall stability. However, existing slopes and future cut slopes may be subject to toppling, rock fall, and localized instability along fractures in the bedrock. Existing slopes underlain by older stream deposition and sedimentary bedrock are also subject to erosion and instability.

3.11.2.4 Liquefaction

Soil liquefaction occurs when saturated, loose soils lose their strength due to excess water within the soils. The space between the soil particles is completely filled with water, which exerts pressure on the soil particles, influencing how tightly the soil particles are pressed together. Prior to an earthquake, the water pressure is relatively low. However, the shaking caused by an earthquake can cause the water pressure to increase to the point where the soil particles can readily move with respect to each other. When liquefaction occurs, the strength of the soil decreases and the ability of the soil to support building and bridge foundations are reduced. Liquefied soils also exert pressure on retaining walls, which can cause them to tilt or slide.

The primary factors affecting the possibility of liquefaction in a soil deposit are:

- (1) intensity and duration of earthquake shaking, (2) soil type and relative density,
- (3) overburden pressures, and (4) depth to groundwater. Soils most susceptible to liquefaction are clean, loose, uniformly graded, fine-grained sands, and nonplastic silts that are saturated. Silty sands have also been proven susceptible to liquefaction.

The presence and depth of groundwater in an area will determine if the land is more or less subject to liquefaction (the state of becoming liquid) and instability. Groundwater conditions are variable within the MCP study area and are divided into three distinct regions.

Temescal Valley

Groundwater within Temescal Valley has been reported as shallow as 1.5 m (5 ft) in 1992 in wells 152 m (500 ft) north of Cajalco Road at Temescal Wash. Shallow groundwater is also anticipated within Bedford Wash near the I-15 interchange, although the Log of Test Borings for the Bedford Wash Bridge did not report groundwater to depths of 17 m (55 ft) in borings drilled in 1964. Borings drilled in this area in 2006 encountered groundwater at a depth of 7 m (23 ft) below the existing ground surface. This depth approximately correlates with groundwater conditions associated with Temescal Wash.

Mead Valley and Lake Mathews Area

Much of the Mead Valley and Lake Mathews area is underlain by nonwater-bearing granitic and metamorphic bedrock. Groundwater in these areas generally occurs as water perched above the bedrock and within shallow alluvial filled valleys and drainage channels. Perched groundwater has been reported as shallow as 1 m (3 ft) below the ground surface along portions of Cajalco Road near Wood Road. Two borings drilled in this area in 2006 encountered groundwater at depths of 3.4 m (11 ft) and 5 m (16 ft), respectively, below existing ground surface. These depths are consistent with anticipated shallow groundwater depths within Mead Valley.

Perris and San Jacinto Valleys

Groundwater in the eastern half of the MCP study area generally occurs within three groundwater subbasins referred to as the Perris South, Lakeview, and San Jacinto subbasins.

The Perris South subbasin is located within Perris Valley between I-215 on the west and the Bernasconi Hills on the east. The average depth to groundwater within this subbasin ranged from approximately 19 m (61 ft) to 18 m (58 ft). Well records reviewed indicate groundwater is shallowest near the mouth of the Lake Perris dam and was recorded as shallow as 6 m (20 ft). Seepage from Lake Perris may be contributing to the shallow groundwater in this area. The depth to groundwater increases to the west and was on the order of 31 to 40 m (102 to 136 ft) deep near the middle of the valley.



Three borings drilled in 2006 within the Perris subbasin along Placentia Avenue and Rider Street and adjacent to the Perris Valley Storm Drain in 2006 encountered groundwater at depths of 14, 11, and 15 m (46, 35, and 48 ft), respectively, below the existing ground surface.

The Lakeview subbasin is located within the San Jacinto River Valley between Perris Reservoir and the Lakeview Mountains. The average depth to groundwater within this subbasin ranged from approximately 65 to 67 m (214 to 220 ft). Individual well records near the community of Lakeview and the San Jacinto River indicate a depth to groundwater ranging from approximately 55 to 76 m (182 to 248 ft).

The San Jacinto subbasin is located within the San Jacinto Valley at the eastern end of the MCP study area. The average depth to groundwater within this subbasin ranged from approximately 55 to 56 m (182 to 185 ft). Individual well records near the SR-79 interchange indicate a depth to groundwater of approximately 50 to 78 m (163 to 256 ft). Borings drilled in this area in 2006 encountered groundwater at a depth of 6 m (21 ft) near the intersection of Ramona Expressway and SR-79.

3.11.2.5 Soils

The entire MCP study area is located in a geologic environment that may be prone to collapsible soils. The potential for soils to collapse ranges from low to moderate for the majority of the alluvial soil deposits. The ability of these soils to expand when wet and shrink when dry (change volume) ranges from low to high, depending on the nature of the soils and underlying parent bedrock materials. Residual soils within the MCP study area may also be expansive.

Surface soils within the study area include artificial fill, colluvial soils, Holocene alluvium, Pleistocene older alluvium and fan deposits, Tertiary sandstone and siltstone, Mesozoic plutonic and volcanic rocks, and Mesozoic metamorphic rocks.

Artificial Fill

Artificial fill is associated with existing developments, such as roads and structures, and is present within the MCP study area. Fills are typically composed of materials derived from the surrounding terrain and, for engineering purposes, are generally required to meet certain specifications related to grain size, composition, and compaction.

Artificial fill can be found at the western end of the MCP study area near Cajalco Road and Temescal Canyon Road, and adjacent to Temescal Wash, to depths of

approximately 1.5 m (5 ft). Approximately 4.5 m (15 ft) of dump fill is located east of Elsinore Road. The fill materials generally consist of silty sands with gravel, sand with silt, and sandy gravel with local cobbles. The coarse-grained soils are generally loose to medium dense with occasional stiff, fine-grained layers.

Colluvium

Colluvium, a collection of loose rock debris at the base of a hill or slope, can be found around most of the hillsides and valley areas within the MCP study area. This colluvium (dating from approximately 10,000 years ago to the present) has a variable thickness depending upon the location within the MCP study area.

Younger Alluvium and Fan Deposits

Alluvium, deposits of sand and mud formed by flowing water, underlie much of the MCP study area, including Temescal and Bedford Washes, Mead Valley, Perris and San Jacinto Valleys, and the San Jacinto River floodplain. These relatively young (dating from approximately 10,000 years ago to the present), nonmarine deposits generally consist of fine- to coarse-grained sand with various amounts of silt, clay, and gravel. Cobbles and boulders are common near the base of the deposits.

Alluvium and fan deposits (fan-shaped accumulations of alluvium deposited at the mouth of a ravine or foot of a mountain) are located in the portions of the MCP study area with steeper topography, including the Santa Ana Mountains, the Gavilan Hills, and the Bernasconi Hills. These deposits consist of sands, silty sands, clayey sands, and sandy silts with occasional clay, gravel, and sandy gravel layers. These soils are medium dense to very dense, and the fine-grained layers are stiff to very stiff. Portions of the alluvial soils are likely subject to collapse and consolidation when wet.

Older Alluvial Deposits

Alluvial deposits, including fan deposits, dating from approximately 10,000 to 2 mya are located within Temescal Valley and Wash, on slopes south of Lake Mathews, within Perris Valley, and adjacent to the San Jacinto River floodplain. These older alluvial channel deposits also underlie the central portion of Mead Valley east of Lake Mathews. These older alluvium materials are similar in composition and origin to the younger alluvial deposits but are more consolidated. These soils are medium dense to very dense, and the fine-grained layers are stiff to very stiff.

3.11.3 Environmental Consequences

3.11.3.1 Permanent Impacts

Build Alternatives

The roadway, structures, slopes, and other features of the MCP Build Alternatives could be impacted by ground motion and liquefaction, and possibly ground rupture (deformation) to some degree. Design and construction of the proposed project to current highway and structure design standards would minimize the impact of these conditions to the MCP Build Alternatives.

The primary geologic and geotechnical constraints affecting the design and construction of any of the MCP Build Alternatives include:

- Moderate to high ground accelerations due to the presence of nearby active faults, including the Elsinore, San Jacinto, Casa Loma, and San Andreas faults.
- Fault rupture associated with the Casa Loma branch of the San Jacinto fault in the eastern portion of the MCP study area.
- Impacts to bridges or raised structures due to local shallow groundwater. Shallow groundwater has been identified within Temescal Wash in the western portion of the MCP study area, in the Mead Valley area, near the downstream foundation of Perris Reservoir, and locally near Perris Dam in the Perris Valley.
- Liquefaction and seismically induced settlement in areas of shallow groundwater and loose alluvial soils. Areas subject to liquefaction and seismically induced settlement include Temescal and Bedford Washes, the San Jacinto River and Valley areas, Perris Valley, and locally within Mead Valley.
- Possibility of flooding within Temescal and Bedford Washes, the San Jacinto River and Valley areas, Cajalco Creek, Perris Valley, and locally at or adjacent to drainage crossings.
- Slope stability in areas of steep natural terrain or proposed cut slopes.
- Erosion and surficial instability in hillside areas.
- Difficult bedrock excavation characteristics. Hard granitic and metamorphic bedrock is anticipated in the western portion of the MCP study area and in the Bernasconi Hills.
- Collapsible soils in younger alluvium, primarily in the eastern portion of the MCP study area (Perris Valley and San Jacinto River and Valley areas) and within Temescal Wash.

Faulting/Seismicity

The eastern portion of the MCP study area is located within a designated Earthquake Fault Rupture Hazard Zone for the Casa Loma fault, a branch fault of the San Jacinto fault zone. This fault is considered active and crosses the Ramona Expressway approximately 214 m (700 ft) east of Warren Road, a location that is common to all of the MCP Build Alternatives. The planned interchange at Ramona Expressway/ Warren Road may lie near or within this fault zone.

The possibility of moderate to severe seismic shaking is the most considerable geologic hazard to the project. The MCP study area is located in a region of Southern California that is seismically active and under the influence of several fault systems that are considered to be active or potentially active. Table 3.11.A previously listed the fault systems capable of producing damaging seismic shaking in the MCP study area. The project facilities and structures elements would be designed consistent with applicable building and seismic codes. As a result, the Build Alternatives would be anticipated to accommodate the expected ground shaking in this area, with the likelihood for structural damage substantially reduced or avoided through seismic engineering design.

Landslides

Landslides are rock, earth, or debris flows on slopes due to gravity. They can occur on any terrain given the right conditions of soil, moisture, and angle of slope. Landform alterations may create erosional impacts to the existing terrain. The most extensive alterations would be from construction of cut and fill slopes associated with road realignments. Erosion and sedimentation impacts could occur due to project construction. These impacts and avoidance, minimization, and/or mitigation measures are discussed in Section 3.10 (Water Quality and Storm Water Runoff) and Section 3.14 (Air Quality).

The *Preliminary Geotechnical Design Report* (Kleinfelder, 2008) identified the primary areas where natural slope instability may occur that would need to be considered in the design of the project. They are along the western portion of the MCP study area and within the Bernasconi Hills. Although none of the alignment alternatives are located in areas where landslides or instability are known, designlevel geotechnical investigations would address this issue in more detail.



Cut-and-Fill Slopes

Cut-and-fill slopes would be required to construct any of the MCP Build Alternatives. As described in Chapter 2, extensive use of bridges is proposed to reduce the amount of cut and fill slopes. The majority of the cut slopes are located along Alternative 9, in the Gavilan Hills area and near Monument Peak, located in the southernmost part of the MCP study area. The proposed cut slopes are generally located in hard granitic and metamorphic bedrock. Other than local areas of rock fall or surface instability, no landslides or other evidences of major bedrock instabilities were observed in the areas of the proposed cut slopes. Cut-and-fill slopes would also be required in the McCanna Hills area to accommodate Alternative 9, as well as the other MCP Build Alternatives since this location is common to all the MCP Build Alternatives.

Table 3.11.B shows the estimated cut and fill material for each alternative.



Table 3.11.B Cut-and-Fill Material by Alternative

	Quantity and Type of Earthwork (cubic meters)					
Alternative	Excavation	Fill	Imported Borrow	Disposal Off Site		
4	10,246,200	16,711,070	6,464,870	0		
5	10,309,279	16,504,893	6,195,614	0		
6	10,171,760	16,992,885	6,821,125	0		
7	10,234,839	16,786,708	6,551,869	0		
9	23,473,805	19,241,157	0	4,232,648		

Source: Jacobs, 2008.

More extensive landform alteration also occurs under Alternative 9 due to its alignment through the Gavilan Hills and the area south of Lake Mathews near Monument Peak.



Due to the hardness of the bedrock in the Gavilan Hills, Monument Peak, and McCanna Hills areas, blasting may be required during construction activities of the cut-and-fill slopes. The entire process of an individual blast event to remove hard rock (excavation, drilling holes in the hard rock, placing charges and detonation cords, detonation at specific time intervals, removal of pulverized rock) can range in length from several days to several weeks, depending on the size of the area planned for each blast event. Typical blast events "pulverize" from approximately 6,116–30,582 cubic meters (m³) (8,000–40,000 cubic yards

[cy]) of in-place rock. The drilling contractor generally utilizes 7 or 10 cm (3 or 4 in) diameter holes and spaces the drill holes in a 3 x 3 m (9 x 9 ft) grid pattern. Depending on the project grade requirements, each blasting detonation can vary in depth from 3–12 m (10–40 ft). While the individual blast events would vary in size and depth depending on the final results desired by the blast event, a blast size of approximately 6,880 m³ (9,000 cy) of in-place rock would require approximately 9,525 kilograms (kg) (21,000 pounds [lbs]) of ammonium nitrate fuel oil.

To minimize the possibility of damage at or adjacent to the project site, test shots would be performed to determine hole depth, charge size, and depth of charge burial. These small charges would help reveal natural fractures in the rock that can create rock fragments, which are propelled through the air by the force of the blast and could endanger humans and nearby structures or equipment. The test shots would also monitor noise vibrations due to blasting. The test blasts would allow the blast contractor to minimize the possibility of damage at, or adjacent to, the proposed project site. Avoidance, minimization, and/or mitigation measures related to construction activities are provided in Sections 3.14, Air Quality, and 3.15, Noise.

Liquefaction

The MCP *Preliminary Geotechnical Design Report* (Kleinfelder, 2008) indicates a possibility for liquefaction along the proposed alternatives in areas of shallow groundwater and loose granular soils. Areas that may be prone to liquefaction include Temescal and Bedford Washes (all alternatives), the San Jacinto River and Valley areas (all alternatives), Perris Valley (all alternatives), and Mead Valley (Alternatives 4 through 7).

Impacts to the facilities and structures under the Build Alternatives due to liquefaction and seismically induced settlement can be substantially reduced based on design and construction, consistent with the recommendations of the detailed geotechnical investigations prepared during final design. As noted earlier, detailed site-specific geotechnical investigations would be conducted during final design to evaluate the possibility of liquefaction and seismically induced settlement along the alignments of the MCP Build Alternatives, and to provide recommendations for remediation if required.

Soils

Landform alteration throughout the MCP study area would likely occur due to construction grading. Erosion and sedimentation impacts could occur due to project construction. These impacts are discussed in Section 3.10 (Water Quality and Storm Water Runoff).

The primary areas where natural slope instability may occur that may influence project design are along the western portion of the MCP study area, and within the Bernasconi Hills. Deeper fills are anticipated within the embankments associated with the I-15 and the I-215 freeways, Temescal Wash, and locally along the proposed alignment alternatives. Embankment fill slopes constructed at an inclination of 1:2 (horizontal:vertical) or less, like the fill slopes planned as part of the project, should have adequate stability during a major seismic event and not be subject to failure or landslides. Therefore, the MCP Build Alternatives would not result in adverse impacts related to slope instability.

No Build Alternatives

Under the MCP No Build Alternatives, the permanent impacts discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but earthquake and seismic safety concerns would be issues that would be analyzed as part of the environmental and engineering studies for the other transportation improvement projects included in the No Build Alternatives. The extensive grading and use of cut and fill slopes required for the MCP project would not occur under the No Build Alternatives.

Discussion of Impacts Relative to MSHCP Amendment

Geology/soils/seismic/topography was determined not to be a topic of concern and therefore was not analyzed in the Multiple Species Habitat Conservation Plan (MSHCP) EIR/EIS. An amendment to the MSHCP to provide coverage for Alternative 9 TWS DV (the Locally Preferred Alternative) would not change the conclusion of the MSHCP EIR/EIS related to geology, soils, seismic hazards, and topography.

3.11.3.2 Temporary Impacts

Build Alternatives

Temporary impacts are related to construction activities. Each of the Build Alternatives would alter existing landforms due to grading and construction of various cut and fill slopes. Construction activities may also temporarily disturb soil



outside the facility footprint, but within the project right of way, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased possibility of soil erosion.

The construction activities associated with the proposed Build Alternatives could be impacted by ground motion and liquefaction, and possibly ground rupture (deformation) to some degree if an earthquake were to occur during construction. Implementation of safe construction practices and compliance with Caltrans and California Division of Occupational Safety and Health Administration (Cal-OSHA) requirements would minimize the impacts of these conditions.

No Build Alternatives

Under the MCP No Build Alternatives, the temporary impacts discussed above for the MCP Build Alternatives would not occur for the MCP project itself. Similar impacts would occur for the other transportation improvement projects included in the No Build Alternatives.

3.11.4 Avoidance, Minimization, and/or Mitigation Measures

While implementation of standard design and construction practices will reduce the MCP project's risk for geologic hazards such as soil erosion and slope instability, Mitigation Measures GEO-1 through GEO-4 listed below will also reduce potential impacts to liquefaction, soil, seismic issues, and erosion from implementation of the MCP project. The following measures would apply to all of the MCP Build Alternatives.

GEO-1

Prior to completion of final design, the Riverside County
Transportation Commission (RCTC) will prepare a design-level
geotechnical report. It is not feasible to prepare such a study at this
time because the design is at a preliminary, conceptual stage. This
report will document soil-related constraints and hazards such as slope
instability, settlement, liquefaction, or related secondary seismic
impacts that may be present. Acceptance of this report will be subject
to the local agencies with jurisdiction over the MCP project right of
way and the California Department of Transportation (Caltrans) for
portions of the MCP project within State highway right of way. The
performance standard for this report will be the geotechnical design



standards of the State of California, Caltrans, and the affected local jurisdictions. The report shall also include:

- Evaluation of expansive soils and recommendations regarding construction procedures and/or design criteria to minimize the effect of these soils on the development of the project.
- Identification of potential liquefiable areas within the project limits and recommendations for mitigation. Any areas that require mitigation would be within the disturbed areas, and no additional impacts would result.
- Demonstration that side slopes can be designed and graded so that surface erosion of the engineered fill is not increased compared to existing, natural conditions.
- During construction, and as included on project plans during final design, the Riverside County Transportation Commission (RCTC) will require planting of native vegetation with good soil-binding characteristics and low water requirements on engineered slopes to reduce erosion and slope instability. These types of plants include species that are compatible with existing adjacent habitat and native to the project area, including but not limited to the following: brittlebush (California encelia), California buckwheat (Eriogonum fasciculatum), California sagebrush (Artemisia californica), and deerweed (Lotus scoparius). Sixty percent of the planting coverage shall be completed within the first 5 years of construction.
- The Riverside County Transportation Commission (RCTC) will maintain a quality assurance/quality control plan during construction. The plan will include observing, monitoring, and testing by a geotechnical engineer and/or geologist during construction to confirm that geotechnical/geologic recommendations are fulfilled, or if different site conditions are encountered, appropriate changes are made to accommodate such issues. The geotechnical engineer will submit weekly reports to RCTC while grading, excavation, and construction activities are underway.
- **GEO-4** Prior to completion of final design, the Riverside County

 Transportation Commission (RCTC) will undertake a detailed review





of available well information to locate all groundwater wells within the MCP project right of way. Any groundwater wells that occur within the MCP project right of way will be identified on a well management plan and abandoned properly during project construction in accordance with California Department of Water Resources Standards (Bulletin 74-90). Any water supply provided by active wells will be replaced. Replacement water may be provided by a variety of means, such as installing a new well or by creating a connection to a municipal supply. The project engineer will document the location of existing wells, the abandonment approval by the agencies with jurisdiction for those wells within the MCP project right of way, and the replacement water supply as needed for active wells in a report submitted to RCTC for review and approval prior to initiation of construction activities.

This page intentionally left blank

3.12 Paleontology



The information in this section is based on the *Paleontological Resources Identification and Evaluation Report* (LSA Associates, Inc. 2008).

3.12.1 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 or funded projects (e.g., Antiquities Act of 1906 [16 USC 431-433], Federal-Aid Highway Act of 1935 [20 USC 78]). Under California law, paleontological resources are protected by the California Environmental Quality Act, the California Administrative Code, Title 14, Section 4306 et seq., and Public Resources Code Section 5097.5.

3.12.2 Affected Environment

Paleontological resources (fossils) are defined as any trace of a past life form. While wood, bones, teeth, and shells are the most common fossils, under certain conditions soft tissues, tracks and trails may be preserved as fossils. Fossils are most commonly found in sedimentary rock layers

The proposed MCP project is located in the northwestern Peninsular Range Geologic Province of southern California. This province is bounded on the north by the Transverse Mountain Ranges, on the east by the Colorado and Mojave Deserts, and on the west by the Pacific Ocean.

The layers of rock material of the northwestern Peninsular Range Province date from the late Paleozoic and Mesozoic eras (between 540 and 248 million years ago [mya]) and through the Cenozoic Period (approximately 65 mya to present). The dominant rock material in this region is granitic, with overlying sedimentary formations. Subdivisions of the Peninsular Range Province include the Perris Block, a 32 by 50 kilometer (km) (20 by 50 mile [mi]) mass of crystalline rocks formed in the Cretaceous Period (approximately 146–65 mya), and the Elsinore Trough (west of the Perris Block), a valley controlled by the Elsinore Fault Zone.



Paleontological resources identified in the MCP study area are described in the following sections.

3.12.2.1 Cenozoic-Tertiary: The Age of Mammals Silverado Formation—Paleocene

This formation is composed of marine and nonmarine sandstone, siltstone, and claystone. Sediments contain diverse fossil flora, abundant fossil gastropods and pelecypods, and may contain fossil vertebrates. There are approximately 22 fossil localities within the MCP study area that are attributed to the Silverado Formation. Two outcrops of this formation are near the I-15/Cajalco Road interchange.

Vaqueros and Sespe Formations—Late Eocene—Oligocene—Early Miocene

These formations are a combination of marine and nonmarine sediments that provide important details relating continental and marine events along the ancient California coast. Fossil vertebrates previously found in these formations include tarsiers, lemurs, rhinoceros, camels, and small mammals including hedgehogs, shrews, and rodents. These formations are found south of the I-15/Cajalco Road interchange. Two fossil localities within the MCP study area are attributed to these formations.

Topanga Formation—Early Miocene

Fossiliferous marine sandstones of the Topanga Formation contain mixtures of marine and land fossils, marine mollusks and vertebrates include pelecypods and gastropods, sharks, rays, bony fishes, turtles, crocodiles, birds, whales, porpoises, sea lions, and sea cows. Land vertebrate fossils include three-toed horse and deer mouse. Fossil birds in this formation are rare in most sedimentary formations. Four fossil localities with the MCP study area are attributed to the Topanga Formation and outcrop of this formation is found northwest of the I-15/Cajalco Road interchange, within the MCP study area.

Lake Mathews Formation—Middle Miocene

This formation has produced important collections of fossil vertebrates, including two species of oredonts, camels, gophers, javelinas, deer mice, and ground squirrels. Four fossil localities associated with this formation are located within the MCP study area. Outcrops of this formation are also found within the MCP study area on the northeastern and southern sides of Lake Mathews.

Puente Formation—Upper Miocene

This formation is composed of marine sandstone shales and siltstone. Fossils include marine algae, mollusks, whale, fish, marine turtles, sharks, bony fishes, land plants, and land mammals such as rhinoceros, camel, and elephant. Outcrops of the Puente

Formation are closely associated with and consistently occur between outcrops of the Topanga Formation and the Fernando Formation. Nine fossil localities related to this formation are within the MCP study area.

Fernando Formation—Pliocene

Pebbly sandstone and estuary siltstone of this formation contain fossil vertebrates such as mastodon, rabbits, and rodents. Eighteen (18) fossil localities are found within the MCP study area, and outcrops of this formation are found northwest of the I-15/Cajalco Road interchange.

Plio-Pleistocene Transition

Sediments near Corona that span the Plio-Pleistocene transition contain fossil mammals. These sediments are similar to formations near Murrieta with a diverse assemblage of fossil reptiles, birds, and large and small mammals.

3.12.2.2 Quaternary-Pleistocene – Ice Age *Pleistocene Alluvium*

Pleistocene Alluvium is located east of the I-215. The Perris Block is covered by Pleistocene sediments. Mammoths and bison are the indicator species for this time period. The central portion of the Perris Block has produced complex faunas of vertebrate fossils, including the saber cat *Smilodon* (the California state fossil) and mammoth, as well as large and small mammals, reptiles, gastropods, wood, and seeds. More than 100 Pleistocene-age fossil localities have been recorded within the MCP study area, and all segments of the MCP project cross Pleistocene-age sediments.

3.12.3 Fossil Localities

Generally, scientifically significant paleontological resources are geologic sites or sedimentary deposits containing individual fossils or assemblages of fossils that are unique or unusual, are stratigraphically important, and add to the existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally. All vertebrate fossils are classified as "significant." Those fossils found undisturbed and not subjected to disturbance after their initial burial and fossilization are particularly important, as they provide information for interpretation of tectonic events, past climates, the relationships between aquatic and terrestrial species, and evolution in general. Table 3.12.A identifies the fossil localities recorded in the MCP study area.

Table 3.12.A Fossil Localities within the Mid County Parkway
Study Area by Formation

Era	Period	Epoch	Formation	No. of Localities		
Mesozoic 248–65 mya				0		
		Paloecene 65–54.8 mya	Silverado	22		
		Oligocene 33.7–23.8 mya	Sespe- Vaqueros	2		
	Tertiary	Early Miocene 23.8–17 mya	Topanga	4		
Cenozoic 65 mya to present	65–1.8 mya	Middle Miocene 17–10 mya	Lake Mathews	4		
		Late Miocene 10–5 mya	Puente	9		
		Pliocene 5–1.8 mya	Fernando	18		
		Early Pleistocene 1.8 mya–780,000 ya	Perris Block	3		
	Quaternary 1.8 mya to	Middle Pleistocene 780,000–126,000 ya		0		
	present	Late Pleistocene/Holocene 120,000–11,000 ya		114		
Total	Total 176 Localities					

Source: Paleontological Resources Identification and Evaluation Report, LSA Associates, Inc., 2008.

mya = million years ago

ya = years ago

3.12.3.1 Paleontological Sensitivity

A formation or rock unit has paleontological sensitivity if it previously has produced, or has characteristics conducive to the preservation of, vertebrate fossils and associated fossil environmental indicators or regionally uncommon invertebrate and plant fossils. All sedimentary rocks and certain volcanic and mildly metamorphosed rocks are considered to have sensitivity for paleontological resources.

As discussed above, formations with paleontological sensitivity are located within the MCP study area. One method of assessing paleontological sensitivity is by comparing the areas of sediment sensitivity within each alternative. The sensitivity of a resource can be designated in one of the following ways:

- High Sensitivity (H): Formations or rock units that are known to contain or have the correct age and depositional conditions to contain paleontologic resources.
 High Sensitivity formations can be further classified:
 - Ha: areas where nonrenewable paleontological resources are known from *surface outcrops*.

- Hb: areas of high sensitivity where sediments containing paleontological resources are expected at depth. The depth at which these sediments occur must be determined by developing cross sections and/or reviewing geotechnical boring logs that locate such sediments.
- Low Sensitivity (L): determined by a qualified vertebrate paleontologist conducting a literature and records review as well as a field survey. Low sensitivity can not be determined by simply looking for rock unit descriptions on a geologic map.
- Undetermined Sensitivity (U): areas underlain by sedimentary rocks about which literature and unpublished studies are not available and which, therefore, must be evaluated by field studies and then designated Ha, Hb, or L.

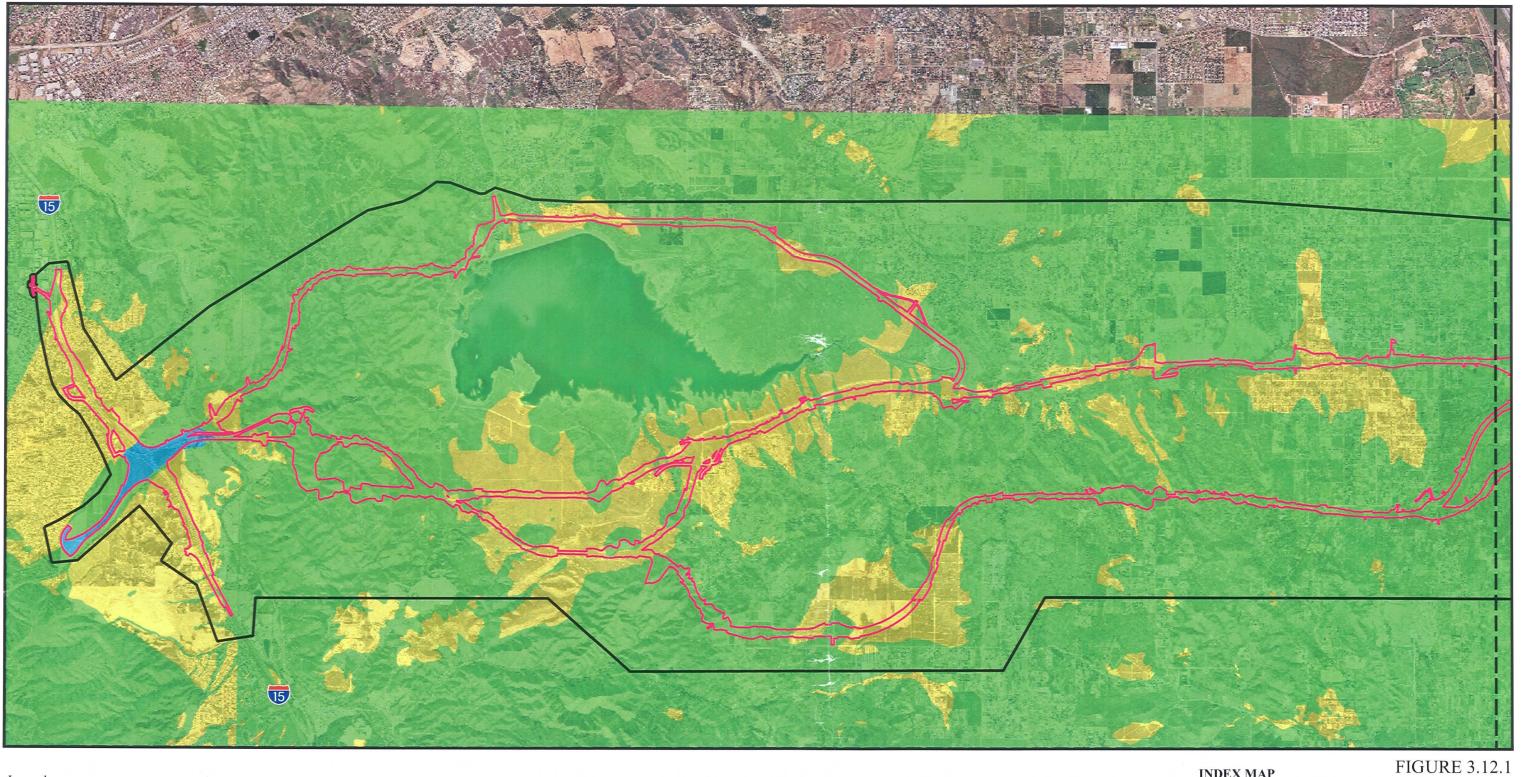
3.12.3.2 Literature Review and Records Search

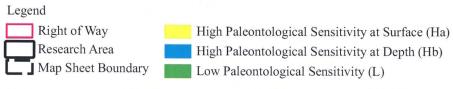
A paleontological literature review was conducted for the MCP project using unpublished reports, paleontological assessment and monitoring reports, field notes, and published literature.

The literature review utilized recent geologic mapping summaries (Morton 2004) to verify the location, extent, and lithologic descriptions of sedimentary formations within the proposed rights of way. The Paleontological Resource Sensitivity Map (Figure 3.12.1) is based on sedimentary formations that have either a record of producing fossils or are relatively fine-grained sediments conducive to the preservation of paleontological resources.

During the records search, the San Bernardino County Museum responded with a recommendation that "...development of the Mid County Parkway in Riverside County, California has a high potential to adversely impact significant nonrenewable paleontological resources. Sediments of the Silverado Formation, Topanga, Formation, and the Lake Mathews Formation as well as Pleistocene older alluvium all have high paleontological sensitivity. A qualified professional, vertebrate paleontologist must be retained to develop a program to mitigate adverse impacts to paleontological resources. The impact [sic] program would need to be consistent with provisions of the California Environmental Quality Act, as well as with regulations implemented by the County of Riverside and with the proposed guidelines of the Society of Vertebrate Paleontology" (Eric Scott, Curator of Paleontology, written correspondence, dated March 23, 2005).

This page intentionally left blank



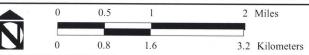


INDEX MAP

Sheet 1 of 2

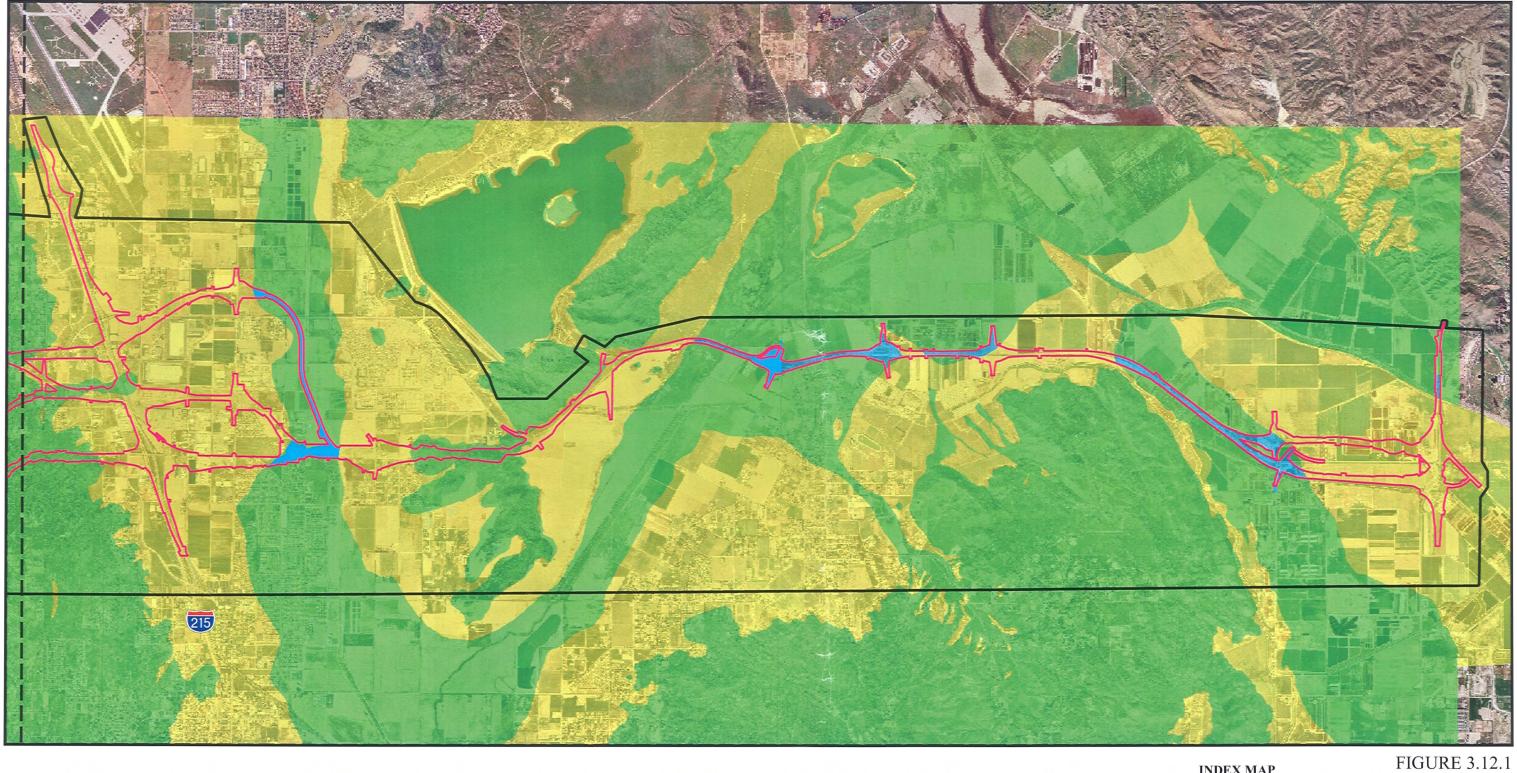


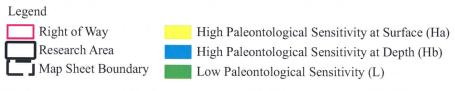
SOURCE: USGS Geologic Quads, Eagle Aerial (2004), Jacobs Engineering (2/2007), LSA (2007)



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank



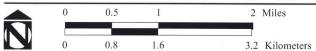


INDEX MAP

Sheet 2 of 2



SOURCE: USGS Geologic Quads, Eagle Aerial (2004), Jacobs Engineering (2/2007), LSA (2007)



Chapter 3	Affected Environment,	. Environmental	Consequences.	and Mitigation Measures

This page intentionally left blank

The Los Angeles County Museum of Natural History added that "Excavations in the mixed Sespe-Vaqueros undifferentiated deposits, the non-marine Lake Mathews formation, or the marine Topanga, Puente and Fernando Formations have a very good chance of uncovering significant fossil vertebrate specimens. Therefore, any substantial excavations in the portions of the proposed project area containing older sedimentary deposits at or near the surface should be closely monitored to quickly and professionally collect any vertebrate fossils without impeding development" (Samuel A. McLeod, Ph.D., written correspondence, dated June 23, 2005).

3.12.3.3 Field Inspection

A vehicular survey of the MCP study area was conducted during May 2005 and again in December 2006. The survey verified the results of the literature review and the analysis of the geologic mapping along the rights of way mapped for the MCP Build Alternatives.

A foot survey was conducted between April and July 2005. Paleontological crew members walked parallel transects along all areas within the proposed MCP rights of way that the records and literature search had determined might contain sediments that could contain paleontological resources or had undetermined sensitivity.

3.12.4 Environmental Consequences

Because sedimentary formations with paleontological sensitivity are geographically restricted to the Elsinore Trough and the Perris Block, the paleontological sensitivity is discussed by alternative in the following sections.

3.12.4.1 Permanent Impacts

Build Alternatives

Fossils and their associated contextual data are significant nonrenewable scientific resources, and the loss of these resources resulting from construction of the MCP Build Alternatives would be the primary impact on paleontological resources. Earthmoving operations would result in the destruction of fossils and fossiliferous rock units within the construction disturbance limits. It is often not possible to completely eliminate impacts to fossil resources. It is understood that earthmoving activity would, unavoidably, destroy some fossils. These types of impacts can be partially mitigated by collecting and preserving a representative sample of the entire fossil assemblage and associated geologic information in the areas disturbed by project construction.



Permanent impacts from the MCP Build Alternatives on paleontological resources would include:

- Destruction of paleontological resources
- Damage to paleontological resources during grading
- Destruction of rock units that may contain paleontological resources
- Loss of contextual data associated with paleontological resources
- Loss of associations between paleontological resources

The MCP Build Alternatives cross areas that contain seven fossiliferous Tertiary formations (65–2 mya) and fossiliferous early to late Pleistocene sediments deposited during the last 2 million years. These fossiliferous sediments crop out at the surface and may also be encountered below surface at many locations within the MCP study area, depending upon the alternative.

Table 3.12.B summarizes the amount of area with high sensitivity for paleontological resources within the footprint of each MCP Build Alternative. Based on the data presented in Table 3.12.B, all alternatives have approximately the same degree of sensitivity ranging from 67–76 percent of the total land area within the footprint of each MCP Build Alternative.

Another permanent impact of the MCP Build Alternatives on paleontological resources would be the provision of access to currently inaccessible areas of Riverside County and the cities of Corona, Perris, and San Jacinto, thereby increasing human presence in those areas. Increased human presence afforded by this access creates opportunities for increased disturbance to paleontological resources, including:

- Human-created erosion
- Increased natural erosion due to human modification of the environment
- Damage or erosion created by off-road motor vehicle traffic
- Increased illegal access to, disruption of, and unauthorized collecting of exposed fossil resources by construction personnel during MCP project construction, or by amateur collectors during construction and operation of the MCP.





Level of Sensitivity	Sensitive Hectares	Sensitive Acres		
Alternative 4				
L (low)	256	632		
Ha (surface)	666	1,646		
Hb (subsurface)	206	509		
High Total	872 hectares	2,155 acres		
Alternative 5				
L (low)	269	664		
Ha (surface)	634	1,568		
Hb (subsurface)	191	473		
High Total	825 hectares	2,041 acres		
Alternative 6				
L (low)	427	1,056		
Ha (surface)	693	1,712		
Hb (subsurface)	211	522		
High Total	904 hectares	2,234 acres		
Alternative 7				
L (low)	440	1,087		
Ha (surface)	661	1,634		
Hb (subsurface)	196	486		
High Total	857 hectares	2,120 acres		
Alternative 9				
L (low)	353	873		
Ha (surface)	512	1,266		
Hb (subsurface)	202	498		
High Total	714 hectares	1,764 acres		

Source: Paleontological Resources Identification and Evaluation Report, LSA Associates. Inc., 2008.



The recovery of fossils as part of the construction of the MCP Build Alternatives would make new information available to scientists, educators, and the general public that they would not possess without construction of the project. Fossil recovery and new data would be beneficial effects of the project, including new data on the evolutionary relationships and developmental trends among organisms, information on the age of rock units or sedimentary strata, depositional history of the region and timing of geologic events, development of biological communities, interactions between ancient plant and animal species, geographic restrictions of past species, and unusual or spectacular circumstances in the history of life. Recovered fossil specimens or casts of specimens could also serve as a source of educational material and be incorporated into exhibits for public display.

No Build Alternatives

Under the MCP No Build Alternatives 1A and 1B, the permanent impacts discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but impacts to paleontological resources in other areas would occur for the other transportation improvement projects included in No Build Alternatives 1A and 1B that require grading or excavation in areas with high paleontological resource sensitivity.

Discussion of Impacts Relative to MSHCP Amendment

Paleontology was determined not to be a topic of concern and was therefore not analyzed in the Multiple Species Habitat Conservation Plan (MSHCP) EIR/EIS. An amendment to the MSHCP to provide coverage for Alternative 9 Temescal Wash Area Design Variation (TWS DV) would not change the conclusion of the MSHCP EIR/EIS related to paleontology.

3.12.4.2 Temporary Impacts

Build Alternatives

Direct impacts to paleontological resources would result from construction of any of the MCP Build Alternatives, not from operation of the facility itself. Impacts to paleontological resources are considered permanent, not temporary, as discussed above.

No Build Alternatives

As discussed above for the MCP Build Alternatives, impacts to paleontological resources are considered permanent, not temporary. Although the MCP project would not be built under No Build Alternatives 1A and 1B, impacts to paleontological resources could result from other transportation improvement projects included in No Build Alternatives 1A and 1B that would require grading or excavation in areas with high paleontological resource sensitivity.

3.12.5 Avoidance, Minimization, and/or Mitigation Measures

Since the MCP project could adversely impact paleontological resources during ground-disturbing activities, mitigation is required. Implementation of PAL-1, described below, requires RCTC to prepare a Paleontological Mitigation Plan (PMP) prior to completion of the final design to reduce impacts to paleontological resources.

PAL-1 Prior to the beginning of construction, the Riverside County Transportation Commission (RCTC), in accordance with the

guidelines on the California Department of Transportation (Caltrans) Standard Environmental Reference Web site, the County of Riverside guidelines, guidelines of the Bureau of Land Management (BLM), and the guidelines of the Society of Vertebrate Paleontology, shall develop a Paleontological Mitigation Plan (PMP) for implementation during the excavation phase of the MCP project. The PMP shall include the following steps:

- Prior to the start of construction activity, RCTC shall retain a qualified paleontologist. The paleontologist shall establish procedures (monitoring plan) for paleontological resource monitoring and procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the paleontological resources as appropriate. The paleontologist shall also be present at the pregrading conferences to explain the established procedures based on a preapproved monitoring plan. If paleontological resources are discovered, a qualified project paleontologist shall determine appropriate actions, in cooperation with RCTC, for testing and/or data recovery, plans for which may be developed in advance to avoid construction delays. The paleontologist shall submit a follow-up report to RCTC that shall include the period of inspection, an analysis of any fossils found, the results of any testing or data recovery, and the present repository of the fossil specimens. Paleontological monitoring reports shall be submitted to RCTC on a monthly or more frequent basis during grading and excavation activities of the construction phase of the MCP project.
- A qualified paleontological monitor will be present during ground-disturbing activities within the project disturbance limits in potentially fossiliferous formations crossed by the MCP project. These sediments are likely to contain paleontological resources. The monitoring for paleontological resources will be conducted on a full-time basis where fossiliferous sediments are exposed at the surface (High A) and at elevations where excavation is 0.9 meter (3 feet) below the surface where paleontological resources are anticipated at depth (High B). The monitor will be empowered to temporarily halt or redirect construction activities to ensure



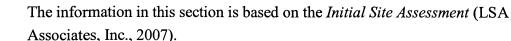
avoidance of adverse impacts to paleontological resources. The monitor will be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, samples will be collected and processed to recover microvertebrate fossils. Processing will include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.

- On encountering a large deposit of fossils, the monitor will salvage all fossils in the area using additional field staff and in accordance with modern paleontological techniques.
- All fossils collected will be prepared to a reasonable point of identification. Excess sediment or matrix will be removed from the specimens to reduce the bulk of the material and the storage cost.
 Itemized catalogs of all material collected and identified will be provided to the repository along with the specimens.
- A compliance report addressing Caltrans and Riverside County guidelines that document the results of the monitoring and salvage activities and the significance of the fossils will be prepared and submitted for filing at RCTC within 4 months of the end of project construction. Consideration shall be given to budgeting for tasks of wet screen matrix processing, fossil preparation, and identification to start while excavation monitoring is ongoing.
- All fossils collected during this work, along with the itemized inventory of these specimens and the compliance report, will be deposited for permanent curation and storage into an established repository (Society of Vertebrate Paleontology [SVP], 1995 and 1996) such as the Riverside Metropolitan Museum.
- There are two federal land (Bureau of Land Management [BLM]) parcels traversed by Alternatives 4, 5, and 9. If the qualified paleontologist determines that the formations in these areas have paleontological sensitivity and construction activities will occur that may disturb these formations, an appropriate BLM paleontological resource use permit will be obtained.





3.13 Hazardous Waste/Materials



3.13.1 Regulatory Setting

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

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for "cradle to grave" regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety & 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 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.



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

3.13.2 Affected Environment

The Initial Site Assessment was prepared to determine whether construction of the MCP project could be affected by any recorded or visible hazardous waste problems within the MCP study area. The Initial Site Assessment included a search of government records to obtain a listing of properties or known incidents from state, federal, or regulatory databases for hazardous waste sites within the project area, review of historical aerial photographs and topographic maps, and a site survey of the proposed right of way for all MCP Build Alternatives to identify any visible contamination. The records search included review of South Coast Air Quality Management District (SCAQMD) approved Health Risk Assessment (HRA) listings, California Regional Water Quality Control Board (RWQCB), Santa Ana Region records, and March Air Reserve Base records.

The records search identified several spills and leaking underground storage tanks (LUSTs) within the proposed right of way, as summarized in Table 3.13.A. For all these releases, remedial action is either planned or in progress or the cases are closed. In addition, all hazardous release, use, storage, and generator sites within 0.4 kilometers (km) (0.25 miles [mi]) of the footprint for all MCP Build Alternatives are described in Table 3.13.B and depicted in Figure 3.13.1.

During the site survey, no evidence of spills, accidental releases, or illegal dumping of hazardous materials or hazardous wastes were observed. Land uses commonly affiliated with hazardous releases were observed throughout the project footprint and buffer area and include gasoline service stations, aboveground storage tanks (ASTs), abandoned and active industrial uses, Burlington Northern Santa Fe rail facilities, pole-mounted transformers, and scrap yards.

Table 3.13.A Hazardous Substance Releases within the Proposed Right of Way (All Alternatives)

Figure 3.13.1 Map Identification Number	Address	Databases	Status
5	Pulliam Family Trust 1569 Nandina Avenue Perris, CA	LUST	On January 4, 1993, an LUST containing diesel was discovered. The leak impacted soil only. A preliminary site assessment workplan was submitted. The Remedial Action Plan was prepared on March 16, 2005. Remediation methods included SVE and treatment of the contaminated soil. Groundwater is proposed to be pumped into an AST and disposed of at an off-site treatment facility. For more information regarding the background and status of this site, see Section 3.6.
5	Nandina Liquor/Texaco 1569 Nandina Avenue Perris, CA	LUST	The leak from an LUST impacted a drinking water aquifer. A Remedial Action Plan was prepared on March 16, 2005. Remediation methods included SVE and treatment of the contaminated soil. Groundwater is proposed to be pumped into an AST and disposed of at an off-site treatment facility. For more information regarding the background and status of this site, see Section 3.6.
15	El Sobrante/Palm Road Lake Mathews, CA	CHMIRS	During a police bust of a vehicle drug lab on February 12, 1995, 5 gallons of drug lab waste-related chemicals were encountered. Cleanup of the site was conducted by the Riverside County Health Department. The site involved an unspecified waterway.
29	1298 East Orange Avenue Corona, CA	CHMRIS	A 5-gallon metal container of an unknown oxidizer was found abandoned in 2001.
33	El Sobrante and Mockingbird Canyon Road, Unknown, CA	ERNS	25 gallons of paint and 5 gallons of tar were dumped on April 17, 1992.
35	ARCO 1402 East Ontario Avenue Corona, CA	CHMIRS	A spill of approximately 20 to 25 gallons of gasoline occurred in 1994. The spill was reported as impacting a waterway.
66	Hy-Line International 31111 Reservoir Avenue Lakeview, CA	LUST	An LUST was discovered on April 4, 1994, containing gasoline. A gasoline additive (MTBE) was also detected. Leak impacted soil only. Case closed as of September 25, 1997.
75	19511 Tyler, Cajalco, CA	CHMIRS	Two gallons of drug lab waste were found in a residence on March 2, 1994. The site involved an unspecified waterway. Cleanup was conducted by Riverside County Health Department.
77 and 78	Mobil Baldwin 21020 Cajalco Road Perris, CA	LUST	An LUST was discovered on July 17, 2000, containing gasoline. The leak impacted soils and groundwater. Soil excavation and infiltration gallery instillation were chosen on January 4, 2006, by the RWQCB to be the most suitable remediation method for site contaminants. The site is currently undergoing remediation and monitoring. For a more in-depth discussion on this site's background and status, see Section 3.6 in the ISA.
79	Barton Road south of Cajalco Road Mead Valley, CA	CHMIRS	Date reported July 25, 1991.
79	Barton Road/Cajalco Road Mead Valley, CA	CHMIRS	Date reported June 29, 1991.

Table 3.13.A Hazardous Substance Releases within the Proposed Right of Way (All Alternatives)

Figure 3.13.1 Map Identification Number	Address	Databases	Status
80	19401 Cajalco Road Mead Valley, CA	ERNS	Five gallons of drug lab waste were discovered on September 5, 1992.
94	Western Municipal Water District Operations Center 16451 El Sobrante Road Riverside, CA	LUST	An LUST containing unleaded gasoline and detectable amounts of MTBE was discovered on September 10, 1994; the LUST impacted a drinking water aquifer. Remedial action through vapor extraction and groundwater treatment is underway. For additional information regarding the background and status of this site, see Section 3.6.
109	19825 Banbury Cross Road Perris, CA	CHMIRS	55 gallons of unspecified chemicals and various drug manufacturing materials were encountered during an illicit drug lab bust on May 4, 1999. Cleanup of the site was conducted by the Riverside County Fire Department.
145	Golden West Homes 3100 North Perris Boulevard Perris, CA	ЕМІ	Reported as generating 22 tons per year of total organic hydrocarbon gases and 17 tons per year of reactive organic gases in 2001.
155	Liston Aluminum Co. 20401 Temescal Canyon Road Corona, CA	LUST	An LUST impacted soil only. Case closed.
155	Cajalco and Temescal Canyon Road El Cerrito, CA	ERNS	5 pounds of Magnesium Turning PCP was spilled on November 5, 1988.
159	Intersection of Bedford Canyon and Georgetown Corona, CA	CHMIRS	A sewer lift station overflowed for approximately one-half hour on February 23, 2000.
160	Liston Aluminum Co. 20401 Temescal Canyon Road Corona, CA	LUST	An LUST containing gasoline was discovered on March 19, 1993. The leak impacted soil only. The case was closed as of July 14, 1993.
161	Sanderson and Ramona Expressway North Hemet, CA	ERNS	55 gallons of acrylic paint were discovered on August 7, 1987.
169	Store-A-Lot Perris 2826 North Perris Boulevard Perris, CA	CHMIRS	Corrosive liquid nitric acid. No waterway was involved.
173	Sunnyedge Disposal 2750 North Perris Boulevard Perris, CA	LUST	An LUST containing gasoline was confirmed on February 25, 1992. The leak impacted soil only. The case was closed as of May 3, 1993.
227	Evans Transport 1936 Indian Avenue Perris, CA	LUST	An LUST containing gasoline was discovered on August 10, 1992. The leak impacted soil only. Contaminated soil was removed and treated. Case closed as of June 17, 1993.

Source: Hazardous Waste Initial Site Assessment, LSA Associates, Inc., 2007.

AST = aboveground storage tank

CHMIRS = California Hazardous Material Incident Reporting System

EMI = Emissions Inventory Data

ERNS = Emergency Response Notification System

ISA = Initial Site Assessment

LUST = leaking underground storage tank MTBE = Methyl Tertiary Butyl Ether

PCP = Phencyclidine

RWQCB = Regional Water Quality Control Board

SVE = soil vapor extraction

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

and from	ROW (ft)							1		(10			
ţ	2 3 3	1247	438	44	165	0	526	1204	114	1030	711	1208	0	0	0	846	1146	1045	0	0	307
Dietance from	ROW (m)	380	134	13	50	0	160	367	35	314	217	368	0	0	0	258	349	319	0	0	94
	Release	No	Yes	گ	٩ ۷	Yes	<u>8</u>	_S	N _O	N _o	No V	No	No	No	Yes	Yes	No	S O	No No	٥ ک	2
	Database	HAZNET	COR, FINDS, HAZNET, HMMD, LUST, RCRIS-SQG	RCRIS-SQG, FINDS, AIRS	HAZNET	COR, LUST, HAZNET, CA_FID	HAZNET	CA WDS	AZ AQUIFER	AIRS	FINDS, HAZNET, AIRS	HIST UST, HAZNET	SCH	HIST UST	SPILLS	AIRS, AST, CA_FID, COR, FINDS, HAZNET, HIST UST, LUST, RCRIS-LQG, SPILLS, UST	HAZNET	HAZNET, FINDS, RCRIS- SQG	AIRS, HAZNET	HAZNET	FINDS, FTTS
	Zip	92571	92571	92570	92371	92370	92571	92571	92518	92570	92571	92370	92516	92644		92503	91719	91719	92370	92571	92571
	City	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	RIVERSIDE	PERRIS	PERRIS	PERRIS	RIVERSIDE	RIVERSIDE	LAKE MATTHEWS	LAKE MATHEWS	CORONA	CORONA	PERRIS	PERRIS	PERRIS
	Address	1375 NANDINA AVE	1480 NANDINA AVE	23100 NANDINA AVE	1530 NANDINA AVE	1569 NANDINA AVE	5055 WESTERN WAY	5008 PATTERSON AVE	7,123 ACRES; EAST OF RIVERSIDE, CA	1190 W OLEANDER AVE	1320 WEST OLEANDER AVE	23560 OLEANDER AVE.	EL SOBRANTE ROAD/LA SIERRA AVE	13100 EL SOBRANTE RD	EL SOBRANTE / PALM RD	18250 LA SIERRA AVE	18410 COMPTON AVE	18430 COMPTON AVE	4675 WADE AVE	4605 WADE AVE	23450 MARKHAM ST
	Site Name	SWEDISH SPEED	EMPIRE TRACTOR	TRIWAY INDUSTRIES	JR PIPELINE CO INC	NANDINA LIQUOR/TEXACO	WESTERN METAL SPINNING AND MFG CORP	LR BUTLER AUTO DISMANTLER	RIVERSIDE NATIONAL CEMETERY	TEMCO FIREPLACE CO	AURORA MODULAR INDUSTRIES INCORPORATED	TEMTEX PRODUCTS, INC., TEMCO FIREPLACE PRODUCTS	ELEMENTARY SCHOOL #30	KAYANO FARMS. INC.		METRO WATER DIST OF SO CAL	CENTENNIAL ANIMAL HOSPITAL	JC MCCLINTON TRUCKING INC	PERRIS VALLEY AUTO BDY, LIEN&C	MYERS PIPELINE INC	GREAT WESTERN METALS
Mon	Map	2	င	2	2	2	ဖ	7	ω	6	7	12	13	14	12	17	19	19	20	20	21

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Map	Site Name	Address	City	diZ	Database	Release	Distance from	Distance from
22	ROWLAND APARTMENTS, CR & R INCORPORATED	233 WEST MARKHAM ST	PERRIS	92571	HAZNET	N _O	279	916
23	PETE'S ROAD SERVICE INC	18620 S COMPTON	CORONA	91719	HAZNET	No No	127	416
24	KENNY RAY FARMS	23381 PERRY ST	PERRIS	92370	HIST UST	٥ N	119	390
25	K MART SHOPPING CTR	1345 E ONTARIO	CORONA	91719	HAZNET	S S	69	225
56	WALMART STORE NO 2842	1290 E ONTARIO AVE	CORONA	92881	FINDS, RCRIS-SQG	S S	107	350
56	SAM'S CLUB FUELING STATION	1395 E ONTARIO AVE	CORONA	92882	UST	٥ N	112	368
27	DWIGHT HOLCOMB ORCHARD SERVICES	1445 E ONTARIO AVE STE #2	CORONA	91719	CA_FID, HAZNET	S N	39	129
28	DWIGHT H. HOLCOMB	1445 E ONTARIO AVE STE	CORONA	91719	HIST UST	S S	47	153
29	UNITED HECKATHORN	1499 ONTARIO AVE	CORONA	91719	CERCLIS-NFRAP	Yes	0	0
29		1298 EAST ONTARIO AVE.	CORONA	92879	SPILLS	Yes	2	9
30	DRY CLEAN FACTORY	1312 E ONTARIO AVE STE 106	CORONA	92881	DRYCLEANERS	No	0	0
31	BEST FOR LESS TIRES	3865 N PERRIS BLVD UNIT A7	PERRIS	92570	HAZNET	No	37	120
31	HERITAGE DEVELOPMENT GROUP	4025 N PERRIS BLVD	PERRIS	92571	HAZNET	No	0	0
31	TEXACO SERVICE STATION	4039 N PERRIS BLVD	PERRIS	92571	RCRIS-LQG, HAZNET, FINDS, UST	No V	0	0
31	EXPRESS AM/PM	4040 N PERRIS BLVD	PERRIS	92571	UST	S S	0	0
32	ACCESS BUSINESS GROUP LLC, NUTRILITE, BRINE FAC, NUTRILITE, AMWAY NUTRILITE PRODUCTS	19600 6TH ST	LAKEVIEW	92567	WWFAC, HAZNET, CA WDS, AIRS, FINDS	o Z	112	367
33	EL SOBRANTE AND MOCKINGBIRD CANYON RD	EL SOBRANTE AND MOCKINGBIRD CANYON RD	UNKNOWN	92504	ERNS	Yes	0	0
34	MOTTE AND SONS INC	33491 MARVIN RD	LAKEVIEW	92383	HIST UST	Š	326	1071
35	ARCO #5676/PRESTIGE STATIONS #5342, BP WEST COAST PRODUCTS LLC 5676	1402 EAST ONTARIO AVE	CORONA	91719	UST, HAZNET, FINDS, RCRIS-SQG, HMIRS, ERNS, SPILLS	Yes	0	0
35	CHASE SUBSTATION	1390 EAST ONTARIO AVE	CORONA	92882	SLIC	Yes	0	0

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Мар	Site Name	Address	City	Zip	Databasa	Dolozeo	Distance from	Distance from
إٍ		SSORRY	Suo.	7 1		חמוממטמ	ROW (m)	ROW (ft)
37	PERRIS VALLEY PRINTING CO	85 E RAMONA EXPRSWY STE 5	PERRIS	92571	HAZNET	No	49	162
37	EXXON MOBIL OIL CORP, MOBIL #18-BLN, EXXON MOBIL OIL CORP #10747	3995 N PERRIS BLVD	PERRIS	92571	UST, RCRIS-LQG, FINDS, SPILLS, HAZNET, LUST, CA FID	Yes	38	126
38	CAMPERS RESORTS OF AMERICA	375 E RAMONA EXPY	PERRIS	92370	CA_FID	_S	291	954
39	LOWES HIW - PERRIS RDC 966	3984 INDIAN AVE	PERRIS	92571	SPILLS, HAZNET, FINDS, RCRIS-SQG	Yes	333	1091
40	SHERM'S IRON WORKS			91719	HIST UST	No No	358	1176
41	RAMONA EXPWY ON RAMP TO NB-215	RAMONA EXPWY ON RAMP TO NB-215	PARIS		ERNS	Yes	20	67
43	REAL (MANUEL L.) ELEMENTARY	19150 CLARK STREET	PERRIS	92570	FINDS	9N	153	502
44	EXTREME AUTOMOTIVE	18889 GROVEWOOD DR	RIVERSIDE	92881	HAZNET	No No	389	1275
45	NWC OF ONTARIO AND STATE	ONTARIO AVENUE / STATE STREET	CORONA		SLIC	Yes	107	351
46	WEST COAST MOTOR SPORTS	3845 N PERRIS	PERRIS	92571	HAZNET	oN	327	1072
47	ABC MORTGAGE SERVICES	19205 ROBBINSON ST	PERRIS	92570	HAZNET	No	325	1067
48	GALAXY, LAKEVIEW FUELS, CHEVRON LAKEVIEW	19560 LAKEVIEW AVE	LAKEVIEW	92567	UST, HAZNET, HIST UST	No	102	335
51	INTOWN PROPERTIES INC/HUD	20633 BURNS ST	PERRIS	92570	HAZNET	No	166	546
52	PERRIS HYDROELECTRIC PLANT, MWD-PERRIS POWER PLANT, MWD/PERRIS PRESSURE CONTROL	27500 RAMONA EXPRESSWAY	PERRIS	92370	UST, FINDS, AIRS, HIST UST, CA_FID	No	0	0
53	COUNTY FIRE - MEAD VALLEY, MEAD VALLEY FIRE STATION	19250 CLARK ST	PERRIS	92370	CA_FID, HIST UST	No	9	19
54	FERREIRA DAIRY	32100 RAMONA EXPRESSWAY	LAKEVIEW	92567	CA WDS	No No	0	0
55	DWR PERRIS MAINTENANCE YARD	26900 RAMONA EXPY	PERRIS	92370	CA_FID	2	0	0
56	WINFORD TEASLEY	19300 ROBINSON ST	PERRIS	92570	HAZNET	No	170	558
22	JOE'S CIRCLE K & 76	19248 HARVILL AVE	PERRIS	92570	UST	So	31	101

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Distance from ROW (ft)	0	929	0	0	166	0	0	0	0	0	0	0	0	20	0	880	18	21	0	45	0	34	33	0
Distance from ROW (m)		191	0	0		0	0	0	0	0	0	0	0	9		268	5	9	0	14	0	10	10	0
Release	o Z	Yes	^o Z	8	Yes	Š	_S	2	8 S	Yes	No	N _o	No	Yes	No	No	No	No	Yes	Yes	No	No	Yes	Yes
Database	CA WDS	ERNS, HAZNET	HAZNET	UST	SPILLS	CA WDS	HAZNET	HAZNET	HAZNET	COR, LUST, AST	CA WDS	HAZNET, AST	зсн	SPILLS	HAZNET	RCRIS-LQG, HAZNET, FINDS, CA WDS, AIRS	HAZNET	HAZNET	ERNS, SPILLS	COR, CA WDS	HIST UST	CA_FID	LUST	SPILLS
Zip	92567	92571	92583	92582	92881	92567	92567	00000	92571	92550	92567	92570	92571		92370	92572	92570	92570		92503	92370	92370		92370
City	LAKEVIEW	PARIS	SAN JACINTO	SAN JACINTO	CORONA	LAKEVIEW	NUEVO	LAKEVIEW	PERRIS	LAKEVIEW	LAKEVIEW	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	MEAD VALLEY	CAJALCO	RIVERSIDE	PERRIS	PERRIS	PERRIS	MEAD VALLEY
Address	32920 RAMONA EXPRESSWAY	3701 NORTH WEBSTER AVE	2047 SANDERSON	2070 N SANDERSON AVE	7279 PIUTE CREEK DR	32300 RAMONA EXPRESSWAY	31111 RESERVOIR	CORNER OF HANSEN / RAMONA	20723 WELLS ST	31111 RESERVOIR AVE	34450 RAMONA EXPRESSWAY	23665 CAJALCO RD	NEVADA AVENUE/MORGAN STREET	23453 CAJALCO ROAD	975 MORGAN RD	195 E MORGAN ST	22180 CAJALCO RD	22099 CAJALCO ROAD	19511 TYLER	17250 EL SOBRANTE RD	21020 CAJALCO	21030 CAJALCO RD	21020 CAJALCO RD	CAJA ROAD / BARTON
Site Name	OFFINGA DAIRY	VETERINARY SERVICE INC	MOBIL	MOBIL		JOHN BOOTSMA DAIRY	1X HYLINE INTERNATIONAL	METROPOLITAN WATER DISTRICT	HUD INTOWN PROPERTIES	HY - LINE INTERNATIONAL	PASTIME LAKES DAIRY	CALIFORNIA TRUSS COMPANY	VAL VERDE CONTINUATION HIGH SCHOOL		VAL VERDE USD	MODTECH HOLDINGS INC	HUD INTOWN PROPERTIES	KEVIN YATES	19511 TYLER	HETTINGA RANCH (CR)	BALDWIN'S MOBIL	MOBIL BALDWIN	MOBIL - BALDWIN	
Map ID	28	29	09	09	61	62	63	64	65	99	29	89	69	02	71	72	73	74	75	9/	11	78	78	79

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Distance from	ROW (ft)	798	0	1290	0	77	328	195	1097	146	293	1311	318	0	0	858	644	100	551	280
Distance from	KOW (m)	243	0	393	0	23	100	59	334	45	68	400	97	0	0	262	196	30	168	85
Release	Yes	Yes	2	2	2	Yes	S S	^S	No	Yes	Yes	No.	Yes	oN	Yes	Yes	Yes	Yes	Yes	No
Database	ERNS	LUST. COR	HAZNET	HAZNET	HAZNET	SPILLS	FINDS	HAZNET	ΓF	SPILLS	SPILLS	UST, HAZNET, CA WDS	LUST	HAZNET	COR, LUST, AIRS, CA_FID, HIST UST, AST, CA WDS, HAZNET	SPILLS	SPILLS	ERNS	COR, LUST	HAZNET, FINDS
αiZ	92870	92550	92570	92883	92570		92879	92571				92567		92503	92504	92570	92570		92570	92370
City	MEAD VALLEY	LAKEVIEW	PERRIS	CORONA	PERRIS	PERRIS	CORONA	PERRIS	LAKEVIEW	PERRIS	PERRIS	LAKEVIEW	PERRIS	RIVERSIDE	RIVERSIDE	MEAD VALLEY	MEAD VALLEY	LAKE MATTHEWS	PERRIS	PERRIS
Address	19401 CAJALCO RD	19741 5TH ST	18550 CAJALCO RD.	2794 SPRING MEADOW DRIVE	18300 CAJALCO RD	18194 CAJALCO	17850 CAJALCO RD	3532 N PERRIS BLVD	32710 RESERVOIR AVE	20430 SOUDER ST	19725 TYLER RD	32710 RESERVOIR AVE	17679 CAJALCO RD	16460 EL SOBRANTE RD	16451 EL SOBRANTE RD	20890 HUNTER RD	20255 HUNTER	CAJALCO + EL SOBRANTE RD	17679 CAJALCO ST	19765 PATTERSON AVE
Site Name	19401 CAJALCO RD	NUTRILITE FARM	MEI TANG	LEE MOBERG	I SAKIOKA LLC		CORONA TRUCK SALVAGE	JOHN COUDURES COMPANY	MC ANALLY ENTERPRISES, LLC			MCANALLY ENTERPRISES LLC, STORM, LAKEVIEW	LAKE MATTHEWS GENERAL STORE	KIEWIT PACIFIC	WESTERN MUNICIPAL WATER DISTRICT OPERATIONS CENTER			CAJALCO + EL SOBRANTE RD	LAKE MATHEWS GENERAL STORE	METROPOLITAN WATER DIST OF STHRN CAL, CHEMICAL UNLOADING FACILITY
Мар	2 ₀₈	84	82	83	84	82	98	88	68	06	91	95	93	94	94	92	96	26	86	66

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Database	Zip Database 92570 HISTLIST AIRS CA FID		Zip
		92570	PERRIS 92570
. 1	\dashv	92571	PERRIS 92571
1	+	92571	PERRIS 92571
<u>.</u>			925/1
	S 92570 HAZNET		92570 EWS
	92567 UST	92567	92567
	92567 SCH		92567
	0 AIRS		0
S,	92370 HAZNET, SPILLS		92370
, (92383 HIST UST, CA_FID		92383 NTO
	92567 FINDS		92567
_	92506 HIST UST		i / PERRIS 92506
			92370 Y
	92370 HAZNET, CA WDS, TRIS, AIRS, CORRACTS, FINDS, RCRIS-LQG, RCRIS-TSDF, HIST UST, RAATS, ERNS	92370	92370
	92571 HAZNET	-	92571
δį	Н	Н	PERRIS 92370
F. K.			92370
	92370 ERNS		92370 Y

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Distance from ROW (ft)	186	405	449	142	111	320	0	7	58	891	516	0	511	1045	659	917	0	0	70	0	712	797	778
Distance from ROW (m)	57	123	137	43	34	86	0	2	18	272	157	0	156	319	201	280	0	0	21	0	217	243	237
Release	Yes	ON ON	Yes	No	Yes	No	oN	Yes	Yes	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No No	<u>8</u>
Database	SPILLS, COR, CA_FID, LUST	HAZNET, HAZNET, FINDS, RCRIS-SQG, CA WDS, AIRS	FINDS, RCRIS-SQG, SPILLS, AIRS, AIRS	CA WDS	SPILLS	HIST UST	HAZNET	SPILLS	SPILLS	SPILLS	HAZNET	HAZNET	SPILLS	HAZNET	SPILLS	HAZNET	AIRS, CA WDS, FINDS, HAZNET, TRIS	FINDS, RCRIS-SQG, CA FID	ERNS, SPILLS	CA WDS	LUST	AIRS	FINDS
Zip	92570	92570	92570	92582		92370	92881	92367	92704		92570	92881		92570		92571	92571	92570		92582		92570	92571
City	PERRIS	PERRIS	PERRIS	SAN JACINTO	PERRIS	PERRIS	CORONA	NUEVO	CORONA	CORONA	PERRIS	CORONA	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	UNKNOWN	SAN JACINTO	CORONA	PERRIS	PERRIS
Address	23480 RIDER ST	325 W RIDER ST	275 W RIDER ST	2451 RAMONA EXPRESSWAY	103 EL ROSARIO	3100B N PERRIS BLVD	7540 LIBERTY AVE	ROMANO EXP / PICO	19995 LAYTON ST	19963 WINTON ST	3121 INDIAN AVE	20045 BEDFORD CANYON RD	3135 LA PAZ LN	20111 FALLEN LEAF DR	3080 WILSON	3061 INDIAN AVE	3100 N PERRIS BLVD	3100-A PERRIS BLVD	10470 CAJALCO RD	35500 RAMONA EXPRESSWAY	19630 TEMESCAL CYN RD		2935 INDIAN AVE
Site Name	MCANALLY ENTERPRISES	RECAT INC, WESTERN LIGHTING STANDARDS	HOME SYSTEMS INC	RAMONA FARMS		SPORTSCOACH CORP.	HRIBAR TRANSPORTATION				AAA TOOL & DIE, GBC CONCRETE & MASONRY CONSTRUCTION	PROFESSIONAL FLEET		HUD INTOWN PROPERTIES		J&J TAPE AND LABEL INC	GOLDEN WEST HOMES	COACHMEN INDUSTRIES	10470 CAJALCO RD	MIRA VISTA DAIRY	WAYSIDE DAIRY	PREMIER LAMINATING SERVICES INC	VAL VERDE HIGH (CONT)
Map ID	118	119	120	121	130	131	132	133	134	135	136	137	138	139	142	144	145	145	146	148	149	150	151

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Distance from ROW (#)															
Dist	291	383	0	0	0	0	0	942	0	0	0	0	0	799	233
Distance from ROW (m)	68	117	0	0	0	0	0	287	0	0	0	0	0	244	71
Release	Yes	Yes	o N	Yes	Yes	o N	No	No	No	Yes	No	Yes	Yes	No	No
Database	RCRIS-SQG, HAZNET, FINDS, FTTS, REF, AIRS, SLIC, CA_FID, HIST UST,, SPILLS, RCRIS-SQG, FINDS, HAZNET, CERCLIS-NFRAP	LUST	CA WDS	ERNS	LUST	FINDS, AIRS	AZ AQUIFER	HAZNET	HIST UST	SPILLS, FINDS	CA_FID	COR, LUST, CA_FID, FINDS, CA WDS, CERCLIS-NFRAP,	ERNS	CA WDS	RCRIS-LQG, HAZNET, FINDS, CA WDS, AIRS, RCRIS-LQG
Zip	92881		92582			92881	92881	92618	91719	92882	91718	91719		92582	92572
City	CORONA	CORONA	SAN JACINTO	EL CERRITO	CORONA	CORONA	CORONA	CORONA	CORONA	CORONA	CORONA	CORONA	NR. HEMET	SAN JACINTO	PĖRRIS
Address	20305 TEMESCAL CANYON RD	19885 TEMESCAL CYN RD	35600 RAMONA EXPRESSWAY	CAJALCO AND TEMESCAL CYN RD	20401 TEMESCAL CYN RD	9001 CAJALCO RD	9107 CAJALCO RD	20310 KLYNE ST	20551 BEDFORD CANYON RD	INTERSECTION OF BEDFORD CANYON / GEORGETOWN	20420 TEMESCAL CANYON RD	20401 TEMESCAL CANYON RD	SANDERSON X RAMONA EXPRESSWAY	36580 RAMONA EXPRESSWAY	2830 BARRETT AVE
Site Name	GAMBOA TRUCK LINES, PACIFIC CLAY PRODUCTS INC	CORONA TRUCKING	PICO DAIRY	CAJALCO AND TEMESCAL CYN RD	LISTON ALUMINUM	PAUL HUBBS CONSTRUCTION COMPANY	LISTON ALUMINUM COMPANY SITE	LISTON BRICK OF CORONA	MCMILLAN BROS. CITRUS RANCH	EARTH PRODUCTS RECYCLING	MATERIAL TRANSPORT	LISTON ALUMINUM	SANDERSON X RAMONA EXPRESSWAY	ED VANDER WOUDE DAIRY	MODTECH INC
Map ID	152	152	153	155	155	156	157	158	159	159	160	160	161	162	163

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Distance from	ROW (ft)	395	0	222	53	0	0	0	0	143	0	0	0	314	313	120	163	330	397	503	649	684	592	457
Distance from	ROW (m)	120	0	89	16	0	0	0	0	44	0	0	0	96	95	37	50	101	121	153	198	208	180	139
	Release	No	S O	S O	ž	2	Yes	^S	No No	%	No	Yes	<u>گ</u>	_S	No	No	S S	No	2	No	No	2	No	Yes
	Database	HIST UST	HIST UST	CA WDS	HAZNET, CA WDS, AIRS	HAZNET	HAZNET, SPILLS	DRYCLEANERS	HAZNET	CA WDS	FINDS, RCRIS-SQG	RCRIS-LQG, COR, LUST, FINDS, RCRIS-SQG, , CA_FID, HIST UST, HIST UST	RCRIS-LQG, FINDS	HAZNET	HAZNET	HAZNET	HAZNET, SCH, FINDS	HAZNET	HAZNET	HAZNET	HAZNET	HAZNET	AIRS	HAZNET, COR, LUST, AIRS, HIST UST
i	Zip	92383	92383	92582	92370	92571	92570	92883	92571	92582	92570	92570	92571	92370	92571	92570	92571	92571	92571	92570	92570	92571	92570	92570
	City	SAN JACINTO	SAN	SAN JACINTO	PERRIS	PERRIS	PERRIS	CORONA	PERRIS	SAN JACINTO	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS
	Address	37300 RAMONA EXPRESSWAY	36582 RAMONA EXPY	2441 RAMONA EXPRESSWAY	150 W PLACENTIA AVE	100 SPECTACULAR BID ST	2826 N PERRIS BLVD	3811 BEDFORD CANYON	273 SUNNY HALO CT	1970 N WARREN RD	2770 N PERRIS BLVD	2750 N PERRIS BLVD	2730 PERRIS BLVD	490 LISBON AVE	520 LISBON ST	273 COUNT TURF ST	2656 INDIAN AVENUE	274 CHANT ST	218 CHANT	2587 TWENTY GRAND ST		2606 FERDINAND CT	24067 WATER AVE	24100 WATER STREET
	Site Name	SAN JACINTO RIVER RANCH	DE VRY & SON DAIRY	CBJ DAIRY	BLADOW SANDBLASTING, INC	INTOWN PROPERTIES, INC/HUD	STOR-A-LOT PERRIS	EAGLE DRY CLEANERS	HUD INTOWN PROPERTIES	JOHN & MARGIE OOSTDAM DAIRY	EXTRUSIONS UNLIMITED INC	SUNNYEDGE DISPOSAL	WELL 57	MENCHACA FRANK	HUD INTOWN PROPERTIES	HUD	VAL VERDE ELEMENTARY SCHOOL ADDITION	HUD INTOWN PROPERTIES	INTOWN PROPERTIES, INC/HUD	HUD	HUD	INTOWN PROPERTIES, INC/HUD	STAR MILLING CO	CLA-VAL COMPANY
Map	.⊡	164	165	166	167	168	169	170	171	172	173	173	173	174	175	177	179	180	181	182	184	184	185	186

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Distance from	ROW (ft)	1279	684	738	1093	0,	5	7.2	99	1223	4:		12	4	91	1221	1244	1190	1249	51	2	L 1
Distance from D		390 12	208		333 10						221 724		281 922	291 954	273 896	372 12	379 12	363 11	381 12	151 495	156 512	289 947
-	Kelease	No 3	No 2	Yes 2	No 3						Yes 2		No	No 2	No 2	Yes 3	No 3	No 3	No 3	Yes 1	No L	No S
4	Database	UST, CA WDS, HAZNET	HIST UST	HAZNET, FINDS, SPILLS	CA WDS	HAZNET	HAZNET	HAZNET	SPILLS	HAZNET, SPILLS	ERNS, CA_FID, HAZNET, SWRCY, HAZNET		HAZNET	HAZNET	FINDS	ERNS, SPILLS	HAZNET	HAZNET	CA WDS	SPILLS, FINDS, AIRS, HIST UST	HAZNET	FINDS, FINDS, RCRIS- SQG, AIRS, CA_FID, HIST
7.2	d17	91719	92370	92570	92571	92571	92570	\vdash		92570	92571		92570	92571	92571	92370	92570	92571	92582	92572	92570	92570
1410	CITY	CORONA	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS		PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	SAN JACINTO	PERRIS	PERRIS	PERRIS
2003774	Address	20625 TEMESCAL CANYON RD	23772 WATER AVE	24100-B WATER STREET	2575 MURRIETA ROAD	571 WATER AVE	2572 ELWOOD CT	2628 ELWOOD CT	2608 LARKIN ST	21690 HIGH ST	2560 PERRIS BLVD		220 BOLD VENTURE ST	2577 PLEASANT COLONY	20340 INDIAN AVE	2545 MAJESTIC PRINCE COURT	2519 PLEASANT COLONY ST	2518 AZRA CT	1882 RAMONA BLVD	24201 ORANGE AVE	24200 ORANGE ST	24100 ORANGE AVE
omc/N ofis		TRUE CAST CONCRETE PRODUCTS, QUIKRETE	PEDRO MA INDACOCHEA	CRAFTECH METAL FORMING INC	MIKE PRECIE DAIRY	HUD INTOWN PROPERTIES	HUD	HUD INTOWN PROPERTIES		CLANDESTINE DRUG LAB OPERATOR UNKNOWN	WAL MART STORES INC, TOMRA PACIFIC	INC/ALBERTSONS #6726, INLAND DENTAL GROUP OF PERRIS	HUD	HUD INTOWN PROPERTIES	VAL VERDE SD	2545 MAJESTIC PRINCE COURT	HUD	INTOWN PROPERTIES, INC/HUD	R & J DAIRY - 1882 RAMONA	THE SALVATION ARMY	MINERAL RESOURCE TECHNOLOGY INC	ATKINSON BRICK COMPANY, NEW DAVIDSON BRICK CO INC, DAVIDSON BRICK CO INC,
Мар	₽	187	188	189	190	191	192	192	193	194	195		196	197	199	200	201	202	207	210	210	211

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

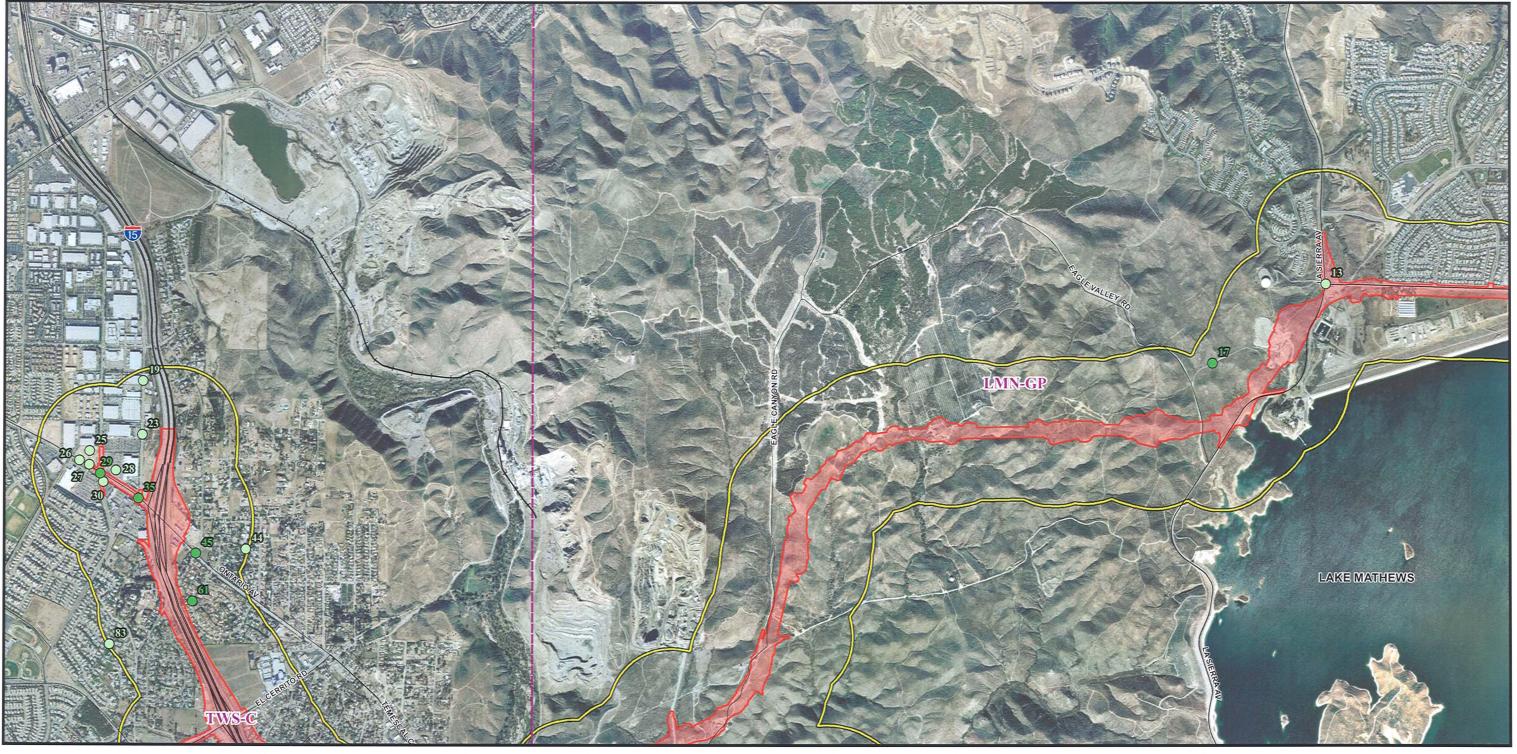
Distance from	ROW (ft)															·					
Distar	8	0	444	379	380		874	20	789	831	591	241	0	19	559	0	0	1010	797	217	181
Distance from	ROW (m)	0	135	116	116		266	15	240	253	180	73	0	9	170	0	0	308	243	158	55
0000100	Kelease	8	Yes	Yes	Yes		8	o _N	Yes	S _N	92	2	No	Yes	o _Z	No No	_N	Yes	Yes	No	N N
Databasa	Database	HAZNET	SPILLS	SPILLS	ERNS, SPILLS		CA FID	HAZNET	ERNS, SPILLS	HAZNET	HIST UST	HAZNET	HIST UST	HAZNET, COR, LUST	FINDS	FINDS, RCRIS-SQG	HAZNET, UST	SPILLS	ERNS, SPILLS	HAZNET	FINDS
Zip	d17	92571	92370	92870	92570		92571	92570	92262	92370	92370	92570	92370	92570	92883	92879	91719	91719	91719	91719	92883
) it	CILY	PERRIS	MEAD VALLEY	MEAD VALLEY	UNINCORPO	RATED COUNTY APEA	PERRIS	PERRIS	PALM SPRINGS	PERRIS	PERRIS	PERRIS	PERRIS	PERRIS	CORONA	CORONA	CORONA	UNINCORPO RATED COUNTY AREA	CORONA	CORONA	CORONA
Address	Sealphy	588 W. ORANGE	SOUTH OF ORANGE STREET / LEE STREET	BROWN STREET / ORANGE STREET	21080 ORANGE ST		2364 INDIAN AVE	21100 GOLD VALLEY RD	2299 INDIAN AVE (PRIV HEALTH CARE FAC)	20751 INDIAN ST	21-011 INDIAN AVE.	21250 OLD ELSINORE RD	21580 INDIAN ST	1936 INDIAN ST	8971 FOSTER RD	22099 KNABE RD	22079 KNABE RD	8530 BEDFORD MOTOR WAY	8580 BEDFORD MOTORWAY	19712 TEMESCAL CANYON	21550 TEMESCAL CANYON RD
Site Name		F.C.I. CONSTRUCTORS			21080 ORANGE ST		JOHN COUDURES COMPANY	RUSSELL DETWITERGREGORY JAMES JOHNSON	2299 INDIAN AVE (PRIV HEALTH CARE FAC)	VAL VERDE SCH DISTRICT	JOHN COUDURES CO.	HUD INTOWN PROPERTIES	DICK G. EVANS TRANSPORTATION,	1X EVANS, AUDREY, EVANS TRANSPORT	FOSTER ROAD ILLEGAL DUMP SITE	CONSTRUCTION MACHINERY INC	CORONA CLAY CO		8580 BEDFORD MOTORWAY	HUD INTOWN PROPERTIES	WEIRICK ROAD ILLEGAL DUMP SITE
Map	٩	213	216	217	218		219	221	222	222	224	225	227	227	228	229	229	230	231	232	233

Table 3.13.B Hazardous Release/Use/Storage/Generators within 0.4 km (0.25 mi) of the Proposed Right of Way (All Alternatives)

Map ID	Site Name	Address	City	diZ	Database	Release	Distance from ROW (m)	Distance from ROW (ft)
234	CHAMPION DIESEL TRUCK REPAIR	19877 TEMESCAL CYN RD	CORONA	91719	HAZNET	No	120	394
235	CONTINENTAL PUMPING INC	21657 TEMESCAL CANYON RD	CORONA	92883	DRYCLEANERS	No	42	139
235	ALL COUNTIES ENVIRONMENTAL SVCS, STP, CREEKSIDE MHP-CORONA	21650 TEMESCAL CANYON ROAD	CORONA	91720	CA WDS, FINDS, RCRIS- SQG	No	45	147
236	COUNTY FIRE - EL CERRITOS	20320 HIGHWAY 71	CORONA	91720	CA_FID, CA WDS, HIST UST	No	43	141
236	LISTON ALUMINUM CO 031046	20401 TEMESCAL CYN RD	CORONA	91720	AIRS, HAZNET, SPILLS	Yes	74	243
237	FST SAND & GRAVEL	21780 TEMESCAL CANYON RD	CORONA	92883	HAZNET, CA WDS, FINDS, RCRIS-SQG	No	239	784
238	ACCURATE MOTOR PRODUCTS AND SERVICE	22079 FOREST BOUNDARY RD STE B	CORONA	92883	FINDS, RCRIS-SQG	No	260	852
239	S&S RANCH LLP	15409 LAKE MATHEWS DR	PERRIS	92570	HAZNET	No	53	173
240	SCHAEFER RANCH	15604 LAKE MATHEWS DRIVE	RIVERSIDE	92502	HIST UST	2	136	446
000	Source: Hazardous Waste Initial Site Assessment 1.SA Associates. Inc., 2007.	LSA Associates. Inc., 2007.						

Source: *Hazardous v* ft = feet km = kilometers

m = meters ROW = right of way





--- Segments Breaks Study Area === Planned Roads

— Existing Roads Hazardous Release Site

O Use Site/Storage Site/Generator Site — Railroad

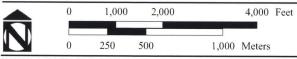
MAP INDEX

FIGURE 3.13.1

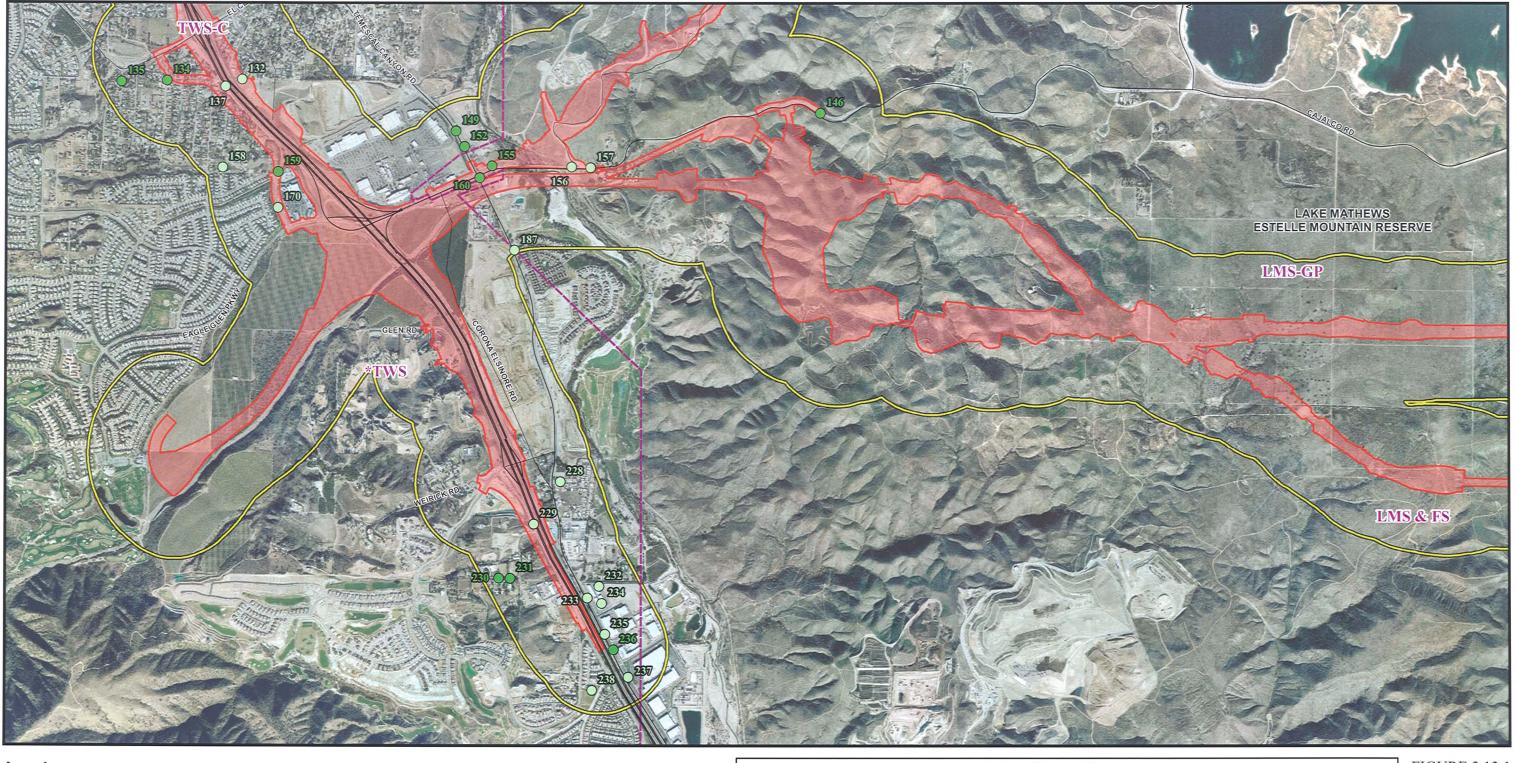
Sheet 1



SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measure	Chapter 3 /	Affected Environment	. Environmental	Consequences.	. and Mitigation Measures
--	-------------	----------------------	-----------------	---------------	---------------------------





Right-of-Way (All Alternatives) --- Segments Breaks

Study Area ==== Planned Roads
Hazardous Release Site Existing Roads

Hazardous Release Site
 Use Site/Storage Site/Generator Site
 → Railroad

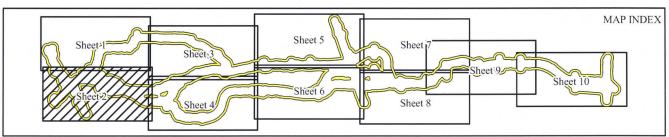
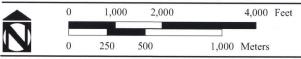


FIGURE 3.13.1 Sheet 2

UNTY PARKET

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures





Study Area

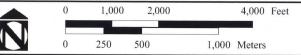
Hazardous Release Site

○ Use Site/Storage Site/Generator Site → Railroad

Right-of-Way (All Alternatives) --- Segments Breaks === Planned Roads

— Existing Roads

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).



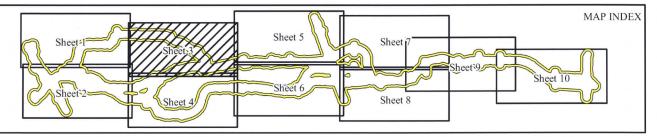
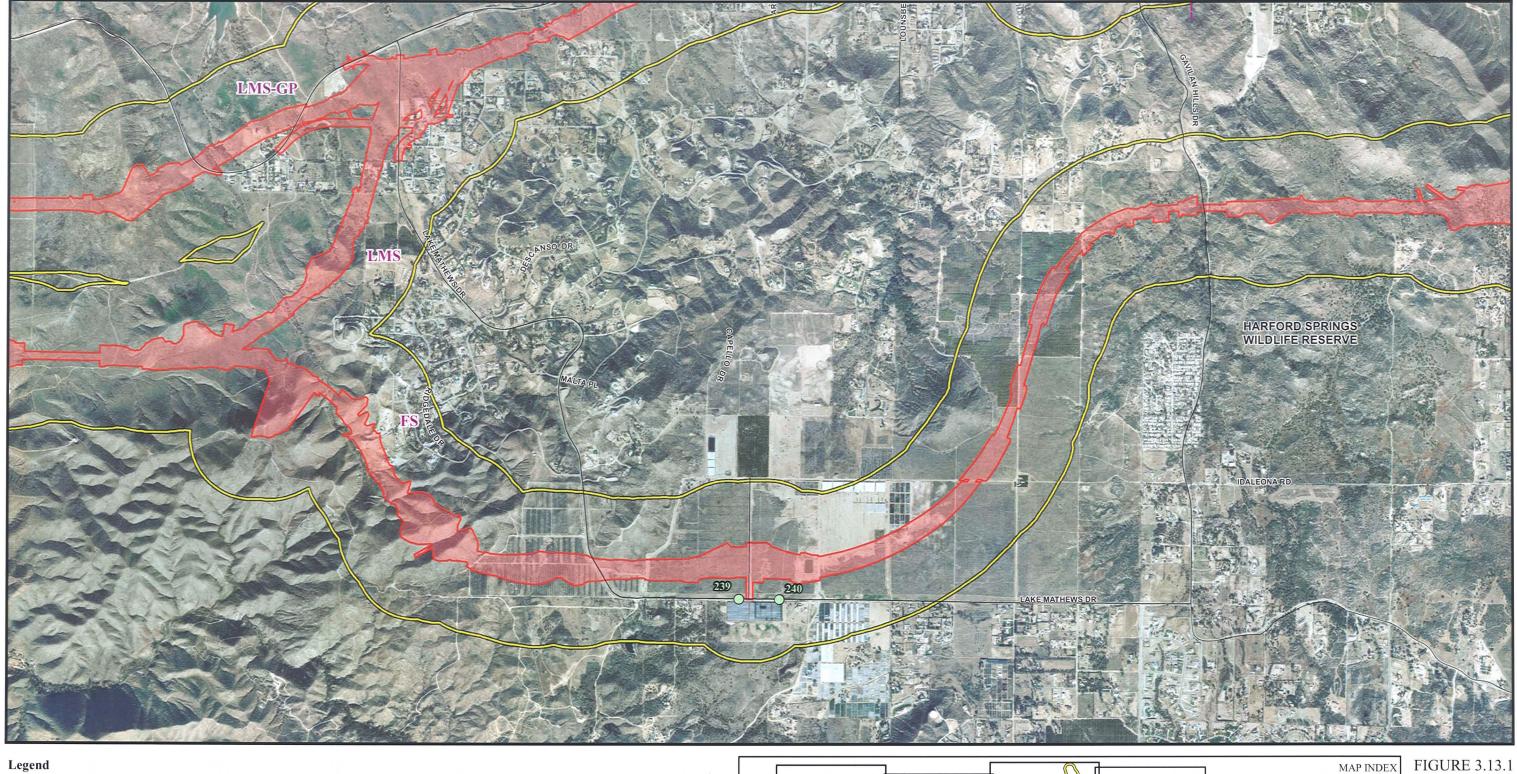


FIGURE 3.13.1

Sheet 3



Chapter 3 Affected Environme	ent, Environmental Consequence	es, and Mitigation Measures
------------------------------	--------------------------------	-----------------------------





Study Area

Hazardous Release Site

○ Use Site/Storage Site/Generator Site — Railroad

Right-of-Way (All Alternatives) --- Segments Breaks === Planned Roads

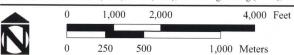
MAP INDEX Sheet 8



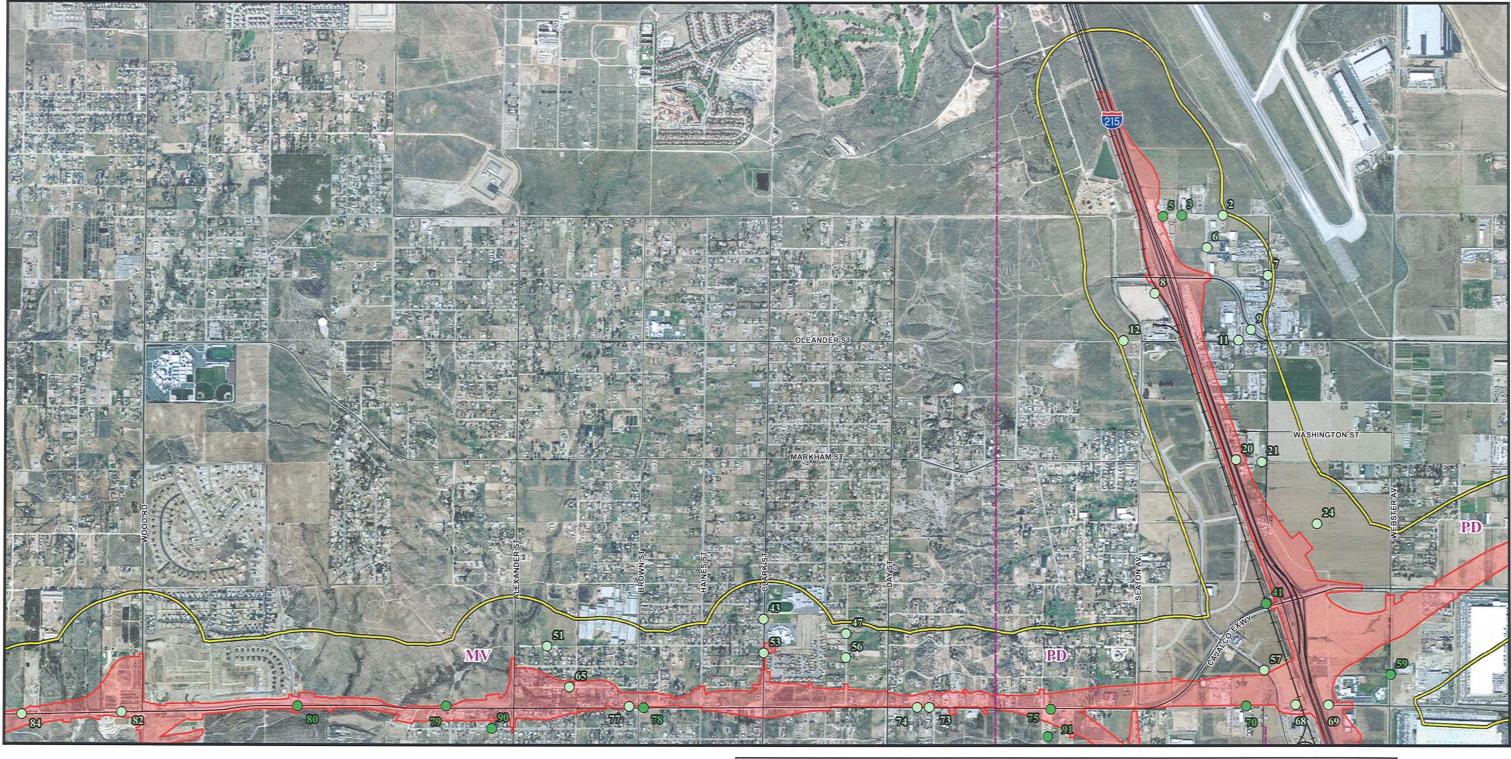
Sheet 4

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).

---- Existing Roads



Chapter 3 Affected Environment, L	Environmental Consequences	. and Mitigation Measures
-----------------------------------	----------------------------	---------------------------





Right-of-Way (All Alternatives) --- Segments Breaks

Study Area === Planned Roads

— Existing Roads Hazardous Release Site

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).

MAP INDEX

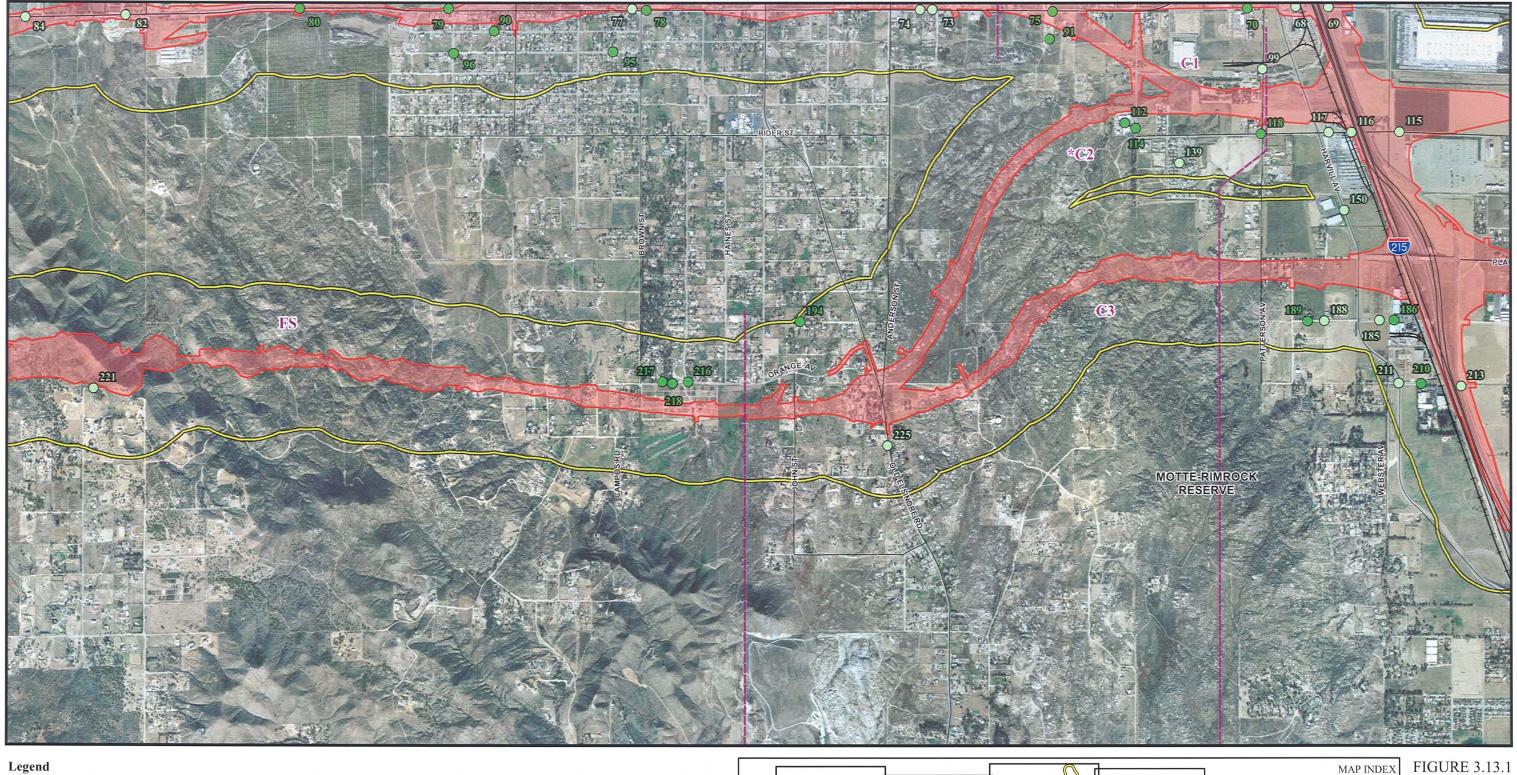
FIGURE 3.13.1 Sheet 5



4,000 Feet

1,000 Meters

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures





--- Segments Breaks

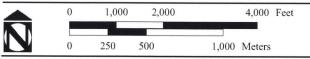
Study Area

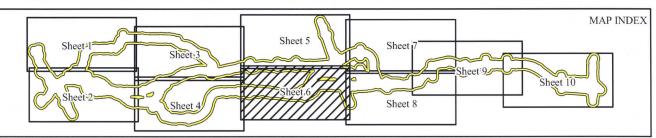
==== Planned Roads — Existing Roads

Hazardous Release Site

○ Use Site/Storage Site/Generator Site → Railroad

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).

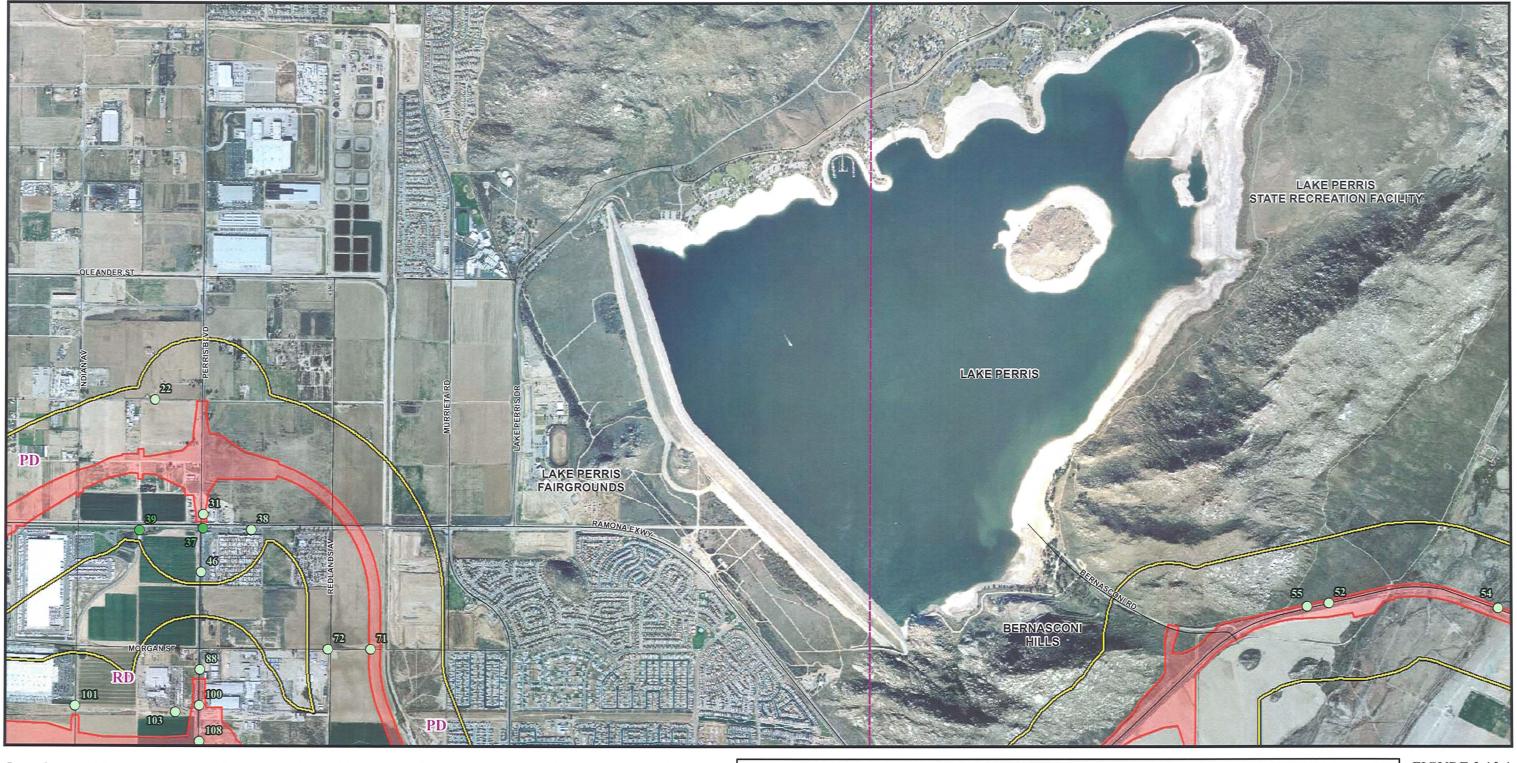




Sheet 6



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures





--- Segments Breaks Study Area === Planned Roads

Hazardous Release Site

○ Use Site/Storage Site/Generator Site → Railroad

MAP INDEX

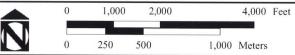
FIGURE 3.13.1

Sheet 7

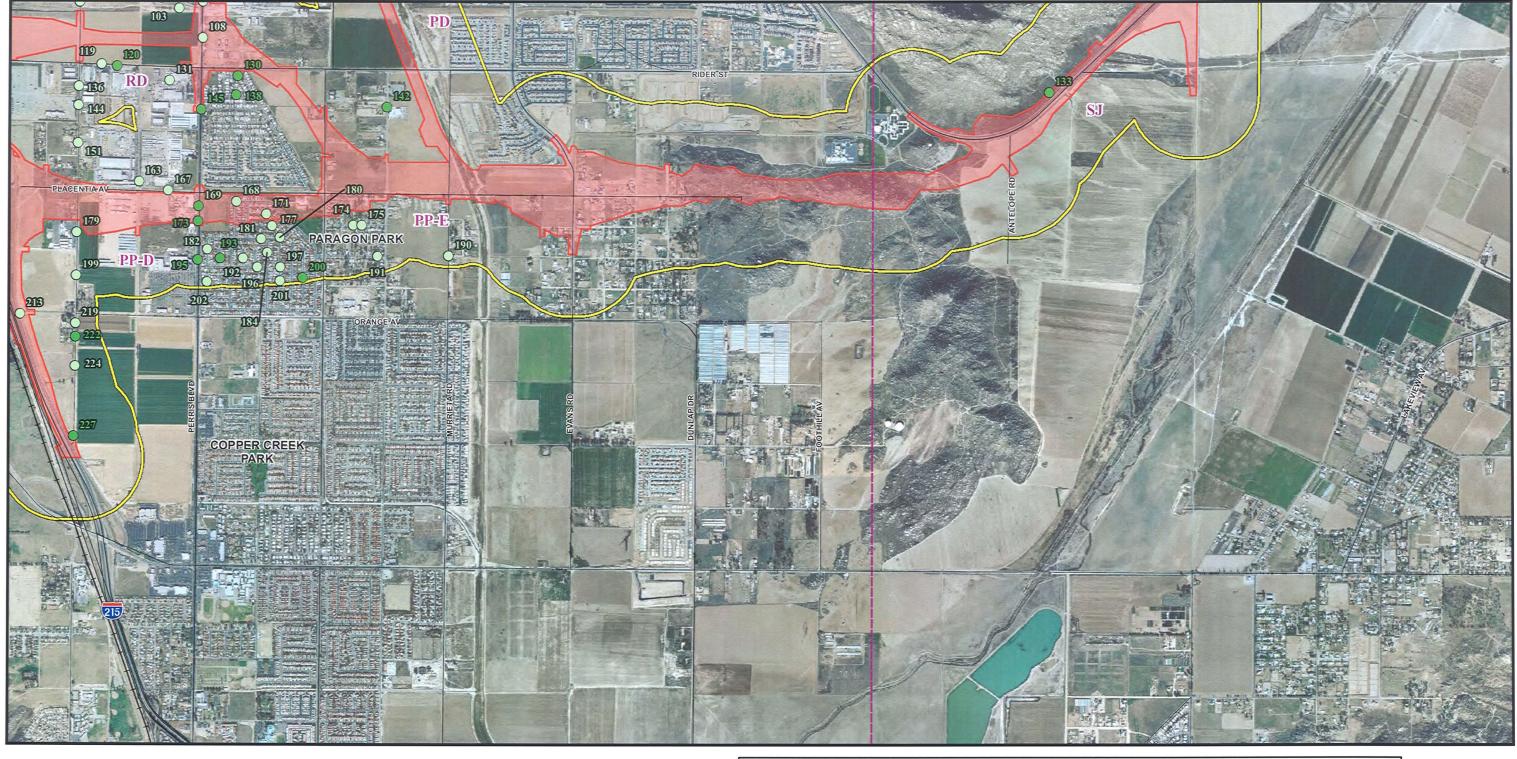


SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).

— Existing Roads



Chapter 3	Affected Environment	, Environmental	Consequences	, and Mitigation Measures
-----------	----------------------	-----------------	--------------	---------------------------



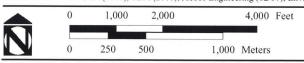


Hazardous Release Site

○ Use Site/Storage Site/Generator Site → Railroad

--- Segments Breaks Study Area === Planned Roads — Existing Roads

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).



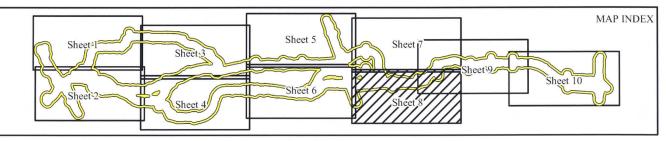
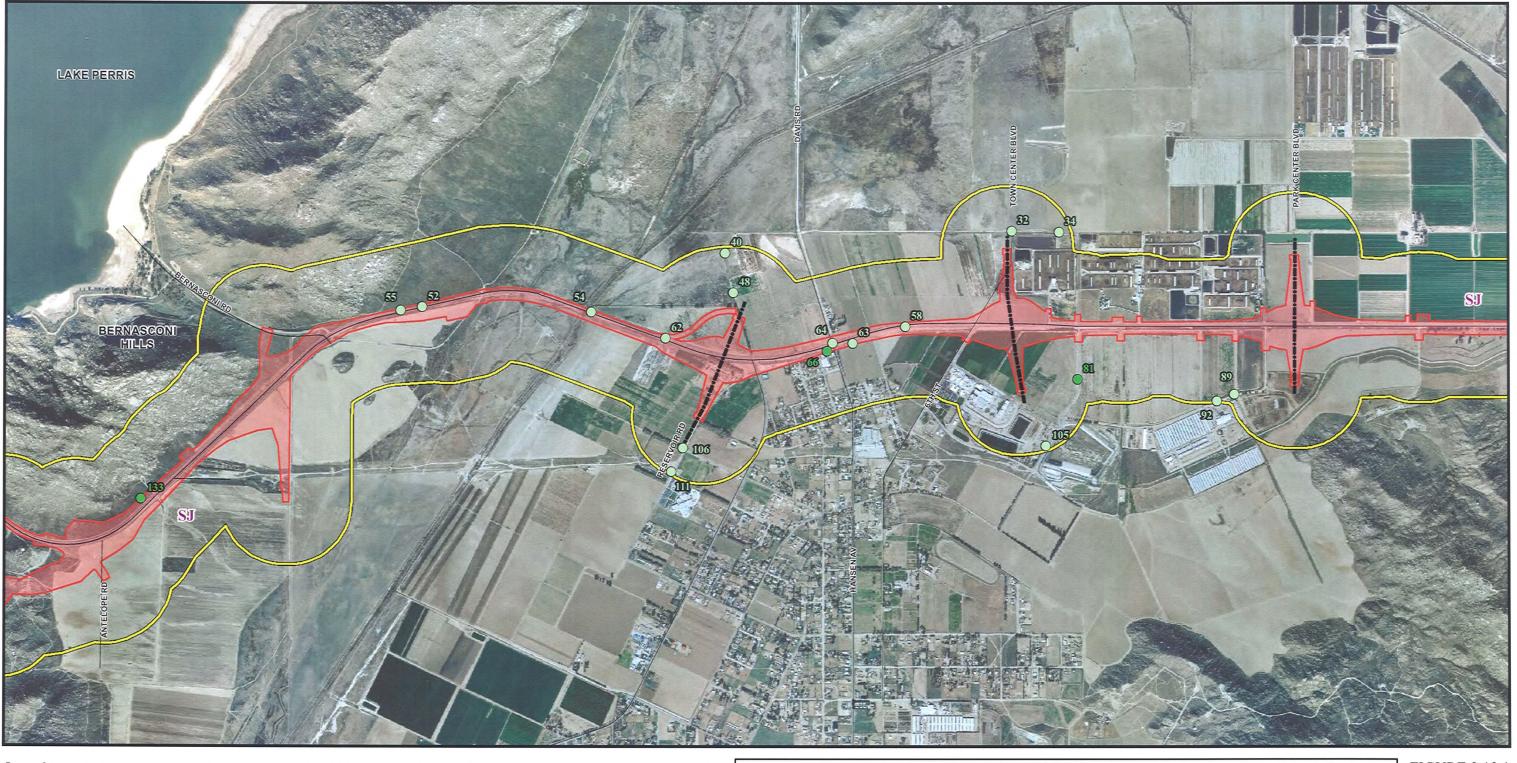


FIGURE 3.13.1

Sheet 8



Chapter 3 Affected Environment, Environmental Consequences, and I	Mitigation Measures
---	---------------------





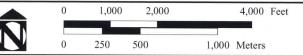
Right-of-Way (All Alternatives) --- Segments Breaks

Study Area

=== Planned Roads — Existing Roads Hazardous Release Site

○ Use Site/Storage Site/Generator Site → Railroad

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).



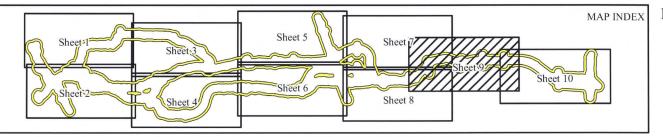
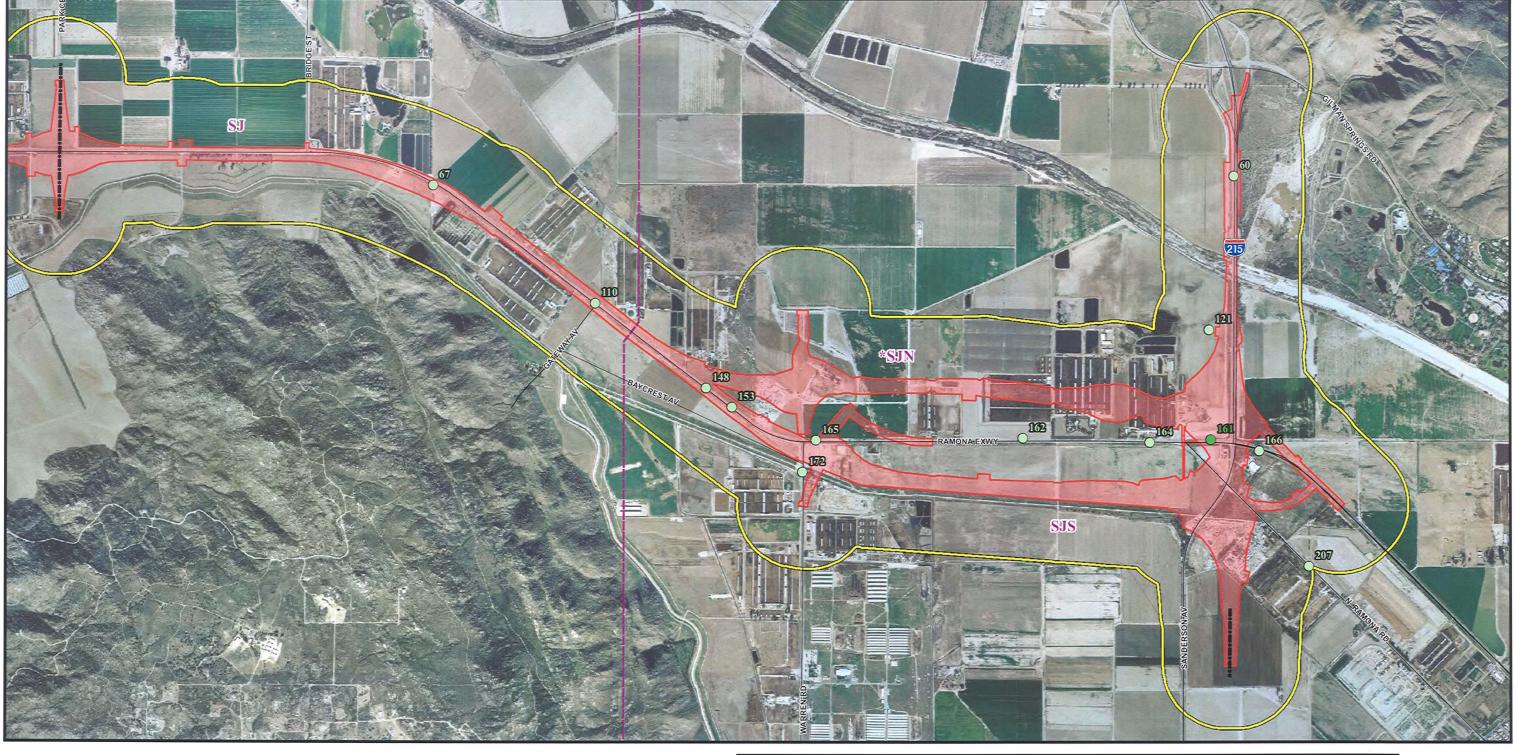


FIGURE 3.13.1 Sheet 9



Chapter 3	Affected Environment	Environmental Conse	guences, and Mitiga	ation Measures
-----------	----------------------	---------------------	---------------------	----------------





Study Area

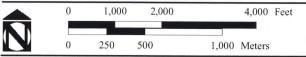
Hazardous Release Site

○ Use Site/Storage Site/Generator Site → Railroad

--- Segments Breaks === Planned Roads

— Existing Roads

SOURCE: Air Photo USA (2006), TBM (2006), Jacobs Engineering (02/07), Environmental Data Resources, Inc (2006).



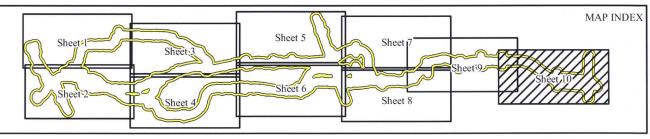


FIGURE 3.13.1 Sheet 10



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

Based on the Initial Site Assessment, the following are expected to be encountered within the MCP study area:

- Aerially Deposited Lead: Aerially deposited lead is a byproduct of internal
 combustion engines burning lead-containing fuels. Aerially deposited lead is
 deposited on the sides of roads and highways by passing cars and is often found in
 the soil adjacent to highways and roads. Elevated concentrations of aerially
 deposited lead may be present along existing roadways throughout the MCP study
 area.
- Asbestos: The use of asbestos in many building products was banned by the United States Environmental Protection Agency (EPA) by the late 1970s; however, many asbestos-containing product categories not previously banned (prior to 1989) may still be in use today. Asbestos-containing material represents a concern when it is subject to damage that results in the release of fibers. Asbestos may be found in building materials such as rails, bearing pads, support piers, expansion joint material in bridges, asphalt, and concrete within the MCP study area. Structures constructed prior to 1981 are presumed to have asbestos-containing materials in the building materials.
- Lead-based Paint: Structures constructed prior to 1978 are presumed to have lead-based paint. In addition, yellow paints made prior to 1995 may exceed hazardous waste criteria under Title 22, California Code of Regulations, and require disposal to a Class I disposal site.
- Polychlorinated Biphenyls: Polychlorinated biphenyls (PCBs) are known
 hazardous materials that are found in coolants or lubricating oils used in some
 electrical transformers, light ballasts, electrical panels, or other similar equipment
 prior to 1976. Pole- and pad-mounted electrical transformers, which were
 observed within the MCP study area, may contain PCBs. In addition, structures
 constructed prior to 1976 are presumed to have PCBs in light ballasts and
 electrical equipment.
- Pesticides: The area adjacent to the proposed right of way for all alternatives includes farmland still under production. It is likely that pesticides exist in the soil in these areas. In addition, from the 1940s to 1970, dichlorodiphenyltrichloroethane (DDT) was a common pesticide used on orchards and crops. A persistent pesticide, DDT and its breakdown products have been detected in soils throughout the state 13 years after its last use.
- Contaminated Groundwater: At least two LUST cases within the proposed right of way for all alternatives have affected area groundwater and are currently

within various stages of remediation. The proposed right of way for Alternatives 4 and 6 is also adjacent to March Air Reserve Base, a source of extensive groundwater contamination. Historically, groundwater in the vicinity has been encountered between 8.8 and 106 meters (m) (28.9 and 347.8 feet [ft]) below ground surface.

- Hazardous Waste Generators and Handlers: Multiple industrial and automotive uses are located within and adjacent to the proposed right of way of the MCP Build Alternatives. At least 51 of these locations are classified by the records search as a hazardous waste generator and/or handler (refer to Table 3.13.B). While many of these facilities are not in violation of hazardous waste regulations, hazardous wastes and materials are routinely present at these facilities.
- Railroad: Although no cases of accidental spills associated with the Burlington Northern Santa Fe railroad tracks in the MCP study area were revealed in the records search, soils along the railroad tracks within the proposed right of way should be assumed to be impacted by petroleum hydrocarbons and metals.
- LUST Sites: Several existing gasoline stations are located within the proposed right of way. At least two gasoline stations with an LUST (Nandina Liquor/Texaco station [also known as the Pulliam Family Trust site] located at 1569 Nandina Avenue and the Mobil station located at 21020 Cajalco Road) are currently undergoing remediation.
- Additional Sites: At least five locations of former clandestine drug operations within the proposed right of way were revealed during the record search. There is a possibility that additional, undiscovered sites may exist within the proposed right of way. Contaminants at clandestine labs range from highly volatile organic solvents and semivolatile organic compounds to highly corrosive inorganic acids and bases, the illicit drug itself, and other byproducts.

3.13.3 Environmental Consequences

3.13.3.1 Permanent Impacts

Build Alternatives

Implementation of MCP Build Alternatives 4, 5, 6, 7, or 9 would include operation of a new roadway. The MCP Build Alternatives could result in hazardous materials spills as a result of traffic accidents on the MCP. In addition, vehicles traveling on the MCP may transport hazardous substances which could spill and impact the roadway, adjacent properties, or resources. However, transport of hazardous materials is subject

to strict regulations. In addition, Caltrans, the California Highway Patrol, and local police and fire departments are trained in emergency response procedures for safely responding to accidental spills of hazardous substances on public roads, which further reduces impacts. In addition, the MCP project would be designed to current safety standards, which would reduce the possibility of accidents compared to older roadways that are not designed to current standards. Table 3.13.C identifies impacts associated with existing hazardous waste/materials sites for the MCP Build Alternatives.

Table 3.13.C Number of Hazardous Release/Use/Storage/Generators for Each MCP Build Alternative within 0.4 km (0.25 mi)

Alternative	Inside ROW	0–30 m (0–100 ft)	30–200 m (100 ft–1/8 mi)	200–400 m (1/8–1/4 mi)	Total
Alt. 4 Base Case	40	55	108	156	359
Alt. 4 SJN DV	38	52	108	155	353
Alt. 4 TWS DV	43	59	116	158	376
Alt. 5 Base Case	38	53	110	161	362
Alt. 5 SJN DV	36	50	110	160	356
Alt. 5 TWS DV	41	57	118	163	379
Alt. 6 Base Case	51	67	115	161	394
Alt. 6 SJN DV	49	64	115	160	388
Alt. 6 TWS DV	54	71	123	163	411
Alt. 7 Base Case	49	65	117	166	397
Alt. 7 SJN DV	47	62	117	165	391
Alt. 7 TWS DV	52	69	125	168	414
Alt. 9 Base Case	32	40	87	139	298
Alt. 9 RD DV	30	39	90	139	298
Alt. 9 PP-E DV	32	40	87	139	298
Alt. 9 SJN DV	30	37	87	138	292
Alt. 9 TWS DV	35	44	95	141	315

Source: Hazardous Waste Initial Site Assessment, LSA Associates, Inc., 2007.

Alt. = Alternative

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

DV = Design Variation

RD = Rider Street

ft = feet km = kilometers ROW = right of way

km = kilometom = meters mi = miles SJN = San Jacinto North TWS = Temescal Wash Area

For the reasons outlined above, implementation of the MCP project would not result in a substantial permanent adverse impact related to hazardous waste and materials.

No Build Alternatives

Under the MCP No Build Alternatives, the permanent impacts discussed above would not occur as a result of the MCP project; however, the hazardous material sites identified for the MCP project would be of concern for other projects included in the MCP No Build Alternatives such as the I-15 widening, I-215 widening, SR-79 realignment project, and the General Plan roadway projects. For the other projects in

the MCP No Build Alternatives, there is the possibility of accidents and hazardous spills similar to those for the MCP Build Alternatives. Standard emergency response procedures implemented by the appropriate agencies would be the same for the MCP No Build Alternatives as for the MCP Build Alternatives.

Discussion of Impacts Relative to MSHCP Amendment

Hazardous waste and materials were determined not to be topics of concern and therefore were not analyzed in the Multiple Species Habitat Conservation Plan (MSHCP) EIR/EIS. An amendment to the MSHCP to provide coverage for Alternative 9 TWS DV (the Locally Preferred Alternative) would not change the conclusion of the MSHCP EIR/EIS related to hazardous waste and materials.

3.13.3.2 Temporary Impacts

Build Alternatives

Based on the findings of the records search and the site survey, hazardous materials may be encountered during excavation and construction activities for all MCP Build Alternatives. Multiple industrial and automotive uses are located within the proposed right of way of all MCP Build Alternatives and would be acquired as part of the MCP project. Because these sites are hazardous waste generators and/or handlers, hazardous wastes and materials are routinely present at these facilities and would be removed prior to acquisition of these parcels for the MCP project.



Table 3.13.C provides a comparison of the number of hazardous material/waste sites within 0.4 km (0.25 mi) of the alternative alignments. As shown in Table 3.13.C, Alternative 9 has the fewest hazardous materials sites within and immediately adjacent to the project footprint. When compared to other alternatives, Alternatives 6 and 7 have the greatest number of sites within and immediately adjacent to the project footprint. Site investigations would be performed on all hazardous materials sites within the right of way for the MCP project to determine whether hazardous materials are present on site. Hazardous material spills associated with any property acquired for the MCP project would be remediated prior to MCP construction.

Elevated concentrations of aerially deposited lead may be present along existing roadways that would be modified by the MCP project. During grading activities, there is the possibility of hazardous concentrations of aerially deposited lead to be released into the environment and affect construction workers.

Structures that would be removed or modified as part of the MCP project may contain asbestos-containing material, PCB, and/or lead-based paint, which could be released

into the environment if not properly handled and removed for disposal. Demolition of structures containing asbestos-containing materials requires notification to the SCAQMD as indicated in Section 7-1.01F, Air Pollution Control, and Section 7-1.04, Permits and Licenses of the Standard Specifications.

Any transformers that would be removed or relocated during construction of the MCP project should be considered PCB-containing unless labeled or tested otherwise. Leaking transformers that impact adjacent soils would be a concern during project construction because they could affect construction workers and the environment.

Yellow traffic stripe and pavement-marking materials (paint, thermoplastic, permanent tape, and temporary tape) that would be removed as part of the project may contain elevated concentrations of metals such as lead. Removal of these materials during project construction could affect construction workers and the surrounding environment.

Vacant, undisturbed (ungraded) parcels or parcels with current use or evidence of past use for agricultural purposes may contain elevated concentrations of pesticides. Excavation of pesticide-impacted soil could affect construction workers and the surrounding environment.

March Air Reserve Base and past LUSTs in the MCP study area have contaminated groundwater. Dewatering of contaminated groundwater during construction of the MCP could impair adjacent surface waters.

Soils along the Burlington Northern Santa Fe railroad tracks within the proposed right of way are assumed to be impacted by petroleum hydrocarbons and metals. During grading or excavation within the Burlington Northern Santa Fe right of way, hazardous concentrations of petroleum hydrocarbons and metal could be released into the environment and affect construction workers.

Several existing gasoline stations are located within the proposed right of way and would be acquired as part of the MCP project. Because these are operating service stations, future releases could occur that could impact the project during construction.

There is a possibility that clandestine drug operation sites may exist within the project footprint and may be within the right of way acquired for the MCP project. These sites may be contaminated by chemicals ranging from highly volatile organic solvents

and semivolatile organic compounds to highly corrosive inorganic acids and bases, the illicit drug itself, and other byproducts.

Previously unknown contaminants could be encountered at the commercial properties to be acquired as part of the MCP project due to poor housekeeping, improperly stored chemicals, or past spills. If not handled properly, these contaminants could affect construction workers and the surrounding environment.

During the initial development and siting of the alignments for the MCP Build Alternatives, adjustments to the right of way were made in order to avoid impacts to the Metropolitan Water District (Metropolitan) chlorine gas facility located at 19765 Patterson Avenue. In addition, refinements to the right of way were made at this location in order to minimize soil disturbance and avoid the acquisition of property that could contain hazardous materials.

Contact with hazardous materials during construction would be minimized through preconstruction site investigation and sampling of suspect hazardous materials. Soils exceeding state criteria for hazardous waste are required to be disposed of at the appropriate Class I or II facility. The nearest Class I facilities are the Chemical Waste Management Inc. Kettleman Hills facility in King's County and the Safety-Kleen facility in Buttonwillow in Kern County. The mitigation measures, described below in Section 3.13.4, would prevent adverse impacts during construction of the project.

No Build Alternatives

Alternatives 1A and 1B would both involve construction and improvement of the other transportation facilities in the MCP study area. Hazardous materials similar to those for the MCP project could be encountered during construction of these other projects included in Alternatives 1A and 1B.

3.13.4 Avoidance, Minimization and/or Mitigation Measures

The measures below would apply to all MCP Build Alternatives substantially reduce adverse impacts related to hazardous materials and hazardous wastes during construction of the MCP project.

HW-1 Prior to completion of right of way acquisition, the Riverside County
Transportation Commission (RCTC) will conduct a Site Investigation
for hazardous materials sites identified in the Initial Site Assessment
that are within the right of way of the approved alternative. It is not

feasible to conduct these site investigations prior to completion of the Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) because new contamination may occur if the investigations are completed too far in advance of right of way acquisitions. The performance standard for this measure is compliance with applicable federal, State, and local regulations. The Site Investigation will meet or exceed the requirements of the United States Environmental Protection Agency's (EPA) Standards and Practices for All Appropriate Inquiries (FR 66070, Vol. 70, No. 210, November 1, 2005). If contaminants are determined to be present during the Site Investigation, one or more of the following specialized reports may be necessary: Remedial Actions Options Report, Sensitive Receptor Survey, Human Health/Ecological Risk Assessment, and/or Quarterly Monitoring Report. Site Investigations for any active leaking underground storage tank (LUST) cases will be coordinated with the Riverside County Department of Environmental Health (RCDEH), and if groundwater has been impacted, the Regional Water Quality Control Board (RWQCB), Santa Ana Region. Site Investigations for any automotive or industrial uses will be coordinated with the RCDEH. Site Investigations for any clandestine drug lab locations will be coordinated with the RCDEH, Department of Toxic Substances Control (DTSC), and law enforcement agencies. Prior to completion of final design, RCTC shall provide a Hazardous Substances Disclosure Document (HSDD) that clears affected right of way for acquisition to the California Department of Transportation (Caltrans) District Hazardous Waste Coordinator for review and approval.

=

HW-2

During final design, the Riverside County Transportation Commission (RCTC) will conduct soil sampling for aerially deposited lead in unpaved locations adjacent to existing state highway right of way within the project limits, if not previously tested. It is not feasible to conduct these site investigations prior to completion of the Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) because new contamination may occur if the investigations are completed too far in advance of right of way acquisitions. The performance standard for this measure is compliance with applicable federal, State, and local regulations. The analytical results of the soil sampling will determine the appropriate handling of the soil in those

areas and disposal of surplus materials. Soil will be reused within the California Department of Transportation (Caltrans) right of way in accordance with the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), Variance No. 00-H-VAR-04, September 22, 2000, or a subsequent applicable variance. If it is not feasible to reuse soils, then the excavated hazardous soils will require off-site disposal as hazardous waste at a permitted facility (Class I or II). Refer to Standard Special Provision XE 19-900 for additional information on the disposal of soils impacted with aerially deposited lead.

- HW-3 Prior to construction, the Riverside County Transportation Commission (RCTC) will retain a certified consultant to conduct predemolition asbestos, lead-based paint, and polychlorinated biphenyl (PCB) surveys of any structures that will be renovated or demolished. Building materials that exceed California Health and Safety Code criteria for hazardous waste will be disposed of at the appropriate Class I or II facility.
- Prior to construction the Riverside County Transportation Commission (RCTC) will conduct inspections of utility pole-mounted transformers that will be relocated or removed as part of the project. Leaking transformers will be considered a polychlorinated biphenyl (PCB) hazard unless tested and confirmed otherwise, and will be handled accordingly.
- **HW-5** Prior to construction, the Riverside County Transportation Commission (RCTC) will test and remove any yellow traffic striping and pavement-marking material in accordance with Standard Special Provision XE 15-300.
- HW-6 Prior to construction, the Riverside County Transportation Commission (RCTC) will determine whether groundwater removal will be required during construction of the project. The need for dewatering cannot be determined until the final design phase. Any dewatering will require compliance with the State General Permit or an individual permit from the Regional Water Quality Control Board (RWQCB), Santa Ana Region, consistent with National Pollutant

Discharge Elimination System (NPDES) requirements. The RWQCB will decide which permit is applicable and whether sampling is required once it receives and reviews the Notice of Intent (NOI). Additional coordination with the Riverside County Department of Environmental Health (RCDEH), Department of Toxic Substances Control (DTSC), and the Department of Defense may be necessary, and will be conducted by RCTC, if groundwater dewatering occurs in the vicinity of the March Air Reserve Base. RCTC will provide the Resident Engineer with the Waste Discharge Identification Number or a copy of an individual permit (as applicable) issued by the RWQCB prior to construction.

HW-7

During final design, the Riverside County Transportation Commission (RCTC) will sample soils adjacent to the Burlington Northern Santa Fe railroad tracks that will be disturbed during construction of the project for petroleum hydrocarbons, metals, solvents, and other potential contaminants to determine whether they require special handling and disposal. Soils exceeding California Health and Safety Code criteria for hazardous waste will be disposed of at the appropriate Class I or II facility.

HW-8

Prior to completion of right of way acquisitions, the Riverside County Transportation Commission (RCTC) will conduct soil sampling for pesticides in former or current agricultural properties that will be disturbed by the project where soil has not been disturbed (through grading, etc.). It is not feasible to conduct these site investigations prior to completion of the Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) because new contamination may occur if the investigations are completed too far in advance of right of way acquisitions. The performance standard for this measure is compliance with applicable federal, State, and local regulations. The analytical results of the soil sampling will determine the appropriate handling and disposal of the soil. Sampling will be conducted in general accordance with Department of Toxic Substances Control (DTSC) Interim Guidance for Sampling Agricultural Fields for School Sites (August 26, 2002).

HW-9

The Riverside County Transportation Commission (RCTC) will notify and submit fees to the South Coast Air Quality Management District (SCAQMD) at least 10 days prior to proceeding with any demolition or renovation of a structure (refer to SCAQMD Rule 1403). Contractors will adhere to the requirements of SCAQMD Rule 1403 during renovation/demolition activities.

HW-10

If suspect hazardous waste or underground tanks are encountered during construction, the contractor will stop work and follow the procedures outlined in Appendix E, Caltrans Unknown Hazards Procedures for Construction.

3.14 Air Quality



The information in this section is based on the MCP *Air Quality Analysis* (LSA Associates, Inc., 2008).

3.14.1 Regulatory Setting

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO2).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), and particulate matter (PM). California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the Southern California Association of Governments (SCAG) for Southern California (Los Angeles, Orange, and portions of San Bernardino County and Western Riverside Counties) and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the RTP is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP must be modified until

conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for 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. A region is a "nonattainment" area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA and CEQA purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the CO standard to be violated, and in "nonattainment" areas the project must not cause any increase in the number and severity of violations. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

3.14.2 Affected Environment

3.14.2.1 Climatic Conditions

The project site is located in western Riverside County, an area within the South Coast Air Basin (Basin), which includes Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino Counties. Air quality regulation in the Basin is administered by the South Coast Air Quality Management District (SCAQMD), a regional agency created for the Basin.

The Basin climate is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern boundary, and high mountains surround the rest of the Basin. The region lies in the semipermanent high-pressure zone of the eastern Pacific. The resulting climate is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted. However, periods of extremely hot weather, winter storms, and Santa Ana wind conditions do occur.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and

maximum temperatures than do inland areas. The climatological station closest to the MCP study area monitoring temperature is the Perris Station (station number 046816). The annual average maximum temperature recorded at this station is 25.9°C (degrees Celsius) (78.7°F), and the annual average minimum is 7.4°C (45.3°F). January is typically the coldest month in this area of the Basin.

The majority of rainfall in the Basin occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin along the coastal side of the mountains. The climatological station closest to the project area that monitors precipitation is the Perris Station. Average rainfall measured at this station varied from 4.90 centimeters (cm) (1.93 inches [in]) in February to 0.89 cm (0.35 in) or less between May and October, with an average annual total of 26.47 cm (10.42 in). Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed from midafternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in the vicinity of the project area blow predominantly from the east-southeast at relatively low velocities. Wind speeds in the project area average about 6.4 kilometers per hour (kph) (4 miles per hour [mph]). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds together with a persistent temperature inversion limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, northerly or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

Western Regional Climatic Center. 2006. www.wrcc.dri.edu (accessed November 2006).

Inversion layers have a substantial role in determining ozone (O_3) formation. Ozone and its precursors will mix and react to produce higher concentrations under an inversion. The inversion will also simultaneously trap and hold directly emitted pollutants such as CO. PM_{10} (particulate matter with a diameter of 10 microns or smaller) is both directly emitted and created indirectly in the atmosphere as a result of chemical reactions. Concentration levels are directly related to inversion layers due to the limitation of mixing space.

Surface or radiation inversions are formed when the ground surface becomes cooler than the air above it during the night. The earth's surface goes through a radiative process on clear nights, when heat energy is transferred from the ground to a cooler night sky. As the earth's surface cools during the evening hours, the air directly above it also cools, while air higher up remains relatively warm. The inversion is destroyed when heat from the sun warms the ground, which in turn heats the lower layers of air; this heating stimulates the ground level air to float up through the inversion layer.

The combination of stagnant wind conditions and low inversions produces the greatest concentration of pollutants. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are CO and oxides of nitrogen (NO_x) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_x to form photochemical smog.

3.14.2.2 Monitored Air Quality

The primary federal and state standards for pollutants are shown in Table 3.14.A. The MCP study area is located within SCAQMD jurisdiction. As shown in Figure 3.14.1, the SCAQMD maintains ambient air quality monitoring stations throughout the Basin. The air quality monitoring stations closest to the MCP study area are Perris (237½ North D Street, located within the MCP study area), Lake Elsinore (506 West Flint Street, approximately 14.5 kilometers [km] [9 miles (mi)] south of the MCP study area), and Riverside-Rubidoux (5888 Mission Boulevard, approximately 32 km [20 mi] north of the MCP study area). Air quality trends identified from data collected at these three air quality monitoring stations between 2002 and 2006 are listed in Tables 3.14.B, 3.14.C, and 3.14.D.

Table 3.14.A Ambient Air Quality Standards

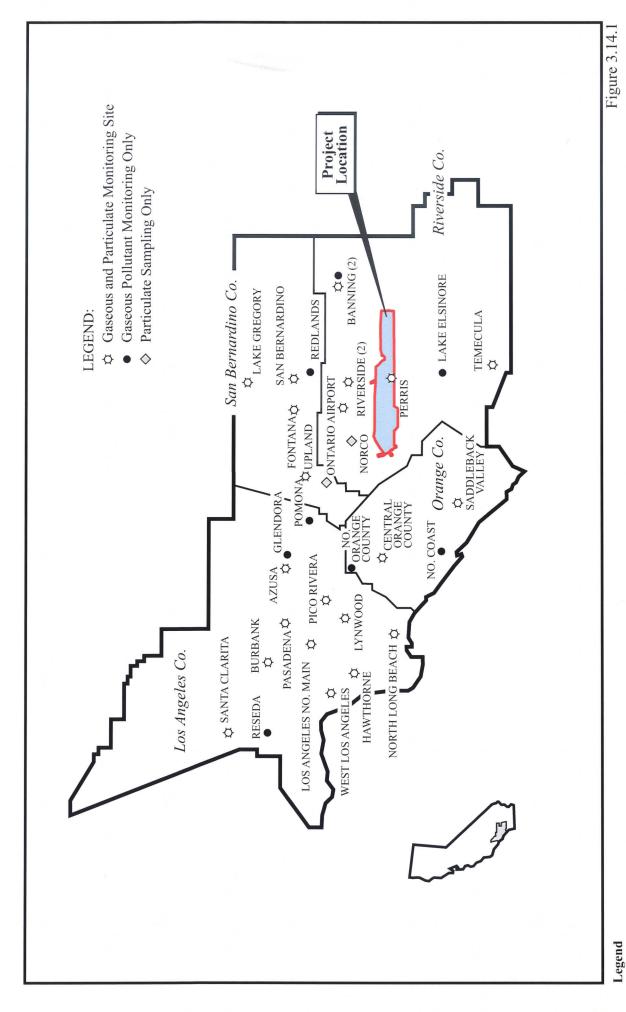
Pollutant	Averaging	California	Standards ¹	F	ederal Standards ²		
Pollutant	Time	Concentration ³	Method⁴	Primary ^{2,5}	Secondary ^{3,6}	Method ⁷	
Ozone (O ₃)	1-Hour	0.09 ppm (180 µg/m³) 0.07 ppm	Ultraviolet Photometry	- 0.075 ppm	Same as Primary Standard	Ultraviolet Photometry	
	8-Hour	(137 µg/m³)	r notometry	(147 µg/m³)	Timary Standard		
Respirable	24-Hour	50 μg/m ³		150 μg/m³		Inertial	
Particulate Matter (PM₁₀)	Annual Arithmetic M ean	20 μg/m³	Gravimetric or Beta Attenuation	-	Same as Primary Standard	Separation and Gravimetric Analysis	
Fine	24-Hour	No Separate S	State Standard	35 μg/m ³		Inertial	
Particulate Matter (PM _{2.5})	Annual Arithmetic M ean	12 μg/m³	Gravimetric or Beta Attenuation	15 μg/m³	Same as Primary Standard	Separation and Gravimetric Analysis	
Carban	8-Hour	9.0 ppm (10 mg/m³)	Nondispersive	9 ppm (10 mg/m³)		Nondispersive	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m ³)	Infrared Photometry	35 ppm (40 mg/m³)	None	Infrared Photometry	
(00)	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)	(NDIR)	_		(NDIR)	
Nitrogen Dioxide	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	Gas Phase Chemiluminescen	0.053 ppm (100 μg/m³)	Same as Primary Standard	Gas Phase Chemiluminesce	
(NO₂)	1-Hour	0.18 ppm (339 µg/m³)	ce	_	Primary Standard	nce	
Lead	30-day average	1.5 μg/m³	Atomic	_	-	High-Volume Sampler and	
Leau	Calendar Quarter	-	Absorption	1.5 µg/m³	Same as Primary Standard	Atomic Absorption	
	Annual Arithmetic Mean	-		0.030 ppm (80 µg/m³)	-	Spectrophotome	
Sulfur Dioxide	24-Hour	0.04 ppm (105 μg/m³)	Ultraviolet Fluorescence	0.14 ppm (365 µg/m³)	-	try	
(SO₂)	3-Hour	-	i idorescence	_	0.5 ppm (1300 μg/m³)	Method)	
	1-Hour	0.25 ppm (655 μg/m³)		<u>-</u>	- -		
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. Method: Beta Attenuation and Transmittance through Filter Tape.			No Federal		
Sulfates	24-Hour	25 μg/m³	Ion Chromatography		Standards		
Hydrogen Sulfide	1-Hour	0.03 ppm (42 μg/m³)	Ultraviolet Fluorescence				
Vinyl Chloride ⁸	24-Hour	0.01 ppm (26 µg/m³) s Board, June 26, 20	Gas Chromatography				

Source: California Air Resources Board, June 26, 2008.

See footnotes on next page.

Footnotes:

- California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1- and 24-hour); nitrogen dioxide; suspended particulate matter, PM₁₀; and visibility-reducing particles are values not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 mg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.
- Oncentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25 C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- Any equivalent procedure that can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
- The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.



SCAQMD Air Monitoring Network Within the South Coast Air Basin KP0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

MCP Project Area

This page intentionally left blank



Table 3.14.B Ambient Air Quality Monitored at the Perris Air **Monitoring Station**

Pollutant Standard		2006	2005	2004	2003	2002
Carbon Monoxide (CO)						
Max 1-hr concentration (ppm)		NM	NM	NM	NM	NM
No. days exceeded: State	> 20 ppm/1-hr > 35 ppm/1-hr	NM	NM	NM	NM	NM
Max 8-hr concentration (ppm)		NM	NM	NM	NM	NM
No. days exceeded: State	> 9.1 ppm/8-hr > 9.5 ppm/8-hr	NM	NM	NM	NM	NM
Ozone (O ₃)						
Max 1-hr concentration (ppm)		0.169	0.126	0.128	0.155	0.147
No. days exceeded: State	> 0.09 ppm/1-hr	77	11	36	67	59
Ozone (O ₃)				····		
Max 8-hr concentration (ppm)		0.122	0.103	0.104	0.121	0.117
No. days exceeded: Federal	> 0.08 ppm/8-hr	53	3	20	46	39
Particulates (PM₁₀)						
Max 24-hr concentration (ppm)		119	75	79	135	95
No. days exceeded: State	> 50 µg/m³ > 150 µg/m³	18 0	18 0	15 0	17 0	21 0
Annual Arithmetic Average (µg	/m³)	37	37	43	43	43
Exceeded: State	> 20 µg/m³	Yes	Yes	Yes	Yes	Yes
Particulates (PM _{2.5})						
Max 24-hr concentration (ppm)		NM	NM	NM	NM	NM
No. days exceeded: Federal	> 65 μg/m ³	NM	NM	NM	NM	NM
Annual Arithmetic Average (µg	/m³)	NM	NM	NM	NM	NM
Exceeded: State	> 12 µg/m³ > 15 µg/m³	NM NM	NM NM	NM NM	NM NM	NM NM
Nitrogen Dioxide (NO₂)						
Max 1-hr concentration (ppm): State	> 0.25 ppm/1-hr	NM	NM	NM	NM	NM
No. days exceeded	NM	NM	NM	NM	NM	
Annual average concentration: Federal	0.053 ppm annual average	NM	NM	NM	NM	NM
No. days exceeded		NM	NM	NM	NM	NM

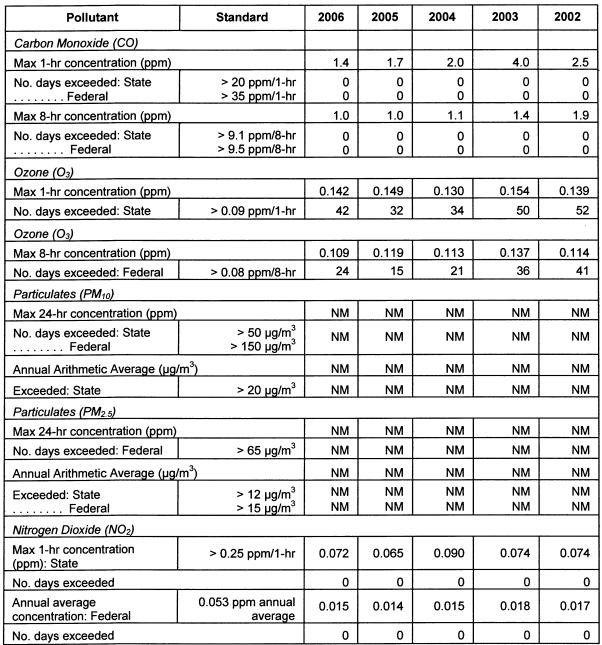
hr = hour

NM = not monitored at this station

 $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or smaller PM_{10} = particulate matter with a diameter of 10 microns or smaller

ppm = parts per million µg/m³ = micrograms per cubic meter





hr = hour

NM = not monitored at this station

 $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or smaller

 PM_{10} = particulate matter with a diameter of 10 microns or smaller

ppm = parts per million

μg/m³ = micrograms per cubic meter





Table 3.14.D Ambient Air Quality Monitored at the Riverside-Rubidoux Air Monitoring Station

Pollutant	Standard	2006	2005	2004	2003	2002
Carbon Monoxide (CO)						
Max 1-hr concentration (ppm)		2.7	3.4	4.3	4.5	4.1
No. days exceeded: State	> 20 ppm/1-hr > 35 ppm/1-hr	0 0	0 0	0	0 0	0
Max 8-hr concentration (ppm)		2.3	2.5	3.0	3.7	3.1
No. days exceeded: State	> 9.1 ppm/8-hr > 9.5 ppm/8-hr	0 0	0 0	0 0	0 0	0 0
Ozone (O ₃)						
Max 1-hr concentration (ppm)		0.151	0.144	0.141	0.169	0.155
No. days exceeded: State	> 0.09 ppm/1-hr	45	46	59	80	56
Ozone (O ₃)						
Max 8-hr concentration (ppm)		0.117	0.129	0.114	0.140	0.124
No. days exceeded: Federal	> 0.08 ppm/8-hr	30	32	35	62	35
Particulates (PM ₁₀)						-
Max 24-hr concentration (ppm)		109	123	137	164	130
No. days exceeded: State	> 50 μg/m³ > 150 μg/m³	69 0	67 0	70 0	59 2	71 0
Annual Arithmetic Average (µg/		52.7	50.4	53.5	55.1	56.2
Exceeded: State	> 20 µg/m ³	Yes	Yes	Yes	Yes	Yes
Particulates (PM _{2.5})						
Max 24-hr concentration (ppm)		68	99	92	104	78
No. days exceeded: Federal	> 65 μg/m ³	1	4	5	8	8
Annual Arithmetic Average (μg/	m ³)	19.0	20.9	22.1	24.8	• 27.5
Exceeded: State	> 12 μg/m ³ > 15 μg/m ³	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
Nitrogen Dioxide (NO ₂)						
Max 1-hr concentration (ppm): State	> 0.25 ppm/1-hr	0.076	0.077	0.092	0.099	0.098
No. days exceeded	0	0	0	0	0	
Annual average concentration: Federal	0.053 ppm annual average	0.020	0.022	0.017	0.021	0.023
No. days exceeded Source: Air Quality Analysis, LSA Ass		0	0	0	0	0

hr = hour

NM = not monitored at this station

 $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or smaller

 PM_{10} = particulate matter with a diameter of 10 microns or smaller

ppm = parts per million

µg/m³ = micrograms per cubic meter



From the ambient air quality data listed, it can be seen that CO and NO_2 levels are below the relevant state and federal standards at the stations where these pollutants are monitored. One-hour ozone levels exceeded the State standard in each of the past 5 years. Eight-hour ozone levels exceeded the federal standard in each of the past 5 years. The PM_{10} levels in the MCP project area exceeded the state standards in each of the past 5 years and exceeded the federal PM_{10} standard in 2003. The federal 24-hour $PM_{2.5}$ standard was exceeded in each of the past 5 years. The federal and state annual $PM_{2.5}$ standards were also exceeded in each of the past 5 years.

Historical ambient air quality data are used to classify the attainment status for the Basin. More specifically, the data collected at the air quality monitoring stations are used by the United States Environmental Protection Agency (EPA) to identify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA. In addition, different classifications of attainment such as marginal, moderate, serious, severe, and extreme are used to classify each air basin in the state on a pollutant-by-pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the NAAQS. The Basin's attainment status for each of the criteria pollutants is listed in Table 3.14.E.

Table 3.14.E Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O ₃ 1-hour	Nonattainment	Revoked June 2005
O ₃ 8-hour	Not Established	Severe 17 Nonattainment
PM ₁₀	Nonattainment	Serious Nonattainment ¹
PM _{2.5}	Nonattainment	Nonattainment ²
CO	Attainment	Attainment/Maintenance ³
NO ₂	Attainment	Attainment/Maintenance
All others	Attainment/Unclassified	Attainment/Unclassified

Source: Air Quality Analysis, LSA Associates, Inc., 2008.

µg/m³ = micrograms per cubic meter

CO = carbon monoxide

EPA = United States Environmental Protection Agency

NO₂ = nitrogen dioxide

 O_3 = ozone

 PM_{10} = particulate matter with a diameter of 10 microns or smaller $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or smaller

In October 2006, the EPA, in its final rule revision, eliminated the annual PM₁₀ standard.

The PM_{2.5} nonattainment designation is based on the 1997 standard. In 2006, the EPA revised the 24-hour standard. The 2006 PM_{2.5} new standard of 35 μg/m³ applies one year after the effective date of the new designation (April 2010).

³ Effective June 11, 2007, the South Coast Air Basin was redesignated as attainment/maintenance for the federal CO standard.



3.14.2.3 Regional Air Quality Conformity

The proposed project is in the 2008 RTP, which was found to conform by the FHWA/Federal Transit Administration (FTA) on June 5, 2008. The project is also included in the SCAG financially constrained 2006 Regional Transportation Improvement Program (RTIP), which was found to be conforming by the FHWA/FTA on October 2, 2006 (Project ID: RIV031218, CETAP – Mid County Parkway Corridor: complete environmental work/route alternatives (Phases 1 and 2) from SR79 in the east through Lake Mathews and Mead Valley to I-15). The design concept and scope of the proposed project is consistent with the project description in the 2008 RTP, the 2006 RTIP, and the assumptions in SCAG's regional emission analysis. Therefore, the MCP project is in conformance with the State Implementation Plan (SIP). The project will also comply with all SCAQMD requirements. A copy of the RTIP project listing is included in Appendix K. The RCTC has submitted updated project modeling information for use by SCAG in preparing and modeling the 2008 RTIP. The 2008 conformity determination will be included in the Final Environmental Impact Statement for the MCP project prior to approval of the Record of Decision.

3.14.2.4 Project Level Air Quality Conformity

Because the MCP project is within a nonattainment area for federal PM_{2.5} and PM₁₀ standards, a local hot-spot analysis for PM_{2.5} (particulate matter with a diameter of 2.5 microns or smaller) and PM_{10} is required for conformity purposes. However, the EPA does not require hot-spot analyses, qualitative or quantitative, for projects that are not listed as a project of air quality concern (POAQC). POAQC includes new or expanded highway projects that have a substantial number of or an increase in diesel vehicles and projects in or affecting locations identified in the PM₁₀ or PM_{2.5} applicable implementation plan as sites of possible violation. As the MCP project will be constructing a new roadway, it may be a POAQC. Therefore, a detailed PM_{2.5} and PM₁₀ hot-spot analysis (LSA Associates, September 2007) was prepared and submitted to the Transportation Conformity Working Group (TCWG) on August 14, 2007, and reviewed by the working group on August 28, 2007. An updated version of the PM_{2.5} and PM₁₀ hot-spot analysis was submitted to the TCWG in March 2008. The project was approved and concurred upon by Interagency Consultation by the TCWG on March 24, 2008, as a project not having adverse impacts on air quality and that meets the requirements of Clean Air Act and 40 CFR 93.116.



3.14.3 Environmental Consequences

3.14.3.1 Permanent Impacts

Build Alternatives

Long-term Regional Emissions

The purpose of the MCP project is to provide a facility that would efficiently and effectively move people and goods between and through the cities of Corona, Perris, and San Jacinto. The MCP project is not expected to generate any additional traffic. Regional traffic trips would remain similar. Therefore, no new long-term regional emissions would result from implementation of the MCP project. The MCP project would improve traffic movement in the MCP study area, thereby lowering the total pollutants emitted by motor vehicles.

Long-term mobile emissions associated with the MCP Build Alternatives would be less than the No Build Alternatives due to improved traffic flow in the project area, with the same projected future trips in the project vicinity. However, emission reductions associated with such improvements are difficult to quantify. Therefore, no emission calculations are provided in this analysis for regional vehicular emissions.

Carbon Monoxide (CO)

CO is used as an indicator of a project's direct and indirect impact on local air quality because CO does not readily disperse in the local environment in cool weather when the wind is fairly still. The Caltrans Transportation Project-Level Carbon Monoxide *Protocol* (December 1997) was used to assess the project's impact on the local CO concentrations. Based on this protocol, a screening analysis was conducted to determine whether the MCP project would result in any CO hot spots. Localized emissions of CO may increase with implementation of the MCP project. However, as described in detail in the Air Quality Analysis (LSA Associates, Inc., 2008), none of the MCP Build Alternatives are expected to result in any concentrations exceeding the 1-hour or 8-hour CO standards. Therefore, the project has sufficiently addressed the CO impact, and no further analysis is needed.

Particulate Matter (PM₁₀ and PM_{2.5})

The MCP project is within a nonattainment area for the NAAQS for particulate matter (PM) less than 2.5 microns (PM_{2.5}) and less than 10 microns (PM₁₀) in size. Therefore, PM analyses are required for conformity purposes. A qualitative PM hotspot analysis was conducted based on the EPA PM Qualitative Analysis Guidance for a project-level PM hot-spot analysis.



It is not expected that changes to PM_{2.5} and PM₁₀ emission levels associated with the proposed project would result in new violations of the federal air quality standards for the following reasons:



- The future truck traffic volumes along MCP would not exceed 10,000 average daily traffic (ADT).
- The ambient PM₁₀ concentrations have not exceeded the 24-hour or annual federal standard within the past six years.
- Based on the projected PM₁₀ concentrations listed in the 2003 Air Quality Management Plan (AQMP), the 24-hour PM₁₀ concentrations would be 81 percent of the federal standard by 2015 and 38 percent of the federal standards by 2035.
- Based on the local monitoring data, the 24-hour PM_{2.5} concentrations within the project area would be reduced to 38 to 57 percent of the federal standard by 2015 and 10 to 20 percent of the federal standard by 2035.
- Based on the local monitoring data, the annual average PM_{2.5} concentrations within the project area would be reduced to 49 to 83 percent of the federal standard by 2015 and 10 to 18 percent of the federal standard by 2035.
- The project-related 3 to 6 percent increase in regional PM_{2.5} and PM₁₀ emissions would not result in any new exceedances of the federal standards in 2015 or 2035. The daily PM_{2.5} and PM₁₀ emissions within the project area are listed in Tables 3.14.F and 3.14.G, respectively.
- By 2035 the intersections within the proposed project area will be operating during the p.m. peak hour at level of service (LOS) C through F without improvements. The proposed build alternatives would improve the LOS to A through D.



For these reasons, future new or worsened PM_{2.5} and PM₁₀ violations of any standards are not anticipated; therefore, the project meets the conformity hot-spot requirements in 40 CFR 93-116 and 93-123 for both PM_{2.5} and PM₁₀. On March 24, 2008, the project was approved and concurred upon by Interagency Consultation by the TCWG as a project not having adverse impacts on air quality and that meets the requirements of Clean Air Act and 40 CFR 93.116.





Table 3.14.F Daily PM_{2.5} Emissions

Traffic Condition	Exhaust Emissions (lbs/day)	Tire Wear (Ibs/day)	Brake Wear (Ibs/day)	Road Dust (lbs/day)	Total (lbs/day)	Change from No Build (lbs/day)	Change from No Build (%)
Existing	876	76	141	7,414	8,508	-	•
2015 No Build	914	108	199	10,430	11,650	-	-
2015 Alt. 4	961	113	208	11,064	12,345	695	6.0
2015 Alt. 5	944	111	205	10,798	12,057	407	3.5
2015 Alt. 6	954	112	207	10,937	12,209	559	4.8
2015 Alt. 7	952	112	206	10,925	12,195	545	4.7
2015 Alt. 9	959	112	207	11,051	12,329	679	5.8
2035 No Build	883	135	249	13,044	14,310	-	-
2035 Alt. 4	926	141	260	13,837	15,164	853	6.0
2035 Alt. 5	911	139	256	13,505	14,811	500	3.5
2035 Alt. 6	920	140	259	13,678	14,997	686	4.8
2035 Alt. 7	918	140	258	13,664	14,980	670	4.7
2035 Alt. 9	923	140	259	13,821	15,144	834	5.8

Alt. = Alternative

lbs/day = pounds per day

 $PM_{2.5}$ = particulate matter less than 2.5 microns in size





Traffic Condition	Exhaust Emissions (lbs/day)	Tire Wear (Ibs/day)	Brake Wear (lbs/day)	Road Dust (lbs/day)	Total (Ibs/day)	Change from No Build (lbs/day)	Change from No Build (%)
Existing	1,528	304	389	74,189	76,410	-	1
2015 No Build	1,345	428	547	104,377	106,697	-	-
2015 Alt. 4	1,421	448	572	110,107	112,548	5,851	5.5
2015 Alt. 5	1,391	442	564	107,887	110,283	3,586	3.4
2015 Alt. 6	1,407	446	569	109,106	111,527	4,830	4.5
2015 Alt. 7	1,405	445	568	108,956	111,374	4,676	4.4
2015 Alt. 9	1,419	447	570	109,904	112,339	5,642	5.3
2035 No Build	1,113	538	685	130,544	132,879	-	-
2035 Alt. 4	1,170	563	715	137,711	140,159	7,279	5.5
2035 Alt. 5	1,149	555	706	134,934	137,344	4,464	3.4
2035 Alt. 6	1,161	560	712	136,458	138,891	6,012	4.5
2035 Alt. 7	1,159	559	710	136,271	138,699	5,820	4.4
2035 Alt. 9	1,167	562	713	137,457	139,898	7,019	5.3

Source: Air Quality Analysis, LSA Associates, Inc., 2008.

Alt. = Alternative

lbs/day = pounds per day

 PM_{10} = particulate matter less than 10 microns in size

Qualitative Project-level Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are NAAQS, the EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, nonroad mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the CAA. MSATs are compounds emitted from highway vehicles and nonroad equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through an engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead federal agency for administering the CAA and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 Federal Register 17229 [March 29, 2001]). This Rule was issued under the authority in Section 202 of the CAA. In its rule, the EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low-emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur-control requirements, and its proposed heavy-duty engine and vehicle standards and highway diesel fuel sulfur control requirements.

In February 2006, the FHWA issued guidance¹ to advise FHWA Division offices on when and how to analyze MSATs in the NEPA process for highways. The guidance is described as interim because MSAT science is still evolving. As the science progresses, FHWA will update the guidance. This analysis follows current FHWA guidance.

Between 2000 and 2020, FHWA projects that even with a 64 percent increase in vehicle miles traveled (VMT), these programs will reduce highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 to 65 percent and will reduce highway diesel PM emissions by 87 percent. As a result, the EPA concluded that no further motor vehicle emissions or fuel standards were necessary for additional control of MSATs. The EPA is preparing another rule under authority of

-

http://www.fhwa.dot.gov/environment/airtoxic/020306guidmem.htm.

CAA Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary 6 MSATs.

California's vehicle emission control and fuel standards are more stringent than federal standards and are effective sooner, so the effect on air toxics of combined State and federal regulations is expected to result in greater emissions reductions, more quickly, than the FHWA analysis shows. The FHWA analysis, with modifications related to use of the California-specific EMFAC model rather than the MOBILE model, would be conservative.

This report includes a basic analysis of the likely MSAT emission impacts of the proposed project. However, available technical tools do not provide for predicting project-specific health impacts of the emission changes associated with the alternatives considered in this report. Due to these limitations, the following discussion is included in accordance with the Council on Environmental Quality regulations (40 CFR 1502.22[b]) regarding unavailable or incomplete information.

Information that is Unavailable or Incomplete

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human exposure to the estimated concentrations, and then a final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science, both of which prevent a more complete determination of the MSAT health impacts of the proposed project, as described below:

• Emissions: The EPA and California tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While both MOBILE 6.2 and EMFAC (either 2002 or the recently released 2007 version) are used to predict emissions at a regional level, they have limitations when applied at the project level. Both are trip-based models—emission factors are projected based on a typical trip of approximately 7.5 miles and on average speeds for this typical trip. This means that neither model has the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, both models can only approximate emissions from the operating speeds and levels of congestion likely to be present on the

largest-scale projects and cannot adequately capture emissions effects of smaller projects. For PM, the MOBILE 6.2 model results are not sensitive to average trip speed; however, PM emissions from the EMFAC model are sensitive to trip speed, so for California conditions, diesel PM emissions are treated the same as other emissions. Unlike MOBILE 6.2, the EMFAC model does not provide MSAT emission factors; off-model speciation of EMFAC's Total Organic Compounds output must be used to generate MSAT emissions. The emissions rates used in both MOBILE 6.2 and EMFAC are based on a limited number of vehicle tests.

These deficiencies compromise the capability of both MOBILE 6.2 and EMFAC 2002/2007 to estimate MSAT emissions. Both are adequate tools for projecting emissions trends and performing relative analyses between alternatives for very large projects, but neither is sensitive enough to capture the effects of travel changes caused by smaller projects or to predict emissions near specific roadside locations.

Dispersion: The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of CO to determine compliance with the NAAQS. The CALINE4 model used in California is an improvement on the CALINE3based EPA models, but like them was built primarily for CO analysis, has not been specifically validated for use with other materials such as MSATs, and is difficult to use for averaging periods of more than eight hours or so (health risk data for MSATs are typically based on 24-hour, annual, and long-term [30–70 years] exposure). Dispersion models are appropriate for predicting maximum concentrations that can occur at some time at some location within a geographic area, but cannot accurately predict exposure patterns at specific times at specific locations across an urban area to assess potential health risk. The NCHRP is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of adequate monitoring data in most areas for use in establishing projectspecific MSAT background concentrations.

Exposure Levels and Health Effects: Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis limit the ability to reach meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roads and to determine the part of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because insupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emission rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

Research into the health impacts of MSATs is ongoing. For different emission types, a variety of studies show that some are either statistically associated with adverse health outcomes through epidemiological studies (frequently based on emission levels found in occupational settings) or show that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of the EPA's efforts. Most notably, the EPA conducted the National Air Toxics Assessment (NATA 1996) to evaluate modeled estimates of human exposure applicable at the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The EPA is in the process of assessing the risks of various kinds of exposure to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various

substances found in the environment (http://www.epa.gov/iris). The following toxicity information for the six prioritized MSATs was taken from the IRIS database Weight of Evidence Characterization summaries. The following information, from the EPA's IRIS database, represents the EPA's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures:

- Benzene is characterized as a known human carcinogen and may result in decreased lymphocyte counts.
- The potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure. However, acrolein may result in nasal lesions.
- Formaldehyde is a probable human carcinogen, based on limited evidence in humans and sufficient evidence in animals. It may also result in respiratory health impact.
- 1,3-butadiene is characterized as carcinogenic to humans by inhalation and may also result in ovarian atrophy.
- Acetaldehyde is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure. It may also result in degeneration of the olfactory epithelium.
- Diesel exhaust (DE) is likely to be carcinogenic to humans by inhalation from environmental exposures. DE, as reviewed in this document, is the combination of diesel particulate matter (DPM) and DE organic gases. The PM fraction of DE DPM has been identified by the California Air Resources Board as a toxic air contaminant due to long-term cancer risk.

Other studies have addressed MSAT health impacts in proximity to roadways. The Health Effects Institute, a nonprofit organization funded by the EPA, FHWA, and industry, has undertaken a major series of studies to research near-road MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roads is related to adverse health outcomes, particularly respiratory problems. Much of this research is not specific to MSATs; instead, it surveyed the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, these studies do not provide information that would be useful to alleviate the uncertainties listed above and allow for a more comprehensive evaluation of the health impacts specific to the proposed project.

Because of the uncertainties outlined above, a reliable quantitative assessment of the effects of air toxic emission impacts on human health cannot be made at the project level. While available tools do allow reasonable prediction of relative emission changes between alternatives for larger projects, the amount of MSAT emissions from the project alternatives and MSAT concentrations or exposures created by each project alternative cannot be predicted with sufficient accuracy to be useful in estimating health impacts. (As noted above, the current emission model is not capable of serving as a meaningful emission analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have significant adverse impacts on the human environment.

A quantitative analysis of MSAT emissions in the project area is provided below. The concentrations and duration of exposures are uncertain; therefore, the health effects from these emissions cannot be estimated.

MSAT Analysis Methodology

The basic procedure for analyzing emissions for on-road MSATs is to calculate emission factors using EMFAC2007 and apply the emission factors to speed and VMT data specific to the project. EMFAC2007 is the latest emission inventory model developed by the ARB and approved by FHWA that calculates emission inventories for motor vehicles operating on roads in California. The emission

South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 studies on the relationship between health and air quality); NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

factors information used in this analysis is from EMFAC2007 and is specific to the Riverside County portion of the Basin.

This analysis focuses on six MSAT pollutants identified by the EPA as being the highest-priority MSATs. The six pollutants are: DPM, acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene. EMFAC2007 provides emission factor information for DPM but does not provide emission factors for the remaining five MSATs. Each of the remaining five MSATs, however, is a constituent of motor vehicle reactive organic gas (ROG) emissions, and EMFAC2007 provides emission factors for ROG. ARB has supplied Caltrans with "speciation factors" for each of the remaining five MSATs not directly estimated by EMFAC2007. Each speciation factor represents the portion of total ROG emissions that is estimated to be a given MSAT. For example, if a speciation factor of 0.03 is provided for benzene, its emissions level is estimated to be 3 percent of total ROG emissions, utilizing the speciation factor as a multiplier once total ROG emissions are known. This analysis used the ARB-supplied speciation factors to estimate emissions of the aforementioned five MSATs as a function of ROG emissions.

The University of California at Davis (UCD), in cooperation with Caltrans, developed a spreadsheet tool that incorporates EMFAC2007 emission factors; ARB speciation factors; and project-specific traffic activity data such as VMT, speed, travel times, and traffic volumes. The spreadsheet tool applies the traffic activity data to the emission factors and estimates MSAT emissions for base case (with "No Build" alternative) and "Build" alternative scenarios. Results were produced for the Existing (2007) and future No Build and Build (2035) conditions.

MSAT Analysis Results

The emission factors from EMFAC2007 are pollutant emissions in grams per mile of vehicle travel. Multiplying these emission factors by the number of VMT in the project area provides an estimate of the total emissions from vehicles traveling through the project area. Tables 3.14.H and 3.14.I present the ADT volumes for

U.S. Environmental Protection Agency (2001) Control of Emissions of Hazardous Air Pollutants from Mobile Sources: Final Rule. *Federal Register*, Vol. 66, No. 61, pp. 17230–17273. March 29.





Alternative	Auto VMT	Truck VMT	Total VMT
Existing	11,534,779	1,293,513	12,828,292
2015 No Build	16,232,347	1,819,420	18,051,767
2015 Alternative 4	16,886,064	1,943,921	18,829,984
2015 Alternative 5	16,711,557	1,887,518	18,599,075
2015 Alternative 6	16,834,930	1,915,628	18,750,557
2015 Alternative 7	16,797,944	1,914,427	18,712,371
2015 Alternative 9	16,825,461	1,943,391	18,768,852
2035 No Build	20,301,797	2,275,548	22,577,345
2035 Alternative 4	21,119,400	2,431,261	23,550,661
2035 Alternative 5	20,901,144	2,360,719	23,261,863
2035 Alternative 6	21,055,447	2,395,875	23,451,322
2035 Alternative 7	21,009,188	2,394,374	23,403,562
2035 Alternative 9	21,043,604	2,430,599	23,474,203

Source: Iteris, 2007. MCP = Mid County Parkway VMT = vehicle miles traveled

Table 3.14.1 Vehicle Miles Traveled within SCAG Region

Alternative	Auto VMT	Truck VMT	Total VMT
Existing	349,700,131	26,674,632	376,374,763
2015 No Build	375,470,343	34,193,787	409,664,129
2015 Alternative 4	375,679,116	34,191,498	409,870,614
2015 Alternative 5	375,619,803	34,177,333	409,797,136
2015 Alternative 6	375,580,300	34,183,075	409,763,375
2015 Alternative 7	375,602,641	34,179,632	409,782,274
2015 Alternative 9	375,595,736	34,189,122	409,784,858
2035 No Build	469,600,758	42,766,169	512,366,927
2035 Alternative 4	469,861,870	42,763,307	512,625,177
2035 Alternative 5	469,787,688	42,745,590	512,533,278
2035 Alternative 6	469,738,281	42,752,772	512,491,053
2035 Alternative 7	469,766,224	42,748,466	512,514,690
2035 Alternative 9	469,757,587	42,760,335	512,517,921

Source: Iteris, 2007.

SCAG = Southern California Association of Governments

VMT = vehicle miles traveled

existing conditions as well as future conditions in 2035 with and without the proposed project alternatives for the MCP region and SCAG region, respectively.

Vehicle emissions vary by speed. Generally, emissions are higher on a grams-permile basis for slower speeds. For some pollutants, including VOC, emissions increase with speed at speeds greater than 50 mph. Vehicle speeds were estimated by dividing the total VMT for each alternative by the total vehicle hours traveled (VHT) for each alternative. Average speeds would actually be in the 35 to 39 mph range.

As described above, emission factors for DPM and ROG have been obtained for the South Coast Air Basin portion of Riverside County using EMFAC2007. The spreadsheet tool developed by UCD was then utilized in applying the emission factors, speciation factors from ARB, and the traffic activity data. The results of the MSAT analyses for existing conditions and the MCP No Build and Build Alternatives are shown in Tables 3.14.J and 3.14.K.

Table 3.14.J MSAT Emissions for the MCP Study Area (lbs/day)

_	_
_	-
=	_
ν	

Alternative	DPM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
Existing	290.0	176.0	33.8	61.9	7.6	176.0
2015 No Build	219.6	104.2	17.7	45.5	4.0	119.6
2015 Alt. 4	233.6	108.3	18.5	48.2	4.1	126.1
2015 Alt. 5	226.3	106.8	18.3	46.9	4.1	123.2
2015 Alt. 6	230.4	107.7	18.4	47.7	4.1	124.9
2015 Alt. 7	229.9	107.5	18.4	47.6	4.1	124.6
2015 Alt. 9 TWS DV	235.1	108.0	18.5	48.4	4.1	126.4
2035 No Build	113.8	52.9	7.3	25.8	1.6	64.0
2035 Alt. 4	121.0	54.7	7.6	27.4	1.7	67.7
2035 Alt. 5	118.4	54.2	7.5	26.8	1.7	66.4
2035 Alt. 6	119.3	54.5	7.6	27.0	1.7	66.9
2035 Alt. 7	119.1	54.4	7.6	27.0	1.7	66.8
2035 Alt. 9 TWS DV	121.8	54.7	7.6	27.5	1.7	67.9

Source: Air Quality Analysis, LSA Associates, Inc., 2008.

Alt. = Alternative
DPM = diesel particulate matter

MCP = Mid County Parkway
MSAT = Mobile Source Air Toxics

lbs/day = pounds per day

TWS DV = Temescal Wash Area Design Variation



Table 3.14.K MSAT Emissions for the SCAG Region (lbs/day)

Alternative	DPM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
Existing	5,980.4	5,165.3	991.9	1,516.7	224.9	4,574.0
2015 No Build	4,095.9	2,364.8	401.2	897.8	90.3	2,444.4
2015 Alt. 4	4,098.0	2,366.0	401.4	898.2	90.4	2,445.6
2015 Alt. 5	4,097.3	2,365.5	401.3	898.1	90.4	2,445.2
2015 Alt. 6	4,096.9	2,365.3	401.3	898.0	90.4	2,445.0
2015 Alt. 7	4,097.1	2,365.4	401.3	898.0	90.4	2,445.1
2015 Alt. 9 TWS DV	4,097.2	2,365.5	401.3	898.0	90.4	2,445.1
2035 No Build	2,147.1	1,204.5	164.7	500.8	36.6	1,284.1
2035 Alt. 4	2,148.2	1,205.1	164.7	501.1	36.6	1,284.7
2035 Alt. 5	2,147.8	1,204.9	164.7	501.0	36.6	1,284.5
2035 Alt. 6	2,147.7	1,204.8	164.7	501.0	36.6	1,284.4
2035 Alt. 7	2,147.8	1,204.9	164.7	501.0	36.6	1,284.4
2035 Alt. 9 TWS DV	2,147.8	1,204.9	164.7	501.0	36.6	1,284.4

Source: Air Quality Analysis, LSA Associates, Inc., 2008.

Alt. = Alternative

MCP = Mid County Parkway

DPM = diesel particulate matter

MSAT = Mobile Source Air Toxics

lbs/day = pounds per day

TWS DV = Temescal Wash Area Design Variation

The MSAT analysis indicates that a substantial decrease in MSAT emissions can be expected between the existing (2007) and future (2015 and 2035) no build conditions. This decrease is prevalent throughout the highest-priority MSATs and the analyzed alternatives. This decrease is also consistent with the EPA and FHWA projections of a substantial reduction in on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde between 2000 and 2020. Based on the analysis for this project, reductions in MSATs expected by 2035 are: 63 percent of DPM, 71 percent of benzene, 78 percent of 1,3-butadiene, 61 percent of acetaldehyde, 81 percent of acrolein, and 65 percent of formaldehyde. These projected reductions are achieved while total VMT increases by 60 percent between 2007 and 2035. As shown in Table 3.14.J, implementation of the MCP Build Alternatives would result in a slight increase in MSAT emissions compared to the No Build Alternatives within the MCP study area. However, as shown in Table 3.14.K within the SCAG region, the proposed project's increase in MSAT emissions would be negligible.

In summary, while the MCP project alternative would result in a small increase in localized MSAT emissions, the EPA's vehicle and fuel regulations, coupled with fleet turnover, would cause substantial reductions over time that would cause regionwide MSAT levels to be substantially lower than they are today.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed except for improvements to Cajalco Road and Ramona Expressway. Under Alternative 1A, there would be no improvements to east-west travel on Cajalco Road and Ramona Expressway; therefore, there would be no improvement in traffic circulation. Because Alternative 1A would not improve traffic movement in the project vicinity, the total pollutants emitted by motor vehicles in the project vicinity would not decrease under Alternative 1A.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the county and city General Plans. Traffic circulation would be similar under Alternative 1B as compared to the MCP Build Alternatives. Similar to the MCP Build Alternatives, Alternative 1B would improve traffic movement in the MCP study area and lower the total pollutants emitted by motor vehicles. However, as discussed earlier in Section 3.6, Traffic and Transportation/Pedestrian and Bicycle Facilities, several intersections between I-15/I-215 and I-215/SR-79 would experience more congestion under Alternative 1B than under the MCP





Build Alternatives. Therefore, the total pollutants emitted by motor vehicles in these locations would be greater under Alternative 1B compared to the MCP Build Alternatives.

Discussion of Impacts Relative to MSHCP Amendment

Air quality was determined not to be a topic of concern and was therefore not analyzed in the Multiple Species Habitat Conservation Plan (MSHCP) EIR/EIS. An amendment to the MSHCP to provide coverage for Alternative 9 TWS DV (the Locally Preferred Alternative) would not change the conclusion of the MSHCP EIR/EIS related to air quality.

3.14.3.2 Temporary Impacts

Build Alternatives

Short-term air pollutant emissions associated would occur as a result of construction activities and would include fugitive dust from grading/site preparation, equipment exhaust, and use of emulsified asphalt paving materials. No phase of construction would require more than 5 years to complete. Therefore, a detailed construction emission analysis was not required for conformity purposes for the MCP Build Alternatives.

Exhaust Emissions

Construction activities produce combustion emissions from various sources such as grading equipment, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting construction crews. Exhaust emissions during construction of the MCP Build Alternatives would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions. Caltrans Standard Specifications for Construction (Sections 10 and 18 for dust control and Section 39-3.06 for asphalt concrete plant) would be adhered to in order to reduce emissions as a result of construction equipment.

Fugitive Dust

The SCAQMD has established Rule 403 for reducing fugitive dust emissions (PM₁₀). The Best Available Control Measures (BACM), as specified in the SCAQMD Rule 403, would be incorporated into the project commitments for the selected MCP Build Alternatives. With the implementation of the standard construction measures (providing 50 percent effectiveness) such as frequent watering (e.g., minimum twice

per day), fugitive dust emissions from construction activities would not result in adverse air quality impacts.

Naturally Occuring Asbestos

The project is located in Riverside County, which is not among the counties listed as containing serpentine and ultramafic rock. Therefore, the impact from naturally occurring asbestos during project construction would be minimal to none.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed except for improvements to Cajalco Road and Ramona Expressway. Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the county and city General Plans.

Similar to the MCP Build Alternatives, air pollutant emissions, such as fugitive dust from grading/site preparation and equipment exhaust, would occur over the short term from construction of other transportation improvement projects included in the MCP No Build Alternatives. Because the No Build Alternatives would be constructed in Riverside County, which is not among the counties listed as containing serpentine and ultramafic rock, the impact from naturally occurring asbestos would be minimal to none during construction. As with the MCP Build Alternatives, SCAQMD and Caltrans standard measures to reduce or minimize air pollutant emissions associated with construction activities would be followed during construction of the MCP No Build Alternatives. Therefore, construction-related air quality impacts would be similar for the MCP Build and No Build Alternatives.

3.14.4 Avoidance, Minimization, and/or Mitigation Measures



The operation of the MCP project will not result in adverse long-term air quality impacts; therefore, no avoidance, minimization or mitigation measures are required. However, construction of the MCP project may result in adverse impacts related to fugitive dust and construction equipment and vehicle emissions. The standard conditions and SCAQMD Rule 403 described below would substantially reduce potential adverse short-term air quality impacts during construction of Alternative 9 TWS DV.

3.14.4.1 Standard Conditions SCAQMD Standard Specifications

The following SCAQMD standard measures would reduce or minimize air pollutant emissions associated with construction activities for all MCP Build Alternatives:

- During construction, the Riverside County Transportation Commission (RCTC) shall ensure that the construction contractor shall adhere to the requirements of South Coast Air Quality Management District (SCAQMD) rules and regulations on cutback and emulsified asphalt paving materials.
- SC-2 To reduce fugitive dust emissions during construction, the Riverside County Transportation Commission (RCTC) shall ensure that the construction contractor shall adhere to the requirements of South Coast Air Quality Management District (SCAQMD) Rule 403. The Best Available Control Measures (BACMs) specified in SCAQMD's Rule 403 will be incorporated into the project construction.

Caltrans Standard Specifications

Caltrans Standard Specifications for Construction (Sections 10 and 18 for dust control and Section 39-306 for asphalt concrete plant) will be adhered to during construction to reduce emissions as a result of construction equipment operations and construction activities and to reduce fugitive dust. These standard Caltrans specifications are listed below and would apply to all MCP Build Alternatives.

- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that all disturbed areas, including storage piles, not being actively utilized for construction purposes shall be effectively stabilized for dust emissions using water, chemical stabilizers/suppressants, or vegetative ground cover, as appropriate.
- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that all onsite unpaved roads and off-site unpaved access roads shall be effectively stabilized for dust emissions using water or chemical stabilizers/suppressants.

- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that all land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled for fugitive dust emissions by utilizing applications of water or by presoaking.
- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that when materials are transported off site, all material shall be covered or effectively wetted to limit visible dust emissions, or at least 15.2 centimeters (6 inches) of freeboard space from the top of the container will be maintained.
- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that all operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. The use of blower devices is expressly prohibited.
- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that, following the addition of materials to or the removal of materials from the surface of outdoor storage piles, those piles shall be effectively stabilized for fugitive dust emissions utilizing sufficient water or chemical stabilizers/suppressants.
- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that traffic speeds on unpaved roads shall be limited to 24 kilometers per hour (kph) (15 miles per hour [mph]).
- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that sandbags or other erosion control measures shall be installed to

prevent silt runoff to public roadways from sites with a slope greater than 1 percent.

- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that wheel washers for all exiting trucks shall be installed, or all trucks and equipment shall be washed off before leaving the site.
- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that wind breaks shall be installed at windward side(s) of construction areas.
- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that excavation and grading activities shall be suspended when winds exceed 32 kilometers per hour (kph) (20 miles per hour [mph]).
- During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall ensure that areas subject to excavation, grading, and other construction activity shall be limited consistent with other construction activities underway.

Compliance with the above standard SCAQMD and Caltrans measures would substantially reduce fugitive dust (PM_{2.5} and PM₁₀) and equipment emissions generated during construction.

3.14.4.2 Standard Measures for Construction Impacts

The following measures applicable to all MCP Build Alternatives will be implemented by the RCTC during construction to reduce air pollutants generated by construction vehicles and equipment exhaust during the project construction phase:

AQ-1 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative. This applies to both inactive and active sites during workdays, weekends, holidays, and windy conditions.

- AQ-2 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall install wind fencing and phase grading operations and operate water trucks for stabilization of surfaces under windy conditions.
- AQ-3 During construction, the Riverside County Transportation Commission (RCTC), through the construction contractor, shall, when hauling material and operating nonearthmoving equipment, prevent spillage and limit speeds to 24 kilometers per hour (kph) (15 miles per hour [mph]). Limit speed of earthmoving equipment to 16 kph (10 mph).

Mobile and Stationary Source Controls

- AQ-4 During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor reduce use, trips, and unnecessary idling from heavy equipment.
- AQ-5 During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor maintain and tune engines per manufacturers' specifications to perform at United States Environmental Protection Agency (EPA) certification levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- AQ-6 During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
- AQ-7 During construction, the Riverside County Transportation Commission (RCTC) shall require that leased equipment be 1996 model or newer unless cost exceeds 110 percent or average lease cost, and require that 75 percent or more of total horsepower of owned equipment to be used be 1996 or newer models.
- AQ-8 During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor utilize United States Environmental Protection Agency (EPA) registered particulate

traps and other appropriate controls to reduce emissions of diesel particulate matter (DPM) and other pollutants at the construction site.

Administrative Controls



- AQ-9 During construction, the Riverside County Transportation Commission (RCTC) and its contractors shall identify where implementation of mitigation measures for short-term air quality impacts is rejected based on economic infeasibility.
- AQ-10 Prior to construction, the Riverside County Transportation
 Commission (RCTC) shall require that the construction contractor
 prepare an inventory of all equipment prior to construction and
 identify the suitability of add-on emission controls for each piece of
 equipment before groundbreaking. (Suitability of control devices is
 based on whether there is reduced normal availability of the
 construction equipment due to increased downtime and/or power
 output, whether there may be damage caused to the construction
 equipment engine, or whether there may be a risk to nearby workers or
 the public.)
- During construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor utilize the cleanest available fuel engines in construction equipment and identify opportunities for electrification, and use low sulfur fuel (diesel with 15 parts per million [ppm] or less) in engines where alternative fuels such as biodiesel and natural gas are not possible.
- AQ-12 Prior to construction, the Riverside County Transportation
 Commission (RCTC) shall require that the construction contractor
 develop a construction traffic and parking management plan that
 minimizes traffic interference and maintains traffic flow.
- AQ-13 Prior to construction, the Riverside County Transportation Commission (RCTC) shall require that the construction contractor identify sensitive receptors in the project area, such as children, the elderly, and the infirm, and specify the means by which impacts to these populations will be minimized. For example, construction equipment and staging zones shall be located away from sensitive

receptors and away from fresh air intakes to building and air conditioners.

3.15 Noise



The information in this section is based on the *Mid County Parkway Noise Study Report* (VRPA, 2008).

3.15.1 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.

3.15.1.1 California Environmental Quality Act

CEQA requires a strictly no-build 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 for further information on noise analysis under CEQA.

3.15.1.2 National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require 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 A-weighted decibels [dBA]) is lower than the NAC for commercial areas (72 dBA). Table 3.15.A lists the NAC for use in the NEPA 23 CFR 772 analysis.

Table 3.15.B 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.





Activity Category	NAC Hourly A-Weighted Noise Level, dBA L _{eq} (h)	Description of Activities
A	57 dBA 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.
В	67 dBA Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
С	72 dBA Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D		Undeveloped lands.
E	52 dBA Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Federal Highway Administration, 23 CFR 772. dBA $L_{eq}(h)$ = 1-hour equivalent sound level measured in A-weighted decibels NAC = noise abatement criteria

Table 3.15.B Typical Noise Levels

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),		Food Blender at 1 m (3 ft)
at 80 km (50 mph) Noisy Urban Area, Daytime	(BU)	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft) Commercial Area	(/0)	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)
	(30)	Library
Quiet Rural Nighttime	30	Bedroom at Night,
	(20)	Concert Hall (Background)
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Technical Noise Supplement, Caltrans, 1998.

In accordance with Caltrans *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 an increase of 12 dBA or more) 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.

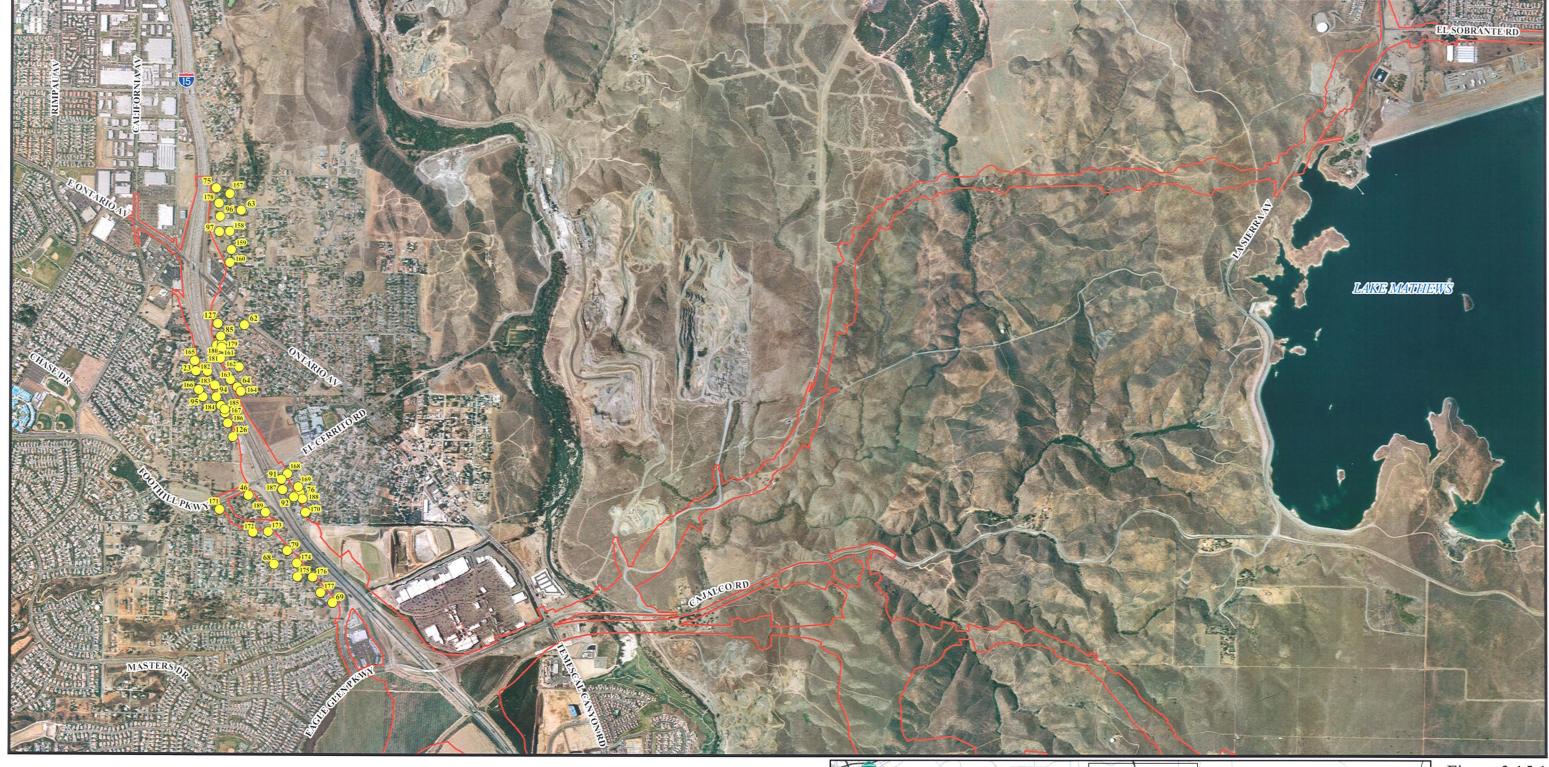
Caltrans *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5 dBA reduction in future noise level must be achieved for an abatement measure to be 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 absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development predating 1978, and the cost per benefited residence.

3.15.2 Affected Environment

3.15.2.1 Surrounding Land Use and Sensitive Receptors

There are existing noise-sensitive land uses such as residences, schools, and parks within the MCP study area. Other land uses within the MCP study area include commercial, industrial, and open space.

The 237 sensitive receptor locations on Figure 3.15.1 show residential uses, a park, and schools that were selected to represent the existing land uses in the project vicinity. There are no existing soundwalls to protect the majority of the residential uses that were studied, with the exception of R124, R136, R137, R138, R221, R222, and R230, which have recently constructed soundwalls that protect the residences. Val Verde High School, Val Verde Elementary, Paragon Park, and



Legend

Receptor Location

Right-of-Way All Alternatives

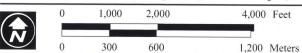
Approved Developments Modeled

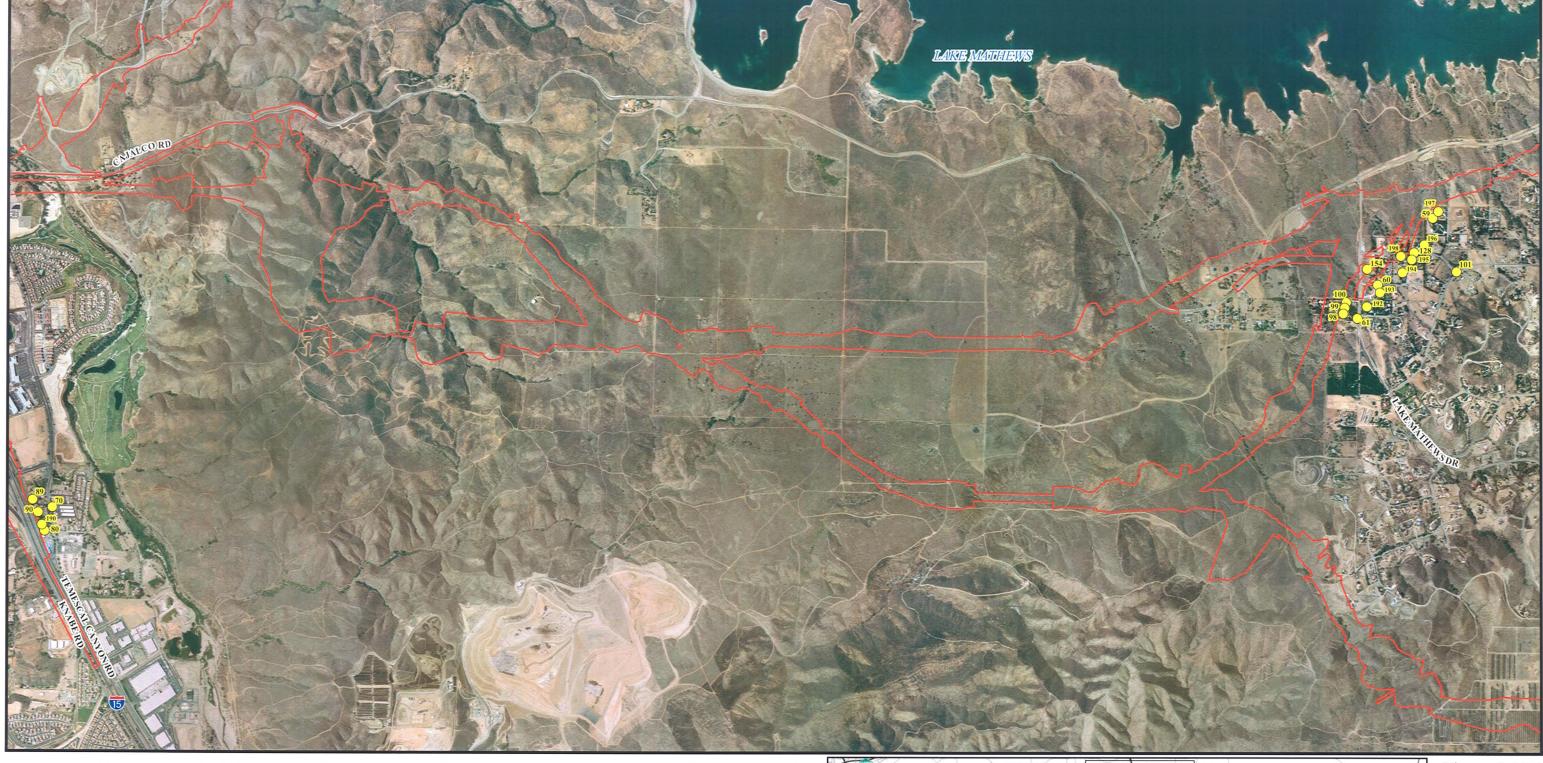
Page 1 of 9
Page 3 of 9
Page 5 of 9
Page 7 of 9
Page 4 of 9

Figure 3.15.1 Page 1 of 9



SOURCE: TBM (2006), Jacobs Engineering (2/2007), VRPA Technologies (2007)







Receptor Location

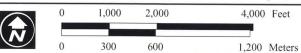
Right-of-Way All Alternatives

Approved Developments Modeled

Figure 3.15.1 Page 2 of 9



SOURCE: TBM (2006), Jacobs Engineering (2/2007), VRPA Technologies (2007)



Chapter 3 Affected Environment, Environmental Consequences, a	and Mitigation Measures
---	-------------------------





Legend Re Receptor Location

Right-of-Way All Alternatives

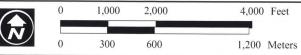
Approved Developments Modeled

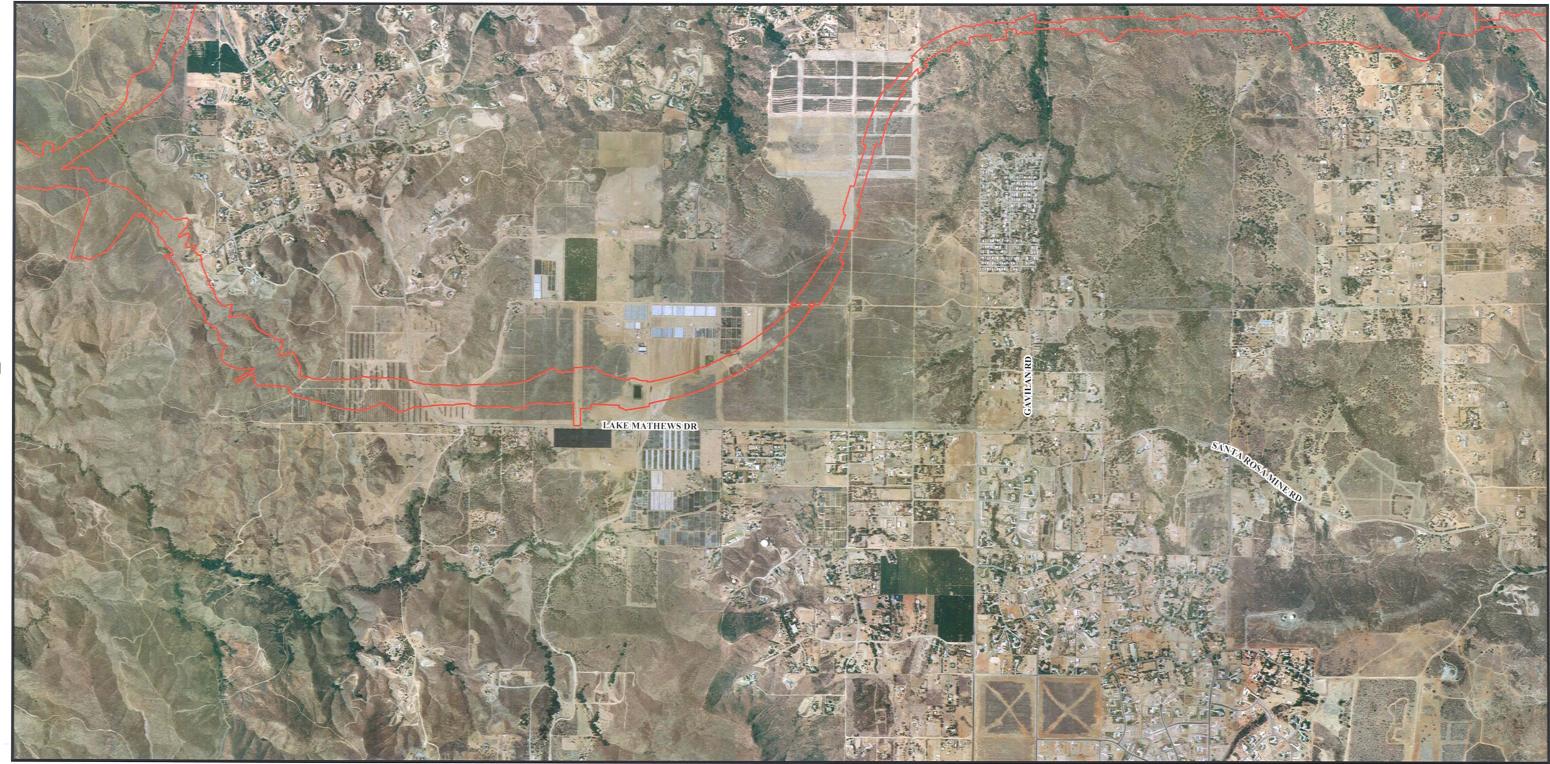
Page 5 of 9

Figure 3.15.1 Page 3 of 9



SOURCE: TBM (2006), Jacobs Engineering (2/2007), VRPA Technologies (2007)





Legend

Receptor Location

Right-of-Way All Alternatives

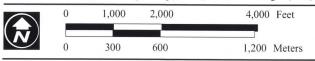
Approved Developments Modeled

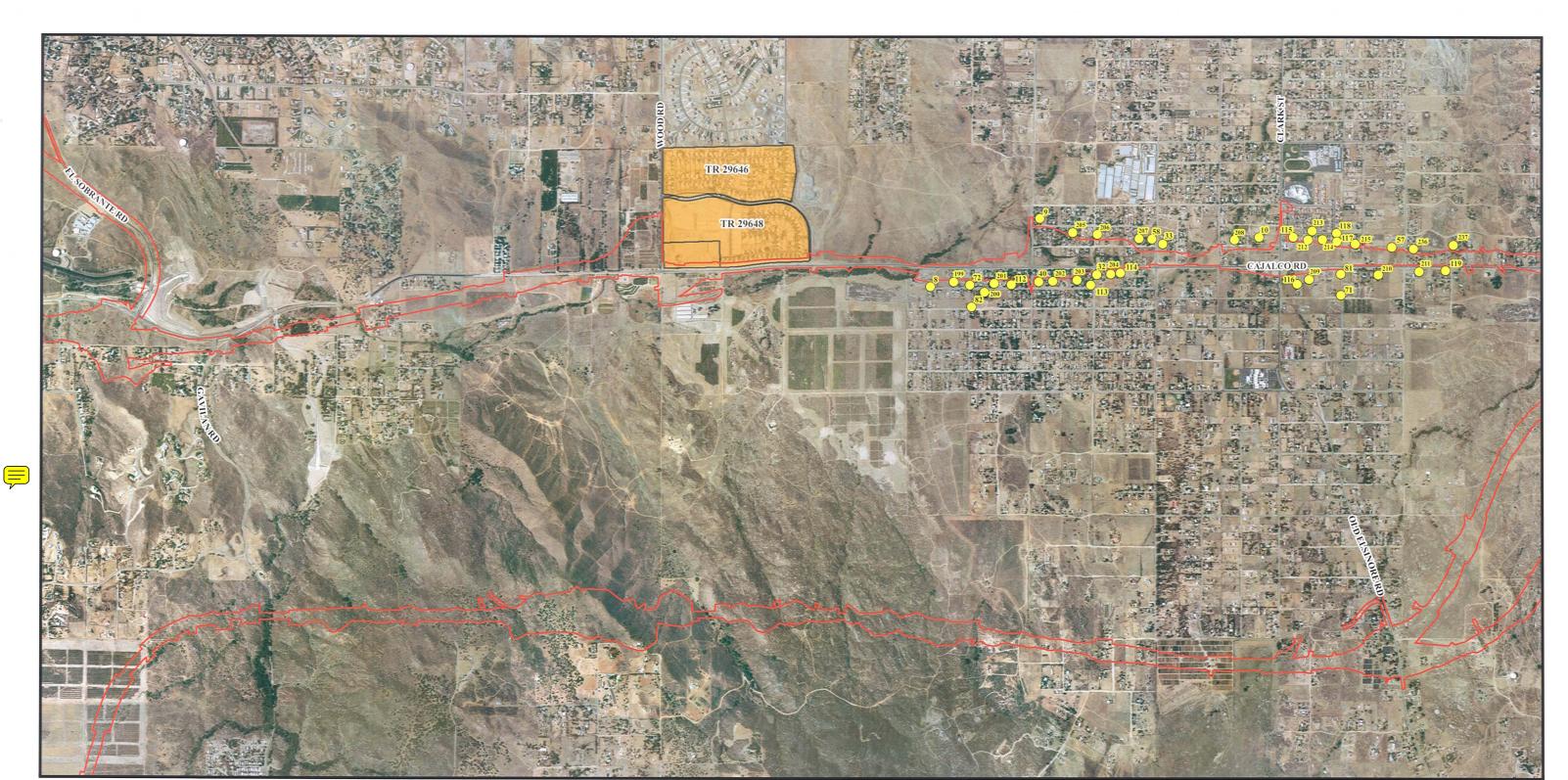
Page 1 of 9
Page 3 of 9
Page 5 of 9
Page 7 of 9
Page 8 of 9
Page 8 of 9

Figure 3.15.1 Page 4 of 9



SOURCE: TBM (2006), Jacobs Engineering (2/2007), VRPA Technologies (2007)





Legend

Receptor Location

Right-of-Way All Alternatives

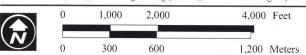
Approved Developments Modeled

Page 1 of 9
Page 3 of 9
Page 5 of 9
Page 7 of 9
Page 8 of 9
Page 4 of 9

Figure 3.15.1 Page 5 of 9



SOURCE: TBM (2006), Jacobs Engineering (2/2007), VRPA Technologies (2007)





Legend

Receptor Location

Right-of-Way All Alternatives

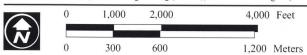
Approved Developments Modeled

Page 5 of 9 Page 7 of 9

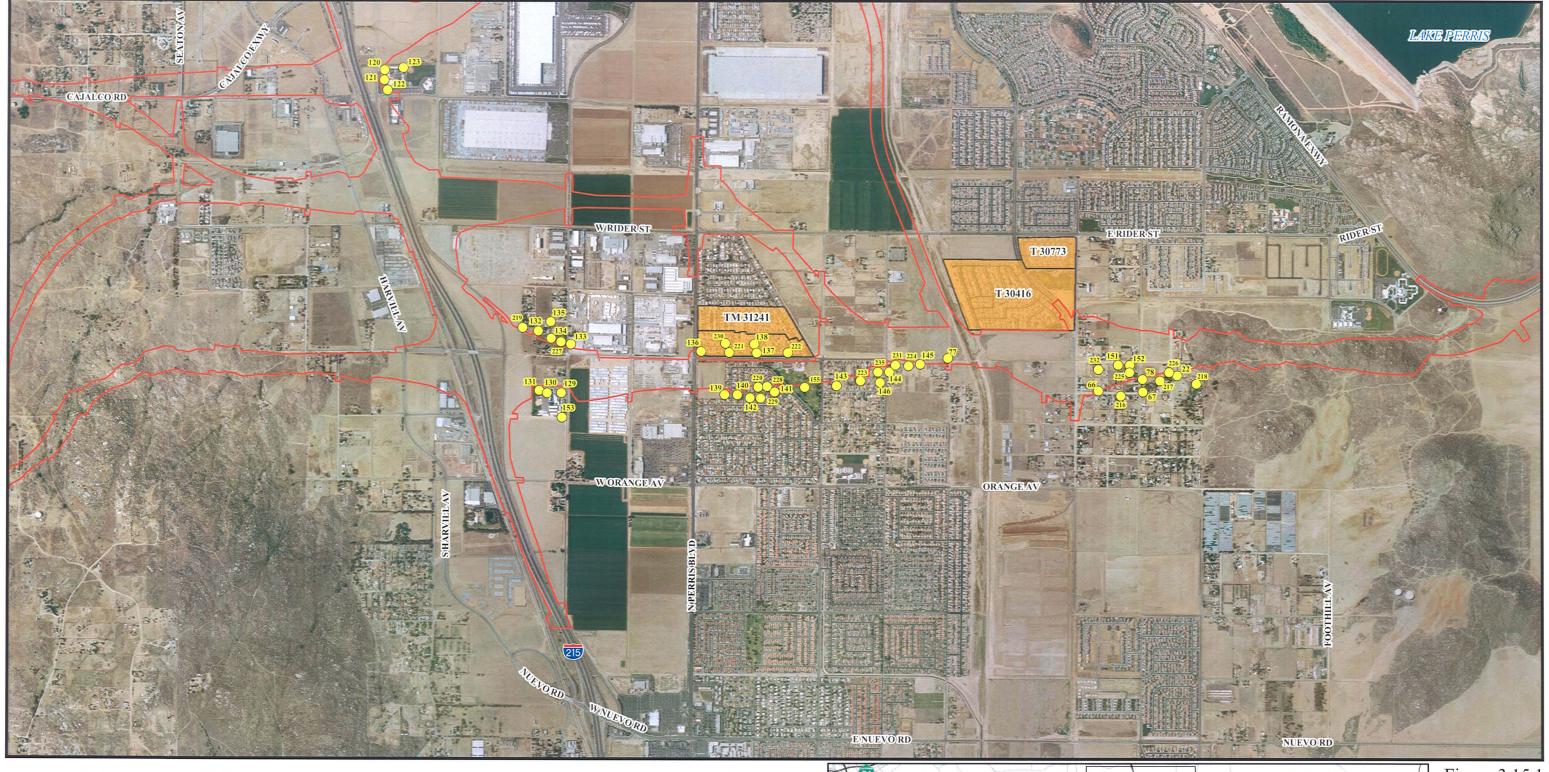
Figure 3.15.1 Page 6 of 9



SOURCE: TBM (2006), Jacobs Engineering (2/2007), VRPA Technologies (2007)







Legend Re Receptor Location

Right-of-Way All Alternatives

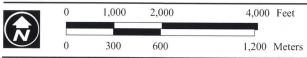
Approved Developments Modeled

Page 5 of 9 Page 7 of 9

Figure 3.15.1 Page 7 of 9



SOURCE: TBM (2006), Jacobs Engineering (2/2007), VRPA Technologies (2007)







Receptor Location

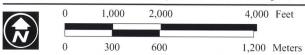
Right-of-Way All Alternatives

Approved Developments Modeled

Figure 3.15.1 Page 8 of 9



SOURCE: TBM (2006), Jacobs Engineering (2/2007), VRPA Technologies (2007)







Receptor Location

Right-of-Way All Alternatives

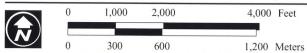
Approved Developments Modeled

Page 1 of 9
Page 3 of 9
Page 5 of 9
Page 7 of 9
Page 8 of 9
Page 7 of 9
Page 7 of 9

Figure 3.15.1 Page 9 of 9



SOURCE: TBM (2006), Jacobs Engineering (2/2007), VRPA Technologies (2007)



El Cerrito Park are the major schools and parks within the project area that were studied due to their proximity to one or more of the MCP Build Alternatives. There are no existing soundwalls to protect the schools and parks. None of the existing commercial land uses along the MCP project alternatives have sensitive outdoor activity areas; therefore, no commercial properties were selected as sensitive receptor locations.

3.15.2.2 Existing Noise Levels

The primary source of noise in the project area is traffic on Interstate 15 (I-15), Interstate 215 (I-215), and sections of the MCP study area. The Burlington Northern Santa Fe (BNSF) is an existing railroad track within the MCP study area that is located just west of I-215. Rail operations within the MCP study area are frequent during both daytime and nighttime hours. No noise-sensitive land uses within the MCP study area were exposed to intermittent noise levels generated by rail operations.

Existing noise levels were measured at 128 of the 237 representative sensitive receptor locations along the MCP Build Alternatives during off-peak traffic hours, when traffic was flowing freely (9:00 a.m. to 3:30 p.m.). The measured existing noise levels are shown in Table 3.15.C. The results of the measured noise levels were then used to calibrate the noise model and to predict the noise level at all 237 modeled sensitive receptor locations. Modeled existing noise levels are shown in Table 3.15.D. Existing sound levels at 62 of the 237 receptors currently approach or exceed the NAC.

In addition, interior noise levels were measured at classroom buildings along the MCP project alignment (Table 3.15.E). Concurrent noise measurements were taken inside and outside of the classroom to measure the attenuation provided by the classroom building. As shown in Table 3.15.E, the interior noise levels within the classrooms along the MCP project alignment are currently below the 52 dBA L_{eq} NAC for Activity Category E.



Table 3.15.C Measured Existing Noise Levels

Monitor Number	Location	Noise Sources	dBA L _{eq}
M-1	9013 Cajalco Road (Tropical Gardens)	Traffic on Cajalco Road	59.6
M-2	10400 Cajalco Road between 10480 and 10470	Traffic on Cajalco Road	61.4
M-3	Cajalco Road a quarter mile west of La Sierra	Traffic on Cajalco Road	61.2
M-4	13521 Cajalco Road next to Dirt Road	Traffic on Cajalco Road	63.1
M-5	Cajalco Road and Gavilan	Traffic on Cajalco Road	60.0
M-6	Cajalco Road and Cowan Rd	Traffic on Cajalco Road	60.5
M-7	Cajalco Road and Wood	Traffic on Cajalco Road	59.5
M-8	Barton St and Souder St	Traffic on Cajalco Road	60.2
M-9	Alexander and Moore St	Traffic on Cajalco Road	60.0
M-10	Clark St and Johnson Ave	Traffic on Cajalco Road	59.8
M-11	Cajalco Road and Harvill	Traffic on Cajalco Road	63.8
M-12	I-215 South of Van Buren at Graveyard	Traffic on I-215	63.7
M-13	I-215 between Oleander and Cajalco	Traffic on I-215	70.1
M-14	I-215 between Cajalco and Nuevo	Traffic on I-215	65.4
M-15	Ramona Expressway and Bernasconi South	Traffic on Ramona Expressway	65.0
M-16	32930 Ramona Expressway	Traffic on Ramona Expressway	62.7
M-17	2720 Ramona Expressway	Traffic on Ramona Expressway	63.3
M-18	Metz St South of Nuevo	Traffic on Nuevo and slight traffic on Metz	65.4
M-19	El Sobrante and Lockwood Rd	Traffic on El Sobrante	59.1
M-20	El Sobrante and Vista Del Lago	Traffic on El Sobrante	57.7
M-21	El Sobrante and McAlistar Avenue	Traffic on El Sobrante	56.5
M-22	Placentia East of Eureka	Traffic on Placentia	55.0
M-23	I-15 and Taber/State	Traffic on I-15	77.8
M-24	Ramona Expressway South of Rider, LMS School	Traffic on Ramona Expressway	62.0
M-25	Ramona and Perris Drain	Traffic on Cajalco Road	66.0
M-26	Rider and Redlands	Traffic on Rider	54.8
M-27	Orange and Brown	Traffic on Orange	55.9
M-28	Eagle Glen Parkway and Masters Blvd	Traffic on Eagle Glen Parkway	45.6
M-29	Placentia and Redlands	Traffic on Placentia and Redlands	56.1
M-30	Rider and Perris	Traffic on Perris and Rider	48.0
M-31	Cajalco Road East of Clark and Boulder Development	Traffic on Cajalco Road	62.8
M-32	Cajalco Road and Meade St	Traffic on Cajalco Road	65.2
M-33	Cajalco Road and Brown St	Traffic on Cajalco Road	59.7
M-34 M-35	Cajalco Road and Seaton I-215 and South Van Buren, North End of	Traffic on Cajalco Road Traffic on I-215	60.3 64.7
M-36	Graveyard Indian Ave South of Placentia. South of R-183	Traffic on Indian and Placentia	59.7
M-37	Ramona Expressway south of Rider	Traffic on Ramona Expressway	69.0
M-38	Ramona Expressway between Davis/Hansen and Lakeview	Traffic on Ramona Expressway	65.0
M-39	Ramona Expressway and Warren Rd	Traffic on Ramona Expressway	61.9
M-40	Alexander St and Souder St	Traffic on Alexander	55.5
M-41	I-215 and Nuevo. Nuevo Business Park area	Traffic on I-215	59.4
M-42	El Sobrante between Mockingbird and Cajalco	Traffic on El Sobrante	54.7
M-43	13000 El Sobrante	Traffic on El Sobrante	61.2
M-44	El Sobrante and La Sierra	Traffic on El Sobrante and La Sierra	56.5
M-45	Reservoir Ave West of Magnolia	Traffic on Ramona Expressway	65.0

Table 3.15.C Measured Existing Noise Levels

Monitor Number	Location	Noise Sources	dBA L _{eq}
M-46	I-15 South of Foothill Parkway	Traffic on I-15	67.3
M-47	Perris Drainage and Rider	Traffic on Rider	49.8
M-48	Rider and Evans	Traffic on Rider and Evans	61.4
M-49	Old Elsinore and Clark/Orange	Traffic on Old Elsinore	52.6
M-50	Gavilan and Multiview	Traffic on Gavilan and Multiview	50.4
M-51	I-15. Eagle Glen Parkway and Cajalco Rd	Traffic on I-15 and Cajalco	64.9
M-52	Lake Mathews and Orange	Traffic on Lake Mathews	50.0
M-53	Placentia east of Perris	Traffic on Placentia	57.0
M-54	Placentia and Indian	Traffic on Placentia	52.8
M-55	SR-79 and Gilman Springs Road	Traffic on SR-79	65.1
M-56	San Felipe and La Paz Lane	Traffic on San Felipe	42.0
M-57	Cajalco and Day St	Traffic on Cajalco Road	66.7
M-58	Brown St and Moore St	Traffic on Brown	53.0
M-59	Somma Dr North of Grande Vista	Traffic on Grande Vista	44.6
M-60	Scenic View Rd and Lake Mathews Dr	Traffic on Lake Mathews	53.0
M-61	Richey Dr and Lake Mathews Dr	Traffic on Lake Mathews	42.0
M-62	Ontario Ave and Piute Creek Dr	Traffic on Ontario	52.0
M-63	State and Smerber	Traffic on State St	51.0
M-64	Piute Creek Dr E/O I-15	Traffic on I-15	64.0
M-65	Placentia Ave and Evans Ave	Traffic on Placentia and Evans	48.0
M-66	Evans Rd and Toliver Rd	Traffic on Evans	46.0
M-67	Toliver Rd and El Nido	Traffic on El Nido	47.0
M-68	Newton and Bobbitt	Traffic on Newton	52.0
M-69	I-15/Bedford Canyon and Georgetown Dr	Traffic on I-15	70.0
M-70	Temescal Canyon Dr and Foster Rd near Weirick	Traffic on Temescal Canyon	67.0
M-71	Carroll St and Elmwood St	Traffic on Carroll	56.0
M-72	Souder St and Una St	Traffic on Cajalco Road	63.0
M-73	Gavilan and Pfeifer - end of road	Traffic on Cajalco Road	48.0
M-74	Gavilan and Pfeifer - middle	Traffic on Gavilan	54.0
	I-15 and Bel Air	Traffic on I-15	74.0
	Frances and Katy off El Cerrito	Traffic on Katy/Frances	61.0
	Placentia and Murrieta	Traffic on Placentia	45.0
M-78	El Nido Ave and 500 ft south of Placentia	Traffic on Placentia	51.0
	I-15/Kylne and Bedford Canyon	Traffic on I-15	74.0
	I-15/Temescal Canyon	Traffic on I-15	70.0
	Carroll and Cajalco	Traffic on Cajalco Road	64.0
	Una and Hunter	Traffic on Cajalco Road	57.0
M-83	West of Extravaganza on Gustin Rd	Traffic on Gustin and Cajalco Road	52.0
M-84	Cajalco Road East of Extravaganza	Traffic on Cajalco Road	60.0
	I-15/State St end	Traffic on I-15	72.0
	I-15/Katy Rd end	Traffic on I-15	66.0
	Ramona Expressway and Hansen	Traffic on Ramona Expressway	63.0
	Magnolia and Fern	Traffic on Magnolia	46.0
	I-15 NB Off at Weirick, southside	Traffic on I-15 and Weirick	60.0
	I-15 NB Off at Weirick, start of ramp	Traffic on I-15	66.0
	I-15 NB Off Ramp and El Cerrito Rd	Traffic on I-15	68.0
	I-15 NB Off Ramp at El Cerrito, North of Katy	Traffic on I-15	66.0
	I-15 NB Off Ramp at Ontario before Ramp	Traffic on I-15	70.0

Table 3.15.C Measured Existing Noise Levels

Monitor Number	I OCATION	Noise Sources	dBA L _{eq}
M-94	West of I-15, east of Calico	Traffic on I-15	70.0
M-95	Dry Gulch Rd and Calico	Traffic on Calico	59.0
M-96	I-15 South of Bel Air	Traffic on I-15	72.0
M-97	I-15 North of Ontario	Traffic on I-15	69.0
M-98	Richey Dr West of Lake Mathews Dr	Traffic on Lake Mathews	53.0
M-99	North of Richey Dr and West of Lake Mathews Dr	Traffic on Lake Mathews	42.0
M-100	Northwest of Lake Mathews and Richey	Traffic on Lake Mathews	42.0
M-101	Grande Vista East of Somma	Traffic on Grande Vista	48.0
M-102	On Richey Dr off Lake Mathews Dr	Traffic on Lake Mathews	40.0
M-103	Northwest of Richey Dr off Lake Mathews Dr	Traffic on Lake Mathews	40.0
M-104	West of Richey Dr off Lake Mathews Dr	Traffic on Lake Mathews	40.0
M-105	North of Richey Dr off Lake Mathews Dr	Traffic on Lake Mathews	38.0
M-106	Northwest of Gavilan and Pfeifer	Traffic on Gavilan	52.0
M-107	Extravaganza Lane and Cajalco Rd	Traffic on Cajalco Road	57.0
M-108	Southeast of Cajalco and Gustin Rd	Traffic on Cajalco Road	48.0
M-109	Southwest of Cajalco and Extravaganza	Traffic on Cajalco Road	50.0
M-110	South of Cajalco and Extravaganza	Traffic on Cajalco Road	54.0
M-111	Southeast of Cajalco and Extravaganza	Traffic on Cajalco Road	57.0
M-112	Souder St West of Alexander	Traffic on Alexander	58.0
M-113	Souder St and Mead St	Traffic on Mead	56.0
M-114	Cajalco Rd between Meade and Brown	Traffic on Cajalco Road	60.0
M-115	Castlerock Trail and Windstone Way	Traffic on Clark	61.0
M-116	Clark south of Cajalco	Traffic on Cajalco Road	62.0
M-117	Carroll St north of Cajalco	Traffic on Cajalco Road	63.0
M-118	Summerwind Trail and Windstone Way	Traffic on Carroll	58.0
M-119	Cajalco Rd and Tyler Rd	Traffic on Cajalco Road	62.0
M-120	I-215 and Nevada Ave between Ramona	Traffic on I-215	65.0
	Expressway and Rider. North end of School		
M-121	I-215 and Nevada Ave between Ramona	Traffic on I-215	67.0
11.100	Expressway and Rider. Middle of School	T (" 1045	
M-122	I-215 and Nevada Ave between Ramona Expressway and Rider. South of School	Traffic on I-215	65.0
M-123	Between Webster Ave and Nevada Ave. Middle of School.	Traffic on Nevada	54.0
M-124	Lakeview Dr North of Placentia	Traffic on Placentia	49.0
M-125	Rider St In Between Lakeview and Perris Blvd	Traffic on Rider	50.0
M-126	I-15 West of El Cerrito	Traffic on I-15	66.0
	State St south of Ontario Ave	Traffic on I-15	50.0
M-128	Grande Vista East of Lake Mathews Dr	Traffic on Grande Vista	50.0

Source: Mid County Parkway Noise Study Report, VRPA, 2008.

dBA L_{eq} = equivalent continuous sound level measured in A-weighted decibels

I-15 = Interstate 15 I-215 = Interstate 215 SR-79 = State Route 79

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

	Noise Receiver Abatement				No. of		Existing	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	.05 m ((10 ft)	H = (3.7 m ((12 ft)	H = 4	4.3 m (14 ft)	H = 4	4.9 m (1	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	No. of Dwelling Units	Address	Noise Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions	Minus No Tylesting Project Conditions Conditions H _{eq} (h), dBA	Impact Type	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
4	M-75	В	TWS-C1	Residential	2	I-15 and Bel Air	75	75	75	0	0	A/E, S	75	0	0	75	0	0	74	1	0	71	4	0	68	7	2
4	M-96	В	TWS-C1	Residential	1	I-15 South of Bel Air	69	73	67	-2	-6	A/E	65	2	0	65	2	0	64	3	0	64	3	0	63	4	0
4	M-97	В	TWS-C1	Residential	2	I-15 North of Ontario	67	69	66	-1	-3	A/E	65	1	0	64	2	0	62	4	0	61	5	2	60	6	2
4	R-157	В	TWS-C1	Residential	3	West of State St East of Receptor 75	65	69	63	-2	-6	None	62	1	0	62	1	0	61	2	0	61	2	0	61	2	0
4	R-158	В	TWS-C1	Residential	3	West of State St East of Receptor 97	65	64	63	-2	-1	None	63	0	0	62	1	0	61	2	0	60	3	0	59	4	0
4	R-159	В	TWS-C1	Residential	2	West of State St North of Receptor 160	56	56	64	8	8	None	64	0	0	63	1	0	62	2	0	61	3	0	60	4	0
4	R-160	В	TWS-C1	Residential	3	West of State St North of Poppy	66	67	66	0	-1	A/E	64	2	0	64	2	0	63	3	0	62	4	0	61	<u>5</u>	3
4	M-63	В	TWS-C1	Residential	2	State and Smerber	60	60	59	-1	-1	None	59	0	0	59	0	0	58	1	0	57	2	0	56	3	0
4	R-178	В	TWS-C1	Residential	1	East of I-15 and North of Receptor 96	71	72	65	-6	-7	None	64	1	0	63	2	0	63	2	0	63	2	0	62	3	0
4	R-164	В	TWS-C2	Residential	2	East of I-15 South of Receptor 64	69	70	66	-3	-4	A/E	63	3	0	62	4	0	62	4	0	61	<u>5</u>	2	N/A	N/A	N/A
4	M-64	В	TWS-C2	Residential	2	Piute Creek Dr East of I-15	67	65	65	-2	0	None	63	2	0	62	3	0	62	3	0	61	4	0	N/A	N/A	N/A
4	R-163	В	TWS-C2	Residential	3	East of I-15 North of Receptor 64	68	69	63	-5	-6	None	63	0	0	62	1	0	62	1	0	61	2	0	N/A	N/A	N/A
4	R-162	В	TWS-C2	Residential	5	East of I-15 North of Receptor 163	81	83	67	-14	-16	A/E	63	4	0	62	<u>5</u>	5	61	<u>6</u>	5	61	<u>6</u>	5	N/A	N/A	N/A
4	R-161	В	TWS-C2	Residential	3	East of I-15 South of Receptor 85	68	69	71	3	2	A/E	65	<u>6</u>	3	64	7	3	64	<u>8</u>	3	63	8	3	N/A	N/A	N/A
4	M-85	В	TWS-C2	Residential	2	I-15/State St end	68	73	71	3	-2	A/E	66	5	2	65	6	2	64	7	2	63	8	2	N/A	N/A	N/A
4	M-62	В	TWS-C2	Residential	4	Ontario Ave and Piute Creek Dr	71	70	66	-5	-4	A/E	64	2	0	63	3	0	63	3	0	62	4	0	N/A	Ņ/A	N/A
4	M-127	В	TWS-C2	Residential	4	State St south of Ontario	68	69	72	4	3	A/E	67	<u>5</u>	4	66	<u>6</u>	4	65	7	4	64	8	4	N/A	N/A	N/A
4	M-23	В	TWS-C3	Residential	2	I-15 and Taber/State	80	80	66	-14	-14	A/E	64	2	0	63	3	0	63	3	0	62	4	0	62	4	0
4	M-94	В	TWS-C3	Residential	3	West of I-15, east of Calico	66	71	69	3	-2	A/E	63	6	3	62	7	3	62	8	.3	61	8	3	60	9	3
4	M-95	В	TWS-C3	Residential	3	Dry Gulch Rd and Calico	61	60	70	9	10	A/E	67	3	0	66	4	0	64	6	3	63	7	3	63	7	3
4	M-126	В	TWS-C3		1	I-15 West of El Cerrito	69	68	75	6	7	A/E, S	67	8	1	66	9	1	65	10	1	65	10	1	64	11	1
4	R-165	В	TWS-C3	Residential	3	West of I-15 North of Receptor 23	61	62	70	9	8	A/E	64	<u>6</u>	3	63	7	3	62	8	3	62	8	3	61	9	3
4	R-166	В	TWS-C3	Residential	2	West of I-15 South of Receptor 23	68	71	69	1	-2	A/E	66	3	0	65	4	0	64	<u>5</u>	2	63	<u>6</u>	2	62	7	2
4	R-167	В	TWS-C3	Residential	2	West of I-15 South of Receptor 94	70	76	72	2	-4	A/E	67	<u>5</u>	2	66	<u>6</u>	2	65	7	2	64	8	2	63	9	2
4	R-184	В	TWS-C3	Residential	2	Whiskey Creek and Calico Circle	61	62	79	18	17	A/E, S, Sb	73	<u>6</u>	2	70	9	2	69	10	2	67	12	2	66	13	2
4	R-186	В	TWS-C3	Residential	5	West of I-15 North of Receptor 126	67	69	77	10	8	A/E, S	70	7	5	69	8	5	67	10	5	66	11	5	65	12	5
4	R-168	В	TWS-C4	Residential	3	East of Frances St South of El Cerrito Road	67	69	62	-5	-7	None	61	1	0	61	. 1	0	61	1	0	61	1	0	N/A	N/A	N/A
4	R-169	В	TWS-C4	Residential	2	East of Frances St North of Katy Way and Receptor 76	65	66	62	-3	-4	None	59	3	0	59	3	0	59	3	0	59	3	0	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

	Receiver Abatement				No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	.05 m ((10 ft)	H = 3	3.7 m ((12 ft)	H = 4	4.3 m (14 ft)	H = 4	1.9 m (16 ft)
Alternative	I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Impact Minus No Project Conditions Leq(h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	,	<u>I.L.</u>	NBR
4	M-76	В	TWS-C4	Residential	2	Frances and Katy off El Cerrito	66	62	63	-3	1	None	59	4	0	59	4	0	59	4	0	59	4	0	N/A	N/A	N/A
4	R-170	В	TWS-C4	Residential	2	East of I-15, South of Receptor 76	70	69	72	2	3	A/E	66	<u>6</u>	2	66	<u>6</u>	2	65	7	2	65	7	2	N/A	N/A	N/A
4	M-89	В	TWS-C6	Residential	2	Magnolia and Fern	. 64	60	72	8	12	A/E	65	7	2	64	8	2	63	9	2	63	9	2	N/A	N/A	N/A
4	M-90	В	TWS-C6	Residential	1	I-15 NB Off at Weirick, start of ramp	68	66	72	4	6	A/E	68	4	0	68	4	0	66	<u>6</u>	1	65	7	1	N/A	N/A	N/A
4	M-70	В	TWS-C6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	67	-3	0	A/E	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3	N/A	N/A	N/A
4	R-190	В	TWS-C6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	77	-1	-2	A/E, S	77	0	0	75	2	0	72	<u>5</u>	1	71	<u>6</u>	1		N/A	
4	M-80	В	TWS-C6	Residential	1	I-15/Temescal Canyon	76	71	73	-3	2	A/E	73	0	0	72	1	0	71	2	0	70	3	0	N/A	N/A	N/A
4	M-63	В	TWS 1	Residential	2	State and Smerber	60	60	66	6	6	A/E	65	1	0	65	1	0	65	1	0	65	1	0	65	1	0
4	R-158	В	TWS 1	Residential	3	West of State St East of Receptor 97	65	64	67	2	3	A/E	65	2	0	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3
4	R-157	В	TWS 1	Residential	3	West of State St East of Receptor 75	65	69	64	-1	-5	A/E	63	1	0	63	1	0	63	1	0	62	2	0	62	2	0
4	M-75	В	TWS 1	Residential	2	I-15 and Bel Air	75	75	75	0	0	A/E, S	75	0	0	73	2	0	72	3	0	68	7	2	67	<u>8</u>	2
4	R-178	В	TWS 1	Residential	1	East of I-15 and North of Receptor 96	71	72	67	-4	-5	A/E	65	2	0	65	2	0	64	3	0	64	3	0	63	4	0
4	M-96	В	TWS 1	Residential	1	I-15 South of Bel Air	69	73	70	1	-3	A/E	67	3	0	67	3	0	66	4	0	65	<u>5</u>	1	64	<u>6</u>	1
4	M-97	В	TWS 1	Residential	2	I-15 North of Ontario	67	69	70	3	1	A/E	67	3	0	66	4	0	65	<u>5</u>	2	64	<u>6</u>	2	63	7	2
4	R-164	В	TWS 2	Residential	2	East of I-15 South of Receptor 64	69	70	73	4	3	A/E	70	3	0	69	4	0	69	4	0	69	4	0	N/A	N/A	N/A
4	M-64	В	TWS 2	Residential	2	Piute Creek Dr East of I-15	67	65	72	5	7	A/E	70	2	0	68	4	0	68	4	0	67	5	0	N/A	N/A	N/A
4	R-163	В	TWS 2	Residential	3	East of I-15 North of Receptor 64	68	69	71	3	2	A/E	67	4	0	67	4	0	66	<u>5</u>	3	65	<u>6</u>	3	N/A	N/A	N/A
4	R-181	В	TWS 2	Residential	3	East of I-15 and South of Receptor 180	69	70	74	5	4	A/E	69	<u>5</u>	3	67	7	3	66	8	3	65	9	3	N/A	N/A	N/A
4	M-62	В	TWS 2	Residential	4	Ontario Ave and Piute Creek Dr	71	70	68	-3	-2	A/E	64	4	0	64	4	0	63	<u>5</u>	4	62	<u>6</u>	4	N/A	N/A	N/A
4	R-180	В	TWS 2	Residential	1	East of I-15 and South of Receptor 85	68	68	75	7	7	A/E, S	68	7	1	66	9	1	65	10	1	64	11	1	N/A	N/A	N/A
4	R-179	В	TWS 2	Residential	3	East of I-15 and Receptor	67	68	73	6	5	A/E	68	<u>5</u>	3	66	<u>7</u>	3	65	8	3	65	8	3	N/A	N/A	N/A
4	M-85	В	TWS 2	Residential	2	I-15/State St end	68	73	73	5	0	A/E	67	6	2	66	7	2	65	8	2	64	9	2	N/A	N/A	N/A
4	M-127	В	TWS 2	Residential	4	State St south of Ontario	68	69	74	6	5	A/E	68	<u>6</u>	4	67	7	4	66	8	4	65	9	4	N/A		N/A
4	M-126	В	TWS 3	Residential	1 1	I-15 West of El Cerrito	69	68	77	8	9	A/E, S	71	6	1	69	8	1	68	9	1	67	10	1	67	10	1
4	R-186	В	TWS 3	Residential	5	West of I-15 North of Receptor 126	67	69	77	10	8	A/E, S	70	7	5	68	9	5	67	10	5	66	11	5	65	12	5
4	R-184	В	TWS 3	Residential	2	Whiskey Creek and Calico Circle	61	62	77	16	15	A/E, S	72	<u>5</u>	2	70	7	2	68	9	2	67	<u>10</u>	2	66	11	2
4	R-185	В	TWS 3	Residential	3	West of I-15 South of Receptor 94	84	86	71	-13	-15	A/E	66	<u>5</u>	3	65	<u>6</u>	3	64	7	3	64	7	3	63	8	3

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	3.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	1.3 m (⁻	14 ft)	H = 4	I.9 m (1	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	•	<u>I.L.</u>	NBR	- 7	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
4	M-94	В	TWS 3	Residential	3	West of I-15, east of Calico	66	71	74	8	3	A/E	67	7	3	66	8	3	65	9	3	65	9	3	64	10	3
4	M-95	В	TWS 3	Residential	3	Dry Gulch Rd and Calico	61	60	69	8	9	A/E	66	3	0	66	3	0	64	5	3	63	6	3	63	<u>6</u>	3
4	R-183	В	TWS 3	Residential	3	West of I-15 North of Receptor 94	81	83	67	-14	-16	A/E	65	2	0	65	2	0	63	4	0	63	4	0	63	4	0
4	R-182	В	TWS 3	Residential	4	West of I-15 and East of Dry Gulch and Receptor 23	81	83	72	-9	-11	A/E	66	<u>6</u>	4	66	<u>6</u>	4	65	7	4	64	<u>8</u>	4	64	<u>8</u>	4
4	M-23	В	TWS 3	Residential	2	I-15 and Taber/State	80	80	72	-8	-8	A/E	67	<u>5</u>	2	66	<u>6</u>	2	64	8	2	64	<u>8</u>	2	63	9	2
4	R-165	В	TWS 3	Residential	4	West of I-15 North of Receptor 23	61	62	74	13	12	A/E	68	<u>6</u>	4	67	7	4	66	<u>8</u>	4	65	9	4	64	<u>10</u>	4
4	R-170	В	TWS 4	Residential	2	East of I-15, South of Receptor 76	70	69	75	5	6	A/E, S	69	<u>6</u>	2	67	<u>8</u>	2	66	9	2	64	11	2	N/A	N/A	N/A
4	R-188	В	TWS 4	Residential	1	East of Katy Way South of Receptor 76	67	67	70	3	3	A/E	65	<u>5</u>	1	64	<u>6</u>	1	63	7	1	62	<u>8</u>	1	N/A	N/A	N/A
4	M-76	В	TWS 4	Residential	2	Frances and Katy off El Cerrito	66	62	69	3	7	A/E	63	<u>6</u>	2	62	7	2	61	8	2	61	<u>8</u>	2	N/A	N/A	N/A
4	R-187	В	TWS 4	Residential	1	East of I-15 North of Receptor 92	63	64	73	10	9	A/E	67	<u>6</u>	1	66	7	1	65	<u>8</u>	1	65	<u>8</u>	1	N/A	N/A	N/A
4	R-168	В	TWS 4	Residential	3	East of Frances St South of El Cerrito Road	67	69	67	0	-2	A/E	66	1	0	66	1	0	66	1	0	66	1	0	N/A	N/A	N/A
4	M-89	В	TWS 6	Residential	2	I-15 NB Off at Weirick, south side	64	60	72	8	12	A/E	64	<u>8</u>	2	62	<u>10</u>	2	61	11	2	60	<u>12</u>	2	N/A	N/A	N/A
4	M-70	В	TWS 6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	66	-4	-1	A/E	63	3	0	62	4	0	62	4	0	62	4	0	N/A	N/A	N/A
4	M-90	В	TWS 6	Residential	1	I-15 NB Off at Weirick, start of ramp	68	66	72	4	6	A/E	67	<u>5</u>	1	66	<u>6</u>	1	65	7	0	64	8	1	N/A	N/A	N/A
4	R-190	В	TWS 6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	74	-4	-5	A/E .	71	3	0	70	4	0	70	4	0	70	4	0	N/A	N/A	N/A
4	M-80	В	TWS 6	Residential	1	I-15/Temescal Canyon	76	71	71	-5	0	A/E	71	0	0	71	0	0	71	0	0	71	0	0	N/A		N/A
4	M-98	В	LMS 2	Residential	1	Richey Dr West of Lake Mathews Dr	53	59	72	19	13	A/E, Sb	68	4	0	67	<u>5</u>	1	66	<u>6</u>	1	64	8	1	63	9	1
4	M-99	В	LMS 2	Residential	1	North of Richey Dr and West of Lake Mathews Dr	54	60	70	16	10	A/E, Sb	64	6	1	63	7	1	62	8	1	62	8	1	61	9	1
4	M-61	В	LMS 2	Residential	1	Richey Dr and Lake Mathews Dr	60	67	60	0	-7	None	59	1	0	59	1	0	59	1	0	59	1	0	59	1	0
4	M-100	В	LMS 2	Residential	1	Northwest of Lake Mathews and Richey	54	61	62	8	1	None	61	1	0	61	1	0	61	1	0	61	1	0	61	1	0
4	R-192	В	LMS 2	Residential	2	East of Lake Mathews North of Eagle View	54	61	60	6	-1	None	60	0	0	60	0	0	60	0	0	60	0	0	60	0	0
4	M-112	В	MV 1	Residential	2	Souder St West of Alexander	61	63	69	8	6	A/E	65	4	0	64	<u>5</u>	2	64	<u>5</u>	2	64	<u>5</u>	2		N/A	
4	R-201	В	MV 1	Residential	4	North of Souder St East of Una St	62	64	69	7	5	A/E	64	<u>5</u>	4	63	<u>6</u>	4	62	7	4	61	8	4		N/A	
4	R-200	В	MV 1	Residential	4	South of Souder St East of Una St	59	61	69	10	8	A/E	65	4	0	63	<u>6</u>	4	62	7	4	61	<u>8</u>	4		N/A	
4	M-72	В	MV 1	Residential	3	Souder St and Una St	61	63	71	10	8	A/E	67	4	0	65	6	3	63	8	3	62	9	3	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

	,	Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with	Impact	H =	H = 2.4 m (8 ft)		H = 3	.05 m ((10 ft)	H = 3.7 m (12 ft)			H = 4	4.3 m (14 ft)	H = 4	6 ft)	
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project Leq(h), dBA	Level with Project L _{eq} (h), dBA		Minus No Type Project	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u> </u>	NBR	L _{eq}		NBR	
4	R-199	В	MV 1	Residential	3	South of Cajalco Road West of Una St North of Souder	63	65	70	7	5	A/E	64	<u>6</u>	3	62	<u>8</u>	3	61	9	3	60	<u>10</u>	3	N/A	N/A	N/A
4	M-82	В	MV 1	Residential	3	Una and Hunter	56	58	62	6	4	None	60	2	0	59	3	0	58	4	0	57	<u>5</u>	3	N/A		N/A
4	M-8	В	MV 1	Residential	1	Barton St and Souder St	61	64	69	8	5	A/E	65	4	0	65	4	0	64	<u>5</u>	1	63	<u>6</u>	1	N/A		N/A
4	M-113	В	MV 2	Residential	2	Souder St and Mead St	61	63	66	5	3	A/E	65	1	0	64	2	0	63	3	0	62	4	0	N/A	N/A	N/A
4	M-40	В	MV 2	Residential	1	Alexander St and Souder St	59	61	69	10	8	A/E	67	2	0	66	3	0	66	3	0	66	3	0	N/A		N/A
4	R-202	В	MV 2	Residential	4	North of Souder St East of Receptor 40	62	65	68	6	3	A/E	65	3	0	64	4	0	64	4	0	63	<u>5</u>	4	N/A		N/A
4	R-203	В	MV 2	Residential	3	North of Souder St West of Receptor 32	62	65	67	5	2	A/E	65	2	0	65	2	0	64	3	0	63	4	0	N/A		N/A
4	M-32	В	MV 2	Residential	1	Cajalco Road and Meade St	65	68	66	1	-2	A/E	64	2	0	63	3	0	61	<u>5</u>	1	60	6	1	N/A		N/A
4	R-204	В	MV 2	Residential	2	North of Souder St East of Receptor 32	62	65	65	3	0	None	62	3	0	61	4	0	59	6	2	59	6	2			N/A
4	M-114	В	MV 2	Residential	2	Cajalco Rd Btwn Meade and Brown	69	72	64	-5	-8	None	60	4	0	59	5	2	58	6	2	58	6	2			N/A
4	M-10	В	MV 3	Residential	1	Clark St and Johnson Ave	63	64	62	-1	-2	None	61	1 1	0	61	1	0	60	2	0	60	2	0	N/A	N/A	N/A
4	R-208	В	MV 3	Residential	5	East of Haines St North of Johnson Ave	61	63	68	7	5	A/E	64	4	0	63	<u>5</u>	5	62	6	5	61	7	5	N/A		N/A
4	M-33	В	MV 3	Residential	1 1	Cajalco Road and Brown St	62	64	67	5	3	A/E	61	6	1	60	7	1	58	9	1_1_	58	9	1_1_	N/A		N/A
4	M-58	В	MV 3	Residential	1 1	Brown St and Moore St	58	59	64	6	5	None	59	5	1	58	6	1	57	7	1	56	8	1	N/A	N/A	N/A
4	R-207	В	MV 3	Residential	1	North of Wells St East of Brown St	60	63	61	1	-2	None	57	4	0	57	4	0	55	6	1	55	6	1	N/A		N/A
4	R-206	В	MV 3	Residential	6	Between Moore St and Wells St East of Mead St	57	59	64	7	5	None	62	2	0	61	3	0	60	4	0	59	5	6	N/A		N/A
4	R-205	В	MV 3	Residential	6	Between Moore St and Wells St East of Receptor 9	57	59	64	7	5	None	63	1	0	63	1	0	62	2	0	60	4	0	N/A		N/A
4	M-9	В	MV 3	Residential	3	Alexander and Moore St	62	65	57	-5	-8	None	57	0	0	57	0	0	57	0	0	57	0	0	N/A		N/A
4	M-119	В	MV 4	Residential	2	Cajalco Rd and Tyler Rd	65	68	75	10	7	A/E, S	69	6	2	67	8	2	66	9	2	64	11	2	N/A	N/A	N/A
4	R-211	В	MV 4	Residential	3	South of Cajalco Road and East of Day St	65	67	70	5	3	A/E	64	6	3	62	8	3	61	9	3	60	10	3	N/A	N/A	N/A
4	R-210	В	MV 4	Residential	2	South of Cajalco Road and West of Day St	67	70	65	-2	-5	None	58	7	2	57	8	2	56	9	2	56	9	2	N/A		
4	M-71	В	MV 4	Residential	2	Carroll St and Elmwood St	59	62	60	1	-2	None	57	3	0	56	4	0	56	4	2	55	5		N/A		
4	M-81	B	MV 4	Residential	1 1	Carroll and Cajalco	66	68	64	-2	-4	None	59	5	1	58	6	1	57	7	1	57	7	1	N/A		N/A
4	R-209	В	MV 4	Residential	1	Northeast of Receptor 116 South of Cajalco Rd	69	71	62	-7	-9	None	59	3	0	59	3	0	58	4	0	58	4	0			
4	M-116	В	MV 4	Residential	1	Clark south of Cajalco	64	66	63	-1	-3	None	62	1	0	62	1	0	61	2	0	61	2	0	N/A		N/A
4	M-115	В	MV 5	Residential	4	Castlerock Trail and Windstone Way	64	64	66	2	2	A/E	66	0	0	66	0	0	66	0	0	65	1	0	N/A		N/A
4	R-212	В	MV 5	Residential	6	East of Receptor 115 South of Windstone Way	60	63	65	5	2	None	65	0	0	64	1	0	64	1	0	64	. 1	0	N/A		N/A
4	R-213	В	MV 5	Residential	5	East of Receptor 115 North of Windstone Way	58	61	65	7	4	None	64	1	0	64	1	0	63	2	0	63	2	0	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H = :	2.4 m (8 ft)	H = 3	.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	1.3 m (14 ft)	H = 4	4.9 m (1	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR			NBR
4	R-214	В	MV 5	Residential	4	West of Receptor 117 South of Windstone Way	60	63	64	4	1	None	62	2	0	62	2	0	62	2	0	61	3	0		N/A	
4	M-117	В	MV 5	Residential	2	Carroll St north of Cajalco	60	63	65	5	2	None	63	2	0	63	2	0	63	3	0	62	3	0		N/A	N/A
4	M-118	В	MV 5	Residential	2	Summerwind Trail and Windstone Way	59	62	64	5	2	None	62	2	0	62	2	0	61	3	0	61	3	0	N/A	N/A	N/A
4	R-215	В	MV 5	Residential	1	East of Receptor 117 West of Robinson St	61	64	66	5	2	A/E	63	3	0	62	4	0	62	4	0	62	4	0	N/A	N/A	N/A
4	M-57	В	MV 5	Residential	1	Cajalco and Day St	63	65	69	6	4	A/E	64	<u>5</u>	1	63	<u>6</u>	1	62	<u>8</u>	1	61	<u>8</u>	1	N/A	N/A	N/A
4	R-236	В	MV 5	Residential	1	West of Day, North of Cajalco Rd	68	70	73	5	3	A/E	68	<u>5</u>	1	66	7	1	65	8	1	64	9	1	N/A	N/A	N/A
4	R-237	В	MV 5	Residential	2	North of Cajalco, East of Tyler	63	67	69	6	2	A/E	69	0	0	68	1	0	67	2	0	67	2	0	N/A	N/A	N/A
4	M-120	В	PD 1	School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. North end of School	68	72	74	6	2	A/E	68	<u>6</u>	2	66	<u>8</u>	2	65	9	2	65	<u>9</u>	2	N/A	N/A	N/A
4	M-121	В	PD 1	School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. Middle of School	70	73	75	5	2	A/E, S	69	<u>6</u>	2	68	7	2	67	<u>8</u>	2	66	9	2	N/A	N/A	N/A
4	M-122	В	PD 1	School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. South of School	68	73	74	6	1	A/E	70	4	0	69	<u>5</u>	2	68	<u>6</u>	2	68	<u>6</u>	2	N/A	N/A	N/A
4	M-123	В	PD 1	School	2	Between Webster Ave and Nevada Ave. Middle of School.	62	66	64	2	-2	A/E	62	2	0	62	3	0	61	3	0	61	4	0	N/A	N/A	N/A
4	R-218	В	PD 2	Residential	2	East of Eureka Ave and Receptor 22	48	50	69	21	19	A/E, Sb	64	<u>5</u>	2	63	<u>6</u>	2	63	<u>6</u>	2	62	7	2	N/A	N/A	N/A
4	M-22	В	PD 2	Residential	2	Placentia East of Eureka	50	52	68	18	16	A/E, Sb	62	<u>6</u>	2	61	7	2	60	8	2	59	9	2	N/A	N/A	N/A
4	R-217	В	PD 2	Residential	1	West of Eureka Ave and East of Receptor 78	49	50	65	16	15	Sb	60	<u>5</u>	1	59	<u>6</u>	1	58	7	1	57	8	1	N/A	N/A	N/A
4	M-78	В	PD 2	Residential	1	El Nido Ave and 500 ft south of Placentia	50	51	66	16	15	A/E, Sb	61	<u>6</u>	1	59	7	1	58	8	1	58	8	1	N/A	N/A	N/A
4	M-67	В	PD 2	Residential	3	Toliver Rd and El Nido	48	50	64	16	14	Sb	59	<u>5</u>	3	58	6	3	57	7	3	56	8	3	N/A		N/A
4	R-216	В	PD 2	Residential	3	South of Toliver Rd East of Receptor 66	48	50	64	16	14	Sb	59	<u>5</u>	3	59	<u>6</u>	3	58	6	3	57	7	3	N/A		N/A
4	M-66	В	PD 2	Residential	3	Evans Rd and Toliver Rd	49	51	60	11	9	None	59	1	0	58	2	0	58	2	0	58	2	0	N/A		N/A
5	M-75	В	TWS-C1	Residential	2	I-15 and Bel Air	75	75	75 67	0	0	A/E, S	75 65	0	0	75	2	0	74 64	3	0	71 64	3	0	68	7 4	0
5 5	M-96 M-97	B B	TWS-C1	Residential Residential	1 2	I-15 South of Bel Air I-15 North of Ontario	69 67	73 69	67 66	-2 -1	-6 -3	A/E A/E	65 65	2	0	65 64	2	0	62	4	0	61	5	2	60	6	2
5	R-157	В	TWS-C1	Residential	3	West of State St East of Receptor 75	65	69	63	-2	-6	None	62	1	0	62	1	0	61	2	0	61	2	0	61	2	0
5	R-158	В	TWS-C1	Residential	3	West of State St East of Receptor 97	65	64	63	-2	-1	None	63	0	0	62	1	0	61	2	0	60	3	0	59	4	0
5	R-159	В	TWS-C1	Residential	2	West of State St North of Receptor 160	56	56	64	8	8	None	64	0	0	63	1	0	62	2	0	61	3	0	60	4	0

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	3.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	1.3 m (14 ft)	H = 4	4.9 m (16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
5	R-160	В	TWS-C1	Residential	3	West of State St North of Poppy	66	67	66	0	-1	A/E	64	2	0	64	2	0	63	3	0	62	4	0	61	<u>5</u>	3
5	M-63	В	TWS-C1	Residential	2	State and Smerber	60	60	59	-1	-1	None	59	0	0	59	0	0	58	1	0	57	2	0	56	3	0
5	R-178	В	TWS-C1	Residential	1	East of I-15 and North of Receptor 96	71	72	65	-6	-7	None	64	1	0	63	2	0	63	2	0	63	2	0	62	3	0
5	R-164	В	TWS-C2	Residential	2	East of I-15 South of Receptor 64	69	70	66	-3	-4	A/E	63	3	0	62	4	0	62	4	0	61	<u>5</u>	2	N/A	N/A	N/A
5	M-64	В	TWS-C2	Residential	2	Piute Creek Dr East of I-15	67	65	65	-2	0	None	63	2	0	62	3	0	62	3	0	61	4	0	N/A	N/A	N/A
5	R-163	В	TWS-C2	Residential	3	East of I-15 North of Receptor 64	68	69	63	-5	-6	None	63	0	0	62	1	0	62	1	0	61	2	0	N/A	N/A	N/A
5	R-162	В	TWS-C2	Residential	5	East of I-15 North of Receptor 163	81	83	67	-14	-16	A/E	63	4	0	62	<u>5</u>	5	61	<u>6</u>	5	61	<u>6</u>	5	N/A	N/A	N/A
5	R-161	В	TWS-C2	Residential	3	East of I-15 South of Receptor 85	68	69	71	3	2	A/E	65	<u>6</u>	3	64	7	3	64	8	3	63	8	3	N/A	N/A	N/A
5	M-85	В	TWS-C2	Residential	2	I-15/State St end	68	73	71	3	-2	A/E	66	<u>5</u>	2	65	<u>6</u>	2	64	7	2	63	<u>8</u>	2	N/A		N/A
5	M-62	В	TWS-C2	Residential	4	Ontario Ave and Piute Creek Dr	71	70	66	-5	-4	A/E	64	2	0	63	3	0	63	3	0	62	4	0	N/A	N/A	N/A
5	M-127	В	TWS-C2	Residential	4	State St south of Ontario Ave	68	69	72	4	3	A/E	67	<u>5</u>	4	66	<u>6</u>	4	65	7	4	64	<u>8</u>	4	N/A	N/A	N/A
5	M-23	В	TWS-C3	Residential	2	I-15 and Taber/State	80	80	66	-14	-14	A/E	64	2	0	63	3	0	63	3	0	62	4	0	62	4	0
5	M-94	В	TWS-C3	Residential	3	West of I-15, east of Calico	66	71	69	3	-2	A/E	63	<u>6</u>	3	62	7	3	62	8	3	61	8	3	60	9	3
5	M-95	В	TWS-C3	Residential	3	Dry Gulch Rd and Calico	61	60	70	9	10	A/E	67	3	0	66	4	0	64	6	3	63	7	3	63	7	3
5	M-126	В	TWS-C3	Residential	1	I-15 West of El Cerrito	69	68	75	6	7	A/E, S	67	<u>8</u>	1	66	9	1	65	10	1	65	10	1	64	11	1
5	R-165	В	TWS-C3	Residential	3	West of I-15 North of Receptor 23	61	62	70	9	8	A/E	64	6	3	63	7	3	62	8	3	62	8	3	61	9	3
5	R-166	В	TWS-C3	Residential	2	West of I-15 South of Receptor 23	68	71	69	1	-2	A/E	66	3	0	65	4	0	64	<u>5</u>	2	63	6	2	62	7	2
5	R-167	В	TWS-C3	Residential	2	West of I-15 South of Receptor 94	70	76	72	2	-4	A/E	67	<u>5</u>	2	66	6	2	65	7	2	64	8	2	63	9	2
5	R-184	В	TWS-C3	Residential	2	Whiskey Creek and Calico Circle	61	62	79	18	17	A/E, S, Sb	73	6	2	70	9	2	69	10	2	67	12	2	66	13	2
5	R-186	В	TWS-C3	Residential	5	West of I-15 North of Receptor 126	67	69	77	10	8	A/E, S	70	7	5	69	8	5	67	10	5	66	11	5	65	12	5
5	R-168	В	TWS-C4	Residential	3	East of Frances St South of El Cerrito Road	67	69	62	-5	-7	None	61	1	0	61	1	0	61	1	0	61	1	0	N/A		N/A
5	R-169	В	TWS-C4	Residential	2	East of Frances St North of Katy Way and Receptor 76	65	66	62	-3	-4	None	59	3	0	59	3	0	59	3	0	59	3	0	N/A		N/A
5	M-76	В	TWS-C4	Residential	2	Frances and Katy off El Cerrito	66	62	63	-3	1	None	59	4	0	59	4	0	59	4	0	59	4	0	N/A		N/A
5	R-170	В	TWS-C4	Residential	2	East of I-15, South of Receptor 76	70	69	72	2	3	A/E	66	<u>6</u>	2	66	<u>6</u>	2	65	7	2	65	7	2	N/A		N/A
5	M-89	В	TWS-C6		2	Magnolia and Fern	64	60	72	8	12	A/E	65	7	2	64	8	2	63	9	2	63	9	2	N/A		N/A
5	M-90	В	TWS-C6		1	I-15 NB Off at Weirick, start of ramp	68	66	72	4	6	A/E	68	4	0	68	4	0	66	<u>6</u>	1	65	7	1	N/A		N/A
5	M-70	В	TWS-C6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	67	-3	0	A/E	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with	J	H =	2.4 m ((8 ft)	H = 3	.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	1.3 m (⁻	14 ft)	H = 4	4.9 m (⁻	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Addres s	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR		<u>I.L.</u>	NBR
5	R-190	В	TWS-C6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	77	-1	-2	A/E, S	77	0	0	75	2	0	72	<u>5</u>	1	71	<u>6</u>	1		N/A	N/A
5	M-80	В	TWS-C6	Residential	1	I-15/Temescal Canyon	76	71	73	-3	2	A/E	73	0	0	72	1	0	71	2	0	70	3	0	N/A	N/A	
5	M-63	В	TWS 1	Residential	2	State and Smerber	60	60	6 6	6	6	A/E	65	1	0	65	1	0	65	1	0	65	1	0	65	1	0
5	R-158	В	TWS 1	Residential	3	West of State St East of Receptor 97	65	64	67	2	3	A/E	65	2	0	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3
5	R-157	В	TWS 1	Residential	3	West of State St East of Receptor 75	65	69	64	-1	-5	A/E	63	1	0	63	1	0	63	1	0	62	2	0	62	2	0
5	M-75	В	TWS 1	Residential	2	I-15 and Bel Air	75	75	75	0	0	A/E, S	75	0	0	73	2	0	72	3	0	68	7	2	67	8	2
5	R-178	В	TWS 1	Residential	1	East of I-15 and North of Receptor 96	71	72	67	-4	-5	A/E	65	2	0	65	2	0	64	3	0	64	3	0	63	4	0
5	M-96	В	TWS 1	Residential	1	I-15 South of Bel Air	69	73	70	1	-3	A/E	67	3	0	67	3	0	66	4	0	65	5	1	64	6	1
5	M-97	В	TWS 1	Residential	2	I-15 North of Ontario	67	69	70	3	1	A/E	67	3	0	66	4	0	65	5	2	64	6	2	63	7	2
5	R-164	В	TWS 2	Residential	2	East of I-15 South of Receptor 64	69	70	73	4	3	A/E	70	3	0	69	4	0	69	4	0	69	4	0	N/A	N/A	N/A
5	M-64	В	TWS 2	Residential	2	Piute Creek Dr East of I-15	67	65	72	5	7	A/E	70	2	0	68	4	0	68	4	0	67	5	0	N/A	N/A	N/A
5	R-163	В	TWS 2	Residential	3	East of I-15 North of Receptor 64	68	69	71	3	2	A/E	67	4	0	67	4	0	66	<u>5</u>	3	65	<u>6</u>	3	N/A	N/A	N/A
5	R-181	В	TWS 2	Residential	3	East of I-15 and South of Receptor 180	69	70	74	5	4	A/E	69	<u>5</u>	3	67	7	3	66	<u>8</u>	3	65	9	3	N/A	N/A	
5	M-62	В	TWS 2	Residential	4	Ontario Ave and Piute Creek Dr	71	70	68	-3	-2	A/E	64	4	0	64	4	0	63	<u>5</u>	4	62	<u>6</u>	4	N/A	N/A	N/A
5	R-180	В	TWS 2	Residential	1	East of I-15 and South of Receptor 85	68	68	75	7	7	A/E, S	68	7	1	66	9	1	65	10	1	64	11	1	N/A	N/A	
5	R-179	В	TWS 2	Residential	3	East of I-15 and Receptor 180	67	68	73	6	5	A/E	68	<u>5</u>	3	66	7	3	65	8	3	65	8	3	N/A		
5	M-85	В	TWS 2	Residential	2	I-15/State St end	68	73	73	5	0	A/E	67	<u>6</u>	2	66	7	2	65	<u>8</u>	2	64	9	2	N/A	N/A	N/A
5	M-127	В	TWS 2	Residential	4	State St south of Ontario Ave	68	69	74	6	5	A/E	68	<u>6</u>	4	67	7	4	66	8	4	65	9	4	N/A	N/A	N/A
5	M-126	В	TWS 3	Residential	1 1	I-15 West of El Cerrito	69	68	77	8	9	A/E, S	71	6	1	69	8	1 1	68	9	1	67	10	1	67	10	1
5	R-186	В	TWS 3	Residential	5	West of I-15 North of Receptor 126	67	69	77	10	8	A/E, S	70	7	5	68	9	5	67	10	5	66	11	5	65	12	5
5	R-184	В	TWS 3	Residential	2	Whiskey Creek and Calico Circle	61	62	77	16	15	A/E, S	72	<u>5</u>	2	70	7	2	68	9	2	67	10	2	66	11	2
5	R-185	В	TWS 3	Residential	3	West of I-15 South of Receptor 94	84	86	71	-13	-15	A/E	66	<u>5</u>	3	65	<u>6</u>	3	64	7	3	64	7	3	63	8	3
5	M-94	В	TWS 3	Residential	3	West of I-15, east of Calico	66	71	74	8	3	A/E	67	7	3	66	8	3	65	9	3	65	9	3	64	10	3
5	M-95	В	TWS 3	Residential	3	Dry Gulch Rd and Calico	61	60	69	8	9	A/E	66	3	0	66	3	0	64	5	3	63	6	3	63	6	3
5	R-183	В	TWS 3	Residential	3	West of I-15 North of Receptor 94	81	83	67	-14	-16	A/E	65	2	0	65	2	0	63	4	0	63	4	0	63	4	0
5	R-182	В	TWS 3	Residential	4	West of I-15 and East of Dry Gulch and Receptor 23	81	83	72	-9	-11	A/E	66	<u>6</u>	4	66	<u>6</u>	4	65	7	4	64	8	4	64	8	4
5	M-23	В	TWS 3	Residential	2	I-15 and Taber/State	80	80	72	-8	-8	A/E	67	<u>5</u>	2	66	<u>6</u>	2	64	8	2	64	8	2	63	9	2
5	R-165	В	TWS 3	Residential	4	West of I-15 North of Receptor 23	61	62	74	13	12	A/E	68	<u>6</u>	4	67	7	4	66	8	4	65	9	4	64	10	4

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Level with		H =	2.4 m	(8 ft)	H = 3	3.05 m	(10 ft)	H =	3.7 m	(12 ft)	H = 4	4.3 m (14 ft)	H = 4	4.9 m (16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	I.L.	NBR	L _{eq}		NBR		<u>I.L.</u>	NBR			NBR		<u>I.L.</u>	NBR
5	R-170	В	TWS 4	Residential	2	East of I-15, South of Receptor 76	70	69	75	5	6	A/E, S	69	6	2	67	8	2	66	9	2	64	11	2	N/A	N/A	
5	R-188	В	TWS 4	Residential	1	East of Katy Way South of Receptor 76	67	67	70	3	3	A/E	65	<u>5</u>	1	64	6	1	63	7	1	62	8	1	N/A		
5	M-76	В	TWS 4	Residential	2	Frances and Katy off El Cerrito	66	62	69	3	7	A/E	63	6	2	62	7	2	61	8	2	61	8	2	N/A	N/A	
5	R-187	В	TWS 4	Residential	1	East of I-15 North of Receptor 92	63	64	73	10	9	A/E	67	<u>6</u>	1	66	7	1	65	8	1	65	8	1			
5	R-168	В	TWS 4	Residential	3	East of Frances St South of El Cerrito Road	67	69	67	0	-2	A/E	66	1	0	66	1	0	66	1	0	66	1	0		N/A	
5	M-89	В	TWS 6	Residential	2	I-15 NB Off at Weirick, south side	64	60	72	8	12	A/E	64	8	2	62	10	2	61	11	2	60	12	2	N/A		
5	M-70	В	TWS 6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	66	-4	-1	A/E	63	3	0	62	4	0	62	4	0	62	4	0	N/A		
5	M-90	В	TWS 6	Residential	1	I-15 NB Off at Weirick, start of ramp	68	66	72	4	6	A/E	67	<u>5</u>	1	66	6	1	65	7	0	64	8	1	N/A		
5	R-190	В	TWS 6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	74	-4	-5	A/E	71	3	0	70	4	0	70	4	0	70	4	0	N/A		
5	M-80	В	TWS 6	Residential	1	I-15/Temescal Canyon	76	71	71	-5	0	A/E	71	0	0	71	0	0	71	0	0	71	0	0	N/A	N/A	N/A
5	M-98	В	LMS 2	Residential	1	Richey Dr West of Lake Mathews Dr	53	59	72	19	13	A/E, Sb	68	4	0	67	<u>5</u>	1	66	<u>6</u>	1	64	8	1	63	9	1
5	M-99	В	LMS 2	Residential	1	North of Richey Dr and West of Lake Mathews Dr	54	60	70	16	10	A/E, Sb	64	<u>6</u>	1	63	7	1	62	8	1	62	8	1	61	9	1
5	M-61	В	LMS 2	Residential	1	Richey Dr and Lake Mathews Dr	60	67	60	0	-7	None	59	1	0	59	1	0	59	1	0	59	1	0	59	1	0
5	M-100	В	LMS 2	Residential	1	Northwest of Lake Mathews and Richey	54	61	62	8	1	None	61	1	0	61	1	0	61	1	0	61	1	0	61	1	0
5	R-192	В	LMS 2	Residential	2	East of Lake Mathews North of Eagle View	54	61	60	6	-1	None	60	0	0	60	0	0	60	0	0	60	0	0	60	0	0
5	M-112	В	MV 1	Residential	2	Souder St West of Alexander	61	63	69	8	6	A/E	65	4	0	64	<u>5</u>	2	64	5	2	64	5	2	N/A	N/A	N/A
5	R-201	В	MV 1	Residential	4	North of Souder St East of Una St	62	64	69	7	5	A/E	64	<u>5</u>	4	63	<u>6</u>	4	62	7	4	61	8	4	N/A	N/A	N/A
5	R-200	В	MV 1	Residential	4	South of Souder St East of Una St	59	61	69	10	8	A/E	65	4	0	63	<u>6</u>	4	62	7.	4	61	8	4	N/A	N/A	N/A
5	M-82	В	MV 1	Residential	3	Una and Hunter	56	58	62	6	6	None	60	2	0	59	3	0	58	4	0	57	<u>5</u>	3	N/A	N/A	N/A
5	M-72	В	MV 1	Residential	3	Souder St and Una St	61	63	71	10	10	A/E	67	4	0	65	<u>6</u>	3	63	8	3	62	9	3	N/A		
5	R-199	В	MV 1	Residential	3	South of Cajalco Road West of Una St North of Souder	63	65	70	7	7	A/E	64	<u>6</u>	3	62	<u>8</u>	3	61	9	3	60	10	3	N/A		N/A
5	M-8	В	MV 1	Residential	1	Barton St and Souder St	61	64	69	8	8	A/E	65	4	0	64	<u>5</u>	1	64	<u>5</u>	1	63	<u>6</u>	1	N/A	N/A	N/A
5	M-113	В	MV 2	Residential	2	Souder St and Mead St	61	63	66	5	5	A/E	65	1	0	64	2		63	3	0	62	4	0	N/A		N/A
5	M-40	В	MV 2	Residential	1	Alexander St and Souder St	59	61	69	10	10	A/E	67	2	0	66	3	0	66	3	0	66	3	0	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

·		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with	1,	H =	2.4 m (8 ft)	H = 3	.05 m	(10 ft)	H = 3	.7 m (12 ft)	H = 4	1.3 m (14 ft)	H = 4	1.9 m (⁻	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions Leq(h), dBA	Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
5	R-202	В	MV 2	Residential	4	North of Souder St East of Receptor 40	62	65	68	6	6	A/E	65	3	0	64	4	0	64	4	0	63	<u>5</u>	4	N/A	N/A	N/A
5	R-203	В	MV 2	Residential	3	North of Souder St West of Receptor 32	62	65	67	5	5	A/E	65	2	0	65	2	0	64	3	0	63	4	0	N/A	N/A	N/A
5	M-32	В	MV 2	Residential	1	Cajalco Road and Meade St	65	68	66	1	1	A/E	64	2	0	63	3	0	61	<u>5</u>	1	60	<u>6</u>	1	N/A	N/A	N/A
5	R-204	В	MV 2	Residential	2	North of Souder St East of Receptor 32	62	65	65	3	3	None	62	3	0	61	4	0	59	<u>6</u>	2	58	7	2	N/A	N/A	N/A
5	M-114	В	MV 2	Residential	2	Cajalco Rd Btwn Meade and Brown	69	72	64	-5	-5	None	60	4	0	59	<u>5</u>	2	58	<u>6</u>	2	58	<u>6</u>	2	N/A	N/A	N/A
5	M-10	В	MV 3	Residential	1	Clark St and Johnson Ave	63	64	62	-1	-1	None	61	1	0	60	2	0	60	2	0	60	2	0	N/A	N/A	N/A
5	R-208	В	MV 3	Residential	5	East of Haines St North of Johnson Ave	61	63	68	7	. 7	A/E	64	4	0	63	<u>5</u>	5	62	<u>6</u>	5	61	7	5	N/A	N/A	N/A
5	M-33	В	MV 3	Residential	1	Cajalco Road and Brown St	62	64	67	5	5	A/E	61	<u>6</u>	1	60	7	1	58	9	1	58	9	1	N/A	N/A	N/A
5	M-58	В	MV 3	Residential	1	Brown St and Moore St	58	59	64	6	6	None	59	51	1	58	<u>6</u>	1	57	7	1	56	8	1	N/A	N/A	N/A
5	R-207	В	MV 3	Residential	1	North of Wells St East of Brown St	60	63	61	1	1	None	57	4	0	57	4	0	55	<u>6</u>	1	55	<u>6</u>	1	N/A	N/A	
5	R-206	В	MV 3	Residential	6	Between Moore St and Wells St East of Mead St	57	59	64	7	7	None	62	2	0	61	3	0	60	4	0	59	<u>5</u>	6	N/A	N/A	N/A
5	R-205	В	MV 3	Residential	6	Between Moore St and Wells St East of Receptor 9	57	59	63	6	6	None	63	0	0	63	0	0	62	1	0	60	3	0	N/A	N/A	N/A
5	M-9	В	MV 3	Residential	3	Alexander and Moore St	62	65	57	-5	-5	None	57	0	0	57	0	0	57	0	0	57	0	0	N/A		N/A
5	M-119	В	MV 4	Residential	2	Cajalco Rd and Tyler Rd	65	68	75	10	10	A/E, S	69	6	2	67	8	2	66	9	2	64	11	2	N/A		
5	R-211	В	MV 4	Residential	3	South of Cajalco Road and East of Day St	65	67	70	5	5	A/E	64	<u>6</u>	3	62	<u>8</u>	3	61	<u>9</u>	3	60	<u>10</u>	3	N/A		N/A
5	R-210	В	MV 4	Residential	2	South of Cajalco Road and West of Day St	67	70	65	-2	-2	None	58	7	2	57	<u>8</u>	2	56	<u>9</u>	2	56	9	2	N/A	N/A	
5	M-71	В	MV 4	Residential	2	Carroll St and Elmwood St	59	62	60	1	1	None	57	3	0	56	4	0	55	<u>5</u>	2	55	5	2	N/A	N/A	
5	M-81	В	MV 4	Residential	1 1	Carroll and Cajalco	66	68	64	-2	-2	None	59	5	1	58	6	1	57	<u> 7</u>	1	56	8	1	N/A	N/A	N/A
5	R-209	В	MV 4	Residential	1	North East of Receptor 116 South of Cajalco Rd	69	71	62	-7	-7	None	59	3	0	59	3	0	58	4	0	58	4	0	N/A	N/A	
5	M-116	В	MV 4	Residential	1 1	Clark south of Cajalco	64	66	63	-1	-1	None	62	1	0	61	2	0	61	2	0	61	2	0	N/A	N/A	
5	M-115	В	MV 5	Residential	4	Castlerock Trail and Windstone Way	64	64	66	2	2	A/E	66	0	0	66	0	0	65	1	0	65	1	0			N/A
5	R-212	В	MV 5	Residential	6	East of Receptor 115 South of Windstone Way	60	63	65	5	- 5	None	64	1	0	64	1	0	63	2	0	63	2	0			N/A
5	R-213	В	MV 5	Residential	5	East of Receptor 115 North of Windstone Way	58	61	64	6	6	None	64	0	0	63	1	0	63	1	0	63	1	0	N/A		N/A
5	R-214	В	MV 5	Residential	4	West of Receptor 117 South of Windstone Way	60	63	63	3	3	None	61	2	0	61	2	0	60	3	0	60	3	0	N/A	N/A	N/A
5	M-117	В	MV 5	Residential	2	Carroll St north of Cajalco	60	63	64	4	4	None	62	2	0	62	2	0	62	2	0	61	3	0			N/A
5	M-118	В	MV 5	Residential	2	Summerwind Trail and Windstone Way	59	62	63	4	4	None	62	1	0	61	2	0	61	2	0	61	2	0	N/A		N/A
5	R-215	В	MV 5	Residential	1	East of Receptor 117 West of Robinson St	61	64	66	5	5	A/E	63	3	0	62	4	0	61	<u>5</u>	1	61	<u>5</u>	1	N/A	N/A	N/A
5	M-57	В	MV 5	Residential	1	Cajalco and Day St	63	65	68	5	5	A/E	64	4	0	63	<u>5</u>	1	61	7	1	61	7	1	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	4.3 m (14 ft)	H = 4	1.9 m (1	6 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions L _{eq} (h), dBA	Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
5	R-236	В	MV 5	Residential	1	West of Day, North of Cajalco Rd	68	70	73	5	5	A/E	68	<u>5</u>	1	66	7	1	65	<u>8</u>	1	64	9	1	N/A	N/A	N/A
5	R-237	В	MV 5	Residential	2	North of Cajalco, East of Tyler	63	67	69	6	6	A/E	69	0	0	68	1	0	67	2	0	67	2	0	N/A	N/A	N/A
5	M-120	В	RD 1	Val Verde High School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. North end of School	68	72	75	7	7	A/E, S	71	4	0	70	<u>5</u>	2	68	7	2	67	<u>8</u>	2	N/A	N/A	N/A
5	M-121	В	RD 1	Val Verde High School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. Middle of School	70	73	78	8	8	A/E, S	72	<u>6</u>	2	70	<u>8</u>	2	69	<u>9</u>	2	68	<u>10</u>	2	N/A	N/A	N/A
5	M-122	В	RD 1	Val Verde High School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. South of School	68	73	78	10	10	A/E, S	72	<u>6</u>	2	71	7	2	69	9	2	68	<u>10</u>	2	N/A	N/A	N/A
5	M-123	В	RD 1	Val Verde High School	2	Between Webster Ave and Nevada Ave. Middle of School.	62	66	63	1	1	None	61	2	0	61	2	0	60	3	0	60	3	0	N/A	N/A	N/A
6	R-160	В	TWS-C1	Residential	3	West of State St North of Poppy	66	67	66	0	-1	A/E	64	2	0	64	2	0	63	3	0	62	4	0	61	<u>5</u>	3
6	R-159	В	TWS-C1	Residential	2	West of State St North of Receptor 160	56	56	64	8	8	None	63	1	0	63	1	0	62	2	0	61	3	0	59	<u>5</u>	2
6	R-158	В	TWS-C1	Residential	3	West of State St East of Receptor 97	65	64	63	-2	-1	None	62	1	0	62	1	0	61	2	0	60	3	0	59	4	0
6	M-97	В	TWS-C1	Residential	2	I-15 North of Ontario	67	69	65	-2	-4	None	65	0	0	64	1	0	62	3	0	61	4	0	60	5	2
6	M-96	В	TWS-C1	Residential	1	I-15 South of Bel Air	69	73	67	-2	-6	A/E	65	2	0	65	2	0	64	3	0	63	4	0	63	4	0
6	M-63	В	TWS-C1	Residential	2	State and Smerber	60	60	59	-1	-1	None	58	1	0	58	1	0	57	2	0	57	2	0	56	3	0
6	R-178	В	TWS-C1	Residential	1	East of I-15 and North of Receptor 96	71	72	64	-7	-8	None	63	1	0	63	1	0	63	1	0	62	2	0	62	2	0
6	R-157	В	TWS-C1	Residential	3	West of State St East of Receptor 75	65	69	62	-3	-7	None	61	1	0	61	1	0	61	1	0	61	1	0	60	2	0
6	M-75	В	TWS-C1	Residential	2	I-15 and Bel Air	75	75	75	0	0	A/E, S	75	0	0	75	0	0	74	1	0	71	4	0	68	7	2
6	R-164	В	TWS-C2		2	East of I-15 South of Receptor 64	69	70	66	-3	-4	A/E	62	4	0	62	4	0	61	<u>5</u>	2	61	<u>5</u>	2	N/A	N/A	N/A
6	M-64	В	TWS-C2	Residential	2	Piute Creek Dr E/O I-15	67	65	65	-2	0	None	63	2	0	62	3	0	61	4	0	61	4	0	N/A	N/A	
6	R-163	В	h	Residential	. 3	East of I-15 North of Receptor 64	68	69	63	-5	-6	None	62	1	0	62	1	0	61	2	0	61	2	0	N/A	N/A	
6	R-162	В	TWS-C2	Residential	5	East of I-15 North of Receptor 163	68	68	66	-2	-2	A/E	62	4	0	61	<u>5</u>	5	60	<u>6</u>	5	60	<u>6</u>	5	N/A	N/A	N/A
6	R-161	В	TWS-C2	Residential	3	East of I-15 South of Receptor 85	68	69	67	-1	-2	A/E	64	3	0	63	4	0	63	4	0	62	<u>5</u>	3	N/A	N/A	N/A
6	M-85	В	TWS-C2	Residential	2	I-15/State St end	68	73	69	1	-4	A/E	65	4	0	64	<u>5</u>	2	63	6	2	62	7	2	N/A		N/A
6	M-62	В	TWS-C2		4	Ontario Ave and Piute Creek Dr	71	70	65	-6	-5	None	63	2	0	63	2	0	62	3	0	62	3	0	N/A	N/A	N/A
6	M-127	В	TWS-C2	Residential	4	State St south of Ontario Ave	68	69	71	3	2	A/E	66	<u>5</u>	4	65	<u>6</u>	4	65	<u>6</u>	4	64	Z	4	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	1.3 m (14 ft)	H = 4	l.9 m (1	6 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions L _{eq} (h), dBA	Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	Leq	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
6	R-165	В	TWS-C3	Residential	3	West of I-15 North of Receptor 23	61	62	70	9	8	A/E	64	6	3	63	7	3	62	<u>8</u>	3	62	<u>8</u>	3	61	9	3
6	M-23	В	TWS-C3	Residential	2	I-15 and Taber/State	80	80	66	-14	-14	A/E	64	2	0	63	3	0	62	4	0	62	4	0	61	<u>5</u>	2
6	R-166	В	TWS-C3	Residential	2	West of I-15 South of Receptor 23	68	71	69	1	-2	A/E	66	3	0	64	<u>5</u>	2	63	<u>6</u>	2	63	<u>6</u>	2	62	7	2
6	M-94	В	TWS-C3	Residential	3	West of I-15, east of Calico	66	71	69	3	-2	A/E	63	<u>6</u>	3	62	7	3	61	8	3	61	8	3	60	9	3
6	M-95	В	TWS-C3	Residential	3	Dry Gulch Rd and Calico	61	60	70	9	10	A/E	67	3	0	65	<u>5</u>	3	64	6	3	63	7	3	62	<u>8</u>	3
6	R-184	В	TWS-C3	Residential	2	Whiskey Creek and Calico Circle	61	62	79	18	17	A/E, S, Sb	73	<u>6</u>	2	70	9	2	68	11	2	67	<u>12</u>	2	66	<u>13</u>	2
6	R-167	В	TWS-C3	Residential	2	West of I-15 South of Receptor 94	70	76	72	2	-4	A/E	67	<u>5</u>	2	66	<u>6</u>	2	65	7	2	64	8	2	63	9	2
6	R-186	В	TWS-C3	Residential	5	West of I-15 North of Receptor 126	67	69	76	9	7	A/E, S	70	<u>6</u>	5	68	<u>8</u>	5	67	9	5	66	<u>10</u>	5	65	11	5
6	M-126	В	TWS-C3	Residential	1	I-15 West of El Cerrito	69	68	75	6	7	A/E, S	67	8	1	66	9	1	65	<u>10</u>	1	64	11	1	64	<u>11</u>	1
6	R-168	В	TWS-C4	Residential	3	East of Frances St South of El Cerrito Road	67	69	62	-5	-7	None	61	1	0	61	1	0	61	1	0	60	2	0	N/A	N/A	N/A
6	R-169	В	TWS-C4	Residential	2	East of Frances St North of Katy Way and Receptor 76	65	66	62	-3	-4	None	59	3	0	59	3	0	59	3	0	59	3	0	N/A	N/A	N/A
6	M-76	В	TWS-C4	Residential	2	Temescal Canyon Dr and Foster Rd near Weirick	66	62	63	-3	1	None	59	4	0	59	4	0	59	4	0	58	<u>5</u>	2	N/A	N/A	N/A
6	R-170	В	TWS-C4	Residential	2	East of I-15, South of Receptor 76	70	69	72	2	3	A/E	66	<u>6</u>	2	66	<u>6</u>	2	65	7	2	65	7	2	N/A	N/A	N/A
6	M-89	В	TWS-C6	Residential	2	I-15 NB Off at Weirick, southside	64	60	72	8	12	A/E	65	7	2	64	<u>8</u>	2	63	9	2	63	9	2	N/A	N/A	N/A
6	M-90	В	TWS-C6	Residential	1	I-15 NB Off at Weirick, start	68	66	72	4	6	A/E	68	4	0	68	4	0	66	<u>6</u>	1	65	7	1	N/A	N/A	N/A
6	M-70	В	TWS-C6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	67	-3	0	A/E	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3	N/A	N/A	N/A
6	R-190	В	TWS-C6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	77	-1	-2	A/E, S	77	0	0	75	2	0	72	<u>5</u>	1	71	<u>6</u>	1	N/A	N/A	N/A
6	M-80	В	TWS-C6	Residential	1	I-15/Temescal Canyon	76	71	73	-3	2	A/E	73	0	0	72	1	0	71	2	0	70		0	N/A	N/A	
6	M-63	В	TWS 1	Residential	2	State and Smerber	60	60	66	6	6	A/E	65			65					0	65	1	0	65	1	0
6	R-158	В	TWS 1	Residential	3	West of State St East of Receptor 97	65	64	67	2	3	A/E	65	2	0	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3
6	R-157	В	TWS 1	Residential	3	West of State St East of Receptor 75	65	69	64	-1	-5	None	63	1	0	63	1	0	63	1	0	62	2	0	62	2	0
6	M-75	В	TWS 1	Residential	2	I-15 and Bel Air	75	75	75	0	0	A/E, S	75	0	0	73	2	0	72	3	0	68	7	2	67	8	2
6	R-178	В	TWS 1	Residential	1	East of I-15 and North of Receptor 96	71	72	67	-4	-5	A/E	65	2	0	65	2	0	64	3	0	64	3	0	63	4	0
6	M-96	В	TWS 1	Residential	1	I-15 South of Bel Air	69	73	70	1	-3	A/E	67	3	0	67	3	0	66	4	0	65	5	1	64	6	1
6	M-97	В	TWS 1	Residential	2	I-15 North of Ontario	67	69	70	3	1	A/E	67	3	0	66	4	0	65	5	2	64	6	2	63	7	2
6	R-164	В	TWS 2	Residential	2	East of I-15 South of Receptor 64	69	70	73	4	3	A/E	70	3	0	69	4	0	69	4	0	69	4	0		N/A	
6	M-64	В	TWS 2	Residential	2	Piute Creek Dr E/O I-15	67	65	72	5	7	A/E	70	2	0	68	4	0	68	4	0	67	5	2	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

93,30,00		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	3.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	4.3 m (14 ft)	H = 4	4.9 m (⁻	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>1.L.</u>	NBR	L _{eq}	I.L.	NBR	L _{eq}	<u>I.L.</u>	NBR		<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
6	R-163	В	TWS 2	Residential	3	East of I-15 North of Receptor 64	68	69	71	3	2	A/E	67	4	0	67	4	0	66	<u>5</u>	3	65	6	3	N/A	N/A	
6	R-181	В	TWS 2	Residential	3	East of I-15 and South of Receptor 180	69	70	74	5	4	A/E	69	<u>5</u>	3	67	7	3	66	8	3	65	9	3		N/A	
6	M-62	В	TWS 2	Residential	4	Ontario Ave and Piute Creek Dr	71	70	68	-3	-2	A/E	64	4	0	64	4	0	63	<u>5</u>	4	62	<u>6</u>	4	N/A	N/A	
6	R-180	В	TWS 2	Residential	1	East of I-15 and South of Receptor 85	68	68	75	7	7	A/E, S	68	7	1	66	9	1	65	10	1	64	11	1	N/A	N/A	N/A
6	R-179	В	TWS 2	Residential	3	East of I-15 and Receptor 180	67	68	73	6	5	A/E	68	<u>5</u>	3	66	7	3	65	8	3	65	<u>8</u>	3	N/A	N/A	N/A
6	M-85	В	TWS 2	Residential	2	I-15/State St end	68	73	73	5	0	A/E	67	6	2	66	7	2	65	8	2	64	9	2	N/A	N/A	N/A
6	M-127	В	TWS 2	Residential	4	State St south of Ontario Ave	68	69	74	6	5	A/E	68	<u>6</u>	4	67	7	4	66	8	4	65	9	4	N/A	N/A	N/A
6	M-126	В	TWS 3	Residential	1	I-15 West of El Cerrito	69	68	77	8	9	A/E, S	71	<u>6</u>	1	69	8	1	68	9	1	67	10	1	67	<u>10</u>	1
6	R-186	В	TWS 3	Residential	5	West of I-15 North of Receptor 126	67	69	77	10	8	A/E, S	70	7	5	68	9	5	67	<u>10</u>	5	66	11	5	65	12	5
6	R-184	В	TWS 3	Residential	2	Whiskey Creek and Calico Circle	61	62	77	16	15	A/E, S, Sb	72	<u>5</u>	2	70	7	2	68	9	2	67	10	2	66	11	2
6	R-185	В	TWS 3	Residential	3	West of I-15 South of Receptor 94	84	86	71	-13	-15	A/E	66	<u>5</u>	3	65	<u>6</u>	3	64	Z	3	64	7	3	63	8	3
6	M-94	В	TWS 3	Residential	3	West of I-15, east of Calico	66	71	74	8	3	A/E	67	7	3	66	8	3	65	9	3	65	9	3	64	10	3
6	M-95	В	TWS 3	Residential	3	Dry Gulch Rd and Calico	61	60	69	8	9	A/E	66	3	0	66	3	0	64	5	3	63	6	3	63	6	3
6	R-183	В	TWS 3	Residential	3	West of I-15 North of Receptor 94	81	83	67	-14	-16	A/E	65	2	0	65	2	0	63	4	0	63	4	0	63	4	0
6	R-182	В	TWS 3	Residential	4	West of I-15 and East of Dry Gulch and Receptor 23	81	83	72	-9	-11	A/E	66	<u>6</u>	4	66	<u>6</u>	4	65	7	4	64	8	4	64	8	4
6	M-23	В	TWS 3	Residential	2	I-15 and Taber/State	80	80	72	-8	-8	A/E	67	5	2	66	6	2	64	8	2	64	8	2	63	9	2
6	R-165	В	TWS 3	Residential	4	West of I-15 North of Receptor 23	61	62	74	13	12	A/E	68	<u>6</u>	4	67	7	4	66	8	4	65	9	4	64	10	4
6	R-170	В	TWS 4	Residential	2	East of I-15, South of Receptor 76	70	69	75	5	6	A/E, S	69	<u>6</u>	2	67	<u>8</u>	2	66	9	2	64	11	2	N/A	N/A	N/A
6	R-188	В	TWS 4	Residential	1	East of Katy Way South of Receptor 76	67	67	70	3	3	A/E	65	<u>5</u>	1	64	<u>6</u>	1	63	7	1	62	<u>8</u>	1	N/A	N/A	N/A
6	M-76	В	TWS 4	Residential	2	Frances and Katy off El Cerrito	66	62	69	3	7	A/E	63	<u>6</u>	2	62	7	2	61	<u>8</u>	2	61	8	2	N/A	N/A	N/A
6	R-187	В	TWS 4	Residential	1	East of I-15 North of Receptor 92	63	64	73	10	9	A/E	67	<u>6</u>	1	66	7	1	65	8	1	65	8	1	N/A	N/A	N/A
6	R-168	В	TWS 4	Residential	3	East of Frances St South of El Cerrito Road	67	69	67	0	-2	A/E	66	1	0 .	66	1	0	66	1	0	66	1	0	N/A	N/A	N/A
6	M-89	В	TWS 6	Residential	2	I-15 NB Off at Weirick, southside	64	60	72	8	12	A/E	64	8	2	62	<u>10</u>	2	61	11	2	60	12	2	N/A	N/A	N/A
6	M-70	В	TWS 6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	66	-4	-1	A/E	63	3	0	62	4	0	62	4	0	62	4	0	N/A	N/A	N/A
6	M-90	В	TWS 6	Residential	1	I-15 NB Off at Weirick, start of ramp	68	66	72	4	6	A/E	67	<u>5</u>	1	66	<u>6</u>	1	65	7	1	64	8	1	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	.05 m ((10 ft)	H = 3	3.7 m (12 ft)	H = 4	4.3 m (14 ft)	H = 4	l.9 m (1	6 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}		NBR
6	R-190	В	TWS 6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	74	-4	-5	A/E	71	3	0	70	4	0	70	4	0	70	4	0	N/A	N/A	N/A
6	M-80	В	TWS 6	Residential	1	I-15/Temescal Canyon	76	71	71	-5	0	A/E	71	0	0	71	0	0	71	0	0	71	0	0	N/A	N/A	N/A
6	M-112	В	MV 1	Residential	2	Souder St West of Alexander	61	63	69	8	6	A/E	65	4	0	64	5)	2	63	<u>6</u>	2	63	<u>6</u>	2	N/A	N/A	N/A
6	R-201	В	MV 1	Residential	4	North of Souder St East of Una St	62	64	68	6	4	A/E	64	4	0	62	<u>6</u>	4	61	7	4	60	8	4	N/A	N/A	N/A
6	R-200	В	MV 1	Residential	4	South of Souder St East of Una St	59	61	68	9	7	A/E	64	4	0	63	<u>5</u>	4	62	<u>6</u>	4	61	7	4	N/A	N/A	N/A
6	M-72	В	MV 1	Residential	3	Souder St and Una St	61	63	70	9	7	A/E	66	4	0	65	51	3	63	7	3	62	8	3	N/A	N/A	N/A
6	R-199	В	MV 1	Residential	3	South of Cajalco Road West of Una St North of Souder	63	65	69	6	4	A/E	65	4	0	64	<u>5</u>	3	63	<u>6</u>	3	63	<u>6</u>	3	N/A	N/A	N/A
6	M-82	В	MV 1	Residential	3	Una and Hunter	56	58	61	5	3	None	59	2	0	59	2	0	58	3	0	57	4	0	N/A		
6	M-8	В	MV 1	Residential	11	Barton St and Souder St	61_	64	68	7	4	A/E	68	0	0	68	0	0	68	0	0	68	0	0	N/A		N/A
6	M-113	В	MV 2	Residential	2	Souder St and Mead St	61	63	66	5	3	A/E	64	2	0	64	2	0	63	3	0	62	4	0	N/A		N/A
6	M-40	В	MV 2	Residential	1	Alexander St and Souder St	59	61	68	9	7	A/E	67	1	0	66	2	0	66	2	0	66	2	0	N/A	N/A	N/A
6	R-202	В	MV 2	Residential	4	North of Souder St East of Receptor 40	62	65	67	5	2	A/E	65	2	0	64	3	0	64	3	0	63	4	0	N/A	N/A	N/A
6	R-203	В	MV 2	Residential	3	North of Souder St West of Receptor 32	62	65	67	5	2	A/E	65	2	0	64	3	0	64	3	0	62	<u>5</u>	3	N/A	N/A	N/A
6	M-32	В	MV 2	Residential	1	Cajalco Road and Meade St	65	68	65	0	-3	None	63	2	0	62	3	0	61	4	0	60	<u>5</u>	1	N/A	N/A	N/A
6	R-204	В	MV 2	Residential	2	North of Souder St East of Receptor 32	62	65	65	3	0	None	61	4	0	60	<u>5</u>	2	59	<u>6</u>	2	58	7	2	N/A	N/A	N/A
6	M-114	В	MV 2	Residential	2	Cajalco Rd Btwn Meade and Brown	69	72	64	-6	-9	None	60	4	0	58	<u>6</u>	2	58	<u>6</u>	2	57	7	2	N/A	N/A	N/A
6	M-10	В	MV 3	Residential	1	Clark St and Johnson Ave	63	64	62	-1	-2	None	60	2	0	60	2	0	60	2	0	59	3	0	N/A	N/A	N/A
6	R-208	В	MV 3	Residential	5	East of Haines St North of Johnson Ave	61	63	67	6	4	A/E	64	3	0	63	4	0	62	<u>5</u>	5	61	6	5	N/A		N/A
6	M-33	B.	MV 3	Residential	1	Cajalco Road and Brown St	62	64	67	5	3	A/E	61	<u>6</u>	1	59	<u>8</u>	1	58	9	1	57	10	1	N/A	+	N/A
6	M-58	В	MV 3	Residential	1	Brown St and Moore St	5 8	59	63	5	4	None	59	4	0	58	5	1	56	7	1	56	7	1	N/A		N/A
6	R-207	В	MV 3	Residential	1	North of Wells St East of Brown St	60	63	60	0	-3	None	57	3	0	56	4	0	55	<u>5</u>	1	54	6	1	N/A	<u> </u>	N/A
6	R-206	В	MV 3	Residential	6	Between Moore St and Wells St East of Mead St	57	59	63	6	4	None	61	2	0	61	2	0	60	3	0	59	4	0	N/A		N/A
6	R-205	В	MV 3	Residential	6	Between Moore St and Wells St East of Receptor 9	57	59	63	6	4	None	63	0	0	63	0	0	61	2	0	60	3	0	N/A		N/A
6	M-9	В	MV 3	Residential	3	Alexander and Moore St	62	65	57	-6	-9	None	56	1	0	56	1	0	56	1	0	56	1	0	N/A		N/A
6	M-119	В	MV 4	Residential	2	Cajalco Rd and Tyler Rd	65	68	75	10	7	A/E, S	68	<u>7</u>	2	67	<u>8</u>	2	65	10	2	63	12		N/A		
6	R-211	В	MV 4	Residential	3	South of Cajalco Road and East of Day St	65	67	70	5	3	A/E	64	<u>6</u>	3	62	<u>8</u>	3	60	<u>10</u>	3	59	11	3	N/A		N/A
6	R-210	B	MV 4	Residential	2	South of Cajalco Road and West of Day St	67	70	65	-2	-5	None	58	7	2	57	<u>8</u>	2	56	9	2	55	10	2		N/A	
6	M-71	В	MV 4	Residential	2	Carroll St and Elmwood St	59	62	60	1	-2	None	57	3	0	56	4	0	55	5	2	55	6	2	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise		·	No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	3.05 m	(10 ft)	H = 3	3.7 m	(12 ft)	H = 4	4.3 m (14 ft)	H = 4	4.9 m (⁻	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions L _{eq} (h), dBA		Impact Type	L _{eq}	<u> </u>	NBR	L_{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
6	M-81	В	MV 4	Residential	1	Carroll and Cajalco	66	68	64	-2	-4	None	58	<u>6</u>	1	58	7	1	57	7	1	56	<u>8</u>	1	N/A	N/A	N/A
6	R-209	В	MV 4	Residential	1	North East of Receptor 116 South of Cajalco Rd	69	71	62	-7	-9	None	59	3	0	58	4	0	58	4	0	58	<u>5</u>	0	N/A	N/A	N/A
6	M-116	В	MV 4	Residential	1	Clark south of Cajalco	64	66	63	-1	-3	None	61	2	0	61	2	0	61	2	0	61	2	0	N/A	N/A	N/A
6	M-115	В	MV 5	Residential	4	Castlerock Trail and Windstone Way	64	64	65	1	1	None	65	0	0	65	0	0	65	0	0	65	1	0	N/A	N/A	N/A
6	R-212	В	MV 5	Residential	6	East of Receptor 115 South of Windstone Way	60	63	64	4	. 1	None	64	0	0	63	1	0	63	1	0	63	1	0	N/A	N/A	N/A
6	R-213	В	MV 5	Residential	5	East of Receptor 115 North of Windstone Way	58	61	64	6	3	None	63	1	0	63	1	0	63	1	0	62	2	0	N/A		N/A
6	R-214	В	MV 5	Residential	4	West of Receptor 117 South of Windstone Way	60	63	63	3	0	None	61	2	0	61	2	0	60	3	0	60	3	0	N/A		N/A
6	M-117	В	MV 5	Residential	2	Carroll St north of Cajalco	60	63	64	4	1	None	62	2	0	62	3	0	61	3	0	61	3	0	N/A	N/A	
6	M-118	В	MV 5	Residential	2	Summerwind Trail and Windstone Way	59	62	63	4	1	None	61	2	0	61	2	0	60	3	0	60	3	0	N/A	N/A	
6	R-215	В	MV 5	Residential	1	East of Receptor 117 West of Robinson St	61	64	65	4	1	None	62	3	0	62	3	0	61	4	0	61	4	0	N/A	N/A	N/A
6	M-57	В	MV 5	Residential	1	Cajalco and Day St	63	65	68	5	3	A/E	63	<u>5</u>	1	62	6	1	61	7	1	60	8	1	N/A	N/A	N/A
6	R-236	В	MV 5	Residential	1	West of Day, North of Cajalco Rd	68	70	72	4	2	A/E	68	4	0	66	<u>6</u>	1	64	<u>8</u>	1	64	9	1	N/A	N/A	N/A
6	R-237	В	MV 5	Residential	2	North of Cajalco, East of Tyler	63	67	69	6	2	A/E	69	0	0	68	1	0	67	2	0	67	2	0	N/A	N/A	N/A
6	M-123	В	PD 1	School	2	Between Webster Ave and Nevada Ave. Middle of School.	62	66	64	2	-2	None	62	2	0	61	3	0	61	3	0	60	4	. 0	N/A	N/A	N/A
6	M-120	В	PD 1	School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. North end of School	68	72	74	6	2	A/E	68	<u>6</u>	2	66	<u>8</u>	2	65	9	2	65	9	2	N/A	N/A	N/A
6	M-121	В	PD 1	School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. Middle of School	70	73	75	5	2	A/E, S	69	<u>6</u>	2	68	7	2	67	8	2	66	9	2	N/A	N/A	N/A
6	M-122	В	PD 1	School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. South of School	68	73	74	6	1	A/E	70	4	0	69	<u>5</u>	2	68	<u>6</u>	2	68	<u>6</u>	2	N/A	N/A	N/A
6	R-218	В	PD 2	Residential	2	East of Eureka Ave and Receptor 22	49	50	66	17	16	A/E, Sb	61	<u>5</u>	2	61	<u>6</u>	2	60	6	2	59	7	2	N/A	N/A	N/A
6	M-22	, B	PD 2	Residential	2	Placentia East of Eureka	50	52	67	17	15	A/E, Sb	62	<u>5</u>	2	61	6	2	59	<u>8</u>	2	59	8	2	N/A		N/A
6	R-217	В	PD 2	Residential	1	West of Eureka Ave and East of Receptor 78	49	50	65	16	15	Sb	60	<u>5</u>	1	59	7	1	57	8	1	57	<u>8</u>	1	N/A	N/A	N/A
6	M-78	В	PD 2	Residential	1	El Nido Ave and 500 ft south of Placentia	50	51	66	16	15	A/E, Sb	60	<u>6</u>	1	59	7	1	58	8	1	57	9	1	N/A	N/A	N/A
6	M-67	В	PD 2	Residential	3	Toliver Rd and El Nido	48	50	64	16	14	Sb	59	<u>5</u>	3	58	<u>6</u>	3	57	7	3	56	8	3	N/A		N/A
6	R-216	В	PD 2	Residential	3	South of Toliver Rd East of Receptor 66	48	50	64	16	14	Sb	59	<u>5</u>	3	58	<u>6</u>	3	57	7	3	57	7	3	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	1.3 m (14 ft)	H = 4	4.9 m (1	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project Leq(h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions L _{eq} (h), dBA	Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>1.L.</u>	NBR
6	M-66	В	PD 2	Residential	3	Evans Rd and Toliver Rd	49	51	64	15	13	Sb	61	3	0	60	4	0	60	4	0	60	4	0	N/A	N/A	N/A
7	R-160	В	TWS-C1	Residential	3	West of State St North of Poppy	66	67	66	0	-1	A/E	64	2	0	64	2	0	63	3	0	62	4	0	61	<u>5</u>	3
7	R-159	В	TWS-C1	Residential	2	West of State St North of Receptor 160	56	56	64	8	8	None	63	1	0	63	1	0	62	2	0	61	3	0	59	<u>5</u>	2
7	R-158	В	TWS-C1	Residential	3	West of State St East of Receptor 97	65	64	63	-2	-1	None	62	1	0	62	1	0	61	2	0	60	3	0	59	4	0
7	M-97	В	TWS-C1	Residential	2	I-15 North of Ontario	67	69	65	-2	-4	None	65	0	0	64	1	0	62	3	0	61	4	0	60	5	2
7	M-96	В	TWS-C1	Residential	11	I-15 South of Bel Air	69	73	67	-2	-6	A/E	65	2	0	65	2	0	64	3	0	63	4	0	63	4	0
7	M-63	В	TWS-C1	Residential	2	State and Smerber	60	60	59	-1	-1	None	58	1_	0	58	1	0	57	2	0	57	2	0	56	3	0
7	R-178	В	TWS-C1	Residential	1	East of I-15 and North of Receptor 96	71	72	64	-7	-8	None	63	1	0	63	1	0	63	1	0	62	2	0	62	2	0
7	R-157	В	TWS-C1	Residential	3	West of State St East of Receptor 75	65	69	62	-3	-7	None	61	1	0	61	1	0	61	1	0	61	1	0	60	2	0
7	M-75	В	TWS-C1	Residential	2	I-15 and Bel Air	75	75	75	0	0	A/E, S	75	0	0	75	0	0	74	1	0	71	4	0	68	7	2
7	R-164	В	TWS-C2	Residential	2	East of I-15 South of Receptor 64	69	70	66	-3	-4	A/E	62	4	0	62	4	0	61	<u>5</u>	2	61	<u>5</u>	2	N/A	N/A	N/A
7	M-64	В	TWS-C2	Residential	2	Piute Creek Dr E/O I-15	67	65	65	-2	0	None	63	2	0	62	3	0	61	4	0	61	4	0	N/A	N/A	N/A
7	R-163	В	TWS-C2	Residential	3	East of I-15 North of Receptor 64	68	69	63	-5	-6	None	62	1	0	62	1	0	61	2	0	61	2	0	N/A	N/A	N/A
7	R-162	В	TWS-C2	Residential	5	East of I-15 North of Receptor 163	68	68	66	-2	-2	A/E	62	4	0	61	<u>5</u>	5	60	<u>6</u>	5	60	6	5	N/A	N/A	N/A
7	R-161	В	TWS-C2	Residential	3	East of I-15 South of Receptor 85	68	69	67	-1	-2	A/E	64	3	0	63	4	0	63	4	0	62	5	3	N/A	N/A	N/A
7	M-85	В	TWS-C2	Residential	2	I-15/State St end	68	73	69	1	-4	A/E	65	4	0	64	<u>5</u>	2	63	6	2	62	7	2	N/A	N/A	N/A
7	M-62	В	TWS-C2	Residential	4	Ontario Ave and Piute Creek Dr	71	70	65	-6	-5	None	63	2	0	63	2	0	62	3	0	62	3	0	N/A	N/A	N/A
7	M-127	В	TWS-C2	Residential	4	State St south of Ontario Ave	68	69	71	3	2	A/E	66	<u>5</u>	4	65	<u>6</u>	4	65	<u>6</u>	4	64	7	4	N/A	N/A	N/A
7	R-165	В	TWS-C3	Residential	3	West of I-15 North of Receptor 23	61	62	70	9	8	A/E	64	<u>6</u>	3	63	7	3	62	<u>8</u>	3	62	<u>8</u>	3	61	9	3
7	M-23	В	TWS-C3	Residential	2	I-15 and Taber/State	80	80	66	-14	-14	A/E	64	2	0	63	3	0	62	4	0	62	4	0	61	<u>5</u>	2
7	R-166	В	TWS-C3	Residential	2	West of I-15 South of Receptor 23	68	71	69	1	-2	A/E	66	3	0	64	<u>5</u>	2	63	<u>6</u>	2	63	<u>6</u>	2	62	7	2
7	M-94	В	TWS-C3	Residential	3	West of I-15, east of Calico	66	71	69	3	-2	A/E	63	<u>6</u>	3	62	7	3	61	8	3	61	8	3	60	9	3
7	M-95	В		Residential	3	Dry Gulch Rd and Calico	61	60	70	9	10	A/E	67	3	0	65	<u>5</u>	3	64	6	3	63	7	3	62	8	3
7	R-184	В	TWS-C3	Residential	2	Whiskey Creek and Calico Circle	61	62	79	18	17	A/E, S, Sb	73	<u>6</u>	2	70	9	2	68	11	2	67	12	2	66	<u>13</u>	2
7	R-167	В	TWS-C3	Residential	2	West of I-15 South of Receptor 94	70	76	72	2	-4	A/E	67	<u>5</u>	2	66	<u>6</u>	2	65	7	2	64	8	2	63	9	2
7	R-186	В	TWS-C3	Residential	5	West of I-15 North of Receptor 126	67	69	76	9	7	A/E, S	70	<u>6</u>	5	68	8	5	67	9	5	66	<u>10</u>	5	65	11	5
7	M-126	В	TWS-C3	Residential	1	I-15 West of El Cerrito	69	68	75	6	7	A/E, S	67	<u>8</u>	1	66	9	1	65	<u>10</u>	1	64	11	1	64	11	1
7	R-168	В	TWS-C4	Residential	3	East of Frances St South of El Cerrito Road	67	69	62	-5	-7	None	61	1	0	61	1	0	61	1	0	60	2	0	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	3.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	4.3 m (14 ft)	H = 4	.9 m (1	6 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	No. of Dwelling Units	Address	Noise Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions Leq(h), dBA	Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
7	R-169	В	TWS-C4	Residential	2	East of Frances St North of Katy Way and Receptor 76	65	66	62	-3	-4	None	59	3	0	59	3	0	59	3	0	59	3	0	N/A	N/A	N/A
7 .	M-76	В	TWS-C4	Residential	2	Temescal Canyon Dr and Foster Rd near Weirick	66	62	63	-3	1	None	59	4	0	59	4	0	59	4	0	58	<u>5</u>	2	N/A	N/A	N/A
7	R-170	В	TWS-C4	Residential	2	East of I-15, South of Receptor 76	70	69	72	2	3	A/E	66	<u>6</u>	2	66	<u>6</u>	2	65	7	2	65	7	2	N/A	N/A	N/A
7	M-89	В	TWS-C6	Residential	2	I-15 NB Off at Weirick, southside	64	60	72	8	12	A/E	65	7	2	64	8	2	63	9	2	63	9	2	N/A	N/A	N/A
7	M-90	В	TWS-C6	Residential	1	I-15 NB Off at Weirick, start of ramp	68	66	72	4	6	A/E	68	4	0	68	4	0	66	<u>6</u>	1	65	7	1	N/A	N/A	N/A
7	M-70	В	TWS-C6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	67	-3	0	A/E	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3	N/A	N/A	N/A
7	R-190	В	TWS-C6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	77	-1	-2	A/E, S	77	0	0	75	2	0	72	<u>5</u>	1	71	<u>6</u>	1	N/A	N/A	N/A
7	M-80	В	TWS-C6	Residential	1	I-15/Temescal Canyon	76	71	73	-3	2	A/E	73	0	0	72	1	0	71	2	0	70	3	0	N/A	N/A	N/A
7	M-63	В	TWS 1	Residential	2	State and Smerber	60	60	66	6	6	A/E	65	1	0	65	1	0	65	1	0	65	1	0	65	1	0
7	R-158	В	TWS 1	Residential	3	West of State St East of Receptor 97	65	64	67	2	3	A/E	65	2	0	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3
7	R-157	В	TWS 1	Residential	3	West of State St East of Receptor 75	65	69	64	-1	-5	None	63	1	0	63	1	0	63	1	0	62	2	0	62	2	0
7	M-75	В	TWS 1	Residential	2	I-15 and Bel Air	75	75	75	0	0	A/E, S	75	0	0	73	2	0	72	3	0	68	7	2	67	<u>8</u>	2
7	R-178	В	TWS 1	Residential	1	East of I-15 and North of Receptor 96	71	72	67	-4	-5	A/E	65	2	0	65	2	0	64	3	0	64	3	0	63	4	0
7	M-96	В	TWS 1	Residential	1	I-15 South of Bel Air	69	73	70	1	-3	A/E	67	3	0	67	3	0	66	4	1 1	65	5	1	64	<u>6</u>	1
7	M-97	В	TWS 1	Residential	2	I-15 North of Ontario	67	69	70	3	1	A/E	67	3	.0	66	4	0	65	5	2	64	6	2	63	7	2
7	R-164	В	TWS 2	Residential	2	East of I-15 South of Receptor 64	69	70	73	4	3	A/E	70	3	0	69	4	0	69	4	0	69	4	0	N/A	N/A	N/A
7	M-64	В	TWS 2	Residential	2	Piute Creek Dr E/O I-15	67	65	72	5	7	A/E	70	2	0	68	4	0	68	4	0	67	5	2	N/A		N/A
7	R-163	В	TWS 2	Residential	3	East of I-15 North of Receptor 64	68	69	71	3	2	A/E	67	4	0	67	4	0	66	5	3	65	6	3	N/A	N/A	N/A
7	R-181	В	TWS 2	Residential	3	East of I-15 and South of Receptor 180	69	70	74	5	4	A/E	69	<u>5</u>	3	67	Z	3	66	8	3	65	9	3	N/A	N/A	N/A
7	M-62	В	TWS 2	Residential	4	Ontario Ave and Piute Creek Dr	71	70	68	-3	-2	A/E	64	4	0	64	4	0	63	5	4	62	6	4	N/A		
7	R-180	В	TWS 2	Residential	1	East of I-15 and South of Receptor 85	68	68	75	7	7	A/E, S	68	7	1	66	9	1	65	<u>10</u>	1	64	11	1	N/A		
7	R-179	В	TWS 2	Residential	3	East of I-15 and Receptor 180	67	68	73	6	5	A/E	68	<u>5</u>	3	66	7	3	65	<u>8</u>	3	65	8	3	N/A	N/A	N/A
7	M-85	В	TWS 2	Residential	2	I-15/State St end	68	73	73	5	0	A/E	67	<u>6</u>	2	66	7	2	65	8	2	64	9	2	N/A	N/A	N/A
7	M-127	В	TWS 2	Residential	4	State St south of Ontario Ave	68	69	74	6	5	A/E	68	<u>6</u>	4	67	7	4	66	8	4	65	9	4	N/A		N/A
7	M-126	В	TWS 3	Residential	1	I-15 West of El Cerrito	69	68	77	8	9	A/E, S	71	<u>6</u>	1	69	8	1	68	9	1	67	10	1	67	<u>10</u>	1
7	R-186	В	TWS 3	Residential	5	West of I-15 North of Receptor 126	67	69	77	10	8	A/E, S	70	7	5	68	9	5	67	<u>10</u>	5	66	11	5	65	<u>12</u>	5
7	R-184	В	TWS 3	Residential	2	Whiskey Creek and Calico Circle	61	62	77	16	15	A/E, S, Sb	72	<u>5</u>	2	70	7	2	68	9	2	67	10	2	66	<u>11</u>	2

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with	, , , , , , , , , , , , , , , , , , , ,	H =	2.4 m ((8 ft)	H = 3	.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	4.3 m (14 ft)	H = 4	l.9 m (1	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions Leq(h), dBA	Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u> I.L.</u>	NBR	L _{eq}	<u>1.L.</u>	NBR
7	R-185	В	TWS 3	Residential	3	West of I-15 South of Receptor 94	84	86	71	-13	-15	A/E	66	<u>5</u>	3	65	<u>6</u>	3	64	7	3	64	7	3	63	<u>8</u>	3
7	M-94	В	TWS 3	Residential	3	West of I-15, east of Calico	6 6	71	74	8	3	A/E	67	7	3	66	<u>8</u>	3	65	9	3	65	9	3	64	<u>10</u>	3
7	M-95	В	TWS 3	Residential	3	Dry Gulch Rd and Calico	61	60	69	8	9	A/E	66	3	0	66	3	0	64	<u>5</u>	3	63	6	3_	63	<u>6</u>	3
7	R-183	В	TWS 3	Residential	3	West of I-15 North of Receptor 94	81	83	67	-14	-16	A/E	65	2	0	65	2	0	63	4	0	63	4	0	63	4	0
7	R-182	В	TWS 3	Residential	4	West of I-15 and East of Dry Gulch and Receptor 23	81	83	72	-9	-11	A/E	66	<u>6</u>	4	66	<u>6</u>	4	65	7	4	64	<u>8</u>	4	64	<u>8</u>	4
7	M-23	В	TWS 3	Residential	2	I-15 and Taber/State	80	80	72	-8	-8	A/E	67	5	2	66	6	2	64	8	2	64	8	2	63	9	2
7	R-165	В	TWS 3	Residential	4	West of I-15 North of Receptor 23	61	62	74	13	12	A/E	68	<u>6</u>	4	67	7	4	66	8	4	65	9	4	64	<u>10</u>	4
7	R-170	В	TWS 4	Residential	2	East of I-15, South of Receptor 76	70	69	75	5	6	A/E, S	69	<u>6</u>	2	67	<u>8</u>	2	66	9	2	64	11	2	N/A	N/A	N/A
7	R-188	В	TWS 4	Residential	1	East of Katy Way South of Receptor 76	67	67	70	3	3	A/E	65	<u>5</u>	1	64	<u>6</u>	1	63	7	1	62	8	1	N/A	N/A	N/A
7	M-76	В	TWS 4	Residential	2	Frances and Katy off El Cerrito	66	62	69	3	7	A/E	63	<u>6</u>	2	62	7	2	61	8	2	61	8	2	N/A	N/A	N/A
7	R-187	В	TWS 4	Residential	1	East of I-15 North of Receptor 92	63	64	73	10	9	A/E	67	<u>6</u>	1	66	Z	1	65	8	1	65	8	1	N/A	N/A	N/A
7	R-168	В	TWS 4	Residential	3	East of Frances St South of El Cerrito Road	67	69	67	0	-2	A/E	66	1	0	66	1	0	66	1	0	66	1	0	N/A	N/A	N/A
7	M-89	В	TWS 6	Residential	2	I-15 NB Off at Weirick, southside	64	60	72	8	12	A/E	64	<u>8</u>	2	62	<u>10</u>	2	61	11	2	60	12	2	N/A	N/A	N/A
7	M-70	В	TWS 6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	66	-4	-1	A/E	63	3	0	62	4	0	62	4	0	62	4	0	N/A	N/A	N/A
7	M-90	В	TWS 6	Residential	1	I-15 NB Off at Weirick, start of ramp	68	66	72	4	6	A/E	67	<u>5</u>	1	66	<u>6</u>	1	65	Z	1	64	8	1	N/A	N/A	N/A
7	R-190	В	TWS 6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	74	-4	-5	A/E	71	3	0	70	4	0	70	4	0	70	4	0	N/A	N/A	N/A
7	M-80	В	TWS 6	Residential	1	I-15/Temescal Canyon	76	71	71	-5	0	A/E	71	0	0	71	0	0	71	0	0	71	0	0	N/A	N/A	
7	M-112	В	MV 1	Residential	2	Souder St West of Alexander	61	63	69	8	8	A/E	64	<u>5</u>	2	64	<u>5</u>	2	63	<u>6</u>	2	63	<u>6</u>	2	N/A	N/A	
7	R-201	В	MV 1	Residential	4	North of Souder St East of Una St	62	64	68	6	6	A/E	64	4	0	62	<u>6</u>	4	61	7	4	60	8	4	N/A		N/A
7	R-200	В	MV 1	Residential	4	South of Souder St East of Una St	59	61	68	9	9	A/E	64	4	0	63	<u>5</u>	4	62	<u>6</u>	4	61	7	4		N/A	
7	M-72	В	MV 1	Residential	3	Souder St and Una St	61	63	70	9	9	A/E	66	4	0	65	<u>5</u>	3	63	7	3	62		3		N/A	
7	R-199	В	MV 1	Residential	0	South of Cajalco Road West of Una St North of Souder	63	65	69	6	6	A/E	65	4	0	64	<u>5</u>	0	63	<u>6</u>	0	63	6	0		N/A	
7	M-82	В	MV 1	Residential	3	Una and Hunter	56	58	61	5	5	None	59	2	0	58	3	0	58	3	0	57		0		N/A	
7	M-8	В	MV 1	Residential	1 1	Barton St and Souder St	61	64	68	7	7	A/E	68	0	0	68	0	0	68	0	0	68		0		N/A	
7	M-113	В	MV 2	Residential	2	Souder St and Mead St	61	63	66	5	5	A/E	64	2	0	64	2	0	63	3	10	62		10		N/A	
7	M-40	В	MV 2	Residential	+ 1	Alexander St and Souder St		61	68	9	9	A/E	67	1	0	66	2	0	66	2	0	66	2	0		N/A	
7	R-202	В	MV 2	Residential	4	North of Souder St East of Receptor 40	62	65	67	5	5	A/E	64	3	0	64	3	0	64	3	0	63	4	0	IN/A	N/A	IN/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

Alternative	Receiver	Noise Abatement	Barrier	Land Use	No. of	Address	Existing Noise Level	Design Year Noise Level	Design Year Noise Level	Design Year Noise Level with Project	Design Year Noise Level with Project	Impact	H =	2.4 m	(8 ft)	H = 3	.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	1.3 m (14 ft)	H = 4	4.9 m (16 ft)
7.ii.cimative	I.D.	Criteria (NAC)	I.D.	Land Ose	Units	Audress	L _{eq} (h), dBA	without Project L _{eq} (h), dBA	with Project L _{eq} (h), dBA		Minus No Project Conditions L _{eq} (h), dBA	Туре	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u> 1.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
7	R-203	В	MV 2	Residential	3	North of Souder St West of Receptor 32	62	65	67	5	5	A/E	65	2	0	64	3	0	64	3	0	62	<u>5</u>	3	N/A	N/A	
7	M-32	В	MV 2	Residential	1	Cajalco Road and Meade St	65	68	65	0	0	None	63	2	0	62	3	0	61	4	0	60	<u>5</u>	1		N/A	
7	R-204	В	MV 2	Residential	2	North of Souder St East of Receptor 32	62	65	65	3	3	None	61	4	0	60	<u>5</u>	2	59	<u>6</u>	2	58	7	2	N/A	N/A	N/A
7	M-114	В	MV 2	Residential	2	Cajalco Rd Btwn Meade and Brown	69	72	64	-5	-5	None	60	4	0	58	<u>6</u>	2	58	<u>6</u>	2	57	7	2	N/A	N/A	N/A
7	M-10	В	MV 3	Residential	1	Clark St and Johnson Ave	63	64	62	-1	-1	None	60	2	0	60	2	0	60	2	0	59	3	0	N/A	N/A	N/A
7	R-208	В	MV 3	Residential	5	East of Haines St North of Johnson Ave	61	63	67	6	6	A/E	64	3	0	63	4	0	62	<u>5</u>	5	61	<u>6</u>	5	N/A	N/A	N/A
7	M-33	В	MV 3	Residential	1	Cajalco Road and Brown St	62	64	67	5	5	A/E	61	<u>6</u>	1	59	<u>8</u>	1	58	9	1	57	<u>10</u>	1	N/A	N/A	
7	M-58	В	MV 3	Residential	1	Brown St and Moore St	58	59	63	5	5	A/E	59	4	0	58	<u>5</u>	1	56	7	1	56	7	1	N/A	N/A	N/A
7	R-207	В	MV 3	Residential	1	North of Wells St East of Brown St	60	63	60	0	0	A/E	57	3	0	56	4	0	55	<u>5</u>	1	54	<u>6</u>	1	N/A	N/A	N/A
7	R-206	В	MV 3	Residential	6	Between Moore St and Wells St East of Mead St	57	59	63	6	6	A/E	61	2	0	61	2	0	60	3	0	59	4	0	N/A	N/A	N/A
7	R-205	В	MV 3	Residential	6	Between Moore St and Wells St East of Receptor 9	57	59	63	6	6	A/E	63	0	0	62	1	0	61	2	0	60	3	0	N/A	N/A	N/A
7	M-9	В	MV 3	Residential	3	Alexander and Moore St	62	65	57	-5	-5	A/E	56	1	0	56	1	0	56	1	0	56	1	0	N/A	N/A	N/A
7	M-119	В	MV 4	Residential	2	Cajalco Rd and Tyler Rd	65	68	75	10	10	A/E, S	68	7	2	67	<u>8</u>	2	65	10	2	64	11	2	N/A	N/A	N/A
7	R-211	В	MV 4	Residential	3	South of Cajalco Road and East of Day St	65	67	70	5	5	A/E	64	<u>6</u> .	3	62	<u>8</u>	3	60	<u>10</u>	3	59	11	3	N/A	N/A	N/A
7	R-210	В	MV 4	Residential	2	South of Cajalco Road and West of Day St	67	70	65	-2	-2	None	58	7	2	57	<u>8</u>	2	56	9	2	55	<u>10</u>	2	N/A	N/A	N/A
7	M-71	В	MV 4	Residential	2	Carroll St and Elmwood St	59	62	60	1	1	None	57	3	0	56	4	0	55	5	2	55	<u>5</u>	2	N/A	N/A	N/A
7	M-81	В	MV 4	Residential	1	Carroll and Cajalco	66	68	64	-2	-2	None	- 58	6	1	58	<u>6</u>	1	57	7	1	56	8	1	N/A	N/A	N/A
7	R-209	В	MV 4	Residential	1	North East of Receptor 116 South of Cajalco Rd	69	71	62	-7	-7	None	59	3	0	58	4	0	58	4	0	57	<u>5</u>	1	N/A	N/A	N/A
7	M-116	В	MV 4	Residential	1	Clark south of Cajalco	64	66	63	-1	-1	None	61	2	0	61	2	0	61	2	0	61	2	0	N/A	N/A	N/A
7	M-115	В	MV 5	Residential	4	Castlerock Trail and Windstone Way	64	64	66	2	2	A/E	66	0	0	66	0	0	65	1	0	65	1	0	N/A	N/A	
7	R-212	В	MV 5	Residential	6	East of Receptor 115 South of Windstone Way	60	63	64	4	4	None	64	0	0	64	0	0	63	1	0	63	1	0	N/A		N/A
7	R-213	В	MV 5	Residential	5	East of Receptor 115 North of Windstone Way	58	61	64	6	6	None	63	1	0	63	1	0	63	1	0	62	2	0	N/A		N/A
7	R-214	В	MV 5	Residential	4	West of Receptor 117 South of Windstone Way	60	63	63	3	3	None	61	2	0	61	2	0	60	3	0	60	3	0	N/A		N/A
7	M-117	В	MV 5	Residential	2	Carroll St north of Cajalco	60	63	64	4	4	None	62	2	0	62	2	0	61	3	0	61	3	0	N/A		N/A
7	M-118	В	MV 5	Residential	2	Summerwind Trail and Windstone Way	59	62	63	4	4	None	61	2	0	61	2	0	60	3	0	60	3	0	N/A	N/A	N/A
7	R-215	В	MV 5	Residential	1	East of Receptor 117 West of Robinson St	61	64	65	4	4	None	62	3	0	62	3	0	61	4	0	61	4	0	N/A		N/A
7	M-57	В	MV 5	Residential	1	Cajalco and Day St	63	65	68	5	5	A/E	64	4	0	62	<u>6</u>	1	61	7	1	60	8	1	N/A		N/A
7	R-236	В	MV 5	Residential	1	West of Day, North of	68	70	72	4	4	A/E	68	4	0	66	<u>6</u>	1	65	7	1	64	<u>8</u>	1	N/A	N/A	N/A
						Cajalco Rd										L			<u></u>				ŀ				

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m ((8 ft)	H = 3	.05 m	(10 ft)	H = 3	3.7 m ((12 ft)	H = 4	1.3 m (1	14 ft)	H = 4	4.9 m (⁻	16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Minus No Project Conditions Leq(h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>l.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>l.L.</u>	NBR
7	R-237	В	MV 5	Residential	2	North of Cajalco, East of Tyler	63	67	69	6	6	A/E	69	0	0	68	1	0	67	2	0	67	2	0	N/A	N/A	N/A
7	M-120	В	RD 1	Val Verde High School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. North end of School	68	72	75	7	7	A/E, S	71	4	0	70	<u>5</u>	2	68	7	2	67	<u>8</u>	2	N/A	N/A	N/A
7	M-121	В	RD 1	Val Verde High School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. Middle of School	70	73	77	7	7	A/E, S	72	<u>5</u>	2	70	7	2	69	8	2	68	9	2	N/A	N/A	N/A
7	M-122	В	RD 1	Val Verde High School	2	I-215 and Nevada Ave between Ramona Expressway and Rider. South of School	68	73	78	10	10	A/E, S	72	<u>6</u>	2	71	7	2	69	9	2	68	<u>10</u>	2	N/A	N/A	N/A
7	M-123	В	RD 1	Val Verde High School	2	Between Webster Ave and Nevada Ave. Middle of School.	62	66	63	1	1	None	61	2	0	60	3	0	60	3	0	59	4	0	N/A	N/A	N/A
9	M-75	В	TWS-C1	Residential	2	I-15 and Bel Air	75	75	75	0	0	A/E, S	75	0	0	75	0	0	74	1	0	71	4	0	68	7	2
9	M-96	В	TWS-C1	Residential	1	I-15 South of Bel Air	69	73	67	-2	-6	A/E	65	2	0	65	2	0	64	3	0	64	3	0	63	4	0
9	M-97	В	TWS-C1	Residential	2	I-15 North of Ontario	67	69	66	-1	-3	A/E	65	1	0	64	2	0	62	4	0	61	5	2	60	6	2
9	R-157	В	TWS-C1	Residential	3	West of State St East of Receptor 75	65	69	63	-2	-6	None	62	1	0	62	1	0	61	2	0	61	2	0	61	2	0
9	R-158	В	TWS-C1	Residential	3	West of State St East of Receptor 97	65	64	63	-2	-1	None	63	0	0	62	1	0	61	2	0	60	3	0	59	4	0
9	R-159	В	TWS-C1	Residential	2	West of State St North of Receptor 160	56	56	64	8	8	None	64	0	0	63	1	0	62	2	0	61	3	0	60	4	0
9	R-160	В	TWS-C1	Residential	3	West of State St North of Poppy	66	67	66	0	-1	A/E	64	2	0	64	2	0	63	3	0	62	4	0	61	<u>5</u>	3
9	M-63	В	TWS-C1	Residential	2	State and Smerber	60	60	59	-1	-1	None	59	0	0	59	0	0	58	1	0	57	2	0	56	3	0
9 .	R-178	В	TWS-C1	Residential	1	East of I-15 and North of Receptor 96	71	72	65	-6	-7	None	64	1	0	63	2	0	63	2	0	63	2	0	62	3	0
9	R-164	В	TWS-C2	Residential	2	East of I-15 South of Receptor 64	69	70	66	-3	-4	A/E	63	3	0	62	4	0	62	4	0	61	<u>5</u>	2	N/A	N/A	N/A
9	M-64	В	TWS-C2	Residential	2	Piute Creek Dr E/O I-15	67	65	65	-2	0	None	63	2	0	62	3	0	62	3	0	61	4	0	N/A		
9	R-163	В	TWS-C2		3	East of I-15 North of Receptor 64	68	69	63	-5	-6	None	63	0	0	62	1	0	62	1	0	61	2	0	N/A		N/A
9	R-162	В	TWS-C2	Residential	5	East of I-15 North of Receptor 163	81	83	67	-14	-16	A/E	63	4	0	62	<u>5</u>	5	61	<u>6</u>	5	61	<u>6</u>	5	N/A		N/A
9	R-161	В	TWS-C2		3	East of I-15 South of Receptor 85	68	69	71	3	2	A/E	65	<u>6</u>	3	64	7	3	64	<u>8</u>	3	63	<u>8</u>	3		N/A	
9	M-85	В	TWS-C2	Residential	2	I-15/State St end	68	73	71	3	-2	A/E	66	<u>5</u>	2	65	<u>6</u>	2	64	7	2	63	8	2	N/A		
9	M-62	В	TWS-C2		4	Ontario Ave and Piute Creek Dr	71	70	66	-5	-4	A/E	64	2	0	63	3	0	63	3	0	62	4	0			
9	M-127	В	TWS-C2		4	State St south of Ontario Ave	68	69	72	4	3	A/E	67	<u>5</u>	4	66	<u>6</u>	4	65	7	4	64	8	4		N/A	N/A
9	M-23	В	TWS-C3		2	I-15 and Taber/State	80	80	66	-14	-14	A/E	64	2	0	63	3	0	63	3	0	62		0	62		0
9	M-94	В	TWS-C3	Residential	3	West of I-15, east of Calico	66	71	69	3	-2	A/E	63	6	3	62	7	3	62	8	3_	61	8	3	60	9	3

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	.05 m ((10 ft)	H = 3	3.7 m ((12 ft)	H = 4	4.3 m (14 ft)	H = 4	1.9 m (1	6 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions L _{eq} (h), dBA	Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>l.L.</u>	NBR	L_{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L_{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
9	M-95	В	TWS-C3	Residential	3	Dry Gulch Rd and Calico	61	60	70	9	10	A/E	67	3	0	66	4	0	64	<u>6</u>	3	63	7	3	63	7	3
9	M-126	В	TWS-C3	Residential	1	I-15 West of El Cerrito	69	68	75	6	7	A/E, S	67	8	1	66	9	1 1	65	10	1	65	10	1	64	11	1
9	R-165	В	TWS-C3	Residential	3	West of I-15 North of Receptor 23	61	62	70	9	8	A/E	64	<u>6</u>	3	63	<u>7</u>	3	62	<u>8</u>	3	62	<u>8</u>	3	61	9	3
9	R-166	В	TWS-C3	Residential	2	West of I-15 South of Receptor 23	68	71	69	1	-2	A/E	66	3	0	65	4	0	64	<u>5</u>	2	63	<u>6</u>	2	62	7	2
9	R-167	В	TWS-C3	Residential	2	West of I-15 South of Receptor 94	70	76	72	2	-4	A/E	67	<u>5</u>	2	66	<u>6</u>	2	65	7	2	64	8	2	63	9	2
9	R-184	В	TWS-C3	Residential	2	Whiskey Creek and Calico Circle	61	62	79	18	17	A/E, S, Sb	73	<u>6</u>	2	70	9	2	69	<u>10</u>	2	67	12	2	66	<u>13</u>	2
9	R-186	В	TWS-C3	Residential	5	West of I-15 North of Receptor 126	67	69	77	10	8	A/E, S	70	7	5	69	<u>8</u>	5	67	10	5	66	11	5	65	<u>12</u>	5
9	R-168	В	TWS-C4	Residential	3	East of Frances St South of El Cerrito Road	67	69	62	-5	-7	None	61	1	0	61	1	0	61	1	0	61	1	0	N/A	N/A	N/A
9	R-169	В	TWS-C4	Residential	2	East of Frances St North of Katy Way and Receptor 76	65	66	62	-3	4	None	59	3	0	59	3	0	59	3	0	59	3	0	N/A	N/A	N/A
9	M-76	В	TWS-C4	Residential	2	Frances and Katy off El Cerrito	66	62	63	-3	1	None	59	4	0	59	4	0	59	4	0	59	4	0	N/A	N/A	N/A
9	R-170	В	TWS-C4	Residential	2	East of I-15, South of Receptor 76	70	69	72	2	3	A/E	66	<u>6</u>	2	66	6	2	65	7	2	65	7	2	N/A	N/A	N/A
9	M-89	В	TWS-C6	Residential	2	Magnolia and Fern	64	60	72	8	12	A/E	65	7	2	64	8	2	63	9	2	63	9	2	N/A	N/A	N/A
9	M-90	В	TWS-C6	Residential	1	I-15 NB Off at Weirick, start of ramp	68	66	72	4	6	A/E	68	4	0	68	4	0	66	<u>6</u>	1	65	7	1	N/A	N/A	N/A
9	M-70	В	TWS-C6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	67	-3	0	A/E	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3	N/A	N/A	N/A
9	R-190	В	TWS-C6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	77	-1	-2	A/E, S	77	0	0	75	2	0	72	<u>5</u>	1	71	<u>6</u>	1	N/A		N/A
99	M-80	В	TWS-C6	Residential	1	I-15/Temescal Canyon	76	71	73	-3	2	A/E	73	0	0	72	1	0	71	2	0	70	3	0	N/A	N/A	N/A
9	M-63	В	TWS 1	Residential	2	State and Smerber	60	60	6 6	6	6	A/E	65	1	0	65	1	0	65	1	0	65	1	0	65	1	0
9	R-158	В	TWS 1	Residential	3	West of State St East of Receptor 97	65	64	67	2	3	A/E	65	2	0	64	3	0	64	3	0	63	4	0	62	<u>5</u>	3
9	R-157	В	TWS 1	Residential	3	West of State St East of Receptor 75	65	69	64	-1	-5	A/E	63	1	0	63	1	0	63	1	0	62	2	0	62	2	0
9	M-75	В	TWS 1	Residential	2	I-15 and Bel Air	75	75	75	0	0	A/E, S	75	0	0	73	2	0	72	3	0	68	7	2	67	8	2
9	R-178	В	TWS 1	Residential	1	East of I-15 and North of Receptor 96	71	72	67	-4	-5	A/E	65	2	0	65	2	0	64	3	0	64	3	0	63	4	0
9	M-96	В	TWS 1	Residential	1	I-15 South of Bel Air	69	73	70	1	-3	A/E	67	3	0	67	3		66	4	0	65	5	1	64	6	1
9	M-97	В	TWS 1	Residential	2	I-15 North of Ontario	67	69	70	3	1	A/E	67	3	0	66	4		65	5	2	64	6	2	63	7	2
9	R-164	В	TWS 2	Residential	2	East of I-15 South of Receptor 64	69	70	73	4	3	A/E	70	3	0	69	4	0	69	4	0	69	4	0	N/A		N/A
9	M-64	В	TWS 2	Residential	2	Piute Creek Dr E/O I-15	67	65	72	5	7	A/E	70	2	0	68	4	0	68	4	0	67	5	2	N/A		N/A
9	R-163	В	TWS 2	Residential	3	East of I-15 North of Receptor 64	68	69	71	3	2	Á/E	67	4	0	67	4	0	66	<u>5</u>	3	65	6	3	N/A	1	N/A
9	R-181	В	TWS 2	Residential	3	East of I-15 and South of Receptor 180	69	70	74	5	4	A/E	69	<u>5</u>	3	67	7	3	66	8	3	65	9	3	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	.05 m ((10 ft)	H = 3	3.7 m (12 ft)	H = 4	4.3 m (⁻	14 ft)	H = 4	l.9 m (1	6 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA		Project Minus No Project Conditions L _{eq} (h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L_{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}		NBR
9	M-62	В	TWS 2	Residential	4	Ontario Ave and Piute Creek Dr	71	70	68	-3	-2	A/E	64	4	0	64	4	0	63	<u>5</u>	4	62	<u>6</u>	4	N/A	N/A	N/A
9	R-180	В	TWS 2	Residential	1	East of I-15 and South of Receptor 85	68	68	75	7	7	A/E, S	68	7	1	66	9	1	65	<u>10</u>	1	64	11	1	N/A	N/A	N/A
9	R-179	В	TWS 2	Residential	3	East of I-15 and Receptor 180	67	68	73	6	5	A/E	68	<u>5</u>	3	66	7	3	65	<u>8</u>	3	65	<u>8</u>	3	N/A	N/A	N/A
9	M-85	В	TWS 2	Residential	2	I-15/State St end	68	73	73	5	0	A/E	67	6	2	66	7	2	65	8	2	64	9	2	N/A	N/A	N/A
9	M-127	В	TWS 2	Residential	4	State St south of Ontario Ave	68	69	74	6	5	A/E	68	<u>6</u>	4	67	7	4	66	<u>8</u>	4	65	9	4	N/A	N/A	N/A
9	M-126	В	TWS 3	Residential	1	I-15 West of El Cerrito	69	68	77	8	9	A/E, S	71	6	1	69	<u>8</u>	1	68	9	1	67	10	1	67	10	1
9	R-186	В	TWS 3	Residential	5	West of I-15 North of Receptor 126	67	69	77	10	8	A/E, S	70	7	5	68	9	5	67	<u>10</u>	5	66	11	5	65	<u>12</u>	5
9	R-184	В	TWS 3	Residential	2	Whiskey Creek and Calico Circle	61	62	77	16	15	A/E, S, Sb	72	<u>5</u>	2	70	7	2	68	9	2	67	<u>10</u>	2	66	11	2
9	R-185	В	TWS 3	Residential	3	West of I-15 South of Receptor 94	84	86	71	-13	-15	A/E	66	<u>5</u>	3	65	<u>6</u>	3	64	7	3	64	7	3	63	<u>8</u>	3
9	M-94	В	TWS 3	Residential	3	West of I-15, east of Calico	6 6	71	74	8	3	A/E	67	7	3	66	<u>8</u>	3	65	9	3	65	9	3	64	10	3
9	M-95	В	TWS 3	Residential	3	Dry Gulch Rd and Calico	61	60	69	8	9	A/E	66	3	0	66	3	0	64	<u>5</u>	3	63	<u>6</u>	3	63	6	3
9	R-183	В	TWS 3	Residential	3	West of I-15 North of Receptor 94	81	83	67	-14	-16	A/E	65	2	0	65	2	0	63	4	0	63	4	0	63	4	0
9	R-182	В	TWS 3	Residential	4	West of I-15 and East of Dry Gulch and Receptor 23	81	83	72	-9	-11	A/E	66	<u>6</u>	4	66	<u>6</u>	4	65	7	4	64	8	4	64	8	4
9	M-23	В	TWS 3	Residential	2	I-15 and Taber/State	80	80	72	-8	-8	A/E	67	<u>5</u>	2	66	6	2	64	8	2	64	8	2	63	9	2
9	R-165	В	TWS 3	Residential	4	West of I-15 North of Receptor 23	61	62	74	13	12	A/E	68	<u>6</u>	4	67	7	4	66	<u>8</u>	4	65	9	4	64	10	4
9	R-170	В	TWS 4	Residential	2	East of I-15, South of Receptor 76	70	69	75	5	6	A/E, S	69	<u>6</u>	2	67	<u>8</u>	2	66	9	2	64	11	2	N/A	N/A	N/A
9	R-188	В	TWS 4	Residential	1	East of Katy Way South of Receptor 76	67	67	70	3	3	A/E	65	<u>5</u>	1	64	<u>6</u>	1	63	7	1	62	8	1	N/A	N/A	
9	M-76	В	TWS 4	Residential	2	Frances and Katy off El Cerrito	66	62	69	3	7	A/E	63	<u>6</u>	2	62	7	2	61	<u>8</u>	2	61	8	2	N/A		N/A
9	R-187	В	TWS 4	Residential	1	East of I-15 North of Receptor 92	63	64	73	10	9	A/E	67	<u>6</u>	1	66	7	1	65	<u>8</u>	1	65	8	1	N/A		N/A
9	R-168	В	TWS 4	Residential	3	East of Frances St South of El Cerrito Road	67	69	67	0	-2	A/E	66	1	0	66	1	0	66	1	0	66	1	0	N/A		-
9	M-89	В	TWS 6	Residential	2	I-15 NB Off at Weirick, southside	64	60	72	8	12	A/E	64	8	2	62	<u>10</u>	2	61	11	2	60	12	2	N/A		N/A
9	M-70	В	TWS 6	Residential	3	Temescal Canyon Dr and Foster Rd near Weirick	70	67	66	-4	-1	A/E	63	3	0	62	4	0	62	4	0	62	4	0		N/A	
9	M-90	В	TWS 6	Residential	1	I-15 NB Off at Weirick, start of ramp	68	66	72	4	6	A/E	67	<u>5</u>	1	66	<u>6</u>	1	65	7	1	64	8	1	N/A		N/A
9	R-190	В	TWS 6	Residential	1	East of I-15 North of Receptor 80 South of Receptor 90	78	79	74	-4	-5	A/E	71	3	0	70	4	0	70	4	0	70	4	0	N/A		N/A
9	M-80	В	TWS 6	Residential	1	I-15/Temescal Canyon	76	71	71	-5	0	A/E	71	0	0	71	0	0	71	0	0	71	0	0	N/A		N/A
9	R-129	В	PPD 2	Val Verde School	2	Indian Ave South of Placentia	50	64	66	16	2	A/E, Sb	65	1	0	65	1	0	65	1	0	64	2	0	N/A	N/A	N/A

Table 3.15.D Existing and Predicted Future Noise and Wall Analysis

		Noise			No. of		Existing Noise	Design Year Noise	Design Year Noise	Design Year Noise Level with	Design Year Noise Level with		H =	2.4 m	(8 ft)	H = 3	.05 m	(10 ft)	H = 3	3.7 m (12 ft)	H = 4	4.3 m (14 ft)	H = 4	4.9 m (16 ft)
Alternative	Receiver I.D.	Abatement Criteria (NAC)	Barrier I.D.	Land Use	Dwelling Units	Address	Level L _{eq} (h), dBA	Level without Project L _{eq} (h), dBA	Level with Project L _{eq} (h), dBA	Project Minus Existing Conditions Leg(h), dBA	Project Minus No Project Conditions Lea(h), dBA	Impact Type	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR	L _{eq}	<u>I.L.</u>	NBR
9	R-130	В	PPD 2	Val Verde School	2	Indian Ave South of Placentia. West of R-129	65	64	65	0	1	None	64	1	0	64	1	0	63	2	0	63	2	0	N/A	N/A	N/A
9	R-131	В	PPD 2	Val Verde School	2	Indian Ave South of Placentia. West of R-130	64	67	66	2	-1	A/E	65	1	0	65	1	0	65	1	0	65	1	0	N/A	N/A	N/A
9	R-153	В	PPD 2	Val Verde School	2	Indian Ave and Water St	59	65	57	-2	-8	None	56	1	0	56	1	0	56	1	0	56	1	0	N/A	N/A	N/A
9	M-77	В	PPD 5	Residential	2	Placentia and Murrieta	57	57	63	6	6	None	63	0	0	63	0	0	63	0	0	63	0	0	N/A	N/A	N/A
9	R-143	В	PPD 5	Residential	4	Lisbon Street South of Placentia	52	54	67	15	13	A/E, Sb	65	2	0	65	2	6	64	3	0	64	3	0	N/A	N/A	N/A
9	R-144	В	PPD 5	Residential	5	Wilson Ave South of Placentia	53	54	64	11	10	None	59	<u>5</u>	5	59	<u>5</u>	5	57	7	5	56	8	5	N/A	N/A	N/A
9	R-145	В	PPD 5	Residential	5	East of Wilson South of Placentia	55	55	62	7	7	None	60	2	0	59	3	0	59	3	0	59	3	0	N/A	N/A	N/A
9	R-146	В	PPD 5	Residential	4	Wilson Ave at Lisbon Street	51	53	57	6	4	None	55	2	0	54	3	0	54	3	0	53	4	0	N/A	N/A	N/A
9	R-223	В	PPD 5	Residential	4	North of Lisbon St , West of Wilson Ave	52	53	64	12	11	Sb	61	3	0	61	3	0	60	4	0	59	<u>5</u>	4	N/A	N/A	N/A
9	R-224	В	PPD 5	Residential	6	East of Receptor 144 and West of Receptor 145	54	55	58	4	3	None	55	3	0	54	4	0	53	<u>5</u>	6	53	<u>5</u>	6	N/A	N/A	N/A
9	R-235	В	PPD 5	Residential	2	East of Receptor 144 and West of Receptor 145	57	55	66	9	11	A/E	61	<u>5</u>	2	61	<u>5</u>	2	59	7	2	58	<u>8</u>	2	N/A	N/A	N/A
9	M-77	В	PPE 5	Residential	2	Placentia and Murrieta	57	57	65	8	8	None	65	0	0	64	1	0	64	1	0	64	1	0	N/A	N/A	N/A
9	R-143	В	PPE 5	Residential	4	Lisbon Street South of Placentia	52	54	65	13	11	Sb	61	4	0	61	4	0	60	<u>5</u>	4	60	<u>5</u>	4	N/A	N/A	
9	R-144	В	PPE 5	Residential	5	Wilson Ave South of Placentia	53	54	65	12	11	Sb	60	<u>5</u>	5	58	<u>7</u>	5	58	7	5	58	7	5	N/A		
9	R-145	В	PPE 5	Residential	5	East of Wilson South of Placentia	55	55	63	8	8	None	60	3	0	60	3	0	60	3	0	60	3	0	N/A		
9	R-146	В	PPE 5	Residential	4	Wilson Ave at Lisbon Street	51	53	59	8	6	None	55	4	0	54	<u>5</u>	4	54	<u>5</u>	4	54	5	4	N/A	N/A	
9	R-223	В	PPE 5	Residential	4	North of Lisbon St , West of Wilson Ave	52	53	65	13	12	Sb	61	4	0	60	<u>5</u>	4	59	<u>6</u>	4	59	<u>6</u>	4	N/A	N/A	
9	R-224	В	PPE 5	Residential	6	East of Receptor 144 and West of Receptor 145	54	54	61	7	7	None	57	4	0	55	<u>6</u>	6	. 55	<u>6</u>	6	55	<u>6</u>	6	N/A		
9	R-231	В	PPE 5	Residential	2	East of Wilson Ave South of Placentia	54	54	61	. 7	7	None	55	<u>6</u>	2	55	<u>6</u>	2	54	7	2	54	7	2	N/A	N/A	
9	R-235	В	PPE 5	Residential	2	East of Receptor 144 and West of Receptor 145	57	55	66	9	11	A/E	61	<u>5</u>	2	59	7	2	59	7	2	58	8	2	N/A	N/A	N/A

Source: Mid County Parkway Noise Study Report, VRPA, 2008.

NOTES:

1) Minimum height needed to break the line of sight between 11.5 ft truck stack and first row receivers.

2) Numbers in bold represent noise levels that approach or exceed the NAC.

3) Underlined numbers represent receptors that have been attenuated by at least 5 dBA.

- 4) The lower noise level shown is the predicted future interior noise level with building attenuation.
- 5) Soundwalls within 4.5 m (15 ft) of the nearest travel lane should not be greater than 4.3 m (14 ft) in height.
- 6) Predicted future interior noise level reduction from soundwall modeling.
- 7) Since the predicted interior noise level would exceed the NAC for Category E (52 dBA L_{eq}), a soundwall or building facade upgrades would be required to reduce the interior noise level to below 52 dBA L_{eq}.
- 8) *Receivers with two results includes design variation along with planned alternative.

A/E = Future noise conditions approach or exceed the NAC dBA = A-weighted decibels

ft = feet

H = Height of soundwall

I.L. = Insertion loss

Leg = Equivalent continuous sound level

 $L_{eq}(h) = 1$ -hour A-weighted equivalent sound level

m = meters

N/A = Soundwall cannot be modeled at 16 ft due to its location

NBR = Number of Benefited Residences (attenuated by 5 dBA or more)

S = Severe Noise Impact (75 dBA or more)

Sb = Substantial noise increase of 12 dBA or more

Table 3.15.E Noise Monitoring Results

Monitor No.	School Name	Location	Noise Level, dBA L _{eq}
Interior I/M-120	Val Verde High School	972 West Morgan Street, Perris, CA 92571; East side of I-215	65 / 33
Interior 2/M-130	Val Verde Elementary School	2656 Indian Avenue, Perris, CA 92571; East side of I-215	64.6 / 30

Source: Mid County Parkway Noise Study Report, VRPA, 2008.

dBA Leq = equivalent continuous sound level measured in A-weighted decibels

I-215 = Interstate 215

3.15.3 Impacts

3.15.3.1 Permanent Impacts

Build Alternatives

Potential long-term noise impacts associated with project operations are solely from traffic noise. Traffic noise was evaluated for the future (year 2035) worst-case traffic condition as a worst-case scenario. Future worst-case noise levels at the representative sensitive receptor locations along the project corridor were determined without soundwalls using the peak-hour traffic volumes. Projected future (2035) traffic noise levels under Alternatives 4, 5, 6, 7, and 9 are shown previously in Table 3.15.D. Modeled receptors that would experience a noise level that approaches or exceeds the NAC are shown in bold in Table 3.15.D.

Of the 237 receptor locations modeled, 88 receptor locations for Alternative 4, 85 receptor locations for Alternative 5, 81 receptor locations for Alternative 6, 79 receptor locations for Alternative 7, and 65 receptor locations for Alternative 9 would approach or exceed the NAC under the future worst-case conditions.

As shown in Table 3.15.D, the traffic noise levels at several receptor locations are lower with the proposed project than under the existing and future no build conditions. This is due to the project adding objects like retaining walls and highway ramps that block the line of sight to the noise source.

"Severe" (75 dBA or greater) noise impacts would occur at receptor locations 23, 75, 174, 182, 183, 185, and 190 as shown in Table 3.15.D. Receptor 23 is located at I-15 and Taber/State. Receptor 75 is located at I-15 and Bel Air. Receptor 174 is located east of Klyne Street, south of Bobbit Avenue. Receptor 182 is located west of I-15 and east of Dry Gulch and Receptor 23. Receptor 183 is located west of I-15, north of

Receptor 94. Receptor 185 is located west of I-15, south of Receptor 94. Receptor 190 is located east of I-15, north of Receptor 80, south of Receptor 90.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. In the previous Table 3.15.D, the noise levels shown for the "Design Year Noise Level without Project" show what the noise levels in the MCP study area would be under the MCP No Build Alternatives. As with the MCP project, noise abatement measures for sensitive receptors impacted by increases in traffic noise would be considered for all future transportation improvement projects included in the MCP No Build Alternatives.

Discussions of Impacts Relative to MSHCP Amendment

Noise was determined not to be a topic of concern and was therefore not analyzed in the Multiple Species Habitat Conservation Plan (MSHCP) EIR/EIS. An amendment to the MSHCP to provide coverage for Alternative 9 TWS DV (the Locally Preferred Alternative) would not change the conclusion of the MSHCP EIR/EIS related to noise.

3.15.3.2 Temporary Impacts *Build Alternatives*

Two types of short-term noise impacts would occur during construction of the MCP project. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site and would incrementally raise noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities would be moved on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the project vicinity. There would be a high single-event noise exposure potential at a maximum of 87 dBA L_{max} (maximum sound level measured in A-weighted decibels) from trucks passing at 15 meters (m) (50 feet [ft]). However, the projected construction traffic would be small when compared to existing traffic volumes along Cajalco Road, Ramona Expressway, and other affected streets, and the associated long-term noise level change would not be perceptible. Therefore, there would be no adverse short-term, construction-related worker commute and equipment transport noise impacts.



The second type of short-term noise impact is related to noise generated during excavation, grading, and roadway construction. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated and, therefore, the noise levels along the MCP project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 3.15.F lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments based on a distance of 15 m (50 ft) between the equipment and a noise receptor.

Table 3.15.F Typical Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 ft)	Suggested Maximum Sound Levels for Analysis (dBA at 50 ft)
Pile Drivers, 12,000–18,000 ft-lb/blow	81–96	93
Rock Drills	83–99	96
Jackhammers	75–85	82
Pneumatic Tools	78–88	85
Pumps	68–80	77
Dozers	85–90	88
Tractors	77–82	80
Front-End Loaders	86–90	88
Hydraulic Backhoe	81–90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–86	86
Trucks	81–87	86

Source: Mid County Parkway Noise Study Report, VRPA, 2008.

dBA = A-weighted decibels

ft = feet

ft-lb/blow = foot-pounds per blow

Typical noise levels at 15 m (50 ft) from an active construction area range up to 91 dBA L_{max} during the noisiest construction phases. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels since the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may

involve 1 or 2 minutes of full-power operation followed by 3 to 4 minutes at lower-power settings.

Construction of the proposed project is expected to require the use of earthmovers, bulldozers, water trucks, and pickup trucks. Noise associated with the use of construction equipment is estimated between 79 and 89 dBA L_{max} at a distance of 15 m (50 ft) from the active construction area for the grading phase. As seen in Table 3.15.F, the maximum noise level generated by operation of each earthmover is assumed to be approximately 88 dBA L_{max} at 15 m (50 ft). Each bulldozer would also generate approximately 88 dBA L_{max} at 15 m (50 ft). The maximum noise level generated by water trucks and pickup trucks is approximately 86 dBA L_{max} at 15 m (50 ft). Each doubling of the sound sources with equal strength increases the noise level by 3 dBA. Each piece of construction equipment operates as an individual point source. The worst-case composite noise level at the nearest residence during this phase of construction would be 91 dBA L_{max} (at a distance of 15 m [50 ft] from an active construction area).

In addition to standard construction equipment, the proposed project will require the use of pile drivers. As shown in Table 3.15.F, pile driving generates noise levels of approximately 93 dBA L_{max} . If pile driving is conducted concurrently with the site preparation, the construction site could potentially generate noise levels of 95 dBA L_{max} at a distance of 15 m (50 ft).

The closest sensitive receptor locations are located 15 m (50 ft) from the project construction areas. Therefore, these receptor locations may be subject to short-term noise reaching 95 dBA L_{max} generated by construction activities along the project alignment.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. As with the MCP project, noise abatement measures for sensitive receptors impacted by construction noise would be considered for all future projects included in Alternatives 1A and 1B.



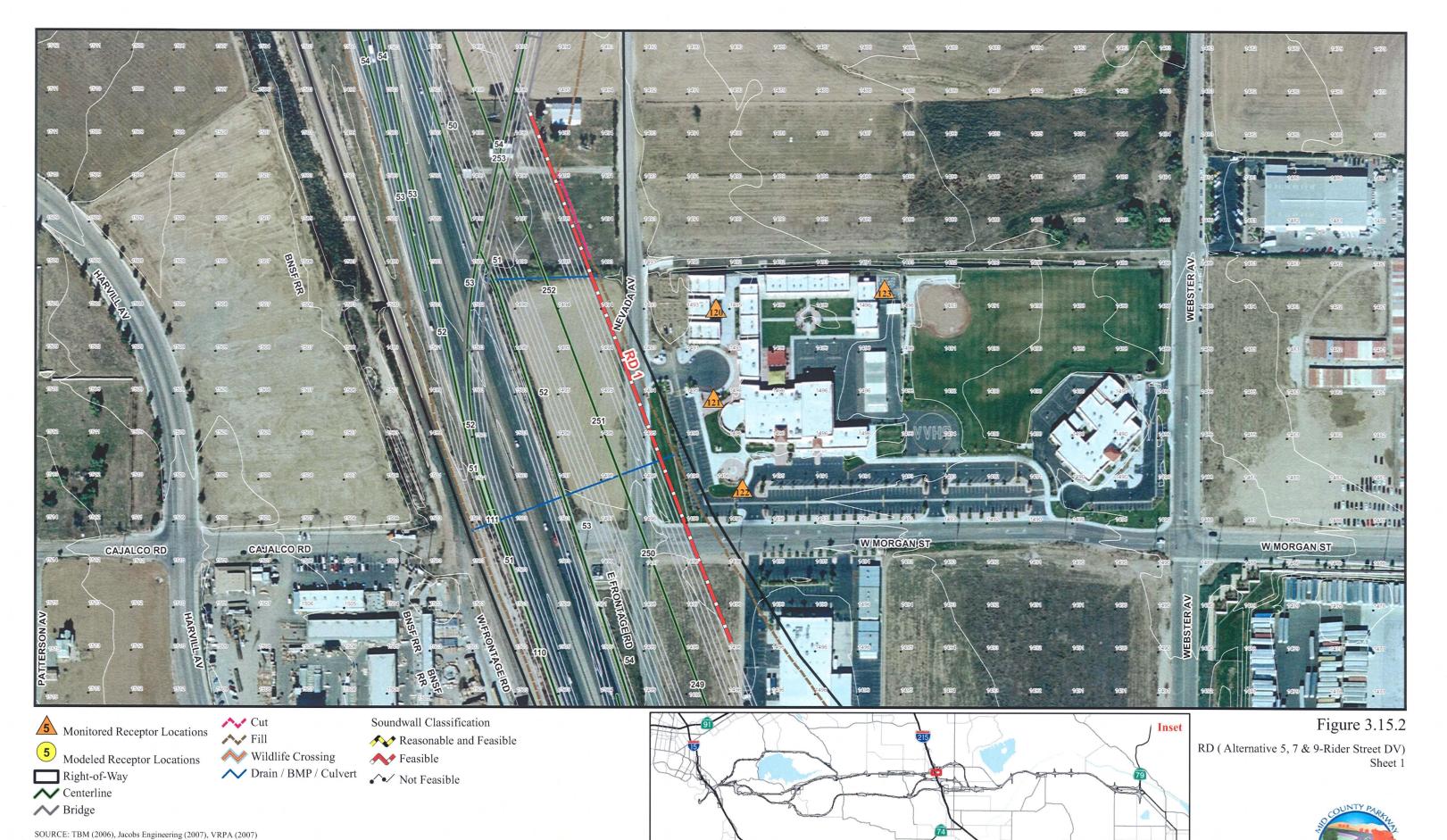
3.15.4 Avoidance, Minimization, and/or Mitigation Measures

3.15.4.1 Permanent Impacts

This section describes recommended actions that avoid, minimize, or abate the adverse project noise impacts identified above in Section 3.15.3.

If the peak-hour traffic noise level at a sensitive receptor location is predicted to approach or exceed the NAC, or if the predicted traffic noise level is 12 dBA or more higher than the corresponding existing modeled noise level at the sensitive receptor location analyzed, noise abatement measures must be considered. Soundwalls were analyzed for all receptor locations that would be exposed to or would continue to be exposed to traffic noise levels that approach or exceed the NAC. At each soundwall location, five soundwall heights were analyzed: 2.4, 3.05, 3.7, 4.3, and 4.9 m (8, 10, 12, 14, and 16 ft, respectively). Predicted noise reduction resulting from the analyzed soundwalls are shown previously in Table 3.15.D.The analyzed soundwalls are described below and shown on Figure 3.15.2.

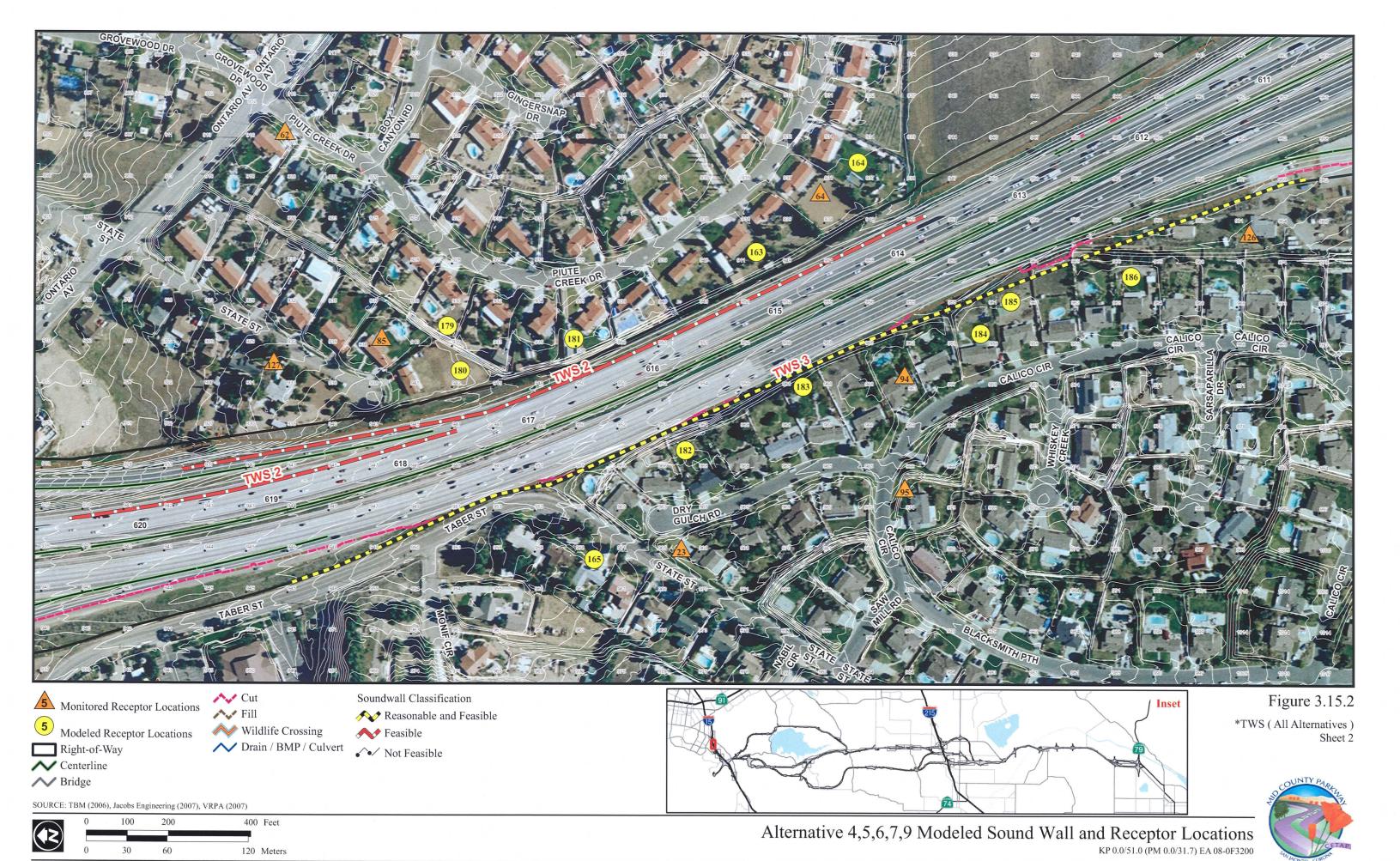
- TWSC 1 A 763 m (2,505 ft) long soundwall was analyzed along the residential property line/freeway right of way on the northbound side of I-15 to protect Receptors 160, 159, 158, 97, 96, 63, 178, 157, and 75. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.
- TWSC 2 A 1,255 m (4,119 ft) long soundwall was analyzed along the freeway right of way/edge of shoulder on the northbound side of I-15 to protect Receptors 164, 64, 163, 162, 161, 85, 62, and 127. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.
- TWSC 3 A 773 m (2,535 ft) long soundwall was analyzed along the freeway right of way on the southbound side of I-15 to protect Receptors 165, 23, 166, 94, 95, 184, 167, 186, and 126. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.
- TWSC 4 A 622 m (2,041 ft) long soundwall was analyzed along the freeway edge of shoulder on the northbound side of I-15 to protect Receptors 168, 169, 76, and 170. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.
- TWSC 6 A 535 m (1,754 ft) long soundwall was analyzed along the freeway edge of shoulder on the northbound side of I-15 to protect Receptors 89, 90, 70, 190, and 80. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.

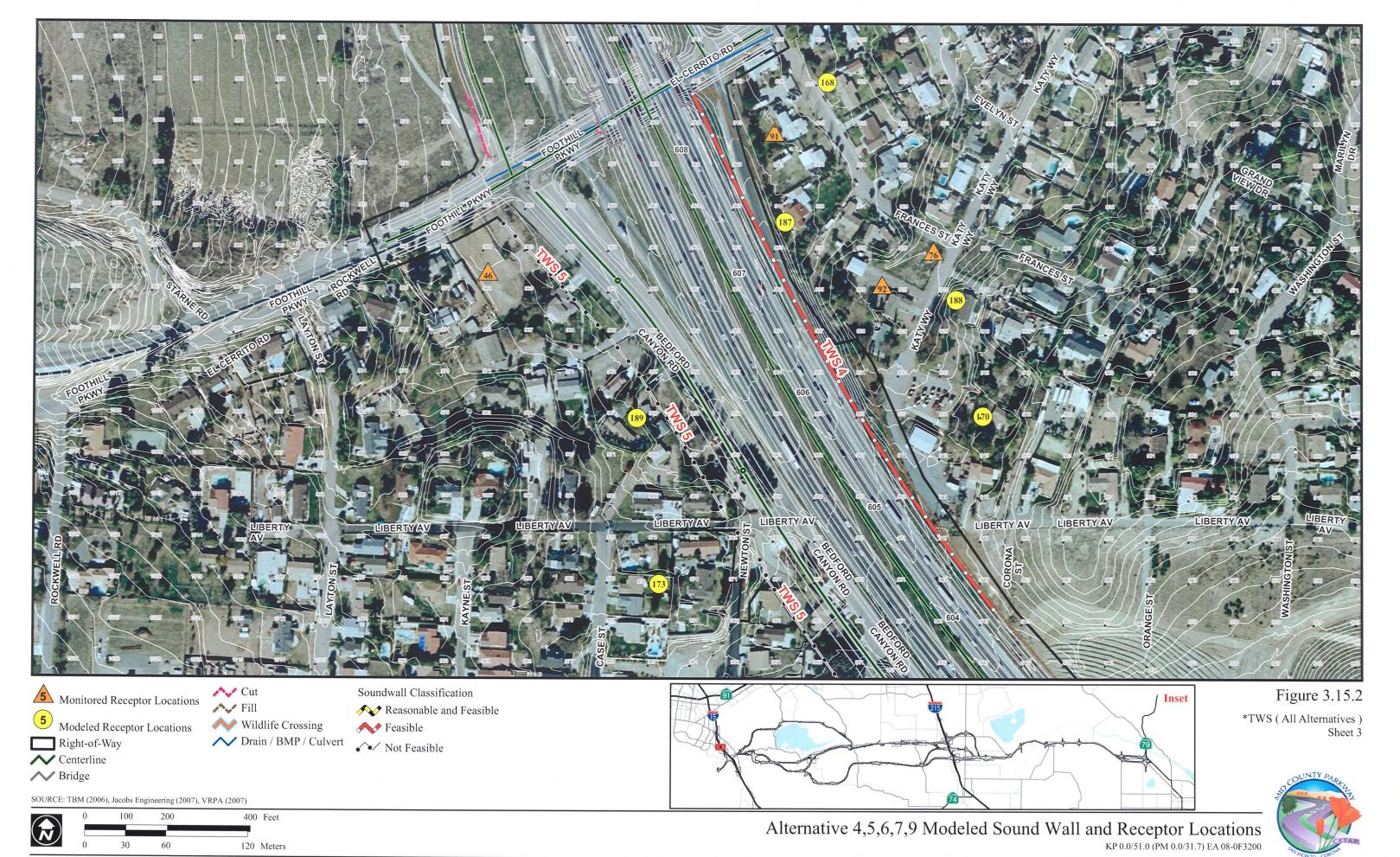


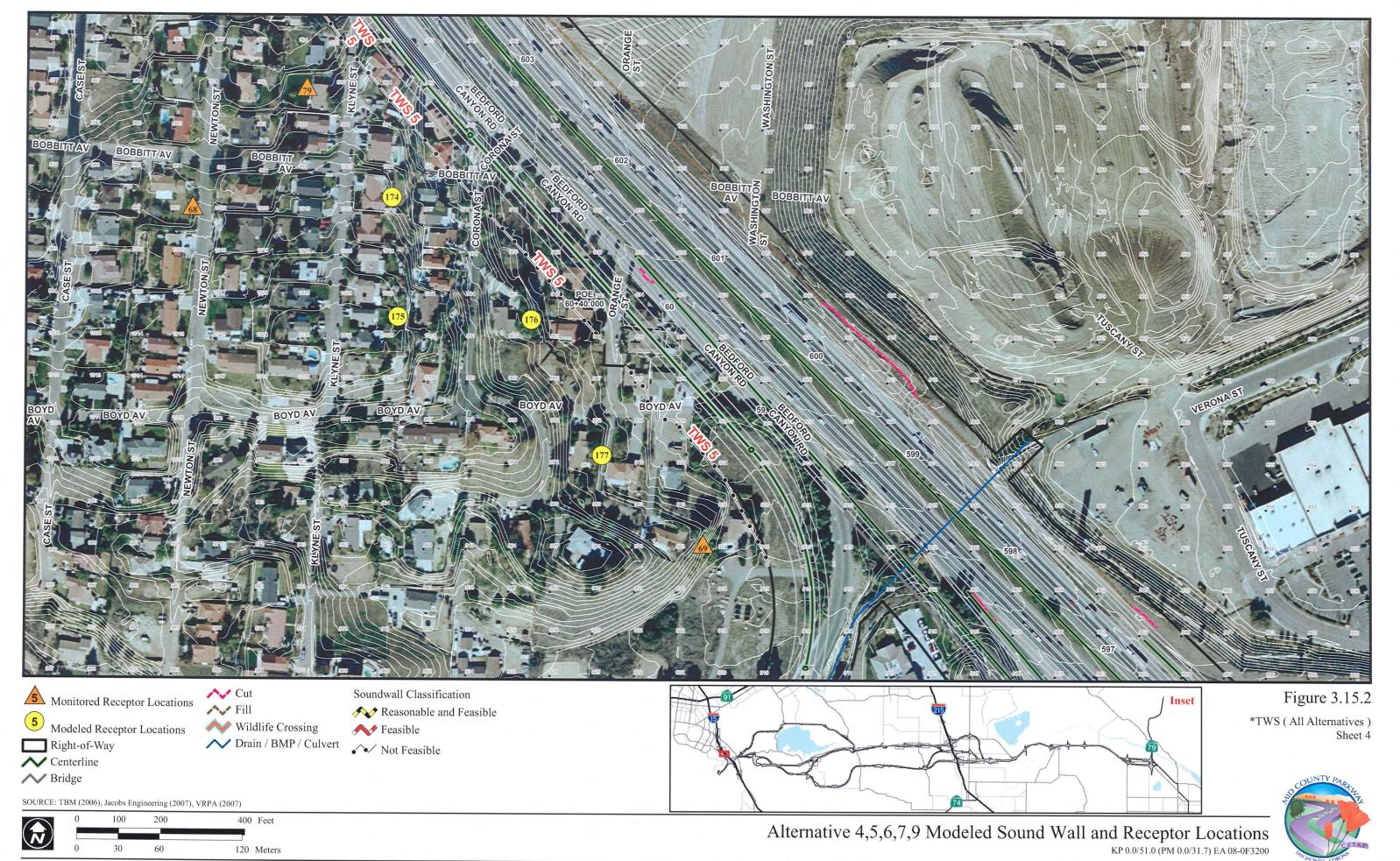
400 Feet 120 Meters

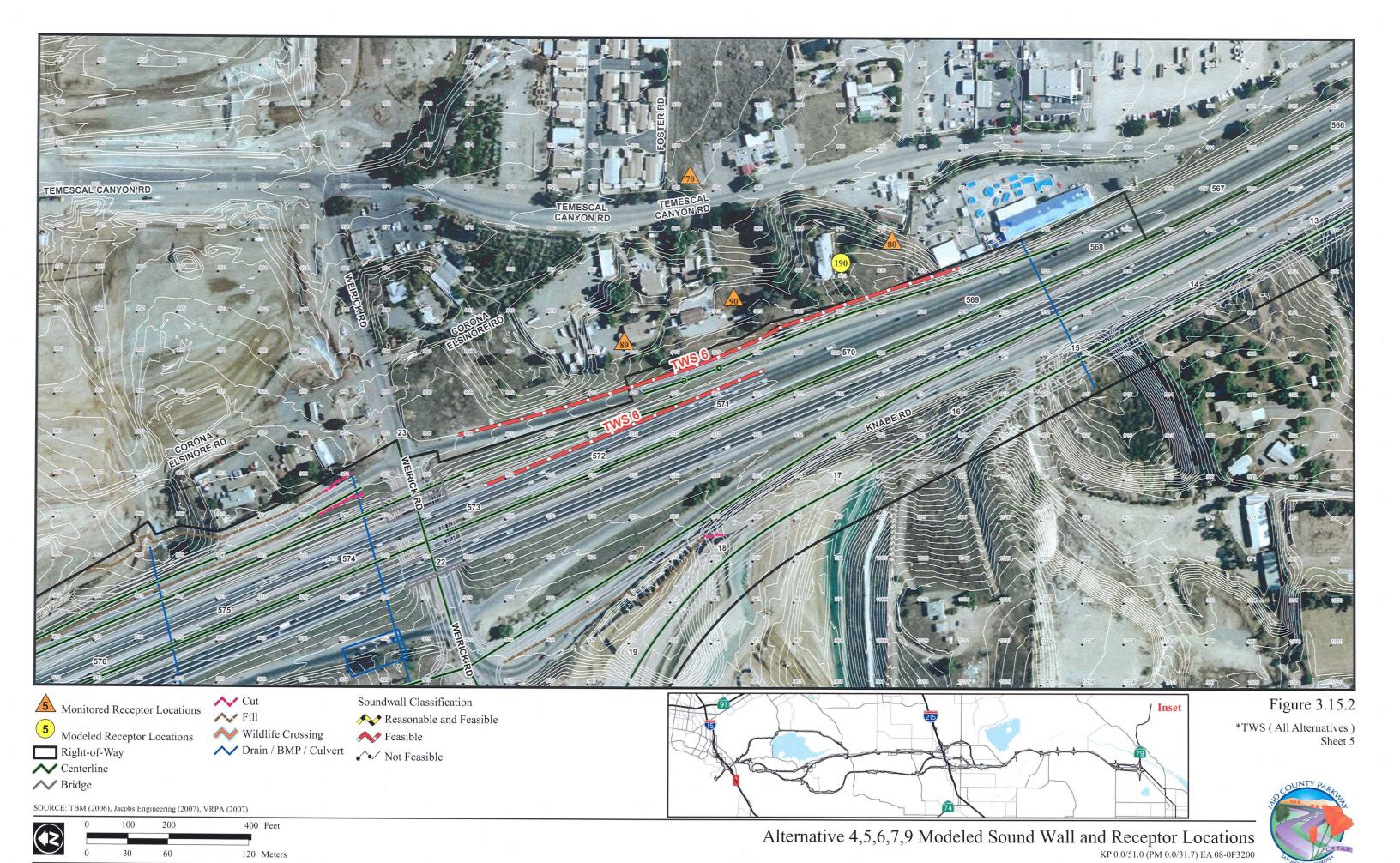
Alternative 4,5,6,7,9 Modeled Sound Wall and Receptor Locations

KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



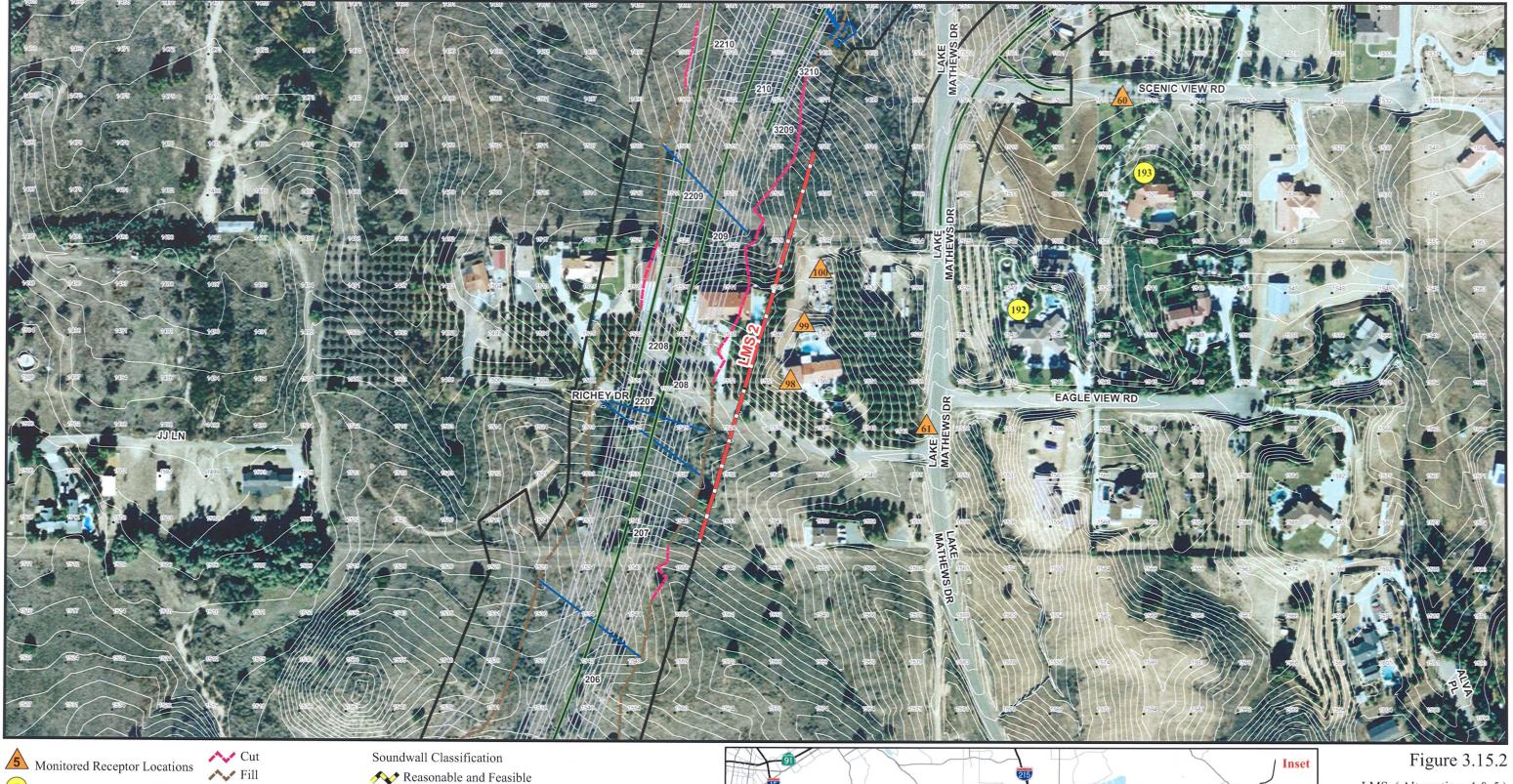


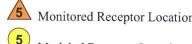




120 Meters

		,





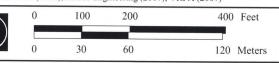
Modeled Receptor Locations Wildlife Crossing ✓ Drain / BMP / Culvert

Feasible Feasible

◆ ✓ Not Feasible

Right-of-Way Centerline ✓ Bridge

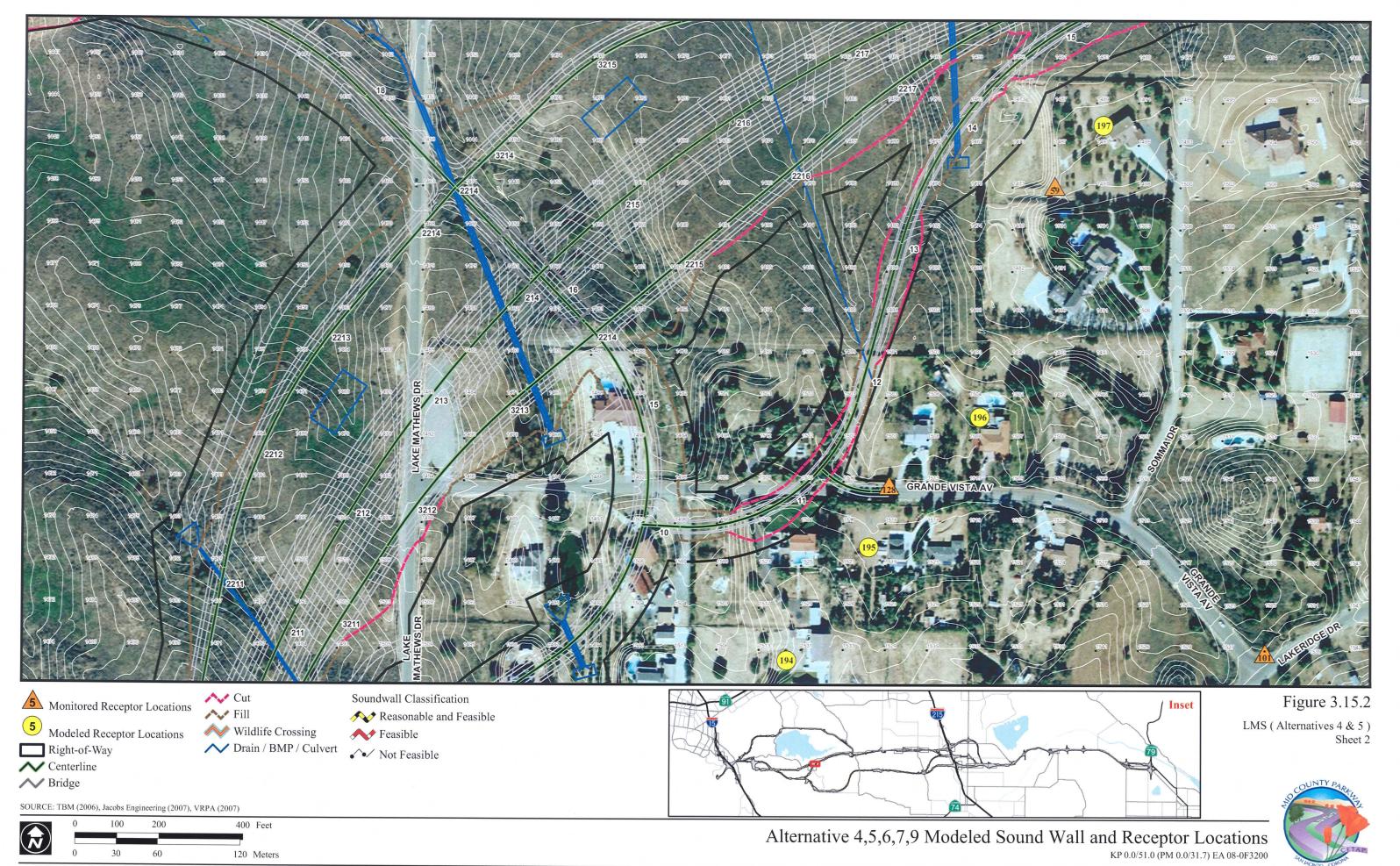
SOURCE: TBM (2006), Jacobs Engineering (2007), VRPA (2007)



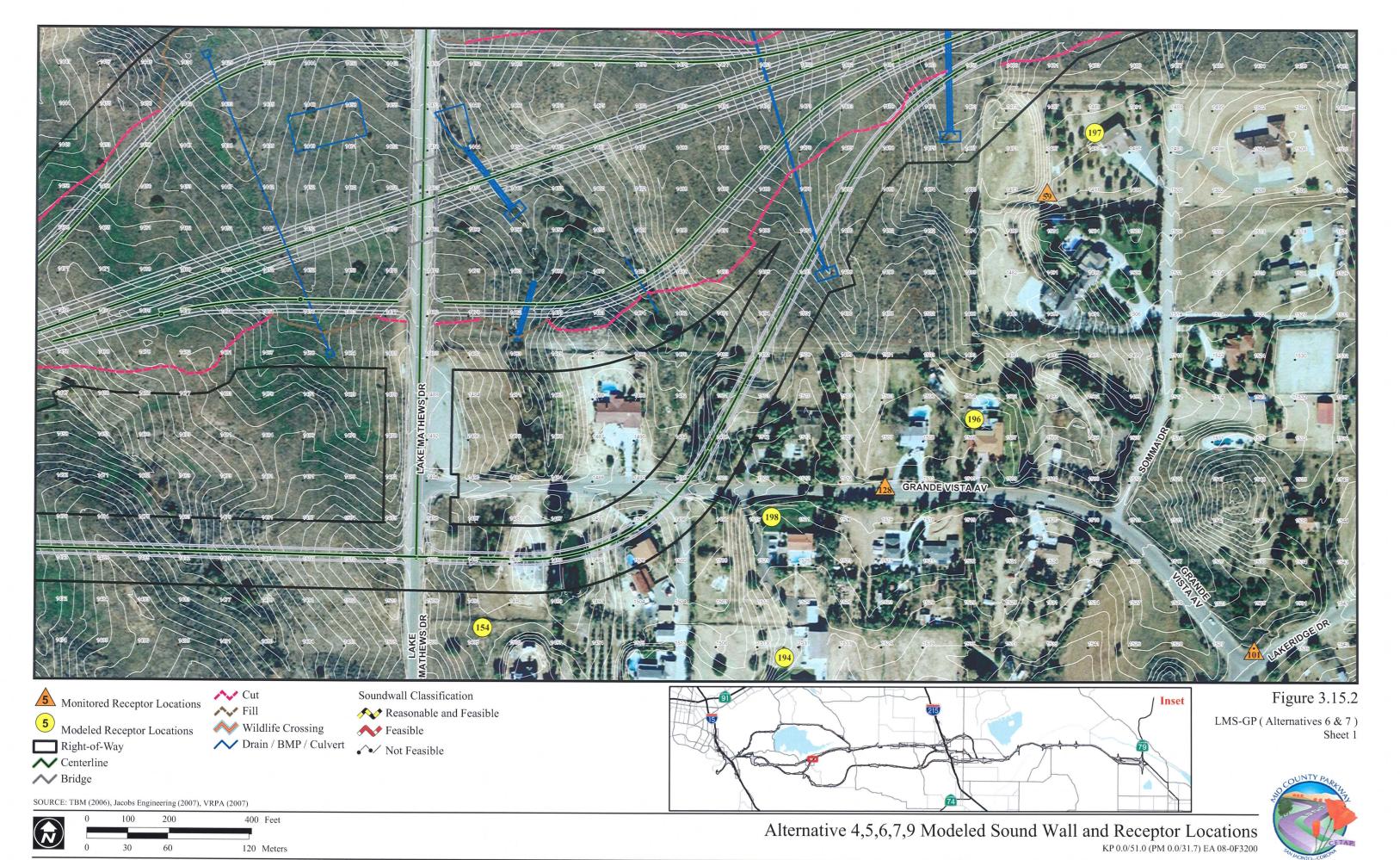


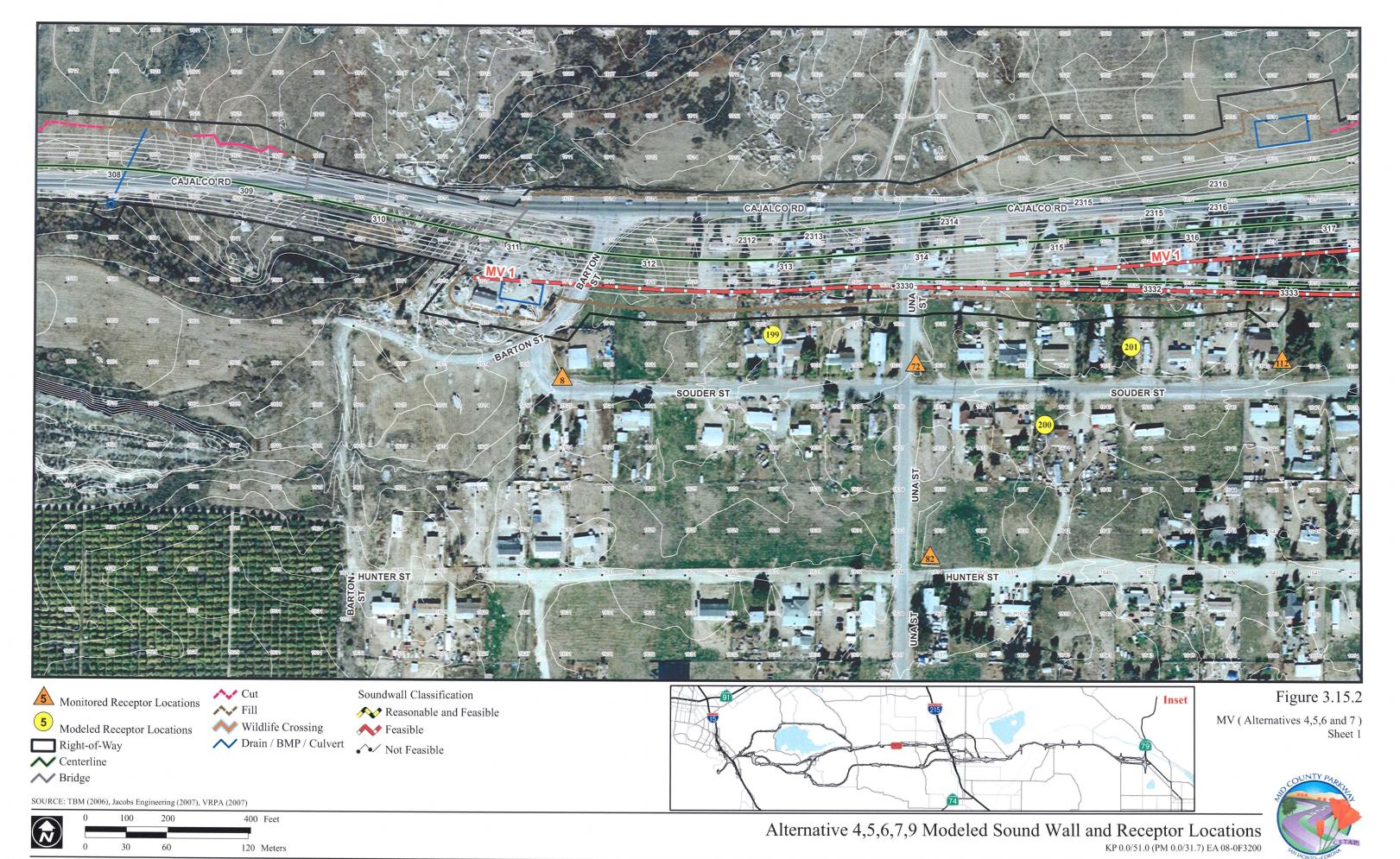
LMS (Alternatives 4 & 5) Sheet 1

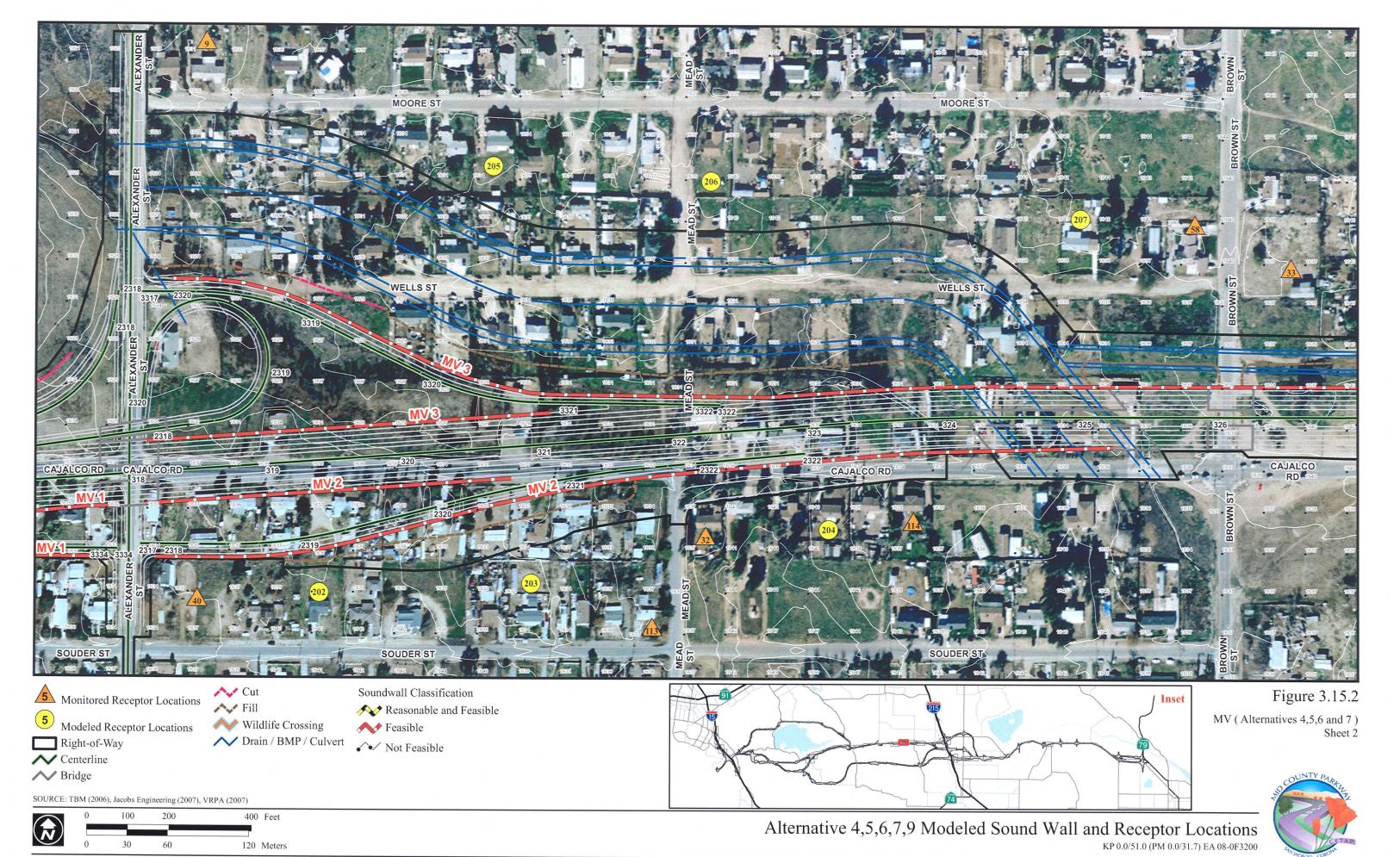


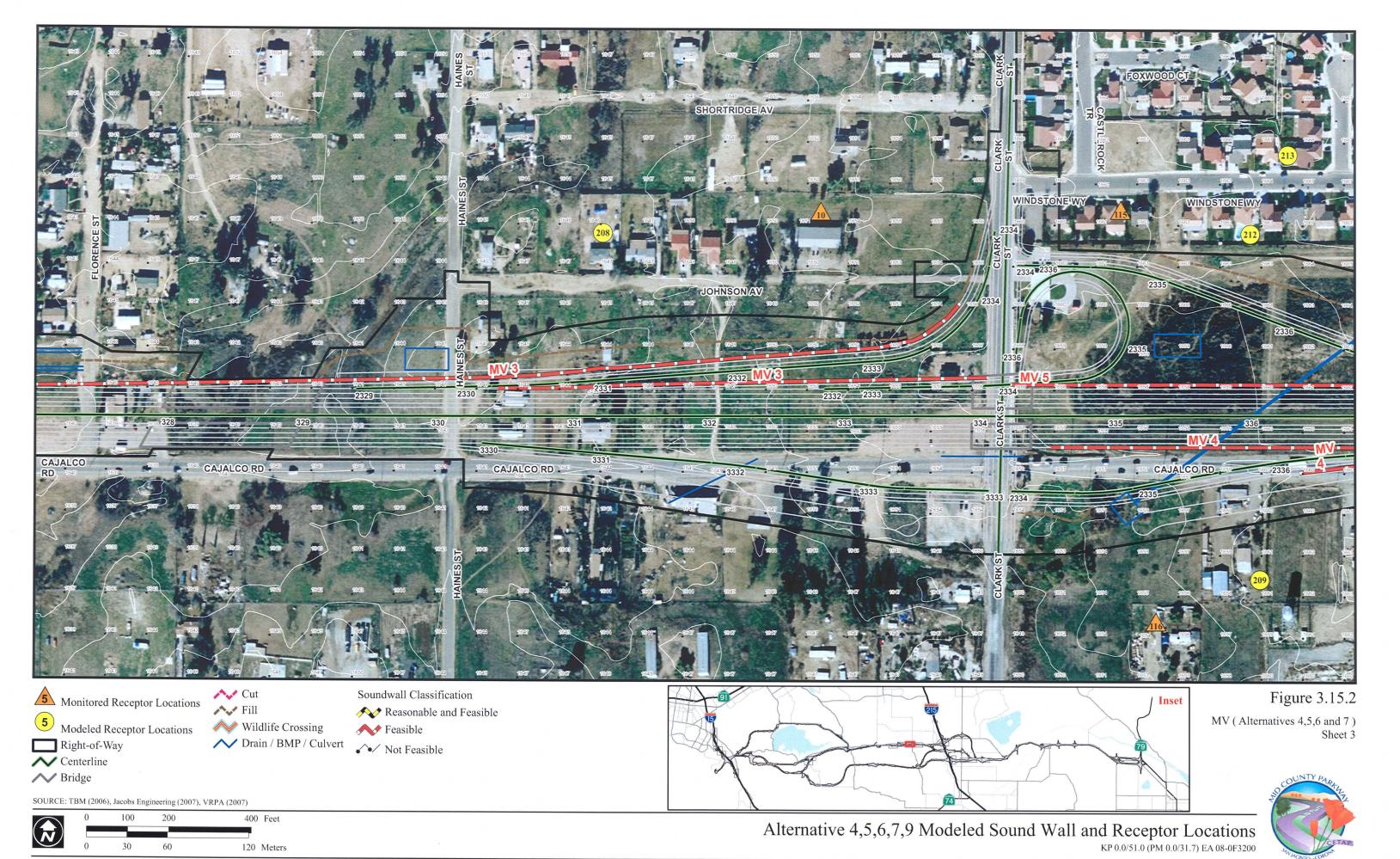


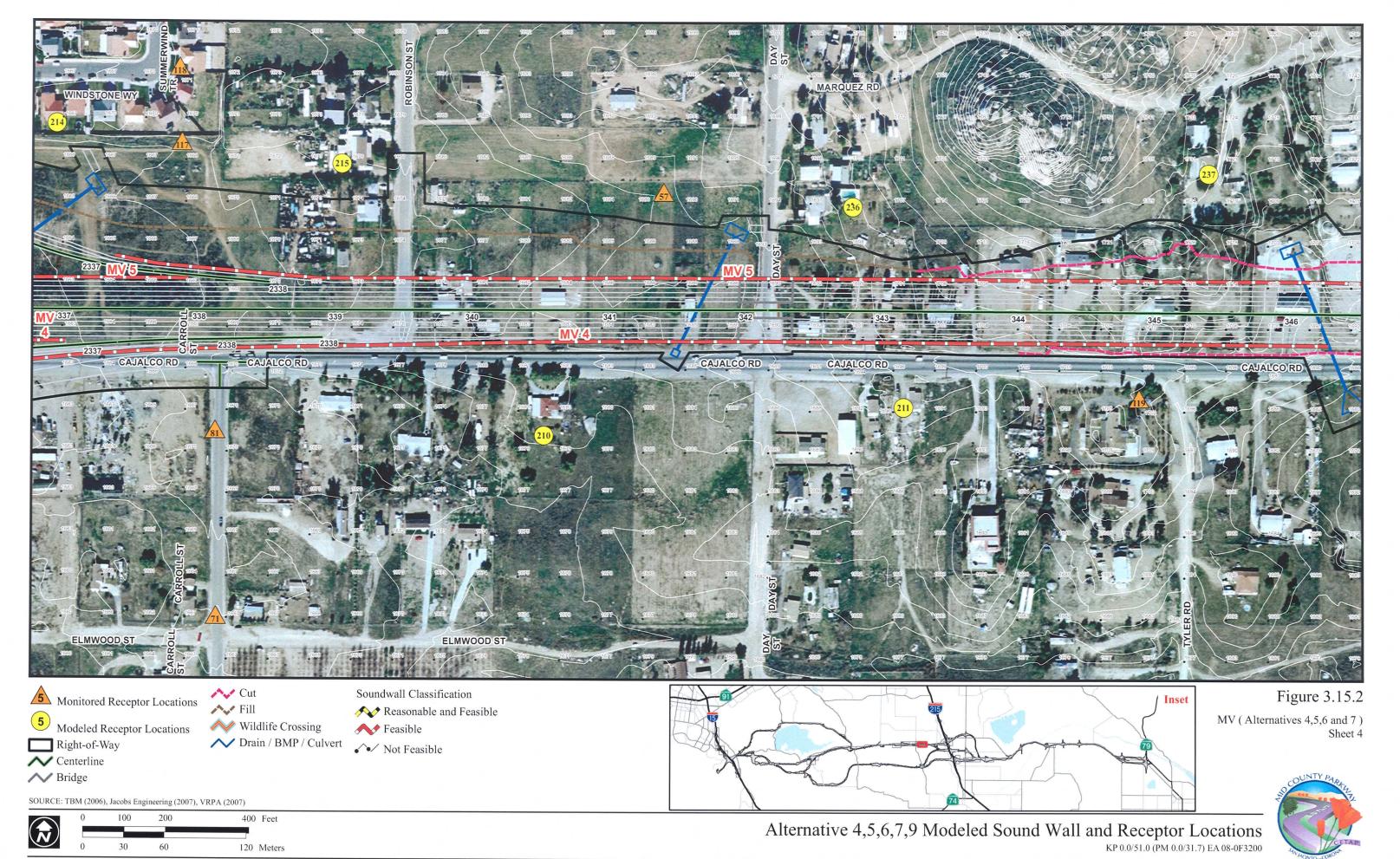
Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Mea	sures
--	-------













400 Feet 120 Meters

Alternative 4,5,6,7,9 Modeled Sound Wall and Receptor Locations KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



SOURCE: TBM (2006), Jacobs Engineering (2007), VRPA (2007)

Bridge

400 Feet 120 Meters

Alternative 4,5,6,7,9 Modeled Sound Wall and Receptor Locations KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



SOURCE: TBM (2006), Jacobs Engineering (2007), VRPA (2007)

Right-of-Way

Centerline Bridge

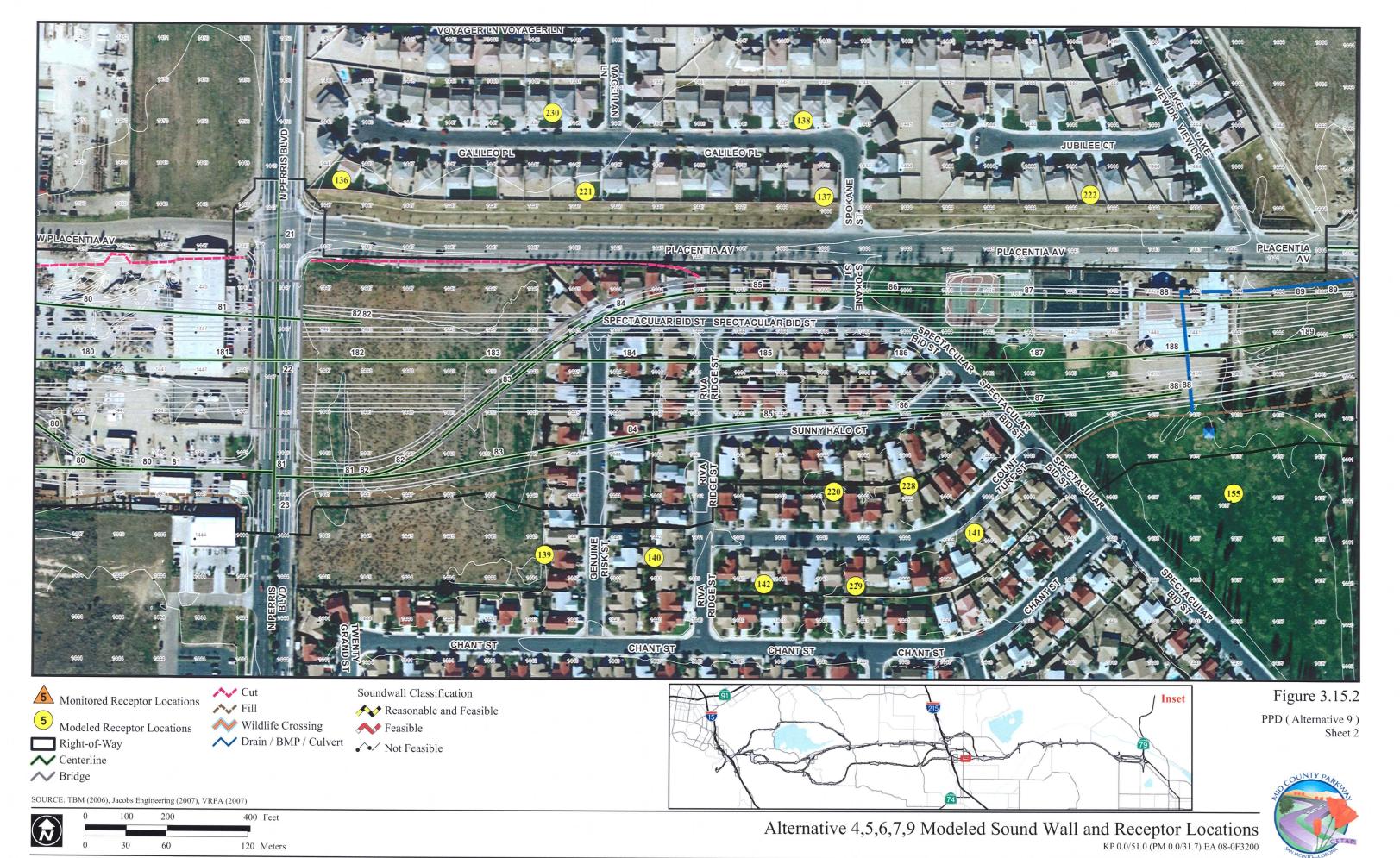
400 Feet 120 Meters

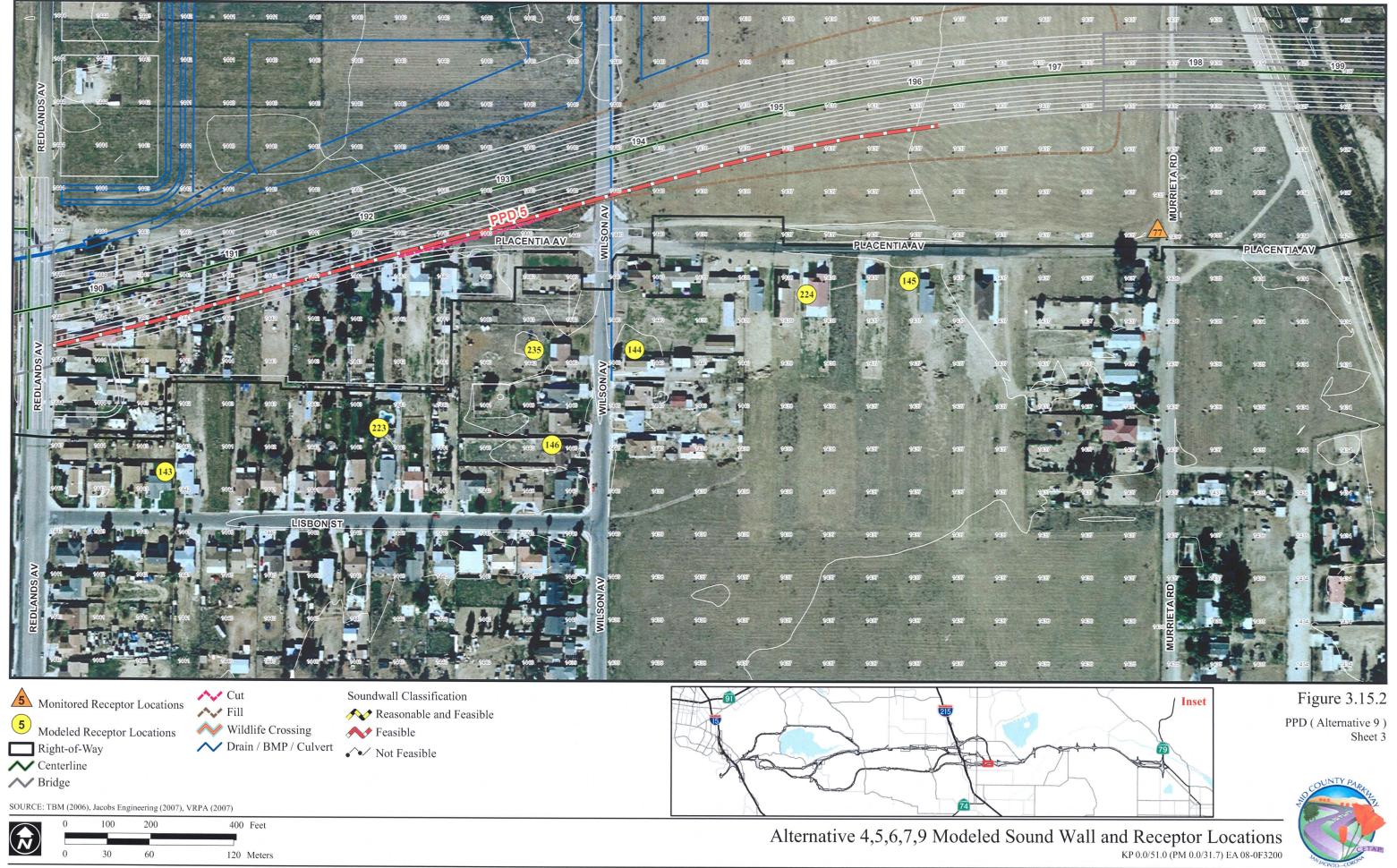
Sheet 1

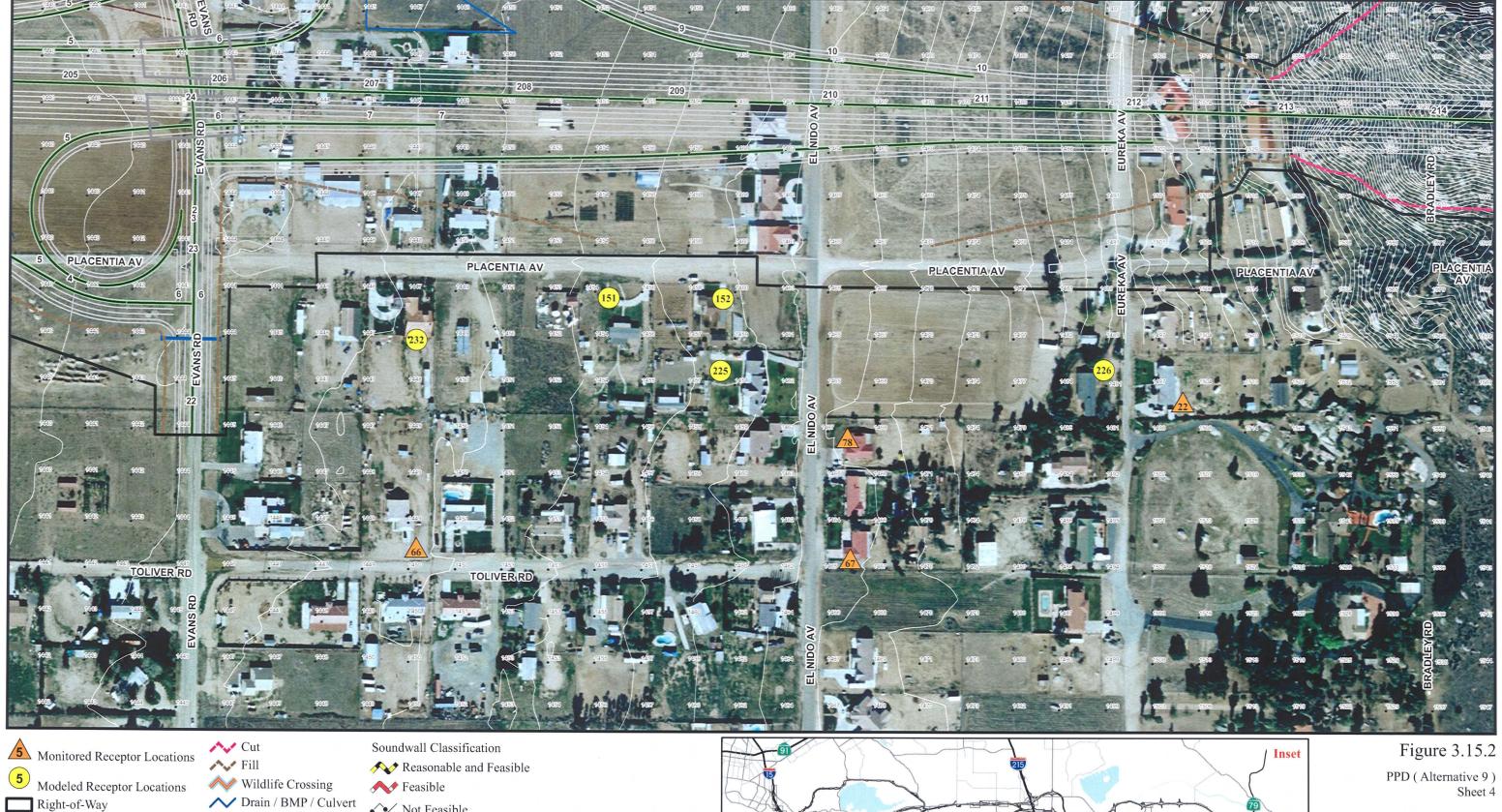


Drain / BMP / Culvert

● Not Feasible







SOURCE: TBM (2006), Jacobs Engineering (2007), VRPA (2007)

✓ Centerline **>>>** Bridge

400 Feet 120 Meters

Sheet 4



✓ Not Feasible



SOURCE: TBM (2006), Jacobs Engineering (2007), VRPA (2007)

Right-of-Way

Centerline Bridge

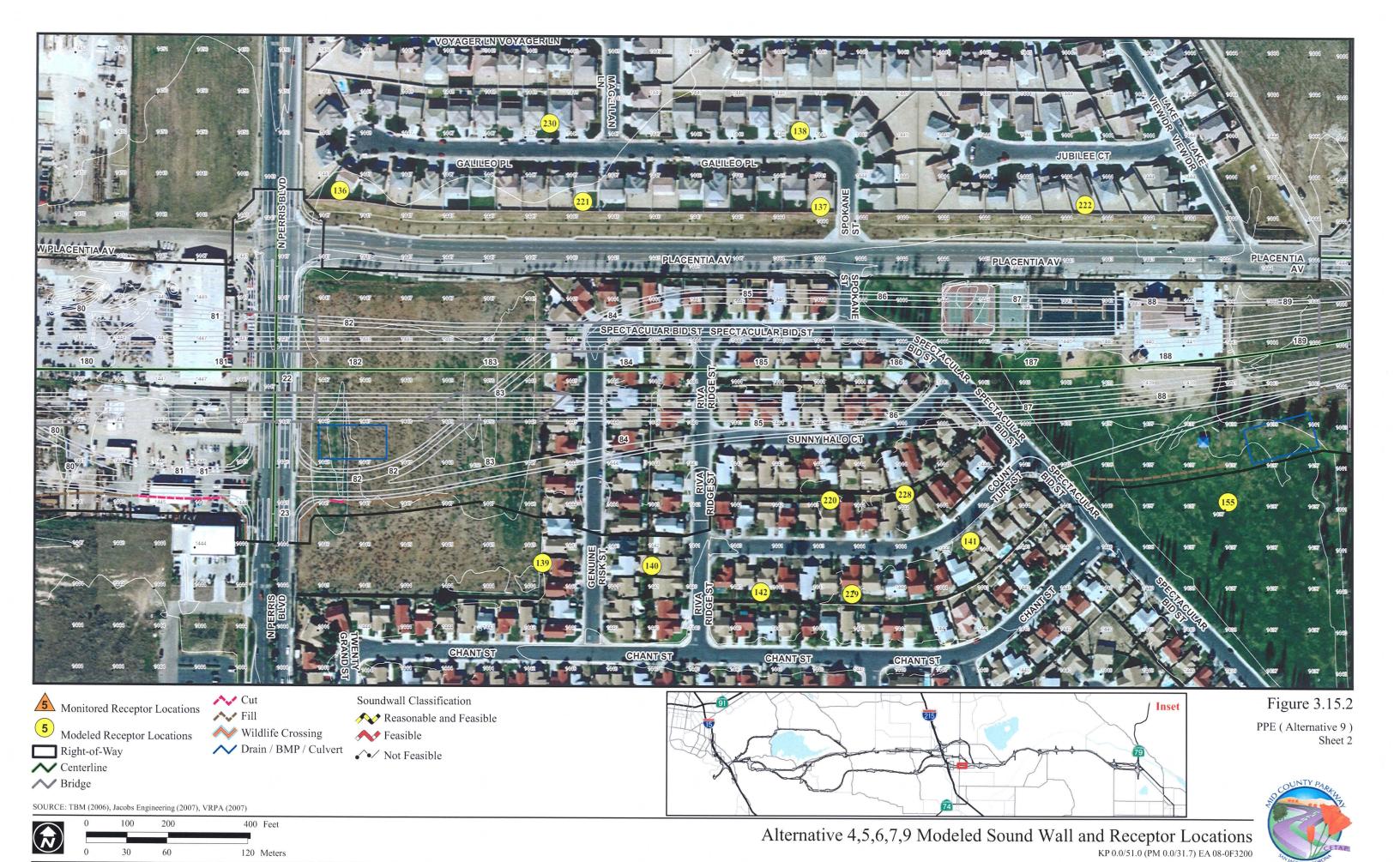
400 Feet 120 Meters

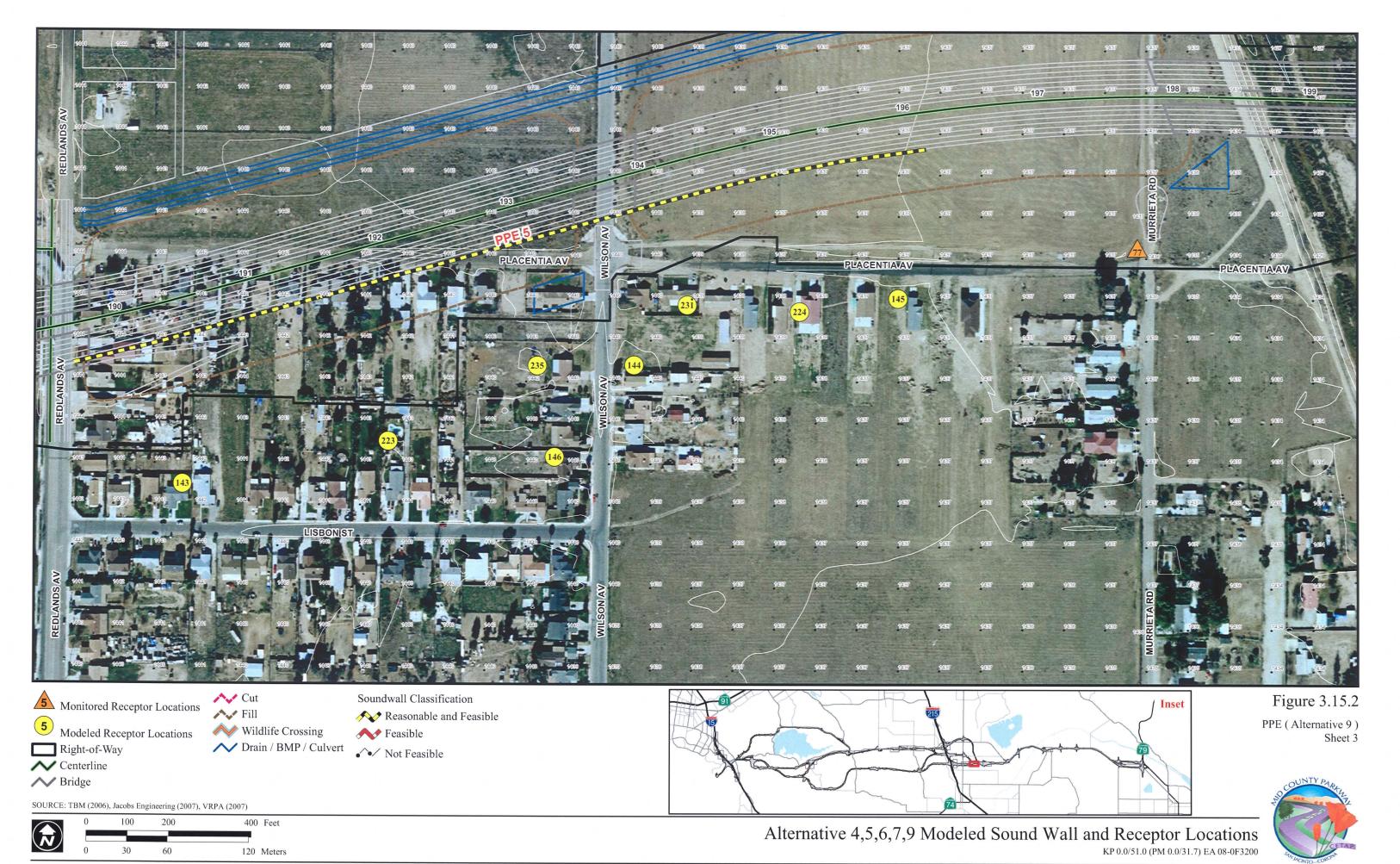
PPE (Alternative 9) Sheet 1

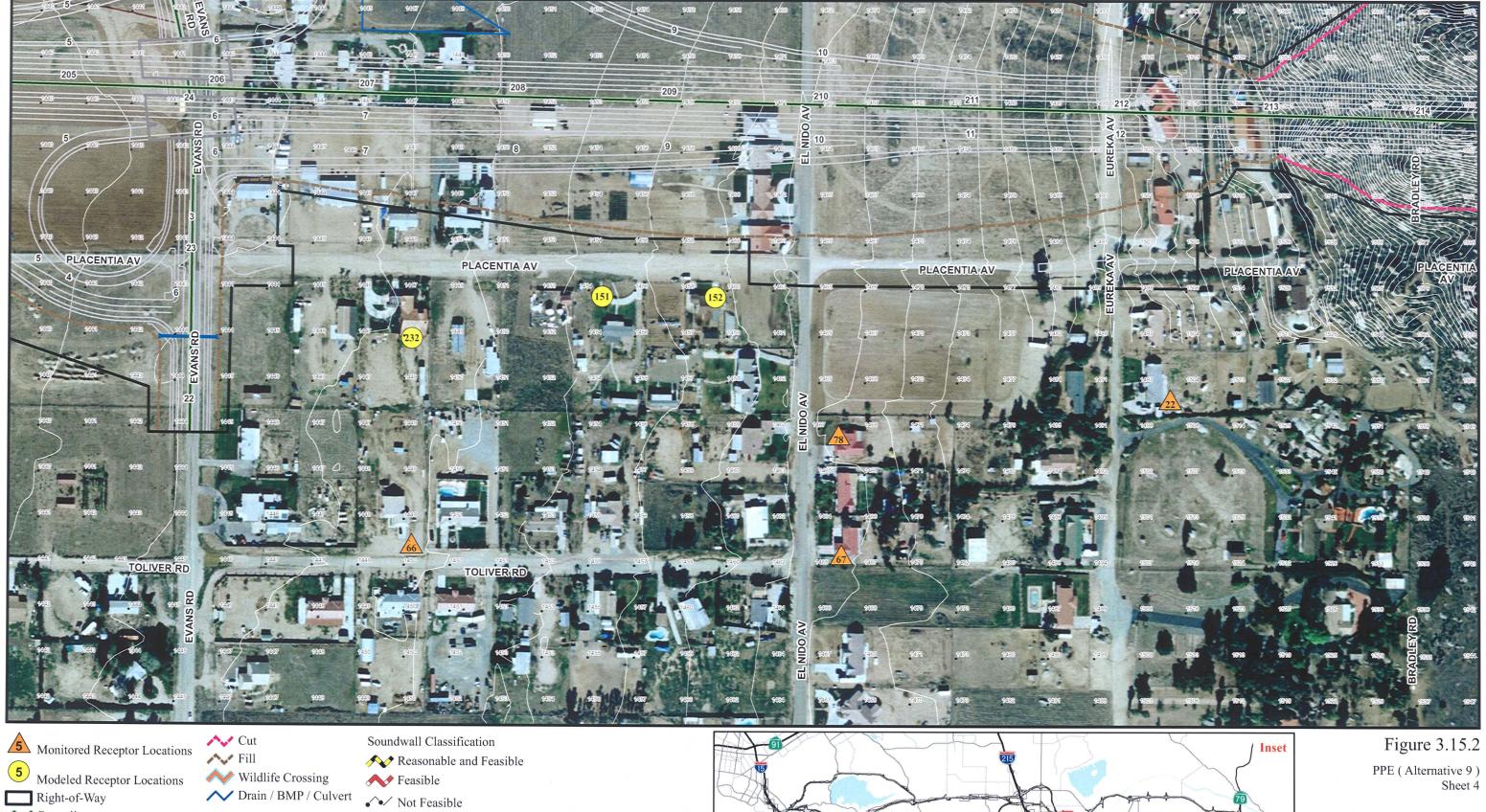


✓ Drain / BMP / Culvert

✓ Not Feasible







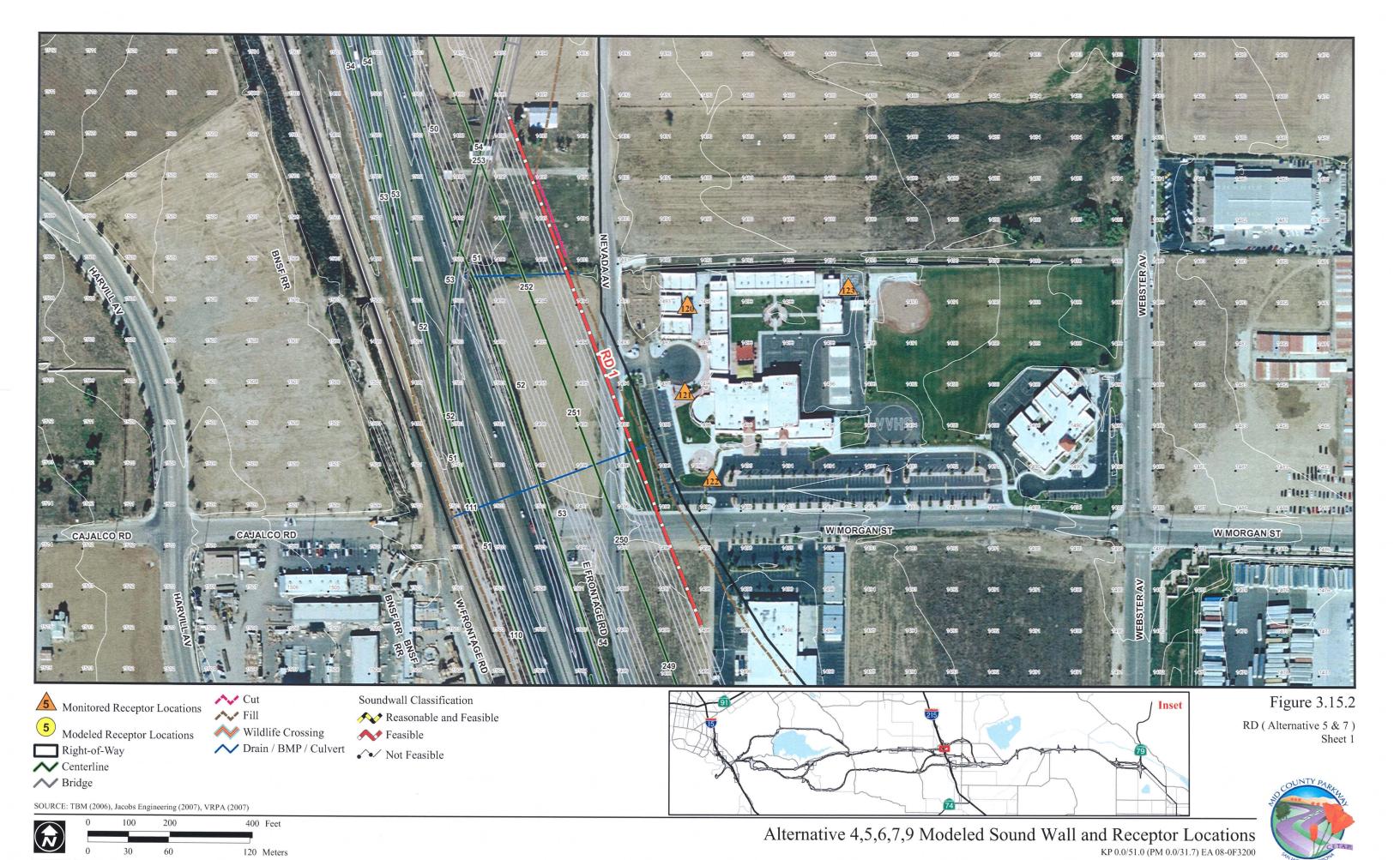
SOURCE: TBM (2006), Jacobs Engineering (2007), VRPA (2007)

Centerline Bridge

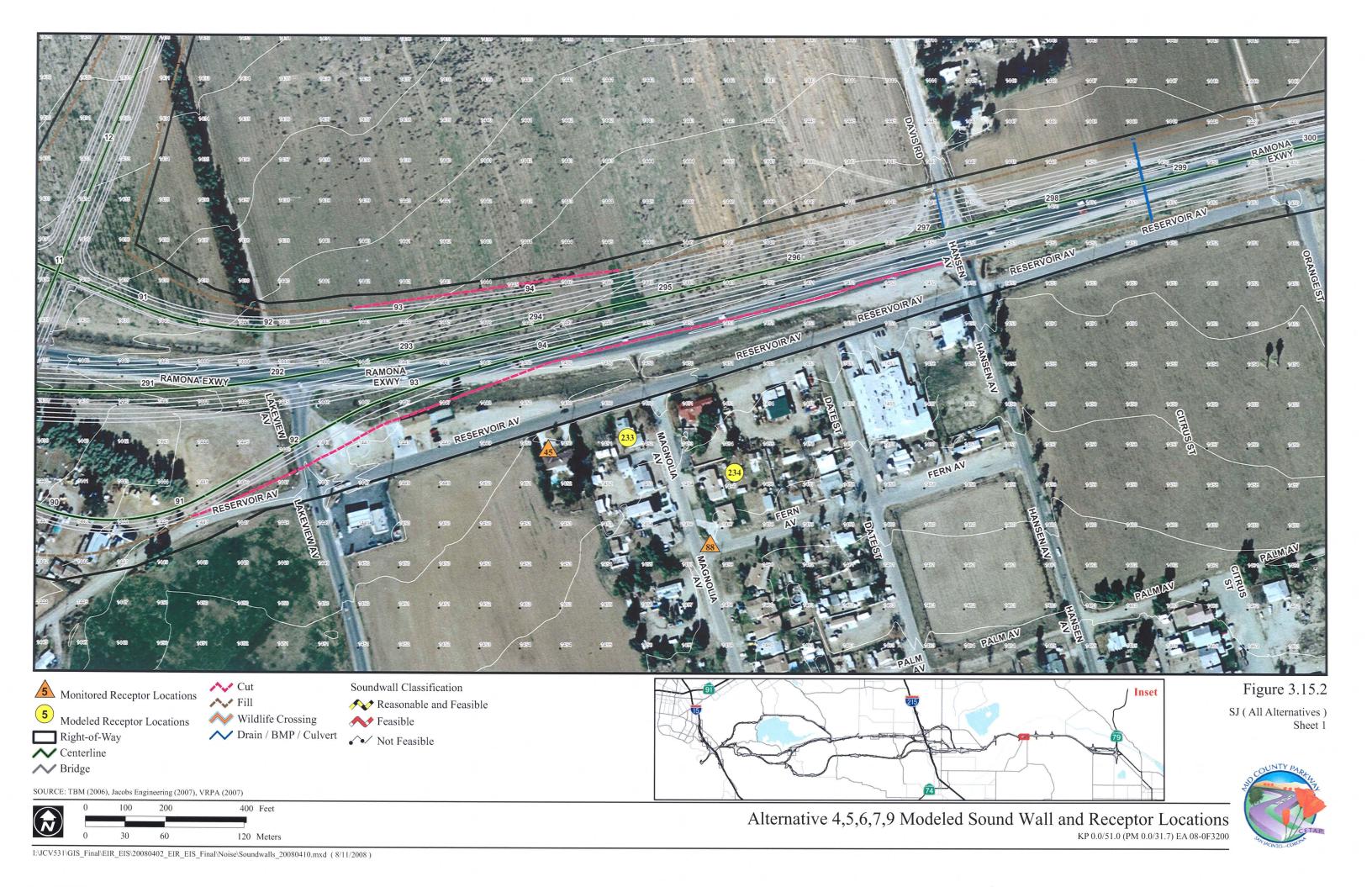
> 400 Feet 120 Meters

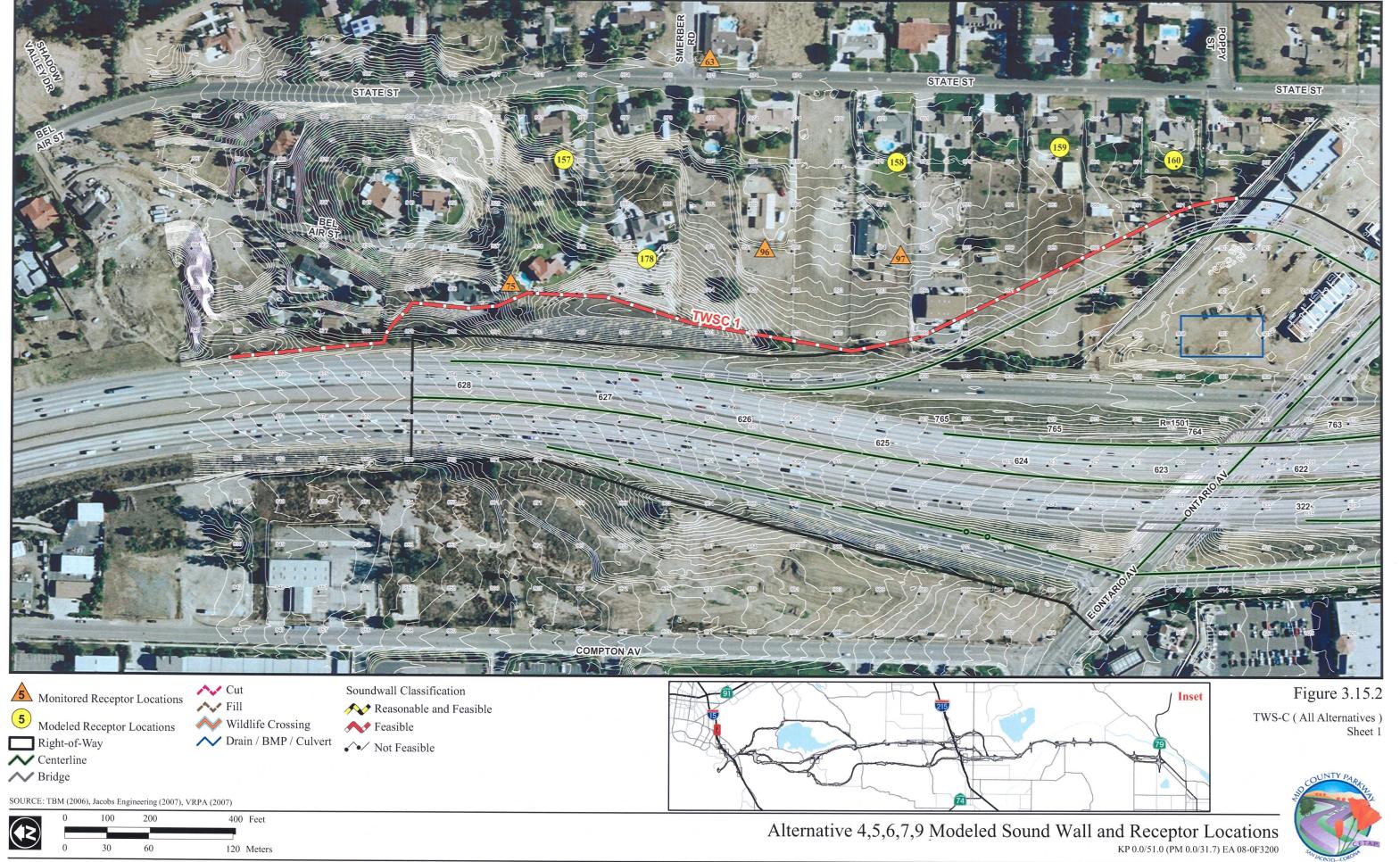
Alternative 4,5,6,7,9 Modeled Sound Wall and Receptor Locations KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Sheet 4

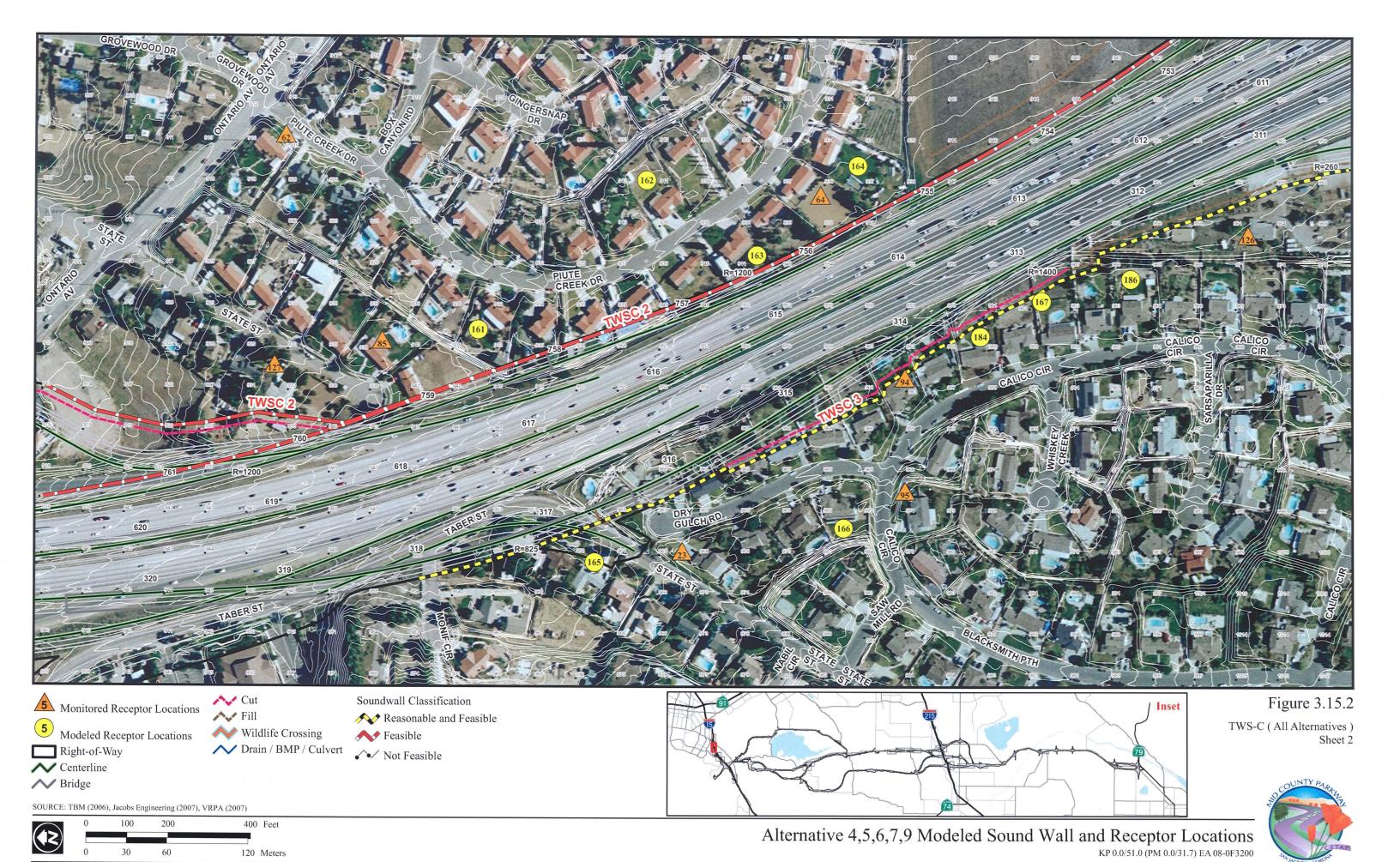


Chapter 3	Affected Environment,	Environmental	Consequences.	and Mitigation	Measures

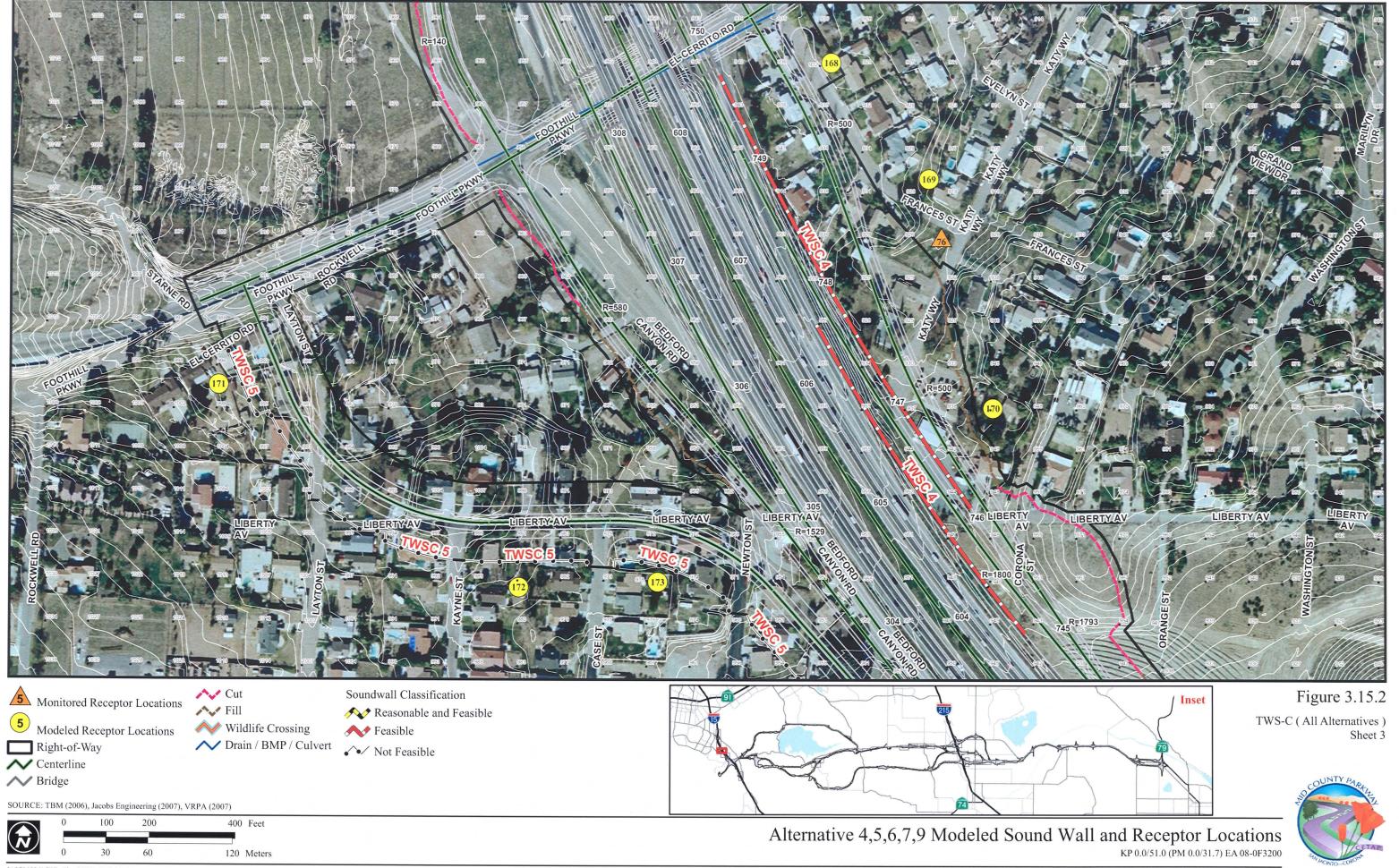




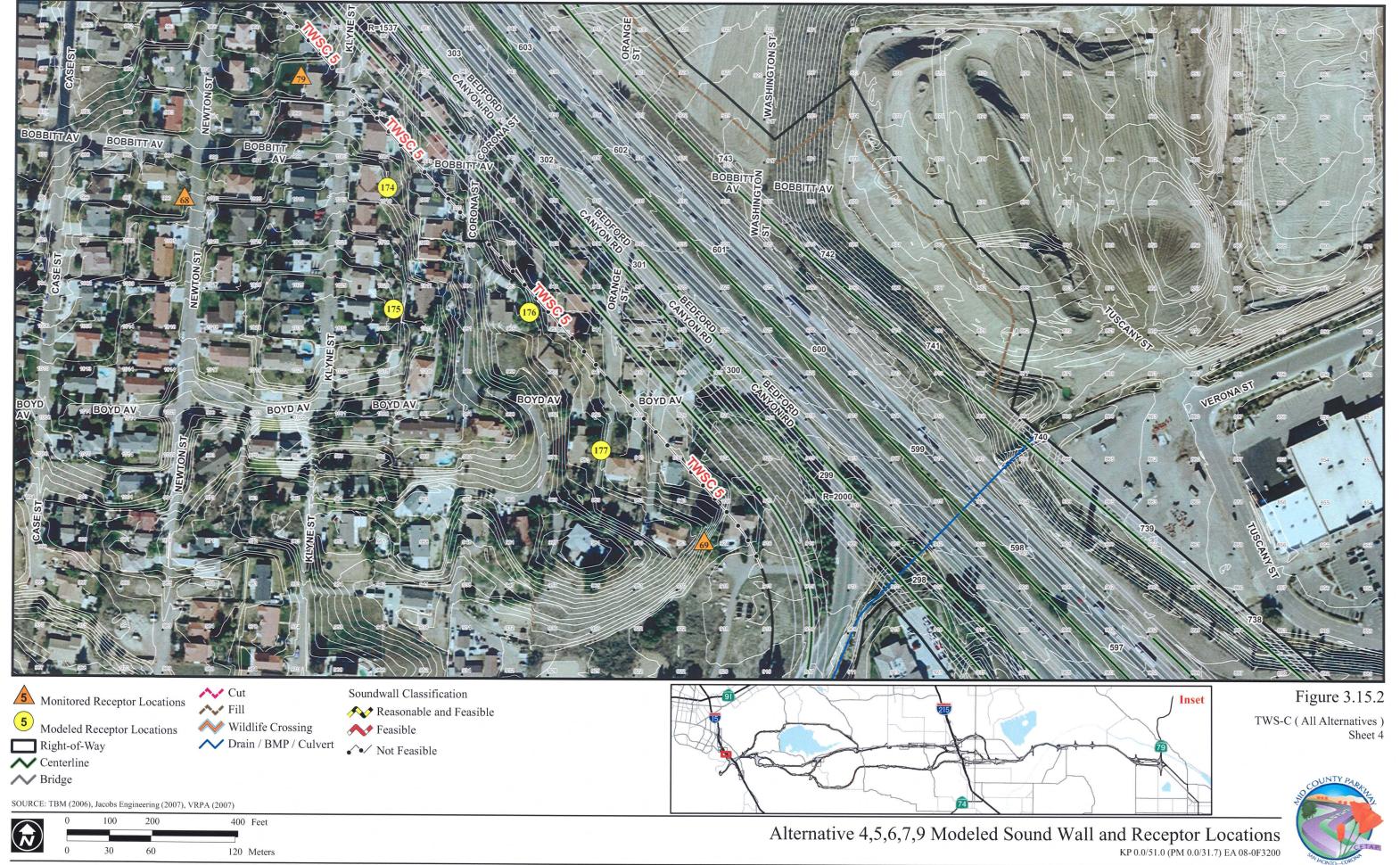
Chapter 3 Affected E	Environment.	Environmental	Consequences,	and Mitigation Measures
----------------------	--------------	---------------	---------------	-------------------------



Chapter 3	Affected	Environment.	Environmental	Consequences.	and Mitigation Measures



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



400 Feet 120 Meters

Alternative 4,5,6,7,9 Modeled Sound Wall and Receptor Locations KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

- TWS 1 A 630 m (2,069 ft) long soundwall was analyzed along the residential property line/freeway right of way on the northbound side of I-15 to protect Receptors 63, 158, 157, 75, 178, 96, and 97. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.
- TWS 2 A 880 m (2,890 ft) long soundwall was analyzed along the freeway edge of shoulder on the northbound side of I-15 to protect Receptors 164, 64, 163, 181, 62, 180, 179, 85, and 127. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.
- TWS 3 A 808 m (2,651 ft) long soundwall was analyzed along the residential property line/freeway right of way on the southbound side of I-15 to protect Receptors 126, 186, 184, 185, 94, 95, 183, 182, 23, and 165. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.
- TWS 4 A 442 m (1,450 ft) long soundwall was analyzed along the freeway edge of shoulder on the northbound side of I-15 to protect Receptors 170, 188, 76, 168, and 187. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.
- TWS 6 A 615 m (2,017 ft) long soundwall was analyzed along the freeway right of way/edge of shoulder on the northbound side of I-15 to protect Receptors 89, 70, 90, 190, and 80. This soundwall applies to Alternatives 4, 5, 6, 7, and 9.
- LMS 2 A 265 m (869 ft) long soundwall was analyzed along the residential property line/right of way on the eastbound side of the MCP project to protect Receptors 98, 99, 61, 100, and 192. This soundwall applies to Alternatives 4 and 5.
- MV 1 A 1,018 m (3,341 ft) long soundwall was analyzed along the freeway edge of shoulder on the eastbound side of the MCP project to protect Receptors 112, 201, 200, 72, 199, 82, and 8. This soundwall applies to Alternatives 4, 5, 6, and 7.
- MV 2 A 985 m (3,229 ft) long soundwall was analyzed along the freeway right of way/edge of shoulder on the eastbound side of the MCP project to protect Receptors 113, 40, 202, 203, 32, 204, and 114. This soundwall applies to Alternatives 4, 5, 6, and 7.
- MV 3 A 2,248 m (7,373 ft) long soundwall was analyzed along the freeway edge of shoulder on the westbound side of the MCP project to protect Receptors 10, 208, 33, 58, 207, 206, 205, and 9. This soundwall applies to Alternatives 4, 5, 6, and 7.
- MV 4 A 1,241 m (4,070 ft) long soundwall was analyzed along the freeway edge of shoulder on the eastbound side of the MCP project to protect Receptors

- 119, 211, 210, 71, 81, 209, and 116. This soundwall applies to Alternatives 4, 5, 6, and 7.
- MV 5 A 1,290 m (4,232 ft) long soundwall was analyzed along the freeway edge of shoulder on the westbound side of the MCP project to protect Receptors 115, 212, 213, 214, 117, 118, 215, 57, 236, and 237. This soundwall applies to Alternatives 4, 5, 6, and 7.
- PD 1 A 428 m (1,405 ft) long soundwall was analyzed along the freeway edge of shoulder on the northbound side of I-215 to protect Receptors 123, 120, 121, and 122. This soundwall applies to Alternatives 4 and 6.
- PD 2 A 827 m (2,713 ft) long soundwall was analyzed along the freeway edge of shoulder on the eastbound side of the MCP project to protect Receptors 218, 22, 217, 78, 67, 216, and 66. This soundwall applies to Alternatives 4 and 6.
- **RD 1** A 403 m (1,321 ft) long soundwall was analyzed along the Val Verde School property line/right of way on the northbound side of I-215 to protect Receptors 120, 121, 122, and 123. This soundwall applies to Alternatives 5, 7, and 9 (Rider Street Design Variation).
- PPD 2 A 584 m (1,916 ft) long soundwall was analyzed along the freeway edge of shoulder on the eastbound side of the MCP project to protect Receptors 153, 131, 130, and 129. This soundwall applies to Alternative 9.
- PPD 5 A 649 m (2,129 ft) long soundwall was analyzed along the freeway edge of shoulder on the eastbound side of the MCP project to protect Receptors 77, 145, 224, 144, 235, 146, 223, and 143. This soundwall applies to Alternative 9.
- PPE 5 A 649 m (2,129 ft) long soundwall was analyzed along the freeway edge of shoulder on the eastbound side of the MCP project to protect Receptors 224, 145, 77, 144, 231, 146, 235, 223, and 143. This soundwall applies to Alternative 9.

Chapter 2 of the *Traffic Noise Analysis Protocol* for New Highway Construction and Reconstruction Projects was used to determine the reasonableness and feasibility of the proposed noise abatement. For the noise abatement to be considered feasible, the noise abatement must provide a minimum of 5 dBA noise reduction at impacted receivers. The feasibility criterion is not necessarily a noise abatement design goal. Greater noise reductions are encouraged if they can be reasonably achieved. The following elements may restrict feasibility:

- Topography
- Access requirements for driveways, ramps, etc.

- Location of local streets in relation to the proposed project
- Other noise sources in the area
- Safety considerations

Table 3.15.G lists the feasible soundwalls and also lists the protected soundwall heights and number of benefited residences. As shown in Table 3.15.G, all of the 18 soundwalls analyzed were determined to be feasible for Alternative 4 as well as all of the 17 soundwalls analyzed for Alternative 5, all of the 17 soundwalls analyzed for Alternative 6, all of the 16 soundwalls analyzed for Alternative 7, and 12 of the 13 soundwalls analyzed for Alternative 9.

Section 2.8.2 of the *Traffic Noise Analysis Protocol* states that a preliminary reasonableness determination of providing noise abatement for exteriors of residential areas in Activity Category B (which includes residential areas) begins with a \$36,000 base allowance (revised from \$15,000 in 2000) per benefited residence and is then modified by the following factors:

- Absolute noise level
- Build versus existing noise levels
- Achievable noise reduction
- New construction or predates 1978
- Total noise abatement allowance versus project cost

Table 3.15.G shows the total allowance and estimated construction cost for each soundwall. Based on the studies prepared for the Draft EIR/EIS, the soundwalls identified in Table 3.15.H for which the cost is less than the allowance have been determined to be both reasonable and feasible. If, during final design, conditions have substantially changed, the soundwall may not be provided. The final decision on soundwalls will be made upon completion of the project design and public involvement processes.

In addition to the residences listed in Table 3.15.G, roadway segments FS (Alternative 9), C1 (Alternatives 5 and 7), C2 (Alternative 9/Rider Street Design Variation), C3 (Alternative 9), SJN (all Build Alternatives), SJS (all Build Alternatives), and RD (Alternatives 5, 7, and 9) are located in rural sections of Riverside County. Residences along these segments are located on large lots separated from each other by large amounts of open space. Sensitive receptors located within 150 to 305 m (500 to 1,000 ft) of the proposed alignments would be potentially

Table 3.15.G Summary of Abatement Key Information

		Height,	Acoustically	Number of	Total	Estimated	Cost Less
Alternative	Barrier	meters	Feasible?	Benefited	Reasonable	Construction	than
		(feet)	reasible:	Residences	Allowance	Cost	Allowance?
4	TWSC 1	2.4 (8)	No	0	\$ -	\$ 1,033,771	No
4	TWSC 1	3.05 (10)	No	0	\$ -	\$ 1,313,750	No
4	TWSC 1	3.7 (12)	No	0	\$ -	\$ 1,593,730	No
4	TWSC 1	4.3 (14)	Yes	2	\$ 96,000	\$ 1,852,173	No
4	TWSC 1	4.9 (16)	Yes	7	\$ 350,000	\$ 2,110,615	No
4	TWSC 2	2.4 (8)	Yes	9	\$ 468,000	\$ 1,698,768	No
4	TWSC 2	3.05 (10)	Yes	14	\$ 756,000	\$ 2,158,851	No
4	TWSC 2	3.7 (12)	Yes	14	\$ 756,000	\$ 2,618,934	No
4	TWSC 2	4.3 (14)	Yes	16	\$ 864,000	\$ 3,043,626	No
4	TWSC 3	2.4 (8)	Yes	16	\$ 992,000	\$ 730,735	Yes
4	TWSC 3	3.05 (10)	Yes	16	\$ 1,024,000	\$ 928,643	Yes
4	TWSC 3	3.7 (12)	Yes	21	\$ 1,344,000	\$ 1,126,551	Yes
4	TWSC 3	4.3 (14)	Yes	21	\$ 1,386,000	\$ 1,309,234	Yes
4	TWSC 3	4.9 (16)	Yes	21	\$ 1,386,000	\$ 1,491,918	No
4	TWSC 4	2.4 (8)	Yes	4	\$ 216,000	\$ 842,451	No
4	TWSC 4	3.05 (10)	Yes	4	\$ 216,000	\$ 1,070,615	No
4	TWSC 4	3.7 (12)	Yes	8	\$ 432,000	\$ 1,298,779	No
4	TWSC 4	4.3 (14)	Yes	11	\$ 594,000	\$ 1,509,391	No
4	TWSC 6	2.4 (8)	Yes	2	\$ 112,000	\$ 723,780	No
4	TWSC 6	3.05 (10)	Yes	2	\$ 112,000	\$ 919,804	No
4	TWSC 6	3.7 (12)	Yes	4	\$ 224,000	\$ 1,115,827	No
4	TWSC 6	4.3 (14)	Yes	7	\$ 406,000	\$ 1,296,772	No
4	TWS 1	2.4 (8)	No	0	\$ -	\$ 596,411	No
4	TWS 1	3.05 (10)	No	0	\$ -	\$ 757,939	No
4	TWS 1	3.7 (12)	Yes	0	\$ -	\$ 919,467	No
4	TWS 1	4.3 (14)	Yes	5	\$ 250,000	\$ 1,068,570	No
4	TWS 1	4.9 (16)	Yes	8	\$ 416,000	\$ 1,217,673	No
4	TWS 2	2.4 (8)	Yes	13	\$ 728,000	\$ 1,192,654	No
4	TWS 2	3.05 (10)	Yes	13	\$ 754,000	\$ 1,515,664	No
4	TWS 2	3.7 (12)	Yes	20	\$ 1,160,000	\$ 1,838,674	No
4	TWS 2	4.3 (14)	Yes	22	\$ 1,276,000	\$ 2,136,838	No
4	TWS 3	2.4 (8)	Yes	24	\$ 1,392,000	\$ 764,206	Yes
4	TWS 3	3.05 (10)	Yes	24	\$ 1,440,000	\$ 971,179	Yes
4	TWS 3	3.7 (12)	Yes	27	\$ 1,674,000	\$ 1,178,151	Yes
4	TWS 3	4.3 (14)	Yes	27	\$ 1,674,000	\$ 1,369,203	Yes
4	TWS 3	4.9 (16)	Yes	27	\$ 1,674,000	\$ 1,560,254	Yes
4	TWS 4	2.4 (8)	Yes	6	\$ 336,000	\$ 598,349	No
4	TWS 4	3.05 (10)	Yes	6	\$ 336,000	\$ 760,402	No
4	TWS 4	3.7 (12)	Yes	6	\$ 348,000	\$ 922,455	No
4	TWS 4	4.3 (14)	Yes	6	\$ 348,000	\$ 1,072,042	No
4	TWS 6	2.4 (8)	Yes	3	\$ 168,000	\$ 832,216	No
4	TWS 6	3.05 (10)	Yes	3	\$ 174,000	\$ 1,057,608	No
4	TWS 6	3.7 (12)	Yes	3	\$ 174,000	\$ 1,283,000	No
4	TWS 6	4.3 (14)	Yes	3	\$ 180,000	\$ 1,491,054	No
4	LMS 2	2.4 (8)	No	0	\$ -	\$ 250,526	No
4	LMS 2	3.05 (10)	Yes	2	\$ 112,000	\$ 318,377	No
4	LMS 2	3.7 (12)	Yes	2	\$ 116,000	\$ 386,228	No
4	LMS 2	4.3 (14)	Yes	2	\$ 116,000		No
4	LMS 2	4.9 (16)	Yes	2	\$ 120,000		No
4	MV 1	2.4 (8)	No	0	\$ -	\$ 1,378,732	No

Table 3.15.G Summary of Abatement Key Information

Alternative	Barrier	Height, meters (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Estimated Construction Cost	Cost Less than Allowance?
4	MV 1	3.05 (10)	Yes	16	\$ 832,000	\$ 1,752,139	No
4	MV 1	3.7 (12)	Yes	17	\$ 864,000	\$ 2,125,546	No
4	MV 1	4.3 (14)	Yes	20	\$ 864,000	\$ 2,470,229	No
4	MV 2	2.4 (8)	No No	0	\$ -	\$ 1,332,677	No
4	MV 2	3.05 (10)	No	0	\$ -	\$ 1,693,610	No
4	MV 2	3.7 (12)	Yes	5	\$ 260,000	\$ 2,054,544	No
4	MV 2	4.3 (14)	Yes	9	\$ 416,000	\$ 2,387,713	No
4	MV 3	2.4 (8)	Yes	2	\$ 104,000		No
4	MV 3	3.05 (10)	Yes	7	\$ 364,000		No
4	MV 3	3.7 (12)	Yes	8	\$ 432,000		No
4	MV 3	4.3 (14)	Yes	14	\$ 756,000		No
4	MV 4	2.4 (8)	Yes	8	\$ 464,000		No
4	MV 4	3.05 (10)	Yes	8	\$ 464,000	\$ 2,134,516	No
4	MV 4	3.7 (12)	Yes	10	\$ 600,000	\$ 2,589,413	No
4	MV 4	4.3 (14)	Yes	10	\$ 600,000	\$ 3,009,318	No
4	MV 5	2.4 (8)	Yes	2	\$ 100,000	\$ 1,746,392	No
4	MV 5	3.05 (10)	Yes	2	\$ 104,000	\$ 2,219,373	No
4	MV 5	3.7 (12)	Yes	2	\$ 104,000	\$ 2,692,354	No
4	MV 5	4.3 (14)	Yes	2	\$ 104,000	\$ 3,128,952	No
4	PD 1	2.4 (8)	Yes	4	\$ 216,000	\$ 579,902	No
4	PD 1	3.05 (10)	Yes	6	\$ 324,000	\$ 736,959	No
4	PD 1	3.7 (12)	Yes	6	\$ 348,000	\$ 894,016	No
4	P D 1	4.3 (14)	Yes	6	\$ 348,000	\$ 1,038,991	No
4	PD 2	2.4 (8)	Yes	12	\$ 648,000	\$ 1,119,402	No
4	PD 2	3.05 (10)	Yes	12	\$ 672,000	\$ 1,422,574	No
4	PD 2	3.7 (12)	Yes	12	\$ 672,000	\$ 1,725,745	No
4	PD 2	4.3 (14)	Yes	12	\$ 672,000	\$ 2,005,596	No
5	TWSC 1	2.4 (8)	No	0	\$ -	\$ 1,033,771	No
5	TWSC 1	3.05 (10)	No	0	\$ -	\$ 1,313,750	No
5	TWSC 1	3.7 (12)	No	0	\$ -	\$ 1,593,730	No
5	TWSC 1	4.3 (14)	Yes	2	\$ 96,000	\$ 1,852,173	No
5	TWSC 1	4.9 (16)	Yes	7	\$ 350,000	\$ 2,110,615	No
5	TWSC 2	2.4 (8)	No	9	\$ 468,000	\$ 1,698,768	No
5	TWSC 2	3.05 (10)	No	14	\$ 756,000	\$ 2,158,851	No
5	TWSC 2	3.7 (12)	Yes	14	\$ 756,000	\$ 2,618,934	No
5	TWSC 2	4.3 (14)	Yes	16	\$ 864,000		No
5	TWSC 3	2.4 (8)	Yes	16	\$ 992,000		Yes
5	TWSC 3	3.05 (10)	Yes	16	\$ 1,024,000		Yes
5	TWSC 3	3.7 (12)	Yes	21	\$ 1,344,000		Yes
5	TWSC 3	4.3 (14)	Yes	21	\$ 1,386,000	\$ 1,309,234	Yes
5	TWSC 3	4.9 (16)	Yes	21	\$ 1,386,000	\$ 1,491,918	No
5	TWSC 4	2.4 (8)	Yes	2	\$ 108,000		No
5	TWSC 4	3.05 (10)	Yes	2	\$ 108,000	\$ 1,070,615	No
5	TWSC 4	3.7 (12)	Yes	4	\$ 108,000	\$ 1,298,779	No
5	TWSC 4	4.3 (14)	Yes	4	\$ 108,000	\$ 1,509,391	No
5	TWSC 6	2.4 (8)	Yes	2	\$ 112,000	\$ 723,780	No
5	TWSC 6	3.05 (10)	Yes	2	\$ 112,000	\$ 919,804	No
5	TWSC 6	3.7 (12)	Yes	4	\$ 224,000	\$ 1,115,827	No
5	TWSC 6	4.3 (14)	Yes	7	\$ 406,000	\$ 1,296,772	No
5	TWS 1	2.4 (8)	No	0	- \$	\$ 596,411	No

Table 3.15.G Summary of Abatement Key Information

		Height,	Acoustically	Number of	Total	Estimated	Cost Less
Alternative	Barrier	meters	Feasible?	Benefited	Reasonable	Construction	than
	TMC 1	(feet)	Ne	Residences	Allowance	Cost	Allowance?
5 5	TWS 1	3.05 (10)	No Yes	0	\$ -	\$ 757,939 \$ 919,467	No
		4.3 (14)		5	\$ -		No
5 5	TWS 1		Yes		\$ 250,000	\$ 1,068,570	No
5	TWS 1	4.9 (16)	Yes	8	\$ 416,000	\$ 1,217,673	No
5	TWS 2	2.4 (8)	Yes	13	\$ 728,000	\$ 1,192,654	No
	TWS 2	3.05 (10)	Yes	13	\$ 754,000	\$ 1,515,664	No
5 5	TWS 2	3.7 (12)	Yes	20	\$ 1,160,000	\$ 1,838,674	No
5 5	TWS 2	4.3 (14) 2.4 (8)	Yes Yes	22 24	\$ 1,276,000	\$ 2,136,838	No Yes
5	TWS 3	3.05 (10)	Yes	24	\$ 1,392,000	\$ 764,206 \$ 971,179	
5	TWS 3	 	Yes		\$ 1,440,000		Yes
5		3.7 (12)		27	\$ 1,674,000	\$ 1,178,151	Yes
5	TWS 3	4.3 (14)	Yes	27	\$ 1,674,000	\$ 1,369,203	Yes
	TWS 3	4.9 (16)	Yes	27	\$ 1,674,000	\$ 1,560,254	Yes
5	TWS 4	2.4 (8)	Yes	6	\$ 336,000	\$ 598,349	No
5	TWS 4	3.05 (10)	Yes	6	\$ 336,000	\$ 760,402	No
5 5	TWS 4	3.7 (12) 4.3 (14)	Yes Yes	6	\$ 348,000 \$ 348.000	\$ 922,455	No
5	TWS 6	2.4 (8)	Yes		, , , , , , , , , , , , , , , , , , , ,	\$ 1,072,042	No
5	TWS 6		Yes	3	\$ 168,000 \$ 174,000	\$ 832,216 \$ 1.057.608	No
5	TWS 6	3.05 (10)	Yes	3			No
	TWS 6	3.7 (12) 4.3 (14)		3	\$ 174,000	\$ 1,283,000	No No
5			Yes		\$ 180,000	\$ 1,491,054	No No
5	LMS 2	2.4 (8)	No	0	\$ -	\$ 358,621	No
5 5	LMS 2	3.05 (10)	Yes Yes	2	\$ 112,000	\$ 455,748	No
5	LMS 2	3.7 (12) 4.3 (14)	Yes	2	\$ 116,000 \$ 116,000	\$ 552,875 \$ 642,530	No No
5	LMS 2	4.9 (16)	Yes	2			No
5	MV 1	2.4 (8)	No	0	\$ 120,000 \$ -	\$ 732,185 \$ 1,378,732	No
5	MV 1	3.05 (10)	Yes	17	\$ 952,000	\$ 1,752,139	No
5	MV 1	3.7 (12)	Yes	17	\$ 952,000	\$ 2,125,546	No
5	MV 1	4.3 (14)	Yes	20	\$ 1,160,000	\$ 2,123,340	No
5	MV 2	2.4 (8)	No	0	\$ 1,100,000	\$ 1,332,677	No
5	MV 2	3.05 (10)	No	0	\$ -	\$ 1,693,610	No
5	MV 2	3.7 (12)	Yes	5	\$ 260,000	\$ 2,054,544	No
5	MV 2	4.3 (14)	Yes	9	\$ 468,000	\$ 2,387,713	No
5	MV 3	2.4 (8)	Yes	2	\$ 104,000	\$ 3,042,835	No
5	MV 3	3.05 (10)	Yes	7	\$ 364,000	\$ 3,866,936	No
5	MV 3	3.7 (12)	Yes	8	\$ 432,000	\$ 4,691,037	No
5	MV 3	4.3 (14)	Yes	14	\$ 756,000	\$ 5,451,746	No
5	MV 4	2.4 (8)	Yes	8	\$ 464,000	\$ 1,679,620	No
5	MV 4	3.05 (10)	Yes	8	\$ 464,000	\$ 2,134,516	No
5	MV 4	3.7 (12)	Yes	10	\$ 600,000	\$ 2,589,413	No
5	MV 4	4.3 (14)	Yes	10	\$ 600,000	\$ 3,009,318	No
5	MV 5	2.4 (8)	No	0	\$ -	\$ 1,746,392	No
5	MV 5	3.05 (10)	Yes	2	\$ 104,000	\$ 2,219,373	No
5	MV 5	3.7 (12)	Yes	3	\$ 156,000	\$ 2,692,354	No
5	MV 5	4.3 (14)	Yes	3	\$ 156,000	\$ 3,128,952	No
5	RD 1	2.4 (8)	No	4	\$ 224,000	\$ 545,319	No
5	RD 1	3.05 (10)	Yes	6	\$ 348,000	\$ 693,010	No
5	RD 1	3.7 (12)	Yes	6	\$ 360,000	\$ 840,700	No
5	RD 1	4.3 (14)	Yes	6	\$ 360,000	\$ 977,030	No

Table 3.15.G Summary of Abatement Key Information

		Height,	Acoustically	Number of	Total	Estimated	Cost Less
Alternative	Barrier	meters	Feasible?	Benefited	Reasonable	Construction	than
		(feet)		Residences	Allowance	Cost	Allowance?
6	TWSC 1	2.4 (8)	No	0	\$ -	\$ 1,033,771	No
6	TWSC 1	3.05 (10)	No	0	\$ -	\$ 1,313,750	No
6	TWSC 1	3.7 (12)	No	0	\$ -	\$ 1,593,730	No
6	TWSC 1	4.3 (14)	No	0	\$ -	\$ 1,852,173	No
6	TWSC 1	4.9 (16)	Yes	4	\$ 192,000	\$ 2,110,615	No
6	TWSC 2	2.4 (8)	Yes	4	\$ 200,000	\$ 1,698,768	No
6	TWSC 2	3.05 (10)	Yes	11	\$ 572,000	\$ 2,158,851	No
6	TWSC 2	3.7 (12)	Yes	13	\$ 676,000	\$ 2,618,934	No
6	TWSC 2	4.3 (14)	Yes	16	\$ 832,000	\$ 3,043,626	No
6	TWSC 3	2.4 (8)	Yes	16	\$ 992,000	\$ 730,735	Yes
6	TWSC 3	3.05 (10)	Yes	21	\$ 1,344,000	\$ 928,643	Yes
6	TWSC 3	3.7 (12)	Yes	21	\$ 1,344,000	\$ 1,126,551	Yes
6	TWSC 3	4.3 (14)	Yes	21	\$ 1,386,000	\$ 1,309,234	Yes
6	TWSC 3	4.9 (16)	Yes	23	\$ 1,518,000	\$ 1,491,918	Yes
6	TWSC 4	2.4 (8)	Yes	2	\$ 104,000	\$ 842,451	No
6	TWSC 4	3.05 (10)	Yes	2	\$ 104,000	\$ 1,070,615	No
6	TWSC 4	3.7 (12)	Yes	2	\$ 104,000	\$ 1,298,779	No
6	TWSC 4	4.3 (14)	Yes	4	\$ 208,000	\$ 1,509,391	No
6	TWSC 6	2.4 (8)	No	2	\$ 112,000	\$ 723,780	No
6	TWSC 6	3.05 (10)	No	2	\$ 112,000	\$ 919,804	No
6	TWSC 6	3.7 (12)	Yes	4	\$ 232,000	\$ 1,115,827	No
6	TWSC 6	4.3 (14)	Yes	7	\$ 406,000	\$ 1,296,772	No
6	TWS 1	2.4 (8)	No	0	\$ -	\$ 596,411	No
6	TWS 1	3.05 (10)	No	0	\$ -	\$ 757,939	No ·
6	TWS 1	3.7 (12)	No	0	\$ -	\$ 919,467	No
6	TWS 1	4.3 (14)	Yes	5	\$ 250,000	\$ 1,068,570	No
6	TWS 1	4.9 (16)	Yes	8	\$ 416,000	\$ 1,217,673	No
6	TWS 2	2.4 (8)	Yes	13	\$ 728,000	\$ 1,192,654	No
6	TWS 2	3.05 (10)	Yes	13	\$ 754,000	\$ 1,515,664	No
6	TWS 2	3.7 (12)	Yes	20	\$ 1,160,000	\$ 1,838,674	No
6	TWS 2	4.3 (14)	Yes	22	\$ 1,276,000	\$ 2,136,838	No
6	TWS 3	2.4 (8)	Yes	24	\$ 1,392,000	\$ 764,206	Yes
6	TWS 3	3.05 (10)	Yes	24	\$ 1,440,000	\$ 971,179	Yes
6	TWS 3	3.7 (12)	Yes	27	\$ 1,674,000	\$ 1,178,151	Yes
6	TWS 3	4.3 (14)	Yes	27	\$ 1,674,000	\$ 1,369,203	Yes
6	TWS 3	4.9 (16)	Yes	27	\$ 1,674,000	\$ 1,560,254	Yes
6	TWS 4	2.4 (8)	Yes	6	\$ 336,000	\$ 598,349	No
6	TWS 4	3.05 (10)	Yes	6	\$ 336,000	\$ 760,402	No
6	TWS 4	3.7 (12)	Yes	6	\$ 348,000	\$ 922,455	No
6	TWS 4	4.3 (14)	Yes	6	\$ 348,000	\$ 1,072,042	No
6	TWS 6	2.4 (8)	Yes	3	\$ 168,000	\$ 832,216	No
6	TWS 6	3.05 (10)	Yes	3	\$ 174,000	\$ 1,057,608	No
6	TWS 6	3.7 (12)	Yes	3	\$ 174,000	\$ 1,283,000	No
6	TWS 6	4.3 (14)	Yes	3	\$ 180,000	\$ 1,491,054	No
6	MV 1	2.4 (8)	No	0	\$ -	\$ 1,378,732	No
6	MV 1	3.05 (10)	Yes	16	\$ 864,000	\$ 1,752,139	No
6	MV 1	3.7 (12)	Yes	16	\$ 896,000		No
6	MV 1	4.3 (14)	Yes	16	\$ 896,000		No
6	MV 2	2.4 (8)	No	0	\$ -	\$ 1,332,677	No
6	MV 2	3.05 (10)	Yes	4	\$ 200,000		No

Table 3.15.G Summary of Abatement Key Information

	ŀ	Height,	Acoustically	Number of	Total	Estimated	Cost Less
Alternative	Barrier	meters	Feasible?	Benefited	Reasonable	Construction	than
		(feet)	reasible:	Residences	Allowance	Cost	Allowance?
6	MV 2	3.7 (12)	Yes	4	\$ 208,000	\$ 2,054,544	No
6	MV 2	4.3 (14)	Yes	8	\$ 416,000	\$ 2,387,713	No
6	MV 3	2.4 (8)	Yes	1	\$ 52,000	\$ 3,042,835	No
6	MV 3	3.05 (10)	Yes	2	\$ 104,000	\$ 3,866,936	No
6	MV 3	3.7 (12)	Yes	8	\$ 432,000	\$ 4,691,037	No
6	MV 3	4.3 (14)	Yes	8	\$ 432,000	\$ 5,451,746	No
6	MV 4	2.4 (8)	Yes	8	\$ 464,000	\$ 1,679,620	No
6	MV 4	3.05 (10)	Yes	8	\$ 464,000	\$ 2,134,516	No
6	MV 4	3.7 (12)	Yes	10	\$ 600,000	\$ 2,589,413	No
6	MV 4	4.3 (14)	Yes	10	\$ 620,000	\$ 3,009,318	No
6	MV 5	2.4 (8)	Yes	1	\$ 50,000	\$ 1,746,392	No
6	MV 5	3.05 (10)	Yes	2	\$ 104,000	\$ 2,219,373	No
6	MV 5	3.7 (12)	Yes	2	\$ 104,000	\$ 2,692,354	No
6	MV 5	4.3 (14)	Yes	2	\$ 104,000	\$ 3,128,952	No
6	PD 1	2.4 (8)	Yes	4	\$ 216,000	\$ 579,902	No
6	PD 1	3.05 (10)	Yes	6	\$ 324,000	\$ 736,959	No
6	PD 1	3.7 (12)	Yes	6	\$ 348,000	\$ 894,016	No
6	PD 1	4.3 (14)	Yes	6	\$ 348,000	\$ 1,038,991	No
6	PD 2	2.4 (8)	Yes	12	\$ 600,000	\$ 1,119,402	No
6	PD 2	3.05 (10)	Yes	12	\$ 624,000	\$ 1,422,574	No
6	PD 2	3.7 (12)	Yes	12	\$ 648,000	\$ 1,725,745	No
6	PD 2	4.3 (14)	Yes	12	\$ 648,000	\$ 2,005,596	No
7	TWSC 1	2.4 (8)	No	0	\$ -	\$ 1,033,771	No
7	TWSC 1	3.05 (10)	No	0	\$ -	\$ 1,313,750	No
7	TWSC 1	3.7 (12)	No	0	\$ -	\$ 1,593,730	No
7	TWSC 1	4.3 (14)	No	0	\$ -	\$ 1,852,173	No
7	TWSC 1	4.9 (16)	Yes	4	\$ 192,000	\$ 2,110,615	No
7	TWSC 2	2.4 (8)	Yes	4	\$ 200,000	\$ 1,698,768	No
7	TWSC 2	3.05 (10)	Yes	11	\$ 572,000	\$ 2,158,851	No
7	TWSC 2	3.7 (12)	Yes	13	\$ 676,000	\$ 2,618,934	No
7	TWSC 2	4.3 (14)	Yes	16	\$ 832,000	\$ 3,043,626	No
7	TWSC 3	2.4 (8)	Yes	16	\$ 992,000	\$ 730,735	Yes
7	TWSC 3	3.05 (10)	Yes	21	\$ 1,344,000	\$ 928,643	Yes
7	TWSC 3	3.7 (12)	Yes	21	\$ 1,344,000	\$ 1,126,551	Yes
7	TWSC 3	4.3 (14)	Yes	21	\$ 1,386,000	\$ 1,309,234	Yes
7	TWSC 3	4.9 (16)	Yes	23	\$ 1,518,000		Yes
7	TWSC 4	2.4 (8)	Yes	2	\$ 104,000	\$ 842,451	No
7	TWSC 4	3.05 (10)	Yes	2	\$ 104,000	\$ 1,070,615	No
7	TWSC 4	3.7 (12)	Yes	2	\$ 104,000	\$ 1,298,779	No
7	TWSC 4	4.3 (14)	Yes	4	\$ 208,000	\$ 1,509,391	No
7	TWSC 6	2.4 (8)	No	2	\$ 112,000	\$ 723,780	No
7	TWSC 6	3.05 (10)	No	2	\$ 112,000	\$ 919,804	No
7	TWSC 6	3.7 (12)	Yes	4	\$ 232,000	\$ 1,115,827	No
7	TWSC 6	4.3 (14)	Yes	7	\$ 406,000	\$ 1,296,772	No
7	TWS 1	2.4 (8)	No	0	\$ -	\$ 596,411	No
7	TWS 1	3.05 (10)	No	0	\$ -	\$ 757,939	No
7	TWS 1	3.7 (12)	No	0	\$ -	\$ 919,467	No
7	TWS 1	4.3 (14)	Yes	5	\$ 250,000	\$ 1,068,570	No
7	TWS 1	4.9 (16)	Yes	8	\$ 230,000	\$ 1,217,673	No
7	TWS 2	2.4 (8)	Yes	13	\$ 728,000	\$ 1,192,654	No
	10002	2.4 (0)	100	10	Ψ 120,000	ψ 1,132,034	140

Table 3.15.G Summary of Abatement Key Information

		Height,	Acoustically	Number of	Total	Estimated	Cost Less
Alternative	Barrier	meters	Feasible?	Benefited	Reasonable	Construction	than
		(feet)	i casible:	Residences	Allowance	Cost	Allowance?
7	TWS 2	3.05 (10)	Yes	13	\$ 754,000	\$ 1,515,664	No
7	TWS 2	3.7 (12)	Yes	20	\$ 1,160,000	\$ 1,838,674	No
7	TWS 2	4.3 (14)	Yes	22	\$ 1,276,000	\$ 2,136,838	No
7	TWS 3	2.4 (8)	Yes	24	\$ 1,392,000	\$ 764,206	Yes
7	TWS 3	3.05 (10)	Yes	24	\$ 1,440,000	\$ 971,179	Yes
7	TWS 3	3.7 (12)	Yes	27	\$ 1,674,000	\$ 1,178,151	Yes
7	TWS 3	4.3 (14)	Yes	27	\$ 1,674,000	\$ 1,369,203	Yes
7	TWS 3	4.9 (16)	Yes	27	\$ 1,674,000	\$ 1,560,254	Yes
7	TWS 4	2.4 (8)	Yes	6	\$ 336,000	\$ 598,349	No
7	TWS 4	3.05 (10)	Yes	6	\$ 336,000	\$ 760,402	No
7	TWS 4	3.7 (12)	Yes	6	\$ 348,000	\$ 922,455	No
7	TWS 4	4.3 (14)	Yes	6	\$ 348,000	\$ 1,072,042	No
7	TWS 6	2.4 (8)	Yes	3	\$ 168,000	\$ 832,216	No
7	TWS 6	3.05 (10)	Yes	3	\$ 174,000	\$ 1,057,608	No
7	TWS 6	3.7 (12)	Yes	3	\$ 174,000	\$ 1,283,000	No
7	TWS 6	4.3 (14)	Yes	3	\$ 180,000	\$ 1,491,054	No
. 7	MV 1	2.4 (8)	No	0	\$ -	\$ 1,378,732	No
7	MV 1	3.05 (10)	Yes	13	\$ 702,000	\$ 1,752,139	No
7	MV 1	3.7 (12)	Yes	13	\$ 728,000	\$ 2,125,546	No
7	MV 1	4.3 (14)	Yes	13	\$ 728,000	\$ 2,470,229	No
7	MV 2	2.4 (8)	No	0	\$ -	\$ 1,332,677	No
7	MV 2	3.05 (10)	No	4	\$ 200,000	\$ 1,693,610	No
7	MV 2	3.7 (12)	Yes	4	\$ 200,000	\$ 2,054,544	No
7	MV 2	4.3 (14)	Yes	8	\$ 400,000	\$ 2,387,713	No
7 7	MV 3	2.4 (8)	Yes	0	\$ -	\$ 3,042,835	No
7	MV 3	3.05 (10)	Yes	4	\$ 200,000	\$ 3,866,936	No
7	MV 3 MV 3	3.7 (12) 4.3 (14)	Yes	8	\$ 200,000	\$ 4,691,037	No
7	MV 4	, , , , , ,	Yes	8	\$ 400,000	\$ 5,451,746	No
7	MV 4	2.4 (8)	Yes	8	\$ 464,000	\$ 1,679,620	No
7	MV 4	3.05 (10) 3.7 (12)	Yes Yes	10	\$ 464,000 \$ 600,000	\$ 2,134,516 \$ 2,589,413	No No
7	MV 4	4.3 (14)	Yes	11	\$ 600,000 \$ 660,000	\$ 2,589,413 \$ 3,009,318	No
7	MV 5	2.4 (8)	No	0	\$ 000,000	\$ 1,746,392	No
7	MV 5	3.05 (10)	Yes	2	\$ 104,000	\$ 2,219,373	No
7	MV 5	3.7 (12)	Yes	2	\$ 104,000	\$ 2,692,354	No
7	MV 5	4.3 (14)	Yes	2	\$ 104,000	\$ 3,128,952	No
7	RD 1	2.4 (8)	Yes	4	\$ 224,000	\$ 545,319	No
7	RD 1	3.05 (10)	Yes	6	\$ 336,000	\$ 693,010	No
7	RD 1	3.7 (12)	Yes	6	\$ 336,000	\$ 840,700	No
7	RD 1	4.3 (14)	Yes	6	\$ 348,000	\$ 977,030	No
9	TWSC 1	2.4 (8)	No	0	\$ -	\$ 1,033,771	No
9	TWSC 1	3.05 (10)	No	0	\$ -	\$ 1,313,750	No
9	TWSC 1	3.7 (12)	No	0	\$ -	\$ 1,593,730	No
9	TWSC 1	4.3 (14)	Yes	2	\$ 96,000	\$ 1,852,173	No
9	TWSC 1	4.9 (16)	Yes	7	\$ 350,000	\$ 2,110,615	No
9	TWSC 2	2.4 (8)	Yes	9	\$ 468,000	\$ 1,698,768	No
9	TWSC 2	3.05 (10)	Yes	14	\$ 756,000	\$ 2,158,851	No
9	TWSC 2	3.7 (12)	Yes	14	\$ 756,000		No
9	TWSC 2	4.3 (14)	Yes	16	\$ 864,000		No
9	TWSC 3	2.4 (8)	Yes	16	\$ 992,000	\$ 730,735	Yes

Table 3.15.G Summary of Abatement Key Information

Alternative	Barrier	Height, meters (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Estimated Construction Cost	Cost Less than Allowance?
9	TWSC 3	3.05 (10)	Yes	16	\$ 1,024,000	\$ 928,643	Yes
9	TWSC 3	3.7 (12)	Yes	21	\$ 1,344,000	\$ 1,126,551	Yes
9	TWSC 3	4.3 (14)	Yes	21	\$ 1,386,000	\$ 1,309,234	Yes
9	TWSC 3	4.9 (16)	Yes	21	\$ 1,386,000	\$ 1,491,918	No
9	TWSC 4	2.4 (8)	Yes	4	\$ 216,000	\$ 842,451	No
9	TWSC 4	3.05 (10)	Yes	4	\$ 216,000	\$ 1,070,615	No
9	TWSC 4	3.7 (12)	Yes	8	\$ 432,000	\$ 1,298,779	No
9	TWSC 4	4.3 (14)	Yes	11	\$ 594,000	\$ 1,509,391	No
9	TWSC 6	2.4 (8)	Yes	2	\$ 112,000	\$ 723,780	No
9	TWSC 6	3.05 (10)	Yes	2	\$ 112,000	\$ 919,804	No
9	TWSC 6	3.7 (12)	Yes	4	\$ 224,000	\$ 1,115,827	No
9	TWSC 6	4.3 (14)	Yes	7	\$ 406,000	\$ 1,296,772	No
9	TWS 1	2.4 (8)	No	0	\$ -	\$ 596,411	No
9	TWS 1	3.05 (10)	No	0	\$ -	\$ 757,939	No
9	TWS 1	3.7 (12)	Yes	0	\$ -	\$ 919,467	No
9	TWS 1	4.3 (14)	Yes	5	\$ 250,000	\$ 1,068,570	No
9	TWS 1	4.9 (16)	Yes	8	\$ 416,000	\$ 1,217,673	No
9	TWS 2	2.4 (8)	Yes	13	\$ 728,000	\$ 1,192,654	No
9	TWS 2	3.05 (10)	Yes	13	\$ 754,000	\$ 1,515,664	No
9	TWS 2	3.7 (12)	Yes	20	\$ 1,160,000	\$ 1,838,674	No
9	TWS 2	4.3 (14)	Yes	22	\$ 1,276,000	\$ 2,136,838	No
9	TWS 3	2.4 (8)	Yes	24	\$ 1,392,000	\$ 764,206	Yes
9	TWS 3	3.05 (10)	Yes	24	\$ 1,440,000	\$ 971,179	Yes
9	TWS 3	3.7 (12)	Yes	27	\$ 1,674,000	\$ 1,178,151	Yes
9	TWS 3	4.3 (14)	Yes	27	\$ 1,674,000	\$ 1,369,203	Yes
9	TWS 3	4.9 (16)	Yes	27	\$ 1,674,000	\$ 1,560,254	Yes
9	TWS 4	2.4 (8)	Yes	6	\$ 336,000	\$ 598,349	No
9	TWS 4	3.05 (10)	Yes	6	\$ 336,000	\$ 760,402	No
9	TWS 4	3.7 (12)	Yes	6	\$ 348,000	\$ 922,455	No
9	TWS 4	4.3 (14)	Yes	6	\$ 348,000	\$ 1,072,042	No
9	TWS 6	2.4 (8)	Yes	3	\$ 168,000	\$ 832,216	No
9	TWS 6	3.05 (10)	Yes	3	\$ 174,000	\$ 1,057,608	No
9	TWS 6	3.7 (12)	Yes	3	\$ 174,000	\$ 1,283,000	No
9	TWS 6	4.3 (14)	Yes	3	\$ 180,000	\$ 1,491,054	No
9	PPD 2	2.4 (8)	No	0	\$ -	\$ 790,659	No
9	PPD 2	3.05 (10)	No	0	\$ -	\$ 1,004,796	No
9	PPD 2	3.7 (12)	No	0	\$ -	\$ 1,218,933	No
9	PPD 2	4.3 (14)	No	0	\$ -	\$ 1,416,598	No
9	PPD 5	2.4 (8)	Yes	7	\$ 364,000	\$ 878,602	No
9	PPD 5	3.05 (10)	Yes	7	\$ 364,000	\$ 1,116,557	No
9	PPD 5	3.7 (12)	Yes	13	\$ 702,000	\$ 1,354,511	No
9	PPD 5	4.3 (14)	Yes	17	\$ 918,000	\$ 1,574,162	No
9	PPE 5	2.4 (8)	Yes	9	\$ 486,000	\$ 878,602	No
9	PPE 5	3.05 (10)	Yes	23	\$ 1,288,000		Yes
9	PPE 5	3.7 (12)	Yes	27	\$ 1,512,000		Yes
9	PPE 5	4.3 (14)	Yes	27	\$ 1,512,000	\$ 1,574,162	No

9 | PPE 5 | 4.3 (14) | Yes | 2 Source: Mid County Parkway Noise Study Report, VRPA, 2008.

Table 3.15.H Feasible and Reasonable Sound Barriers

Alternative	Sound Barrier No.	Height, meters (feet)	Approximate Length, meters (feet)	Side of Freeway	Number of Residences ¹	Cost	
		2.4 (8)	773 (2535)	West	16	\$	730,735
4,5,6,7,9	TWSC 3	3.05 (10)	773 (2535)	West	16	\$	928,643
4,5,6,7,9		3.7 (12)	773 (2535)	West	21	\$	1,126,551
		4.3 (14)	773 (2535)	West	21	\$	1,309,234
	TWS 3	2.4 (8)	808 (2651)	West	24	\$	1,296,000
		3.05 (10)	808 (2651)	West	24	\$	1,344,000
4,5,6,7,9		3.7 (12)	808 (2651)	West	27	\$	1,566,000
		4.3 (14)	808 (2651)	West	27	\$	1,566,00 0
		4.9 (16)	808 (2651)	West	27	\$	1,620,000
9	PPE 5	3.05 (10)	649 (2129)	South	23	\$	1,116,557
9		3.7 (12)	649 (2129)	South	27	\$	1,354,51 1

Source: Mid County Parkway Noise Study Report, VRPA, 2008.

NOTE: Recommended soundwall heights have been bolded and italicized in the table and are discussed in the report.

exposed to noise levels exceeding the federal NAC or a substantial noise increase (12 dBA or more) above the existing ambient noise level. However, the sensitive receptors located along these roadway segments would not qualify for federal noise abatement measures, such as sound walls, due to the high cost per benefited residence. Therefore, the existing sensitive land uses along these segments would potentially be exposed to unavoidable adverse noise impacts. Should the project be constructed, noise abatement measures will be evaluated during final project design to verify whether noise abatement (either exterior or interior) is feasible and reasonable.

The preliminary noise abatement decision presented in this section is 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 pertinent parameters change substantially during the final project design, the preliminary noise abatement decision may be changed or eliminated from the final project design. A final decision to construct noise abatement will be made upon completion of the project design.

"Severe" noise impacts on receptor locations 23, 75, 174, 182, 183, 185, and 190 are included in previous Table 3.15.D with an asterisk. Receptor 23 is reduced in the future build scenarios with insertion of Soundwalls TWSC 3 (Alternatives 4, 5, 6, 7, and 9) and TWS 3 (Design Variation). Receptor 174 is reduced in the future build scenarios with insertion of Soundwalls TWSC 5 (Alternatives 4, 5, 6, 7, and 9) and

Number of residences that are attenuated by 5 dBA (A-weighted decibels) or more by the modeled sound barrier.

TWS 5 (Design Variation). Receptors 182, 183, and 185 are reduced in the future build scenarios with insertion of Soundwall TWS 3 (Design Variation). Receptor 75 is reduced in the future build scenarios with insertion of Soundwalls TWSC 1 (Alternatives 4, 5, 6, 7, and 9) and TWS 1 (Design Variation). Receptor 190 is reduced in the future build scenarios with insertion of Soundwalls TWSC 6 (Alternatives 4, 5, 6, 7, and 9) and TWS 6 (Design Variation). As most of the soundwalls for Alternatives 4, 5, 6, 7, and 9 were determined to be not reasonable, receptors behind these modeled sound barriers would experience a severe traffic noise impact of 75 dBA L_{eq} or higher. Therefore, a site insulation analysis is required prior to final design for each individual property. This analysis will be only conducted if FHWA agrees to fund noise insulations for each of the affected properties.

3.15.4.2 Temporary Impacts

To minimize the construction noise impact for sensitive land uses adjacent to the project site, construction noise is regulated by Caltrans' Standard Specifications, Section 5-1, "Sound Control Requirements," in the Standard Special Provisions. These provisions are:

"Sound control shall conform to the provisions in Section 7-1.01I (Sound Control Requirements) of the Standard Specifications and these special provisions. The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dBA at a distance of 15 m (50 ft). This requirement in no way relieves the contractor from responsibility for complying with local ordinances regulating nose level. The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixer or transient equipment that may or may not be owned by the contractor. The use of loud signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel. Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional cost will be allowed therefore."



3.16 Energy

3.16.1 Regulatory Setting

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.

The National Environmental Policy Act (NEPA) (42 USC Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

3.16.2 Affected Environment

Consumptive uses of energy in the Southern California Association of Governments (SCAG) region are summarized in Table 3.16.A for the years indicated. These data are the most recent available in each case and are therefore the most representative of current conditions.

Transportation (i.e., the movement of people and goods from place to place) is an important end use of energy in California, accounting for approximately 35 percent of total statewide energy consumption in 2004. Nonrenewable energy products derived from crude oil (e.g., gasoline, diesel, kerosene, and residual fuel) provide most of the energy consumed for transportation purposes by on-road motor vehicles (i.e., automobiles and trucks), locomotives, aircraft, and ships. In addition, energy is consumed in connection with construction and maintenance of transportation infrastructure, such as streets, highways, freeways, locomotives, and airport runways. Trends in transportation-related technology foretell increased use of electricity and natural gas in transportation vehicles.

Retrieved October 6, 2005, from the California Energy Commission Web site: http://www.energy.ca.gov/html/calif_energy_facts.html.

Table 3.16.A Annual Transportation Energy Consumption in the SCAG Region for Base (Years as Indicated)

NOTE: As of the base year, electricity does not supply a substantial portion of transportation energy needs in the SCAG region.

Category	Fuel Type	Year	Consumption	Units	
Motor Vehicles	Gasoline/Diesel	1997	6,091,080	thousand gallons	
	Natural Gas	2000	33	million therms	
on Btu basis:					
Motor Vehicles	Gasoline/Diesel	1997	852,751,179	million Btu	
	Natural Gas	2000	3,300,000	million Btu	

Sources:

- 1. California Energy Commission (June 2000). California energy demand 2000–2010. Sacramento, CA.
- 2. Southern California Association of Governments (2001). 2001 regional transportation plan update. Los Angeles.
- 3. Southern California Association of Governments (n.d.). A century of growth: Regional population 1900–2000. Retrieved August 11, 2003, from http://www.scag.ca.gov/census/pdf/regionweb.pdf.
- United States Army Corps of Engineers (February 28, 2002). Civil works program statistics (Information Paper CECW-ZD). Washington, D.C.
- 5. United States Bureau of the Census.
- United States Department of Energy, Energy Information Administration. (n.d.). Table 13: Adjusted sales of distillate fuel oil by energy use in the United States: 1997–2001. Retrieved August 11, 2003, from http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/fuel_oil_and_kerosene_sales/current/pdf/table13. pdf.
- United States Department of Energy, Energy Information Administration. (n.d.). Table 14: Adjusted sales of residual fuel oil by energy use in the United States: 1997–2001. Retrieved August 11, 2003, from http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/fuel_oil_and_kerosene_sales/current/pdf/table14.pdf

Btu = British thermal units SCAG = Southern California Association of Governments

Transportation energy is derived from a wide variety of petroleum products. Automobiles and trucks consume gasoline and diesel fuel. The transportation sector consumes relatively minor amounts of natural gas or electricity but, propelled mainly by air quality laws and regulations, technological innovations in transportation are expected to increasingly rely on compressed natural gas and electricity as energy sources. Biodiesel, which is derived from plant sources such as used vegetable oils, is a small but growing source of transportation fuel. Vehicles powered by fuels other than gasoline or diesel are referred to as "alternative fuel vehicles."

Energy consumption by on-road motor vehicles reflects the types and numbers of vehicles, the extent of their use (typically described in terms of vehicle miles traveled), and their fuel economy (typically described in terms of miles per gallon). Trends in energy consumption by on-road motor vehicles generally follow trends in population and per capita income as well as trends in land use development patterns. For example, diffuse land use development patterns can result in an imbalance between jobs and housing, which can lead to longer average commute trips.

3.16.3 Environmental Consequences

3.16.3.1 Methodology

This energy analysis is based on Caltrans Standard Environmental Reference Volume 1, Chapter 13 – Energy, updated November 2007. The energy analysis addresses two elements: direct and indirect energy consumption. Direct energy refers to the fuel consumed by vehicles using the highway facility. Indirect energy refers to energy associated with the construction and operation of the facility.

Direct transportation energy consumption was estimated for 2035 using the EMFAC2007 air quality model, which provides estimated gasoline and diesel fuel consumption for the MCP Build Alternatives. Estimated energy consumption in 2035 is expected to represent the most conservative (i.e., highest) energy consumption because population and employment are projected to be higher in this year than in any earlier year. Also, no estimate is made of the impact of energy efficiency and conservation measures that are likely to be adopted and that would result in lower energy consumption than projected in these estimates.

Implementation of the MCP project would affect the use of indirect energy resources in the Riverside County and SCAG regions. The analysis of these impacts is at the regional level and is therefore, by its nature an analysis of cumulative impacts. Three main areas of impact have been identified: (1) energy demands for construction; (2) energy demands for operation of the regional transportation system as of 2035; and (3) the cumulative impacts of the growing energy demand associated with implementation of the MCP project.

3.16.3.2 Permanent Impacts

Build Alternatives

Local energy demand for transportation projects typically is dominated by vehicle fuel usage. For this type of project, it is assumed that the energy consumption by vehicles is much larger than the incremental change in electrical energy consumption for any additional lighting (i.e., roadway lighting), which is expected to be minimal. Therefore, energy used from lighting would not have an impact on the environment.

As shown in the air quality and traffic analyses of this EIR/EIS (Sections 3.14 and 3.6, respectively), construction of the MCP Build Alternatives would alter the traffic flow within both the MCP study area and the SCAG region. Based on the traffic analysis, the MCP project would increase the vehicle miles traveled within the MCP study area, but would improve the traffic flow by increasing the average vehicle

speed. The enhanced traffic flow conditions would minimize vehicle delay and improve vehicle fuel efficiency. Table 3.16.B lists the daily fuel consumption and fuel costs associated with the vehicle trips for each MCP Build Alternative within the MCP study area. Table 3.16.C lists the daily fuel consumption and fuel costs associated with the vehicle trips for each Alternative within the SCAG region.

Table 3.16.B MCP Study Area Daily Fuel Consumption Comparison

Alternative	VMT	VHT	Average Speed	Fuel Consumption (gallons)	Fuel Cost ¹	Percent Increase from No Build
Existing	12,828,292	334,587	38.34	538,000	\$1,880,000	N/A
2035 No Build	22,577,345	599,279	37.67	1,020,000	\$3,560,000	N/A
2035 Alternative 4	23,550,661	603,277	39.04	1,060,000	\$3,730,000	3.922%
2035 Alternative 5	23,261,864	604,107	38.51	1,050,000	\$3,670,000	2.941%
2035 Alternative 6	23,451,322	602,708	38.91	1,060,000	\$3,700,000	3.922%
2035 Alternative 7	23,403,563	603,840	38.76	1,060,000	\$3,700,000	3.922%
2035 Alternative 9	23,474,202	604,627	38.82	1,060,000	\$3,720,000	3.922%

Source: VRPA and LSA Associates, Inc., 2007.

Fuel cost was calculated using a cost of \$3.50 per gallon.

MCP = Mid County Parkway

N/A = Not Applicable

VMT = Vehicle Miles Traveled

VHT = Vehicle Hours Traveled

Table 3.16.C SCAG Region Daily Fuel Consumption Comparison

Alternative	VMT	VHT	Average Speed	Gas Consumption (gallons)	Fuel Cost ¹	Percent Increase from No Build
Existing	376,374,763	10,477,332	35.92	16,710,000	\$58,500,000	N/A
2035 No Build	512,366,927	14,342,464	35.72	23,880,000	\$83,600,000	N/A
2035 Alternative 4	512,625,177	14,344,138	35.74	23,890,000	\$83,600,000	0.042%
2035 Alternative 5	512,533,278	14,351,890	35.71	23,890,000	\$83,600,000	0.042%
2035 Alternative 6	512,491,053	14,338,511	35.74	23,880,000	\$83,600,000	0.000%
2035 Alternative 7	512,514,690	14,347,638	35.72	23,890,000	\$83,600,000	0.042%
2035 Alternative 9	512,517,922	14,338,916	35.74	23,880,000	\$83,600,000	0.000%

Source: VRPA and LSA Associates, Inc., 2007.

Fuel cost was calculated using a cost of \$3.50 per gallon.

N/A = Not Applicable

SCAG = Southern California Association of Governments

VMT = Vehicle Miles Traveled

VHT = Vehicle Hours Traveled

As shown in Table 3.16.B, implementation of the MCP Build Alternatives would result in a increase in fuel consumption (i.e., up to a 3.9 percent increase) within the MCP study area. As shown in Table 3.16.C, within the SCAG region, the proposed MCP project's increase in fuel consumption would be negligible (i.e., an increase of 0.04 percent or less depending upon the alternative). Therefore, implementation of



any of the MCP Build Alternatives would not result in a substantial increase in fuel consumption.

The average increase in speeds for all the alternatives, including the MCP No Build Alternatives, is small; however, these average speeds are measured over the entire MCP study area and include hundreds of miles of roadways, causing the small increase to be substantial for key roadways.

Under the MCP No Build Alternatives, the permanent effects on energy consumption discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but these permanent energy consumption effects would occur for the other transportation improvement projects included in the No Build Alternatives.

Discussion of Impacts Relative to MSHCP Amendment

The EIR/EIS for the Multiple Species Habitat Conservation Plan (MSHCP) found that direct and indirect impacts on sensitive vegetation communities and covered species, including species and habitats associated with wetlands and other waters, are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340-hectare (500,000-acre) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 Temescal Wash Area Design Variation (TWS DV), which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV.





The analysis in the MSHCP EIR/EIS included consideration of the potential impacts on energy. The MSHCP EIR/EIS concluded that implementation of the MSHCP would not result in impacts related to energy because the MSHCP would neither require energy nor decrease the potential for energy conservation elsewhere. Based on the analysis of impacts of the MCP related to energy discussed above in this document, the impacts of the MCP would not affect the conclusions of the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not change the findings of the MSHCP EIR/EIS related to energy.

3.16.3.3 Temporary Impacts

Build Alternatives

The construction of the proposed MCP project would likely involve the use of diesel-powered heavy equipment, portable diesel generators, and other battery-operated support equipment, as well as electricity from the existing grid. There would be an irreversible impact from the consumption of diesel fuel (and other fuels) related to these construction activities. However, similar to other recently completed major construction projects in southern California, it is unlikely that the increased energy demands of construction of the proposed MCP project would create a noticeable impact to regional energy consumption.

No Build Alternatives

Under the MCP No Build Alternatives, the temporary energy consumption discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but temporary energy consumption would occur for the other transportation improvement projects included in the No Build Alternatives.

3.16.4 Global Climate Change

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years. Greenhouse gases related to human activity include: carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23, HFC-134a, and HFC-152a. In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and proactive approach to dealing with greenhouse gas emissions and

climate change at the state level. AB 1493 requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions; these regulations would apply to automobiles and light trucks beginning with the 2009 model year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's greenhouse gas emissions to: (1) 2000 levels by 2010, (2) 1990 levels by the 2020 and (3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Climate change and greenhouse gas reduction is also a concern at the federal level; however, at this time, no federal legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change.

According to the IPCC report, *Climate Change 2007: The Physical Science Basis:* Summary for Policymakers (February 2007), there is no doubt that the climate system is warming. Global average air and ocean temperatures as well as the global average sea level are rising¹. From 1995–2006, 11 of those 12 years have ranked as among the warmest on record since 1850². While some of the increase is explained by natural occurrences, the 2007 report asserts that the increase in temperatures is very likely (>90 percent) due to human activity, most notably the burning of fossil fuels³.

For California, similar effects are described in the California Climate Change Center report, *Our Changing Climate: Assessing the Risks to California* (July 2006). Based on projections using state-of-the-art climate modeling, the temperatures in California are expected to rise between 3 degrees Fahrenheit (°F) to 10.5°F by the end of the century depending on how much California is able to reduce its greenhouse gas



Intergovernmental Panel on Climate Change. Climate Change 2007: The Physical Science Basis: Summary for Policymakers (February 2007), p. 5.

² Ibid., p. 5.

³ Ibid., p. 10.

emissions. The report states that these temperature increases would negatively impact public health, water supply, agriculture, plant and animal species, and the coastline¹.

According to a recent white paper by the Association of Environmental Professionals², "an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases." Figure 3.16-1 shows all sources of greenhouse gas emissions in California from 1990–2004. The chart illustrates the complex and multifaceted nature of greenhouse gas emissions and climate change.

Because climate change is a newly emerging topic in environmental documents and general plans, data on greenhouse gas emissions is largely unavailable or newly emerging. The California Energy Commission's Greenhouse Gas Inventory³ represents the best currently available data on greenhouse gas emissions in California. In 2006, the Energy Commission began proceedings on updating the inventory. When finalized, the update of the greenhouse gas emission inventory would include projections on greenhouse gas emissions for 2010 and 2020. The 1990–2004 inventory does include a very rough projection of total greenhouse gas emissions based on a "business-as-usual" trend; this approach does not take into account voluntary and mandated greenhouse gas emission reduction strategies. The projection shows an estimated increase of approximately 130 million metric tons carbon dioxide equivalent (from approximately 460 to 590 million metric tons carbon dioxide equivalent)⁴.

California Climate Change Center, Our Changing Climate: Assessing the Risks to California (July 2006), p. 1.

Hendrix, Michael and Wilson, Cori. Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents (March 5, 2007), p. 2.

³ California Energy Commission. Staff Final Report: Inventory of California Greenhouse Gas Emissions and Sinks: 1990–2004 (December 2006).

⁴ Ibid., Figure 12, p. 22.

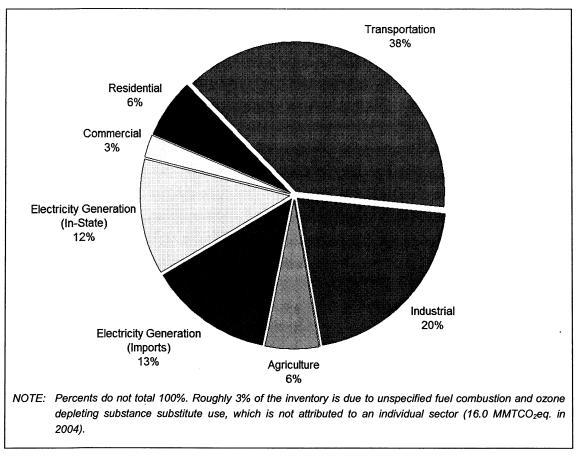


Figure 3.16-1: 2004 Greenhouse Gas Emissions by Sector (480 MMTCO₂eq. Net Emissions)

There is currently no mandatory reporting of greenhouse gas emissions and most environmental and planning documents are only just beginning to consider even a qualitative approach to greenhouse gas emissions and climate change. Caltrans and its parent agency (i.e., the Business, Transportation, and Housing Agency) have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation, Caltrans has created and is implementing the Climate Action Program (December 2006).

In Caltrans Climate Action Program, one of the main strategies employed to reduce greenhouse gas emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0–25 miles per hour [mph]) and speeds over 55 mph. Relieving congestion by enhancing operations and improving travel

times in highly congested travel corridors would lead to an overall reduction in greenhouse gas emissions.

As a project in southern California's Regional Transportation Plan, the MCP project contributes to the strategy of congestion relief.

3.16.5 Avoidance, Minimization, and/or Mitigation Measures

The MCP project would result in a nominal (maximum of 0.03 percent) increase in regional energy consumption compared to the No Build Alternatives due to project operation as a result of increased vehicle miles traveled. Mitigation Measures AQ-1 through AQ-8, AQ-11, and AQ-12 discussed in Section 3.14 will reduce impacts related to increased energy consumption and global climate change.

BIOLOGICAL ENVIRONMENT

3.17 Natural Communities

The analysis of impacts of the proposed project on natural communities is based on the *Natural Environment Study* (NES) (LSA Associates, Inc., 2008). This section includes a discussion of natural communities of special concern, habitat fragmentation, wildlife corridors, and habitat conservation plans.

3.17.1 Regulatory Setting

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on habitat conservation plans, wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily movement. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in Section 3.21, Threatened and Endangered Species. Wetlands and other waters are also discussed in Section 3.18.

3.17.1.1 Habitat Conservation Plans and Natural Communities Conservation Plans

Habitat Conservation Plans are prepared pursuant to Section 10[a][1][B] of the Federal Endangered Species Act (FESA) in order to conserve habitat and receive incidental take¹ permits for take of threatened and endangered fish and wildlife species. The state process of issuing an incidental take² permit under the California Endangered Species Act (CESA) can complement the federal Habitat Conservation Plan process and may include the same or similar species, depending on their status. As provided in Section 2835 of the Fish and Game Code, the CDFG may permit the take, of any identified species whose conservation and management is provided for in a CDFG-approved Natural Communities Conservation Plan. A Natural Communities



¹ "Take" is defined under FESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

² "Take" is defined by the California Fish and Game Code as "to hunt, pursue, catch, capture, or kill or to attempt to hunt, pursue, catch, capture, or kill."

Conservation Plan identifies and provides for the regional or areawide protection of plants, animals, and their habitats while allowing compatible and appropriate economic activity. Sections 2081(b) and 2081(c) of the CESA allow the CDFG to issue an incidental take permit for state listed threatened and endangered species.

Habitat Conservation Plans and Natural Communities Conservation Plans that are applicable to the proposed project are: the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP); the Lake Mathews MSHCP and Natural Communities Conservation Plan; the El Sobrante Landfill MSHCP; and the Habitat Conservation Plan for the Stephens' Kangaroo Rat.

Western Riverside County MSHCP

The western Riverside County MSHCP serves as a comprehensive, multijurisdictional MSHCP and Natural Communities Conservation Plan, and focuses on the conservation of species and their associated habitats in western Riverside County. The MSHCP allows its permittees to better control local land use decisions and maintain a strong economic climate in the region while adhering to the requirements of FESA and CESA. The MSHCP is used to allow participating jurisdictions to authorize the "take" of plant and animal species identified in the MSHCP and found within the boundaries of the MSHCP Plan Area. Regulation of the "take" of threatened, endangered, and rare species is authorized by the wildlife agencies (United States Fish and Wildlife Service [USFWS] and CDFG). The wildlife agencies allow "Take Authorization" for otherwise lawful actions (e.g., public and private development) in exchange for the assembly and management of a coordinated MSHCP Conservation Area.

The MSHCP Plan Area encompasses approximately 1.26 million acres (ac) (1,966 square miles) and includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto. The MSHCP Plan Area covers multiple species and habitats within a diverse landscape, from urban centers to undeveloped foothills and montane forests, all under multiple jurisdictions. The MSHCP Plan Area extends across many bioregions as well, including the Santa Ana Mountains, Riverside Lowlands, San Jacinto Foothills, San Jacinto Mountains, Agua Tibia Mountains, Desert Transition, and San Bernardino Mountains. The goal of the MSHCP is to provide a coordinated

conservation area and implementation program to preserve biological diversity and maintain the region's quality of life.

The Conservation Area is assembled from portions of the MSHCP Criteria Area, which consists of one-quarter-section (i.e., approximately 65 hectares [ha] or 160 ac) cells, each with specific criteria for conservation requirements. The MSHCP Core Areas and Linkages within the MCP project area are shown on Figures 3.17.1a and 3.17.1b.

The Conservation Area targeted under the MSHCP, when complete, will total 200,000 ha (500,000 ac). Of that, 138,800 ha (347,000 ac) have already been conserved through the Public/Quasi-Public (PQP) designation. PQP lands near the project area, mostly consisting of existing habitat reserves (i.e., Stephens' Kangaroo Rat Reserves) and other Habitat Conservation Plans (as discussed later in this section). The Cores and Linkages shown on these figures consist of the lands within the MSHCP Criteria Area that are contemplated to be assembled for conservation in conjunction with the existing PQP lands in this area.

As permittees under the MSHCP, RCTC and Caltrans are obligated to implement specific conditions, as described in Sections 13.7 and 13.8 of the MSHCP Implementation Agreement, and to abide by the Section 10(a)(1) permit conditions. Such requirements include: (1) compliance with the policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools as set forth in Section 6.1.2 of the MSHCP; (2) compliance with the policies for the Protection of Narrow Endemic Plant Species as set forth in Section 6.1.3 of the MSHCP; (3) compliance with surveys to be conducted as set forth in Section 6.3.2 of the MSHCP; (4) compliance with the Urban/Wildlands Interface Guidelines as set forth in Section 6.1.4 of the MSHCP; and (5) compliance with the Best Management Practices (BMPs) and the siting and design criteria as set forth in Section 7.0 and Appendix C of the MSHCP.

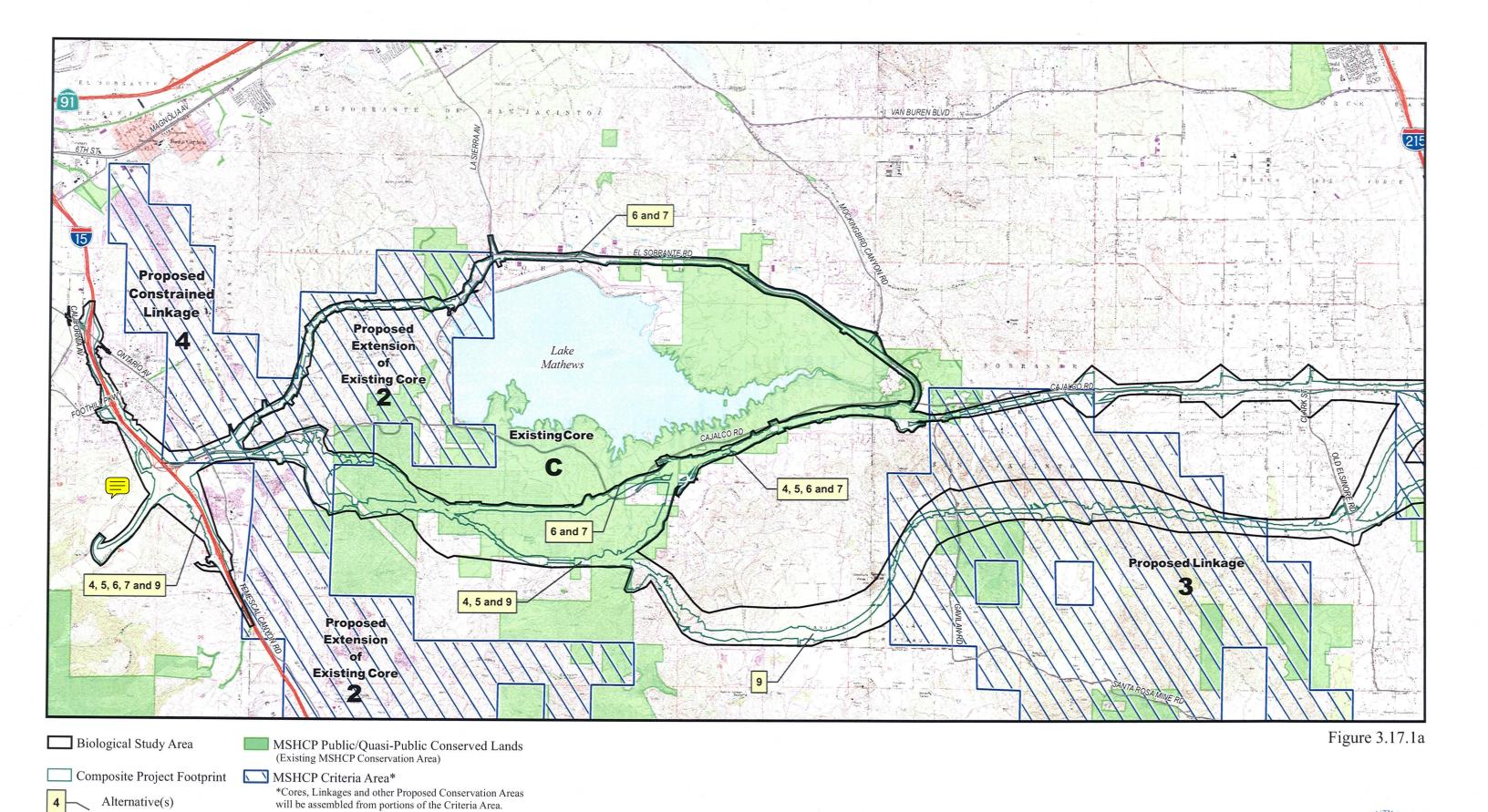
Lake Mathews Multiple Species Habitat Conservation Plan

The Metropolitan Water District of Southern California (Metropolitan) conducted a comprehensive biological review of its properties and prepared a Habitat Conservation Plan titled *Lake Mathews Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan* (1995). The Lake Mathews MSHCP:

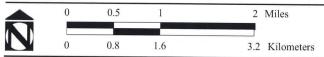
• Creates a multiple-species reserve at Lake Mathews, adjacent to an existing State reserve:



This page intentionally left blank



SOURCE: Jacobs 2007, USGS 7.5' Topographic Maps; County of Riverside, 2005; Thomas Bros, 2006.



Western Riverside County MSHCP Public/Quasi-Public Lands and Criteria Area
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Mea	asures
--	--------

This page intentionally left blank

3.17-6

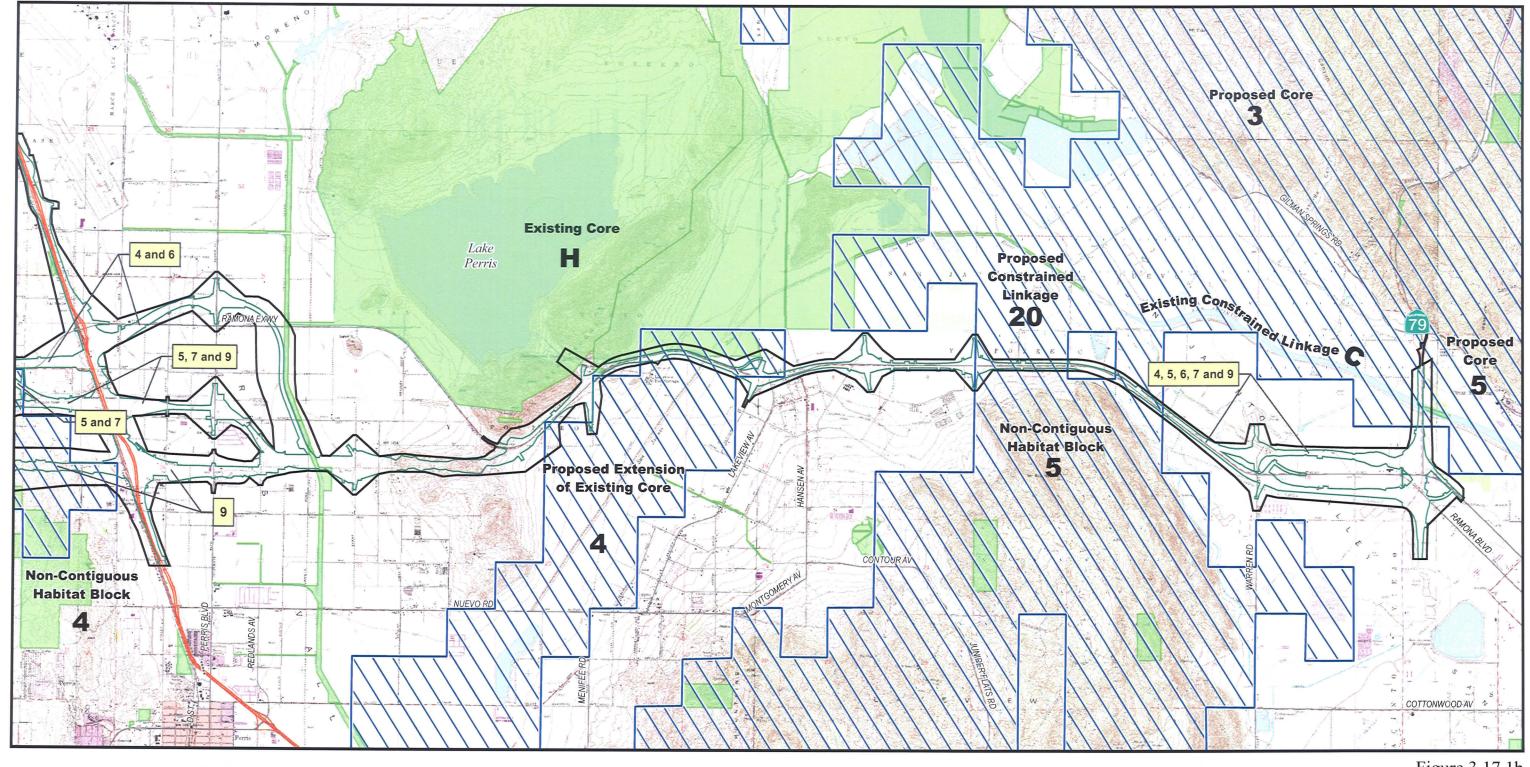


Figure 3.17.1b

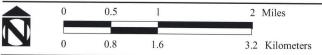
Biological Study Area

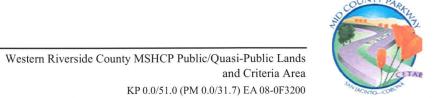
MSHCP Public/Quasi-Public Conserved Lands
(Existing MSHCP Conservation Area)

MSHCP Criteria Area*

*Cores, Linkages and other Proposed Conservation Areas will be assembled from portions of the Criteria Area.

SOURCE: Jacobs 2007, USGS 7.5' Topographic Maps; County of Riverside, 2005; Thomas Bros, 2006.





Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

- Minimizes and mitigates the impacts of projects and activities, pursuant to Sections 7 and 10(a) of the FESA, Section 2081 of the CESA, and Section 2835 of the California Natural Communities Conservation Planning Act;
- Coordinates the establishment, management, and future expansion of the Lake Mathews MSHCP with the Lake Mathews-Estelle Mountain Core Reserve;
- Results in a multi-jurisdictional reserve consisting of over 4,856 ha (12,000 ac)
 managed for various species of flora and fauna within the Lake Mathews MSHCP
 Plan Area and within the Stephens' Kangaroo Rat Reserve land including Estelle
 Mountain.

The Lake Mathews MSHCP Plan Area consists of the Lake Mathews MSHCP Reserve, which includes the existing reserve and mitigation bank and excludes approximately 294 ha (728 ac) designated for operation and maintenance activities and 63 ha (155 ac) designated for water facility improvements.

El Sobrante Landfill Multiple Species Habitat Conservation Plan

USA Waste of California, Inc. is the Permittee for a Habitat Conservation Plan titled *Multiple Species Habitat Conservation Plan for the El Sobrante Landfill* (2001). The El Sobrante Landfill MSHCP Plan Area includes approximately 539 ha (1,333 ac) in western Riverside County, adjacent to the Lake Mathews-Estelle Mountain Core Reserve. The Plan area is divided into two sub-areas: the landfill area (approximately 260 ha [645 ac]) and undisturbed open space (approximately 279 ha [688 ac]). The USFWS issued a Section 10(a)(1)(B) permit under FESA and the CDFG issued a 2081 Incidental Take Permit under CESA. The El Sobrante Landfill MSHCP covers impacts resulting from expansion of the El Sobrante Landfill to two federally and/or state listed species (coastal California gnatcatcher [*Polioptila californica californica*] and Stephens' kangaroo rat [*Dipodomys merriami parvus*]) and to 29 nonlisted species. The plan also provides for vegetation restoration, predator monitoring, and additional measures for conservation of many-stemmed dudleya (*Dudleya multicaulis*), cactus wren (*Campylorhynchus brunneicapillus*), and coastal California gnatcatcher.

Habitat Conservation Plan for the Stephens' Kangaroo Rat

The Riverside County Habitat Conservation Agency (RCHCA) conducted biological studies and produced a document titled *Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County* (March 1996). The Habitat Conservation Plan was submitted to the resource agencies to obtain a "take" permit that would be valid for 30 years, authorizing incidental take of Stephens' kangaroo rat within the



Plan area pursuant to Section 10(a)(1)(B) of the FESA and pursuant to Section 2081 of the California Fish and Game Code. The Habitat Conservation Plan covers 216,176 ha (533,954 ac) within RCHCA member jurisdictions, including approximately 12,146 ha (30,000 ac) of occupied Stephens' kangaroo rat habitat. The RCHCA established a regional system of seven core areas comprising public and private lands for conservation of Stephens' kangaroo rat. The core Stephens' kangaroo rat areas include Motte Rimrock, Lake Skinner, Lake Mathews-Estelle Mountain, San Jacinto-Lake Perris, Sycamore Canyon-March Air Reserve Base, Steele Peak, and Potrero Area of Critical Environmental Concern (ACEC). These core Stephens' kangaroo rat areas will contribute to the conservation of covered species under the MSHCP. The Motte Rimrock Reserve is part of the University of California Natural Reserve System, which is a Trustee Agency for the state of California. Within the Lake Mathews-Estelle Mountain Reserve, there are 14 parcels of land that are owned by RCHCA and managed by the United States Department of the Interior/Bureau of Land Management (BLM).

The Lake Mathews MSHCP, El Sobrante Landfill MSHCP, and Habitat Conservation Plan for the Stephens' Kangaroo Rat Plan Area boundaries within the MCP project area are shown on Figures 3.17.2a through 3.17.2c.

3.17.2 Affected Environment

3.17.2.1 Biological Study Area

The study area is referred to as the "Biological Study Area" (BSA), which is the area assessed for biological resources. The BSA runs the length of the approximately 51-kilometer (km) (32-mile [mi]) project and ranges from 1.7 to 8.3 km (1 to 5 mi) wide. The BSA encompasses approximately 5,324 ha (13,155 ac) and is shown in Figures 3.17.1a, 3.17.1b, 3.17.2a, 3.17.2b, and 3.17.2.c.

3.17.2.2 Plant Communities

Project-specific mapping was conducted in order to provide finer detail and more accuracy than that provided by existing vegetation mapping of the area. Land cover categories used for mapping were also project-specific and are defined below. Categories were selected and defined in order to facilitate habitat assessments for plant and animal species requiring surveys. A universal minimum mapping unit was not used in the land cover mapping. Rather, mapping methodologies varied with land cover categories to meet habitat evaluation needs and to ensure that the mapping



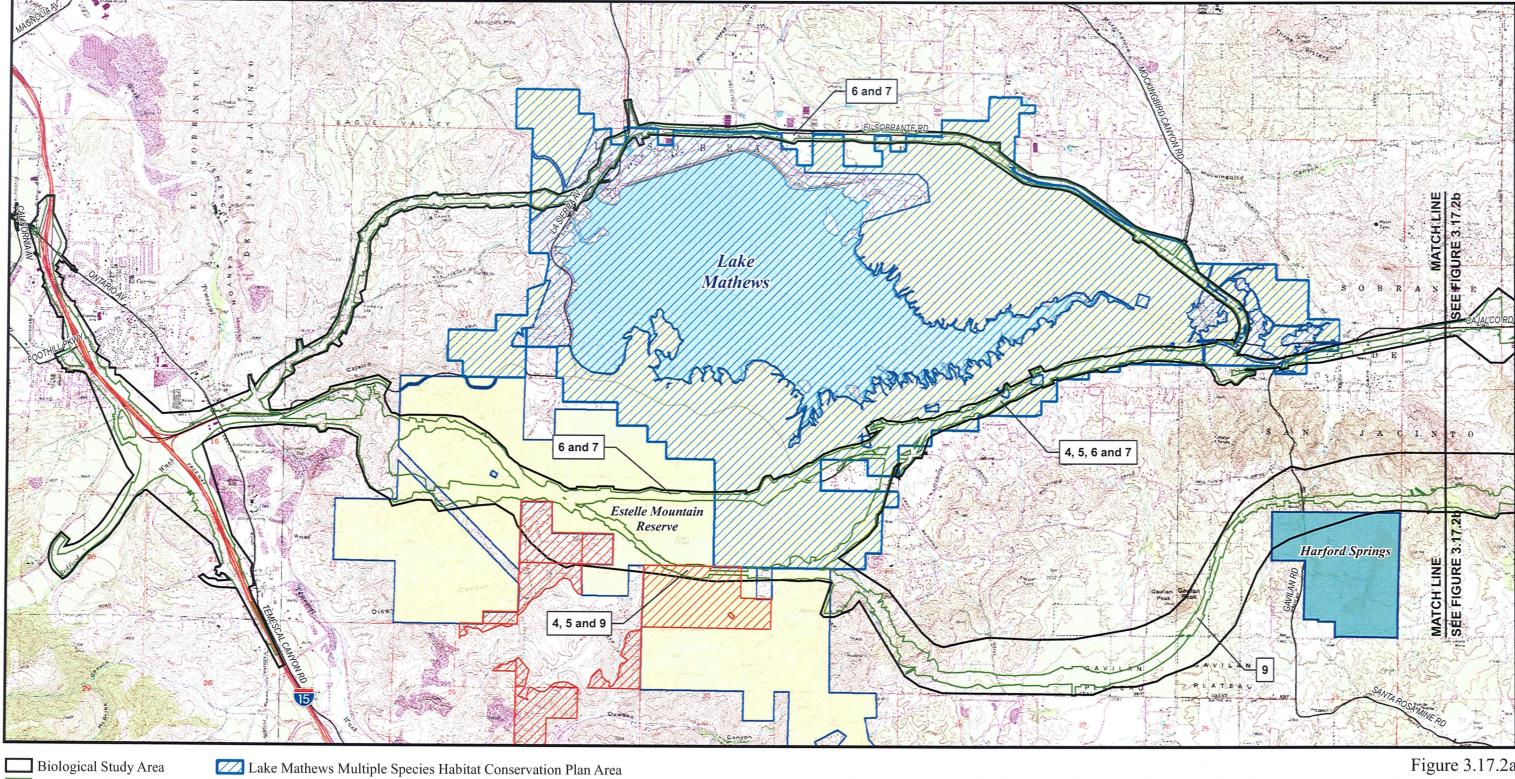


Figure 3.17.2a

SOURCE: USGS 7.5' Topographic Maps; Dudek, 2006; Thomas Bros, 2006. 8,000 Feet 2,400 Meters

Composite Project Footprint El Sobrante Landfill Multiple Species Habitat Conservation Plan Area Stephens' Kangaroo Rat Reserves

Unimproved Park

Lake Mathews and El Sobrante Landfill Multiple Species Habitat Conservation Plan Areas and Stephens' Kangaroo Rat Reserves KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



∧ Alternative(s)

		÷

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

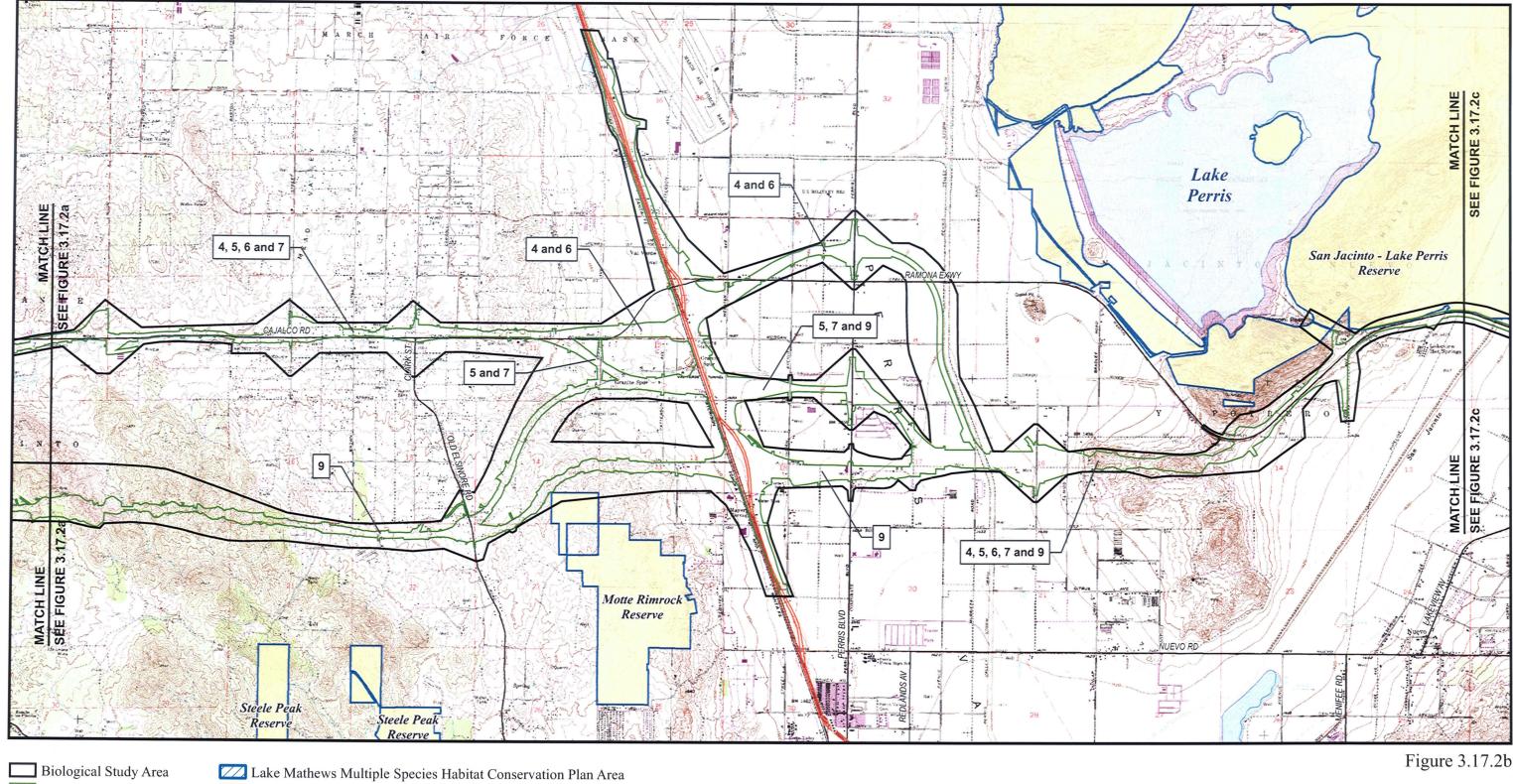
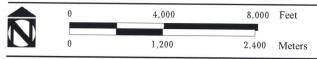


Figure 3.17.2b

SOURCE: USGS 7.5' Topographic Maps; Dudek, 2006; Thomas Bros, 2006.

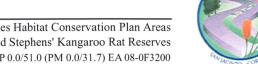
Alternative(s)



Composite Project Footprint El Sobrante Landfill Multiple Species Habitat Conservation Plan Area Stephens' Kangaroo Rat Reserves

Unimproved Park

Lake Mathews and El Sobrante Landfill Multiple Species Habitat Conservation Plan Areas and Stephens' Kangaroo Rat Reserves KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

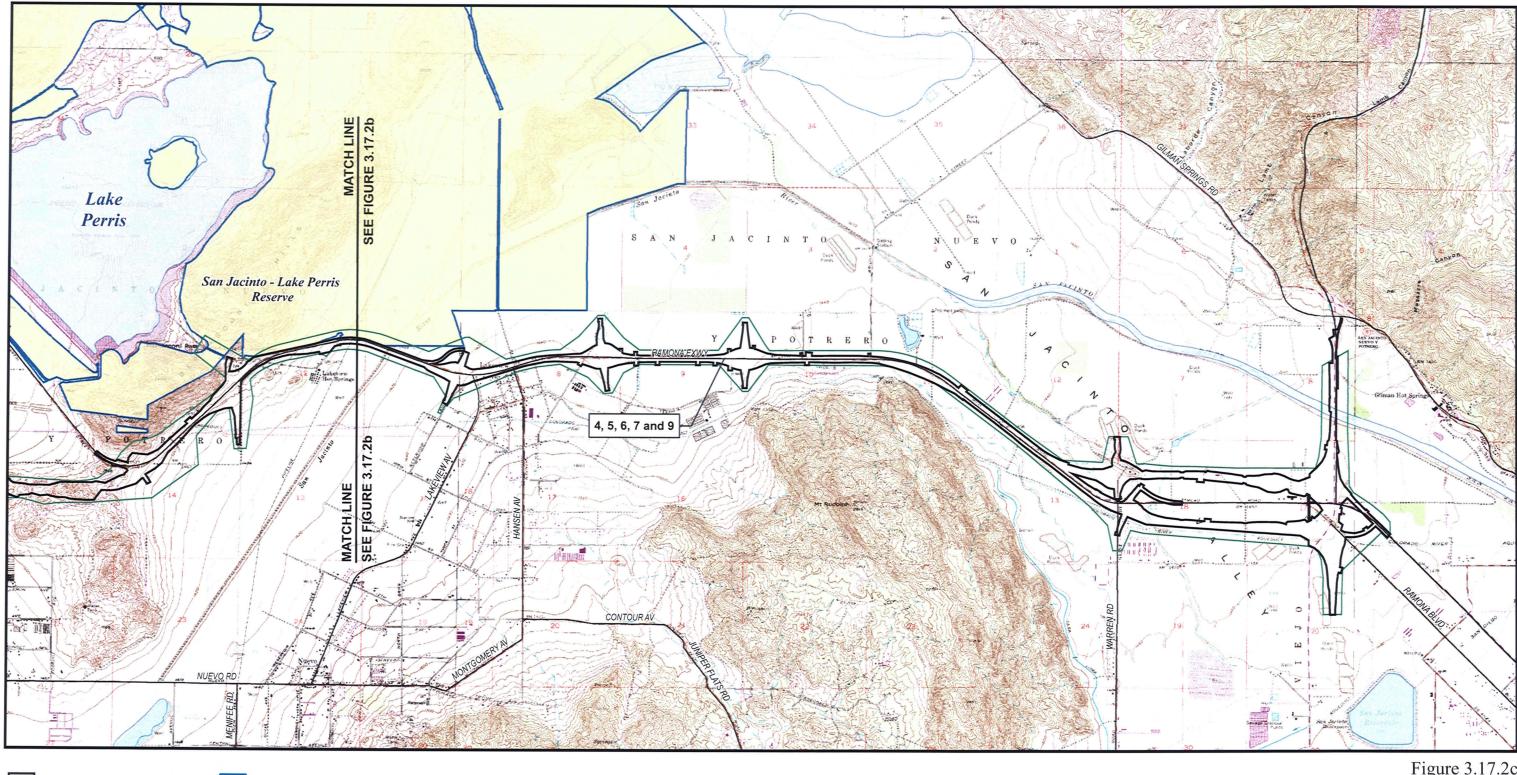
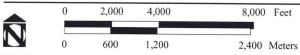


Figure 3.17.2c

Biological Study Area Lake Mathews Multiple Species Habitat Conservation Plan Area Composite Project Footprint El Sobrante Landfill Multiple Species Habitat Conservation Plan Area Stephens' Kangaroo Rat Reserves 4 \ Alternative(s) Unimproved Park

SOURCE: USGS 7.;5' Topographic Maps; Dudek, 2006; Thomas Bros, 2006.



Lake Mathews and El Sobrante Landfill Multuple Species Habitat Conservation Plan Areas and Stephens' Kangaroo Rat Reserves KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

accurately reflected the definitions of the land cover categories. For example, mapping of marshes involved the consideration of needs of animal species utilizing such habitats, while mapping of woodland communities was based on numbers, sizes, and cover values or distances between trees. The vegetation categories assessed for the MSHCP Consistency Analysis (as described in the MSHCP) are referenced in each of the of MCP land cover category descriptions following Table 3.17.A.

Table 3.17.A Land Cover within the BSA

MCP Land Cover Category	Area, ha (ac)
Cropland	1,074.6 (2,655.3)
Grove/Orchard	305.3 (754.5)
Dairy	102.9 (254.3)
Lake/Pond	2.5 (6.3)
Developed/Ruderal	1,434.9 (3,545.7)
Diegan Coastal Sage Scrub	4.4 (10.8)
Riversidean Upland Sage Scrub	866.5 (2,141.2)
Riversidean Alluvial Fan Sage Scrub	18.3 (45.3)
Chaparral	208.1 (514.2)
Nonnative Grassland	1,108.8 (2,740.0)
Alkali Grassland	66.6 (164.7)
Marsh	2.4 (5.9)
Riparian Forest	28.1 (69.4)
Riparian Scrub	43.3 (107.1)
Oak Woodland	1.7 (4.2)
Peninsular Juniper Woodland	69.4 (171.4)
Total Area	5,337 (13,187)

Source: Natural Environment Study (NES), LSA Associates, Inc., 2008.

ac = acres

BSA = Biological Study Area

ha = hectares

MCP = Mid County Parkway

Based on the vegetation mapping conducted for the project, the predominant plant communities in the BSA are nonnative grassland, Riversidean sage scrub, and chaparral. There are also extensive areas of agricultural and developed land.

Table 3.17.A gives the total area occupied by each plant community category within the BSA boundary. Natural communities of special concern identified in the BSA are Riversidean Alluvial Fan Sage Scrub, Marsh, Riparian Forest, Riparian Scrub, Diegan Coastal Sage Scrub, Riversidean Upland Sage Scrub, and Peninsular Juniper Woodland.

Cropland

Cropland includes hay, grain and vegetable crops, and sod farms. This category also includes areas historically used as cropland but that may currently be dominated by ruderal vegetation and used for pasture or left fallow. This category is included within the MSHCP Agricultural Land vegetation community.

Grove/Orchard

Grove/Orchard includes groves, orchards, Christmas tree farms, and associated areas of ruderal vegetation. This category is included within the MSHCP Agricultural Land vegetation community.

Dairy

Dairy lands include feedlots, dairy waste ponds, and associated ruderal and nonvegetated areas. Small areas of heavily fertilized, weedy seasonal wetlands may be present. This category is included within the MSHCP Agricultural Land vegetation community.

Lake/Pond

Lake/Pond includes areas of freshwater ponds and lakes that may be expected to be dry occasionally, but are inundated during most or all of the growing season to a sufficient depth to prevent rooted vegetation from establishing. There are no natural perennial ponds in the BSA. Artificially created ponds within the BSA and the littoral area of Lake Mathews are subject to varied uses. These features may be ponded yearround in wet years but not in drier years. The duration of ponding may also vary depending on agricultural or other uses. Lakes and ponds within the BSA include agricultural ponds (except dairy waste ponds), large ornamental ponds, and a littoral portion of Lake Mathews. Agricultural ponds in this category include irrigation and stock ponds. Common marsh or riparian plants, such as flatsedge (Cyperus spp.) or mulefat (Baccharis salicifolia) may inhabit the edges of such water bodies. Plants commonly associated with vernal pool, such as woolly marbles (Psilocarphus brevissimus) may inhabit receding edges where soils are appropriate. Weedy upland or facultative wetland plants, such as tumbling pigweed (Amaranthus albus), doveweed (Croton setiger), common sunflower (Helianthus annuus), prickly lettuce (Lactuca serriola), and common knotweed (Polygonum aviculare) may inhabit previously inundated areas if water recedes late in the growing season. Lakes and ponds within the BSA include agricultural ponds (except dairy waste ponds), large ornamental ponds, and a portion of Lake Mathews. Agricultural ponds in this



category include irrigation and stock ponds. This category is included within the MSHCP vegetation community labeled Waters.

Developed/Ruderal

Developed/Ruderal lands include roads, buildings, paved areas, golf courses, ornamental plantings, and associated areas that are nonvegetated or that have only ruderal vegetation. This category is included within the MSHCP vegetation community labeled Developed/Disturbed Land.

Diegan Coastal Sage Scrub

Areas of Diegan Coastal Sage Scrub are generally dominated by California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*), together with laurel sumac (*Malosma laurina*) or white sage (*Salvia apiana*). This community is typically more coastal and less xeric than Riversidean Upland Sage Scrub. This category is included within the MSHCP vegetation community labeled Coastal Sage Scrub.

Riversidean Upland Sage Scrub

Riversidean Upland Sage Scrub includes scrub with brittlebush (*Encelia farinosa*), California sagebrush, or California buckwheat typically dominant. Red brome (*Bromus madritensis* ssp. *rubens*) is usually a dominant in the herbaceous layer. This category is included within the MSHCP vegetation community labeled Coastal Sage Scrub.

Riversidean Alluvial Fan Sage Scrub

Riversidean Alluvial Fan Sage Scrub occupies coarse alluvial soils of washes and gently sloping alluvial fans, where it is usually indicated by the presence of scalebroom (*Lepidosartum squamatum*) or by a mixture of species typical of Riversidean sage scrub, such as California buckwheat or white sage, together with evergreen species that are more typical of chaparral, such as lemonade berry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), hollyleaf cherry (*Prunus ilicifolia*), redberry buckthorn (*Rhamnus crocea*), birchleaf mountain mahogany (*Cercocarpus betuloides*), chaparral yucca (*Yucca whipplei*), and California juniper (*Juniperus californica*). This category is included within the MSHCP vegetation community labeled Coastal Sage Scrub.

Chaparral

Chaparral is a shrub-dominated habitat that is composed largely of evergreen species ranging from 1 to 4 meters (m) (3.3 to 13.1 feet [ft]) in height. The most common and

widespread species within chaparral is chamise (*Adenostoma fasciculatum*). Other common shrub species include manzanita (*Arctostaphylos* spp.), ceanothus (*Ceanothus* spp.), scrub oak (*Quercus* spp.), buckthorn (*Rhamnus* spp.), laurel sumac, birchleaf mountain mahogany, toyon (*Heteromeles arbutifolia*), and mission manzanita (*Xylococcus bicolor*). Smaller, deciduous shrubs and subshrubs, such as California buckwheat, California sagebrush, and sages (*Salvia* spp.) are less common in chaparral than in coastal sage scrub, but occur within canopy gaps and disturbed areas. This category is included within the MSHCP vegetation community labeled Chaparral.

Nonnative Grassland

Nonnative Grassland is a predominantly herbaceous community composed of a mixture of nonnative and native species. For purposes of the MCP project, vegetation must have at least one nonruderal species in order to be classified as Nonnative Grassland. Areas vegetated entirely in ruderal species were instead classified as Developed/Ruderal, Cropland, Grove/Orchard, or Dairy, depending on the source of disturbance. Most native plant species are nonruderal and would be considered indicators of this plant community. However, some natives, such as common fiddleneck (*Amsinckia menziesii*), Canada horseweed (*Conyza canadensis*), common sunflower, and doveweed are considered to be ruderal species because they are frequently found in areas of extreme disturbance. All common nonnative species are considered to be ruderal species.

Common dominant species of Nonnative Grassland within the BSA include red brome, common ripgut grass (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), Mediterranean schismus (*Schismus barbatus*), wild oats (*Avena* spp.), and shortpod mustard (*Hirschfeldia incana*). This category is included within the MSHCP vegetation community labeled Grasslands.

Alkali Grassland

Alkali Grassland communities are typically dominated by native alkali-tolerant grasses, forbs, or subshrubs, or by nonnative alkali-tolerant grasses such as foxtail barley. This community occurs in sites that are poorly drained, irregularly flooded, or with a water table that fluctuates near the ground surface. Alkali Grasslands are the intersection of grassland and alkaline soils. Some Alkali Grassland/Playa areas are disturbed and of only moderate alkalinity. Such areas are predominantly vegetated in nonnative species but may also provide marginal habitat for some alkali species of interest, such as smooth tarplant.

Common species of Alkali Grassland/Playa within the BSA include various species of saltbush (*Atriplex* sp.), saltgrass (*Distichlis spicata*), salt heliotrope (*Heliotropium curassavicum*), alkali mallow (*Malvella leprosa*), and bush seepweed (*Suaeda nigra*). This category is included within the MSHCP vegetation community labeled Grasslands.

Marsh

Marshes include permanently flooded areas dominated by perennial, emergent herbaceous species, such as flatsedge, bulrush (*Bolboschoenus* and *Schoenoplectus* spp.), and cattails (*Typha* spp.) in stands that are large enough for use by animal species, such as blackbirds, that utilize marshes for foraging or nesting.

Common plants of marshes within the BSA include tall flatsedge (*Cyperus eragrostis*), pale spikerush (*Eleocharis macrostachya*), common bulrush (*Scirpus acutus*), alkali bulrush (*Scirpus maritimus*), wire rush (*Juncus balticus*), and cattails. This category is included within the MSHCP vegetation community labeled Meadows/Marshes.

Riparian Forest

Riparian Forest includes riparian communities with four or more trees (7.6-centimeter [cm] or 3.0-inch [in]) or more diameter at breast height) of western cottonwood (*Populus fremontii*), tree willows (*Salix* spp.), or western sycamore (*Platanus racemosa*), with combined vegetative cover of at least 20 percent. This category is included within the MSHCP vegetation community labeled Riparian Scrub/Woodland and Forest.¹

The 3.0-inch diameter at breast height requirement for trees is based on the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands, which defines trees as woody plants greater than 3.0 inches diameter at breast height, regardless of height. Since there is no universal standard for determining woodlands/forests, in order to be conservative, the four tree minimum was used as the limit to constitute a woodland/forest. Woodlands were classified with a minimum of 20% canopy based on common methodology used on other projects in southern California (e.g. Methods Used to Survey the Vegetation of Orange County Parks and Open Space Areas and The Irvine Company Property, Jones & Stokes, 1993). Although forests are commonly considered to be closed canopy, riparian forest and woodland habitats were lumped together and labeled as riparian forest for the MCP land cover mapping.

Riparian Scrub

Riparian Scrub includes riparian areas dominated by shrubby willows, mulefat, or broom baccharis (*Baccharis sarothroides*), as well as some areas that would be expected to support these species but that are temporarily nonvegetated due to scouring by floods or to mechanized removal of vegetation from a channel. This category is included within the MSHCP vegetation community labeled Riparian Scrub/Woodland and Forest.¹

Oak Woodland

Oak Woodland is defined as four or more oak (*Quercus*) trees (7.6 cm [3.0 in] or more diameter at breast height) with combined vegetative cover of at least 20 percent. Oak woodlands within the BSA are dominated by coast live oak (*Quercus agrifolia*). This category is included within the MSHCP vegetation community labeled Woodland and Forest.²

Peninsular Juniper Woodland

Peninsular Juniper Woodland was defined as four or more trees (7.6 cm [3.0 in] or more diameter at breast height) of California juniper, each of which is within 61 m (200 ft) of at least one other juniper tree.

Juniper woodlands within the BSA consist of Riversidean Upland Sage Scrub or nonnative grassland with scattered California juniper, and shares dominant species

The 3.0-inch diameter at breast height requirement for trees is based on the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands, which defines trees as woody plants greater than 3.0 inches diameter at breast height, regardless of height. Since there is no universal standard for determining woodlands/forests, in order to be conservative, the four tree minimum was used as the limit to constitute a woodland/forest. Woodlands were classified with a minimum of 20% canopy based on common methodology used on other projects in southern California (e.g. Methods Used to Survey the Vegetation of Orange County Parks and Open Space Areas and The Irvine Company Property, Jones & Stokes, 1993). Although forests are commonly considered to be closed canopy, riparian forest and woodland habitats were lumped together and labeled as riparian forest for the MCP land cover mapping.

² Ibid.

with those vegetation communities. Ecologically, this Peninsular Juniper Woodland/Scrub differs little from adjacent Riversidean Upland Sage Scrub and Nonnative Grassland communities, although the junipers do provide some habitat for arboreal birds. This category is included within the MSHCP vegetation community labeled Woodland and Forest.

3.17.2.3 Wildlife Corridors/Habitat Fragmentation

The majority of the land use in the eastern portion of the BSA (east of Interstate 215 [I-215]) is primarily agricultural, and native habitat along the eastern portion of the MCP project is highly fragmented. However, the MCP project crosses the San Jacinto River floodplain, south of Lake Perris, which is an MSHCP conservation feature in order to provide habitat connectivity and wildlife movement. North of the Lakeview Mountains, the MCP project also crosses agricultural land that is proposed as an MSHCP conservation feature, Proposed Linkage 20, to provide a linkage between the San Jacinto-Lake Perris Reserve and the Lakeview Mountains. Wildlife crossing Ramona Expressway are expected to be coyotes, bobcats, small mammals (such as mice, rats, and squirrels), and some avian species such as roadrunners. However, the existing Ramona Expressway currently acts as a barrier to wildlife movement east of I-215 along both crossings of the San Jacinto River and areas adjacent to the San Jacinto-Lake Perris Reserve lands.

The MCP Build Alternatives in the western portion of the BSA (west of I-215) generally follow existing roadway alignments, either following existing Cajalco Road south of Lake Mathews or following La Sierra Avenue and El Sobrante Road to the north of Lake Mathews. In general, all Build Alternatives, except for Alternative 9, have similar conditions related to habitat fragmentation and wildlife movement

contain wildlife movement impediments and add to habitat fragmentation.

insofar as existing roadways and associated fencing in portions along these roads

However, a large portion of Alternative 9 does not follow existing roadways. West of I-215, Alternative 9 traverses an existing rural area, with large areas of open space where wildlife movement currently is generally unconstrained and inferred to occur.

The MSHCP describes future conservation for several large contiguous areas of undeveloped land along the footprint of Alternative 9. Proposed conservation within these areas is described in the context of five separate MSHCP Conservation Area Features (Proposed Constrained Linkage 4, Existing Core C, Proposed Extension of Existing Core 2, Proposed Non-Contiguous Habitat Block 4, and Proposed





Linkage 3). These proposed Conservation Area Features also include blocks of habitat conserved as parts of the Lake Mathews MSHCP, El Sobrante Landfill MSHCP, and Habitat Conservation Plan for the Stephens' Kangaroo Rat. The majority of the open space bounded by Interstate 15 (I-15), Interstate 215 (I-215), State Route 91 (SR-91), and State Route 74 (SR-74) has been called out for conservation by one of these Habitat Conservation Plans. Most of the existing open space habitat for wildlife in this area remains unfragmented, and movement is unimpeded. There are dirt roads in these areas, but no major roads cross large stretches of these conserved areas. These dirt roads do not substantially restrict wildlife movement or present much threat to wildlife because use of them is infrequent and vehicle speeds are not very fast. Additionally, wildlife (e.g., Stephens' kangaroo rat, mule deer, mountain lion, and coyote) will use dirt roads to move through dense or inhospitable habitat to get to better habitat.

The area in the vicinity of the proposed MCP is a patchwork of agricultural land, disturbed or developed land, and undeveloped land. Much of the undeveloped land suitable for wildlife is fragmented, and smaller areas may have limited function as suitable habitat for larger and more mobile wildlife due to limited availability of resources. These smaller patches, which may not function for larger wildlife, may still function for smaller or sedentary wildlife as live-in habitat (habitat that provides all their life history needs). Patches that do not function as live-in habitat may still serve as foraging areas or movement corridors between larger patches for larger species or birds. Generally, however, wildlife movement currently occurs through the unconstrained areas, primarily within washes and other areas of open vegetation.

Existing developed roads in the western portion of the BSA act as an existing impediment to wildlife movement. These include west-east-trending Cajalco Road, El Sobrante Road, Lake Mathews Road, and Santa Rosa Mine Road, as well as the north-south-trending Old Elsinore Road, Gavilan Road, La Sierra Avenue, and Mockingbird Canyon Road.

Though these roads do not necessarily function as complete barriers to wildlife movement, they represent an existing impact to wildlife movement, resulting in effects including wildlife aversion to crossing as well as increased incidents of roadkill. In most cases, there are few physical barriers (e.g., chain link or solid fencing) along the roads that would deter wildlife from crossing these two-lane paved roads, which convey vehicles that can be traveling at speeds in excess of 50 miles per hour (mph). Although no specific data are available regarding numbers of roadkill,





areas of high roadkill incidences, or potentially affected populations, there are anecdotal observations of roadkill along the existing Cajalco Road, which traverses more suitable wildlife habitat than the other the roads in the area. The three- or four-strand barbed wire fences along most of Cajalco Road are not sufficient to deter large or small wildlife, and wildlife can cross these roads at any location along the fence. Coyotes, bobcats, mountain lions, foxes, raccoons, and other smaller wildlife, including Stephens' kangaroo rat, can move under the fence to continue across the existing road as necessary. Mule deer may move either under or over the fence. Although there are no roadkill data available for this portion of the BSA, it can be inferred that most wildlife crosses at locations where drainages or ridges intersect the roads or, in the case of Stephens' kangaroo rat, where suitable grassland patches intersect roads.

3.17.3 Environmental Consequences

3.17.3.1 Permanent Impacts

For the purposes of this impact analysis, a conservative right of way footprint was established for each MCP Build Alternative that includes areas of cut and fill, staging areas for construction vehicles, equipment and materials, haul routes, and water quality treatment features. While some portions of this right of way footprint would only be temporarily disturbed during construction and would be revegetated with native plant species, it is not expected that this revegetation would fully restore the functions and values of the impacted habitat. Therefore, the analysis of impacts conservatively estimates a worst-case impact scenario wherein all areas within the right of way footprint are calculated as permanent impacts, with the exception of areas spanned by bridges. Impacts to riparian habitats and jurisdictional areas at the bridged areas have been calculated as permanent impacts and temporary impacts (refer to Section 3.17.3.2).

Build Alternatives

Project impacts to each mapped land cover category are provided in Table 3.17.B. Impacts to natural communities of special concern identified in the BSA are discussed in more detail below.

Riparian/Riverine Areas and Vernal Pools

As no feature satisfying the MSHCP definition of vernal pool occurs within the BSA, no impacts to vernal pools would occur for any of the MCP Build Alternatives or design variations.

Table 3.17.B Permanent Impacts to Land Cover Categories

								Impacts, ha (ac	na (ac)			-				
Alternative/DV	Cropland	Grove/ Orchard	Dairy	Lake/ Pond	Developed/ Ruderal	Diegan Coastal Sage Scrub	Riversidean Upland Sage Scrub	Riversidean Alluvial Fan Sage Scrub	Chaparral	Nonnative Grass- land	Alkali Grass- land	Marsh	Riparian Forest	Riparian Scrub	Peninsular Juniper Woodland	Total Impacts
Alt. 4 Base Case	278.8 (688.9)	77.2 (190.8)	11.4 (28.1)	0.5	446.9	1.0	149.1	7.3	0	114.9	18.9	0.6	4.7	6.9	9.5	1,128
Alt. 4 SJN DV	262.3 (648.2)	77.2 (190.8)	36.3	(1.0)	446.7	1.0	149.1	7.3	0	114.8	10.3	0.6	4.3	6.8	9.5	1,127
Alt. 4 TWS DV	278.8 (688.9)	77.2 (190.8)	11.4 (28.1)	0.5	429.0 (1,060.0)	1.0	149.1 (368.4)	7.3	0	114.9	18.9	0.6	4.7	6.9	9.5	1,110
Alt. 5 Base Case	276.1 (682.2)	76.6 (189.4)	11.4 (28.1)	0.6 (1.4)	411.9 (1,017.9)	1.0 (2.5)	148.0 (365.8)	7.3 (18.2)	0	119.8 (296.0)	19.5 (48.2)	0.6	4.7	7.3	9.5	1,094
Alt. 5 SJN DV	259.6 (641.4)	76.6 (189.4)	36.3 (89.8)	0.5 (1.2)	411.8 (1,017.5)	1.0 (2.5)	148.0 (365.8)	7.3 (18.2)	0	119.8 (296.0)	10.9	0.6	4.3	7.2	9.5	1,093
Alt. 5 TWS DV	276.1 (682.2)	76.6 (189.4)	11.4 (28.1)	0.6	394.0 (973.7)	1.0	148.0	7.3	0	119.8	19.5	0.6	4.7	7.3	9.5	1,076
Alt. 6 Base Case	280.6 (693.3)	83.7 (206.9)	11.4 (28.1)	0.9	501.4	2.7	171.2 (423.0)	7.4 (18.4)	0	224.6	18.9	0.6	6.2	10.0	11.4	1,331
Alt. 6 SJN DV	264.1 (652.5)	83.7	36.3	0.8	501.3	2.7	171.2 (423.0)	7.4 (18.4)	0	(555.1)	10.3	0.6	5.7	10.0	11.4	1,330
Alt. 6 TWS DV	280.6 (693.3)	83.7 (206.9)	11.4 (28.1)	0.9	483.5 (1,194.8)	2.7	171.2 (423.0)	7.4 (18.4)	0	224.6 (555.1)	18.9 (46.8)	0.6	6.2 (15.3)	10.0 (24.8)	11.4 (28.2)	1,313
Alt. 7 Base Case	277.8 (686.5)	83.2 (205.6)	11.4 (28.1)	ļ	466.5 (1,152.8)	2.7	170.1 (420.4)	7.4 (18.4)	0	229.6 (567.3)	19.5	0.6	6.2 (15.3)	10.5 (25.8)	11.4 (28.2)	1,298
Alt. 7 SJN DV	261.3 (645.8)	83.2 (205.6)	36.3 (89.8)		466.3 (1,152.4)	2.7	170.1 (420.4)	7.4 (18.4)	0	229.6 (567.3)	10.9	0.6	5.7 (14.2)	10.4 (25.7)	11.4 (28.2)	1,297
Alt. 7 TWS DV	277.8 (686.5)	83.2 (205.6)	11.4 (28.1)	1.0	448.6 (1,108.6)	2.7	170.1 (420.4)	7.4 (18.4)	0	229.6 (567.3)	19.5 (48.2)	0.6	6.2 (15.3)	10.5 (25.8)	11.4 (28.2)	1,280
Alt. 9 Base Case	226.5 (559.7)	98.9 (244.5)	11.4 (28.1)	0.6	358.9 (886.8)	1.0	165.0 (407.7)	6.2 (15.2)	26.9 (66.4)	135.8 (335.5)	19.7 (48.7)	0.5	2.3	3.6	10.9 (26.8)	1,067 (2,637)
Alt. 9 RD DV	262.4 (648.4)	99.1 (244.8)	11.4 (28.1)	1.0 (2.5)	344.6 (851.4)	1.0	149.8 (370.1)	6.2 (15.2)	26.9 (66.4)	151.7 (375.0)	19.5 (48.2)	0.5	2.3	3.5	10.8 (26.8)	1,090 (2,693)
Alt. 9 PP-E DV	224.6 (555.1)	98.9 (244.5)	11.4 (28.1)	0.6 (1.4)	359.5 (888.3)	1.0 (2.5)	164.9 (407.6)	6.2 (15.2)	26.9 (66.4)	135.9 (335.8)	19.7 (48.8)	0.5 (1.2)	2.3 (5.8)	3.6 (8.9)	10.9 (26.8)	1,066 (2,634)
Alt. 9 SJN DV	210.0 (518.9)	98.9 (244.5)	36.3 (89.8)	0.5 (1.2)	358.0 (884.7)	1.0 (2.5)	165.0 (407.6)	6.2 (15.2)	26.9 (66.4)	135.8 (335.5)	11.1 (27.4)	0.6 (1.4)	1.9 (4.7)	3.6 (8.8)	10.9 (26.8)	1,066 (2,635)
Alt. 9 TWS DV	226.5 (559.7)	98.9 (244.5)	11.4 (28.1)	0.6 (1.4)	341.0 (842.6)	1.0 (2.5)	165.0 (407.6)	6.2 (15.2)	26.9 (66.4)	135.8 (335.5)	19.7 (48.7)	0.5 (1.2)	2.3 (5.8)	3.6 (8.9)	10.9 (26.8)	1,049 (2,593)
Source: Matural Environment Study (NIES) SA Accordate Inc. 2008	tronnont.	C+1.dv /NFC	0	Accordat	0000											

ac = acres Alt. = Alternative

Source: *Natural Environment Study (NES)*, LSA Associates, Inc., 2008.
ac = acres
DV = Design Variation
PP-E = Placentia Avenue/Perris Boulevard Elevated Grade
Alt. = Alternative
ha = hectares
RD = Rider Street

SJN = San Jacinto North TWS = Temescal Wash Area

Direct impacts to riparian habitats and additional streambed and associated riparian habitats by alternative are provided in Table 3.17.C. Impact calculations summarized below take into account the reduction of impacts based on the design of bridges that would minimize impacts to riparian habitat. Even though oak woodland is considered a riparian habitat, it is not included in Table 3.17.C because no impacts to this community would occur for any of the MCP Build Alternatives.

Table 3.17.C Permanent Impacts to Riparian/Riverine Areas

		Riparian Community, ha (ac)				
Alternative/DV	Riversidean Alluvial Fan Sage Scrub	Marsh	Riparian Forest	Riparian Scrub	Additional CDFG Streambed and Associated Riparian Habitat ¹	Total Area, ha (ac)
Alt. 4 Base Case	7.3 (18.0)	0.1 (0.2)	2.6 (6.3)	4.8 (11.8)	7.7 (19.0)	22.5 (55.3)
Alt. 4 SJN DV	7.3 (18.0)	0.1 (0.2)	3.3 (8.1)	4.8 (11.8)	7.5 (18.5)	23.0 (56.6)
Alt. 4 TWS DV	7.3 (18.0)	0.1 (0.2)	2.6 (6.3)	4.8 (11.8)	7.5 (18.6)	22.3 (54.1)
Alt. 5 Base Case	7.3 (18.0)	0.1 (0.2)	2.6 (6.3)	5.2 (12.9)	7.5 (18.5)	22.7 (55.2)
Alt. 5 SJN DV	7.3 (18.0)	0.1 (0.2)	3.3 (8.1)	5.2 (12.9)	7.3 (18.0)	23.2 (56.7)
Alt. 5 TWS DV	7.3 (18.0)	0.1 (0.2)	2.6 (6.3)	5.2 (12.9)	7.3 (18.1)	22.5 (54.7)
Alt. 6 Base Case	7.1 (17.5)	0.1 (0.2)	3.1 (7.7)	7.4 (18.2)	9.1 (22.6)	26.8 (65.5)
Alt. 6 SJN DV	7.1 (17.5)	0.1 (0.2)	3.9 (9.5)	7.3 (18.2)	8.9 (22.1)	27.3 (67.0)
Alt. 6 TWS DV	7.1 (17.5)	0.1 (0.2)	3.1 (7.7)	7.4 (18.2)	9.0 (22.2)	26.7 (65.1)
Alt. 7 Base Case	7.1 (17.5)	0.1 (0.2)	3.1 (7.7)	7.8 (19.3)	8.9 (22.1)	27.0 (66.1)
Alt. 7 SJN DV	7.1 (17.5)	0.1 (0.2)	3.9 (9.5)	7.8 (19.2)	8.7 (21.6)	27.6 (67.6)
Alt. 7 TWS DV	7.1 (17.5)	0.1 (0.2)	3.1 (7.7)	7.8 (19.3)	8.8 (21.7)	26.9 (65.7)
Alt. 9 Base Case	6.1 (15.0)	0.0 (0.0)	0.7 (1.6)	2.0 (5.0)	5.0 (12.3)	13.8 (33.2)
Alt. 9 RD DV	6.1 (15.0)	0.0 (0.0)	0.7 (1.6)	1.7 (4.3)	3.9 (9.5)	12.4 (29.7)
Alt. 9 PP-E DV	6.1 (15.0)	0.0 (0.0)	0.7 (1.6)	2.0 (5.0)	5.0 (12.3)	13.8 (33.2)
Alt. 9 SJN DV	6.1 (15.0)	0.0 (0.0)	1.4 (3.4)	2.0 (4.9)	4.8 (11.8)	14.3 (34.7)
Alt. 9 TWS DV	6.1 (15.0)	0.0 (0.0)	0.7 (1.6)	2.0 (5.0)	4.8 (11.9)	13.6 (32.7)

Source: Natural Environment Study (NES), LSA Associates, Inc., 2008.

ac = acres
Alt. = Alternative
CDFG = California Department of Fish and Game
DV = Design Variation
ha = hectares

MSHCP = Multiple Species Habitat Conservation Plan PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

RD = Rider Street SJN = San Jacinto North TWS = Temescal Wash Area

Indirect impacts of the project on riparian habitat adjacent to the project footprint may result from edge effects¹ such as exotic plant infestations, litter, increased fire risk, and unauthorized recreational use. Exotic plant infestations may degrade native



This category includes areas that are not categorized in the land cover mapping (Appendix A of the NES) as Riversidean Alluvial Fan Sage Scrub, Marsh, Riparian Scrub, Riparian Forest, or Oak Woodland, but that were determined to be CDFG streambed and associated riparian habitat in the Jurisdictional Delineation (Appendix L of the NES).

Edge effects: Adverse direct and indirect effects to species, habitats, and vegetation communities along the natural urban/wildlands interface.

habitat that supports these special status species. Additional access points for unauthorized off-road vehicle use may result from the MCP project. Off-road vehicle use may destroy native habitat and these sensitive species, and may also promote exotic plant infestation. Additionally, pollutants (in the form of nitrogen compounds from car emissions) may settle on the soil and stimulate the growth of nonnative species that may out-compete native species. Fire risk increases the potential to require vegetation clearing and removal of habitat adjacent to the roads. Increased fire frequency may result in type conversion of native habitats and an increase of exotic plant species. On the other hand, a major road can provide a firebreak that helps to limit the extent of fires that may already occur at a higher than natural frequency.

Indirect impacts on riparian habitat may result from edge effects of the project. However, much of the riparian habitat in the project vicinity is within existing reserves or within the MSHCP Criteria Area, where development will be limited by MSHCP Cell Criteria. New development throughout the project vicinity would be subject to the riverine/riparian requirements of the MSHCP.

Other beneficial effects could also occur, such as treated storm water runoff from the parkway to riparian habitat would provide additional water to maintain the riparian vegetation that is already established, or provide sufficient additional water to create wetland conditions where they do not currently exist. However, on balance, such indirect effects are generally considered negative.



In addition to the direct permanent impacts to riparian areas listed above, the project may result in indirect impacts to riparian habitat due to shading effects at some bridge locations. Bridges 12, 13, 21, and 34 would result in indirect shading impacts to up to 0.7 ha (1.8 ac) of riparian forest, riparian scrub, and marsh habitats.

Other Natural Communities of Special Concern

Diegan coastal sage scrub, Riversidean sage scrub, and peninsular juniper woodland cover extensive areas of the BSA and vicinity. Table 3.17.D shows the direct impacts for each of these natural communities.

Indirect impacts of the project on natural communities adjacent to the project footprint may result from edge effects such as the spread of exotic plant infestations, litter, increased fire risk, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. However, much of the area occupied by these communities in the project vicinity is within existing reserves or within the MSHCP Criteria Area, where development would be limited by MSHCP Cell Criteria.

Table 3.17.D Permanent Impacts to Other Natural Communities of Special Concern

	N:	Natural Community, ha (ac)		
Alternative/DV	Diegan Coastal Sage Scrub	Riversidean Upland Sage Scrub	Peninsular Juniper Woodland/Scrub	Total, ha (ac)
Alt. 4 Base Case	1.0 (2.5)	149.1 (368.4)	9.5 (23.4)	159.5 (394.2)
Alt. 4 SJN DV	1.0 (2.5)	149.1 (368.3)	9.5 (23.4)	159.5 (394.2)
Alt. 4 TWS DV	1.0 (2.5)	149.1 (368.4)	9.5 (23.4)	159.5 (394.2)
Alt. 5 Base Case	1.0 (2.5)	148.0 (365.8)	9.5 (23.4)	158.5 (391.7)
Alt. 5 SJN DV	1.0 (2.5)	148.0 (365.8)	9.5 (23.4)	158.5 (391.6)
Alt. 5 TWS DV	1.0 (2.5)	148.0 (365.8)	9.5 (23.4)	158.5 (391.7)
Alt. 6 Base Case	2.7 (6.6)	171.2 (423.0)	11.4 (28.2)	185.3 (457.9)
Alt. 6 SJN DV	2.7 (6.6)	171.2 (423.0)	11.4 (28.2)	185.3 (457.8)
Alt. 6 TWS DV	2.7 (6.6)	171.2 (423.0)	11.4 (28.2)	185.3 (457.9)
Alt. 7 Base Case	2.7 (6.6)	170.1 (420.4)	11.4 (28.2)	184.2 (455.3)
Alt. 7 SJN DV	2.7 (6.6)	170.1 (420.4)	11.4 (28.2)	184.2 (455.2)
Alt. 7 TWS DV	2.7 (6.6)	170.1 (420.4)	11.4 (28.2)	184.2 (455.3)
Alt. 9 Base Case	1.0 (2.5)	165.0 (407.7)	10.9 (26.8)	175.6 (434.0)
Alt. 9 RD DV	1.0 (2.5)	149.8 (370.1)	10.8 (26.8)	160.4 (396.4)
Alt. 9 PP-E DV	1.0 (2.5)	164.9 (407.6)	10.9 (26.8)	175.6 (433.9)
Alt. 9 SJN DV	1.0 (2.5)	165.0 (407.6)	10.9 (26.8)	175.6 (433.9)
Alt. 9 TWS DV	1.0 (2.5)	165.0 (407.6)	10.9 (26.8)	175.6 (434.0)

Source: Natural Environmental Study (NES), LSA Associates, Inc., 2008.

ac = acres

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

Alt. = Alternative

RD = Rider Street

DV = Design Variation

SJN = San Jacinto North

ha = hectares

TWS = Temescal Wash Area

Wildlife Corridors/Habitat Fragmentation

The proposed MCP project would create an impediment to wildlife movement within the BSA. As shown in previous Figure 3.17.1, the MCP project crosses numerous areas designated in the western Riverside County MSHCP as conservation features that consist of large core blocks of habitat and smaller blocks of habitat linking larger habitat blocks. However, the design of the MCP Build Alternatives have incorporated wildlife crossings, shown in Appendix I (Attachment E), that would continue to allow wildlife to cross through these wildlife corridors. Additionally, there would be impacts to smaller patches of undeveloped land that may function for small and/or sedentary wildlife as live-in habitat or that may serve as foraging areas or movement corridors between larger patches for larger species or birds.

Impacts to wildlife movement east of I-215 resulting from the MCP project are not expected to create substantially new or different impacts than already experienced along the existing Ramona Expressway because the Ramona Expressway currently creates edge effects and also serves as an impediment to the limited wildlife



movement that currently exists in the already fragmented habitat. Further, impacts to wildlife movement east of I-215 are the same for all alternatives.

The MCP crossing of the San Jacinto River encompasses the entire floodplain south of Lake Perris and should not pose an additional constraint for wildlife movement than what currently exists along Ramona Expressway (which would remain a frontage road after MCP is built). Additionally, due to the proposed wildlife undercrossing along Proposed Linkage 20 (Crossing #10, as shown in Appendix I [Attachment E]), the project may actually facilitate wildlife movement between San Jacinto-Lake Perris Reserve and the Lakeview Mountains through an area that is currently in use for agricultural purposes.

The MCP Build Alternatives would cross the following MSHCP Conservation Area Features in the western portion of the project: Proposed Constrained Linkage 4 (Temescal Wash), Existing Core C (Lake Mathews-Estelle Mountain Reserve), Proposed Extension of Existing Core 2 (an extension of the Lake Mathews-Estelle Mountain Reserve), Non-Contiguous Habitat Block 4 (Motte Rimrock Reserve), and Proposed Linkage 3 (Gavilan Hills). These proposed Conservation Area Features also include blocks of habitat conserved as parts of the Lake Mathews MSHCP, El Sobrante Landfill MSHCP, and Habitat Conservation Plan for the Stephens' Kangaroo Rat and MSHCP Criteria Cells (potential conservation area to be assembled based upon MSHCP conservation criteria). Impacts to these Conservation Area Features would contribute to habitat fragmentation, edge effects, and potential impediments to wildlife movement.

All of the MCP Build Alternatives located west of I-215, except for Alternative 9, have similar conditions related to habitat fragmentation and wildlife movement insofar as existing roadways and associated fencing in portions along these roads contain wildlife movement impediments and add to edge effects and habitat fragmentation. Additionally, impacts to wildlife movement and habitat fragmentation can be assessed as they impact proposed MSHCP Conservation Area Features. The following MSHCP section summarizes impacts to proposed MSHCP Conservation Area Features, consisting of "Cores and Linkages." All of the MCP Build Alternatives have similar impacts to Cores and Linkages, except for Proposed Extension of Existing Core 2, Existing Core C, Proposed Linkage 3, and Proposed Non-Contiguous Habitat Block 4.



Alternatives 6 and 7 would have more than three times the impacts to Proposed Extension of Existing Core 2 and 25 to 300 percent more impacts to Existing Core C than the other alternatives. Alternative 9 and the Design Variations would have less impacts to Existing Core C, but would have up to 17 ha (43 ac) of impacts to Proposed Non-Contiguous Habitat Block 4 in comparison to the other alternatives with no impacts to this area. Alternative 9 would also result in 46–50 ha (115–125 ac) of impacts to Proposed Linkage 3 in comparison to the other alternatives, which would have less than 3 ha (6 ac) of impacts.



Impacts to habitat fragmentation, wildlife corridors, and the potential for roadkill west of I-215 are higher for Alternative 9 because a large portion of Alternative 9 does not follow existing roadways. West of I-215, Alternative 9 traverses an existing rural area with large areas of open space where wildlife movement currently is generally unconstrained. The construction and operation of MCP along the existing open space areas would add to habitat fragmentation by possibly constraining seed dispersal and increasing fire risk. Wildlife movement, which is inferred to currently occur along rural and open space areas west of I-215, would also be expected to be impacted by vehicles traveling at high speeds.

Although no specific data are available regarding numbers of roadkill, areas of high roadkill incidences, or potentially affected populations, there are anecdotal observations of roadkill along the existing Cajalco Road, which traverses more suitable wildlife habitat than the other roads in the area and which only has a three- or four-strand barbed wire fence along the right of way that does not deter wildlife movement. In contrast, a fence (up to 3 m [10 ft]) high along the right of way for all MCP Build Alternatives (except for wildlife crossings at bridges, culverts, or land overcrossings) would reduce the potential for medium to larger mammals (e.g., coyotes, bobcats, mountain lions, mule deer, foxes, and raccoons) to enter the right of way. However, roadkill is anticipated to occur along the MCP Build Alternatives, particularly for small mammals that are not impeded by the fenced right of way boundary. Smaller wildlife that can move under the fence to continue across MCP may be affected by roadkill. Since these smaller species (e.g., pocket mice and kangaroo rats) have smaller dispersal ranges (ranging from approximately 20–38 m (65–379 ft), only populations in close proximity to the MCP Build Alternatives are anticipated to be affected by roadkill. In addition, during cooler parts of the day and year, reptiles that frequently warm themselves on asphalt would be susceptible to roadkill on the MCP roadway. There would likely be a reduction in population size of small mammals and reptiles located in close proximity to the MCP Build Alternatives

due to dispersal activities that may result in wildlife entering the MCP right of way. However, the rate of roadkill for these populations is anticipated to reduce in subsequent years after the opening of the MCP facility.

Western Riverside County MSHCP

As permittees under the MSHCP, RCTC and Caltrans are obligated to implement specific conditions, as described in Sections 13.7 and 13.8 of the MSHCP Implementation Agreement, and to abide by the Section 10(a)(1) permit conditions. Such requirements include: (1) compliance with the policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools as set forth in Section 6.1.2 of the MSHCP; (2) compliance with the policies for the Protection of Narrow Endemic Plant Species as set forth in Section 6.1.3 of the MSHCP; (3) conduct surveys as set forth in Section 6.3.2 of the MSHCP; (4) compliance with the Urban/Wildlands Interface Guidelines as set forth in Section 6.1.4 of the MSHCP; and (5) compliance with the BMPs and the siting and design criteria as set forth in Section 7.0 and Appendix C of the MSHCP.

Compliance with the MSHCP Policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools The project is in compliance with the MSHCP policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools as set forth in Section 6.1.2 of the MSHCP. Focused surveys were conducted for species associated with riparian/riverine areas and vernal pools. Since avoidance of riparian/riverine areas is not feasible, in order to be in compliance with Section 6.1.2 of the MSHCP, a Determination of Biologically Equivalent or Superior Preservation (DBESP) will be prepared. A DBESP is a determination that, with the proposed design and compensation measures, the overall MSHCP Conservation Area design and configuration would be biologically equivalent or superior to what it would be if the project had met the MSHCP avoidance requirements. The DBESP will ensure replacement of lost functions and values of habitat relative to covered species. It is expected that the DBESP prepared for the project impacts to riparian/riverine resources could include a combination of onsite and off-site mitigation not limited to creation, enhancement and restoration. Further description of the DBESP is discussed in the Avoidance, Minimization, and/or Mitigation Measures section (Section 3.17.5) of this document.

Direct impacts to MSHCP riparian/riverine areas, which were provided earlier in this section, are referenced in Table 3.17.C. Impact calculations summarized



below take into account the reduction of impacts based on the design of bridges that would minimize impacts to riparian habitat.

Alternatives 4, 5, 6, and 7 would each impact five nesting pairs/individual least Bell's vireo, and Alternative 9 would impact two nesting least Bell's vireo pairs. Areas of long-term conservation value were determined based on MSHCP requirements for species requiring further surveys under the MSHCP. For the least Bell's vireo, all riparian scrub habitat connected to habitat occupied by least Bell's vireo was determined to have long-term conservation value. Table 3.17.E shows the direct impacts that each alternative would have on habitat suitable for long-term conservation for the least Bell's vireo. Therefore, a DBESP will be prepared addressing the MCP project's impacts to least Bell's vireo.



Table 3.17.E Impacts to Least Bell's Vireo Habitat Suitable for Long-Term Conservation

Alternative/DV	Impacts, ha (ac)
Alt. 4 (All Design Variations)	2.5 (6.1)
Alt. 5 (All Design Variations)	2.5 (6.1)
Alt. 6 (All Design Variations)	3.4 (8.5)
Alt. 7 (All Design Variations)	3.4 (8.5)
Alt. 9 (All Design Variations)	0.9 (2.2)

ac = acres
Alt. = Alternative
DV = Design Variation
ha = hectares

No impacts to vernal pools would occur for any of the MCP Build Alternatives as no feature satisfying the MSHCP definition of vernal pool occurs within the BSA. Impacts to wetland areas that do not meet the definition of vernal pool will be mitigated to the extent that they are regulated by the United States Army Corps of Engineers (USACE) and CDFG or have riparian habitat that will require a DBESP under the MSHCP.

Focused surveys for fairy shrimp were conducted in 2005–2006 and 2006–2007 in wetland ponded areas and any other habitat that could potentially support fairy shrimp. The results of the 2 years of focused surveys are negative. Thus, there would be no impacts to fairy shrimp resulting from the project, and no DBESP related to vernal pools or fairy shrimp is required.



Although six individual willow flycatchers (*Empidonax traillii*) were observed migrating through the project on one day of each survey year, these individuals are considered to be the subspecies *E.t. brewsteri* and not southwestern willow flycatcher (*E.t. extimus*). Thus, there are no impacts to breeding habitat of the southwestern willow flycatcher. While other subspecies of willow flycatcher are included in the state listing of the species as a whole, the other subspecies do not breed in the project area, and there would be little or no impacts to migrating individuals.

No other species associated with riparian/riverine areas or vernal pools that the MSHCP requires focused surveys for was determined to be present within the BSA.

Compliance with the MSHCP Policies for the Protection of Narrow Endemic Plant Species

In order for the project to be in compliance with the policies for the Protection of Narrow Endemic Plant Species¹ as set forth in Section 6.1.3 of the MSHCP, a habitat suitability assessment was conducted for the following plant species within MSHCP-designated Narrow Endemic Plant Species Survey Areas (NEPSSAs)² 1, 3, and 3a:

- Munz's onion (*Allium munzii*) NEPSSAs 1 and 3
- San Diego ambrosia (Ambrosia pumula) NEPSSAs 1, 3, 3a, and 7
- Slender-horned spineflower (Dodecahema leptoceras) NEPSSA 1
- Many-stemmed dudleya (Dudleya multicaulis) NEPSSAs 1, 3, and 3a
- Spreading navarretia (Navarretia fossalis) NEPSSAs 1, 3, and 3a
- California Orcutt grass (Orcuttia californica) NEPSSAs 1, 3, and 3a

Narrow endemic plant species: Defined by the MSHCP as plant species that are highly restricted by their habitat affinities, edaphic requirements, or other ecological factors. Specific conservation measures have been identified in the MSHCP, including requiring focused surveys for certain species within designated survey areas referred to as Narrow Endemic Plant Species Survey Areas (NEPSSAs).

NEPSSA: Survey area designated by the MSHCP for certain narrow endemic plant species. Within the designated survey area, habitat suitability assessments, focused surveys, and impact evaluations are required for the target narrow endemic plant species.

- Brand's phacelia (*Phacelia stellaris*) NEPSSA 7
- San Miguel savory (Satureja chandleri) NEPSSAs 1 and 7
- Hammitt's clay-cress (Sibaropsis hammittii) NEPSSA 1
- Wright's trichocoronis (*Trichocoronis wrightii* var. wrightii) NEPSSAs 1,
 3, and 3a

Focused surveys were conducted where suitable habitat was identified. In areas where target species were found to be present, the area was assessed for long-term conservation value for each species. Table 3.17.F summarizes impacts to habitat suitable for long-term conservation value for narrow endemic plant species. In order to comply with the MSHCP, any impacts to more than 10 percent of areas that provide for long-term conservation value for the species require that a DBESP be made. Details of impacts and mitigation in the form of a DBESP are discussed in Sections 3.19 and 3.21.

Table 3.17.F Impacts to Habitat Suitable for Long-Term Conservation of Narrow Endemic Plant Species

	Permanent Imp	Permanent Impacts, ha (ac)				
Alternative/DV	Many-stemmed Dudleya and Munz's Onion ¹	Spreading Navarretia				
Alt. 4 (All Design Variations)	3.07 (7.58)	0. 31 (0.77)				
Alt. 5 (All Design Variations)	3.07 (7.58)	0. 31 (0.77)				
Alt. 6 (All Design Variations)	0.01 (0.02)	0. 31 (0.77)				
Alt. 7 (All Design Variations)	0.01 (0.02)	0. 31 (0.77)				
Alt. 9 (All Design Variations)	3.07 (7.58)	0. 31 (0.77)				

Impacts to many-stemmed dudleya and Munz's onion are based on inferring that these species are present throughout the areas of potentially suitable habitat that have not been surveyed. All of these areas of assumed impact will be surveyed in 2008. Actual impacts are likely to be smaller, and will be calculated following the 2008 focused survey.

ac = acres

Alt. = Alternative

DV = Design Variation

ha = hectares

Additional Focused Surveys

Habitat suitability assessments and focused surveys were conducted for designated species, as set forth in Section 6.3.2 of the MSHCP. The following



plant species require habitat suitability assessments within the Criteria Area Species Survey Areas (CASSAs)¹ within the BSA:

- San Jacinto Valley crownscale (Atriplex coronata var. notatior) CASSAs 3 and 3a
- Parish's brittlescale (Atriplex parishii) CASSAs 1, 3, and 3a
- Davidson's saltscale (Atriplex serenana var. davidsonii) CASSAs 1, 3, and
 3a
- Thread-leaved brodiaea (*Brodiaea filifolia*) CASSAs 1, 3, and 3a
- Smooth tarplant (*Centromadia pungens* ssp. *laevis*) CASSAs 1, 3, and 3a
- Round-leaved filaree (*Erodium macrophyllum*) CASSAs 1, 3, and 3a
- Coulter's goldfields (Lasthenia glabrata ssp. coulteri) CASSAs 1, 3, and 3a
- Little mousetail (*Myosurus minimus*) CASSAs 1, 3, and 3a
- Mud nama (Nama stenocarpum) CASSAs 3 and 3a

The MSHCP has designated survey areas for the following three wildlife species within the BSA:

- Los Angeles pocket mouse
- San Bernardino kangaroo rat
- Burrowing owl

In areas where target species were found to be present, the area was assessed for long-term conservation value for each species within the designated survey area. Table 3.17.G summarizes impacts to additional survey species that were determined to have habitat suitable for long-term conservation within the MSHCP survey area within the project footprint. In order to comply with the MSHCP, any impacts to more than 10 percent of areas that provide for long-term conservation value for the species require that a DBESP be made. Details of impacts and mitigation in the form of a DBESP are discussed in Sections 3.19, 3.20, and 3.21.

¹ CASSA: Survey area designated by the MSHCP for additional plant species. Within the designated survey area, habitat suitability assessments, focused surveys, and impact evaluations are required for the target plant species.

Table 3.17.G Impacts to Habitat Suitable for Long-Term Conservation of Additional Survey Species

Alternative/DV	Permanent Impacts, ha (ac)				
	Smooth Tarplant	Coulter's Goldfields	Los Angeles Pocket Mouse	San Bernardino Kangaroo Rat	Burrowing Owl
Alt. 4 (All Design Variations)	0.84 (2.08)	0.63 (1.55)	16.2 (40.0)	0.4 (1.0) ¹	0
Alt. 5 (All Design Variations)	0.84 (2.08)	0.63 (1.55)	16.2 (40.0)	0.4 (1.0) 1	0
Alt. 6 (All Design Variations)	0.84 (2.08)	0.63 (1.55)	16.2 (40.0)	0.4 (1.0) 1	0
Alt. 7 (All Design Variations)	0.84 (2.08)	0.63 (1.55)	16.2 (40.0)	0.4 (1.0) ¹	0
Alt. 9 (All Design Variations)	0.84 (2.08)	0.63 (1.55)	16.2 (40.0)	0.4 (1.0) ¹	1.6 (3.9) ²

¹ Impacts to San Bernardino kangaroo rat are less (0.3 ha [0.8 ac]) for the San Jacinto Design Variation.

Alt. = Alternative DV = Design Variation

ha = hectares

Compliance with the MSHCP Urban/Wildlands Interface Guidelines

The project will comply with the Urban/Wildlands Interface Guidelines as set forth in Section 6.1.4 of the MSHCP. These measures to reduce impacts where the project interfaces with existing or proposed conservation areas are discussed in the Avoidance, Minimization, and/or Mitigation Measures section (Section 3.17.5) of this document.

Compliance with the Best Management Practices and the Siting and Design Criteria

The project will comply with the BMPs and the siting and design criteria as set forth in Appendix C and Section 7.0 of the MSHCP. These measures are discussed in the Avoidance, Minimization, and/or Mitigation Measures section (Section 3.17.5) of this document.

MSHCP Conservation Area

The MSHCP Conservation Area would be impacted by all of the MCP Build Alternatives. As previously stated, the Conservation Area comprises existing conservation lands (PQP) as well as the Additional Reserve Lands that will be extracted from the MSHCP Criteria Area. The MSHCP Cell Criteria determine the amount of conservation that will be required in order to meet the conservation

Alternative 9 Rider Street Design Variation is the only Design Variation that would impact burrowing owls. Impacts to burrowing owls are based on loss of foraging habitat to nesting pairs.

ac = acres

goals of the MSHCP. PQP lands—which are the foundations upon which the Criteria Area is built—that are impacted by the project include several existing Habitat Conservation Plan areas as well as reserves.

The MSHCP planning process included evaluations of planned roadways with respect to conservation of biological resources and in the context of the MSHCP Conservation Area. Planned roadways identified in the MSHCP that are located within the MSHCP Criteria Area are considered to be Covered Activities as set forth in Section 7 of the MSHCP and are subject to guidelines for planned roadways to ensure that planned roadways are consistent with MSHCP conservation objectives.



Throughout the MSHCP planning process, evaluations of planned roadways, with respect to conservation of biological resources, were conducted. Planned roadways identified in the MSHCP are considered Covered Activities within the MSHCP Criteria Area. The MSHCP allows for a Community and Environmental Transportation Acceptability Process (CETAP) west-east intracounty transportation corridor as a Covered Activity, and for a Cajalco Road alternative to take the place of the CETAP alternative between El Sobrante Road and the Temescal Wash, if needed. In order for any MCP Build Alternative to be considered a Covered Activity, an equivalency analysis must be provided that demonstrates at least biological equivalency to the alignment analyzed in the MSHCP. Additionally, an amendment to the MSHCP will be required. A summary of this equivalency analysis is provided under the MSHCP Equivalency Analysis (Section 3.17.4).



This section describes the impacts to MSHCP Conservation Area, Criteria Cells, and PQP lands. Section 3.17.4 preliminarily describes how the proposed project would be biologically equivalent to a planned roadway identified in the MSHCP.



Table 3.17.H shows the total impacts to the MSHCP Criteria Area from implementation of the MCP project alternatives. The least impact to the MSHCP Criteria Area would occur with Alternatives 4 and 5. Greater impacts would occur with Alternatives 6, 7, or 9.



Table 3.17.H Impacts to MSHCP Criteria Area

Alternative/DV	Impacts, ha (ac)
Alt. 4 Base Case	154.3 (381.4)
Alt. 4 SJN DV	154.7 (382.2)
Alt. 4 TWS DV	154.3 (381.4)
Alt. 5 Base Case	164.6 (406.8)
Alt. 5 SJN DV	165.0 (407.6)
Alt. 5 TWS DV	164.6 (406.8)
Alt. 6 Base Case	258.2 (638.0)
Alt. 6 SJN DV	258.5 (638.8)
Alt. 6 TWS DV	258.2 (638.0)
Alt. 7 Base Case	268.5 (663.4)
Alt. 7 SJN DV	268.8 (664.2)
Alt. 7 TWS DV	268.5 (663.4)
Alt. 9 Base Case	256.8 (634.5)
Alt. 9 RD DV	228.3 (564.0)
Alt. 9 PP-E DV	256.4 (633.5)
Alt. 9 SJN DV	257.1 (635.3)
Alt. 9 TWS DV	256.8 (634.5)

Source: Natural Environment Study (NES), LSA Associates, Inc., 2008.

ac = acres

Alt = Alternative

DV = Design Variation

ha = hectares

MSHCP = Multiple Species Habitat Conservation Plan

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

RD = Rider Street

SJN = San Jacinto North

TWS = Temescal Wash Area



Table 3.17.H is a worst-case estimate of impacts to the entire MSHCP Criteria Area without taking into account conservation goals specified in the MSHCP for each Criteria Cell. The MSHCP Conservation Area will consist of existing Core Areas¹ and Linkages² as well as new conservation areas (proposed Cores, proposed Linkages, and proposed extensions to existing Cores) that would be assembled from the Criteria Area based upon these Criteria Cell conservation goals. More detailed estimates of project impacts to the MSHCP Conservation

¹ "Core Area" is a block of habitat of appropriate size, configuration, and vegetation characteristics to generally support the life history requirements of one or more species covered by the MSHCP.

² "Linkage" is a connection between Core Areas with adequate size, configuration and vegetation characteristics to generally provide for "Live-In" habitat and/or genetic flow for species.

Area are summarized in Table 3.17.I (Impacts to MSHCP Cores and Linkages) and Table 3.17.J (Impacts to MSHCP Public and Quasi-Public Lands).

In Table 3.17.I, impacts to proposed portions of the MSHCP Conservation Area are expressed as ranges derived from the conservation goals of the corresponding Criteria Cells. Overall, Alternative 9 would have the least impact to MSHCP Cores and Linkages, followed by Alternatives 4 and 5. Alternatives 6 and 7 would have the greatest impact. The primary differences in impacts between alternatives occur in the Proposed Extension of Existing Core 2, Existing Core C, Proposed Linkage 3, and Proposed Non-Contiguous Habitat Block 4.

Table 3.17.J shows impacts to PQP lands (with a breakdown by vegetation type) as defined by the MSHCP. Alternative 9 would have the least impact to PQP lands, followed by Alternatives 4 and 5. Alternatives 6 and 7 would have the greatest impact to PQP lands. Table 3.17.J is an overall summary of impacts to PQP lands; however, specific impacts per each individual Habitat Conservation Plan (which are PQP lands under the MSHCP) are provided in the following discussions.

See Appendix O for a table of regional species considered to be sensitive and their coverage under the MSHCP.

The MCP project may result in indirect effects to habitat fragmentation along existing reserves and proposed MSHCP Conservation Areas. Indirect effects of the project on habitat within these areas may result from edge effects such as habitat fragmentation, exotic plant and animal infestations, litter, fire, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. Indirect effects may result from an increase in fire frequency, which may result in type conversion of native habitats and an increase of exotic plant species. Type conversions from more open native habitat to more dense nonnative grasslands could reduce the area of potential sensitive species habitat. The MCP project may provide additional access points for unauthorized off-road vehicle use, which may destroy native habitat and sensitive species and may also promote exotic plant infestation. Additionally, pollutants (in the form of nitrogen compounds from car emissions) may settle on the soil and stimulate the growth of nonnative species that may out-compete native species. Future development and use of the MCP may result in additional litter. Litter may also result in animal infestations, which may result in additional predators in the area that may prey on



Table 3.17.1 Impacts to MSHCP Cores and Linkages, ha (ac)

Alternative/DV	Existing Core H	Proposed Extension of Existing Core 2	Existing Core C	Proposed Constrained Linkage 20	Existing Constrained Linkage C	Proposed Extension of Existing Core 4	Non- Contiguous Habitat Block 5	Proposed Linkage 3	Proposed Non- Contiguous Habitat Block 4
Alt. 4 Base Case	0.1 (0.2)	30–34 (75–85)	175.6 (433.8)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8–3.2 (7–8)	1.6–2.4 (4–6)	
Alt. 4 SJN DV	0.1 (0.2)	30–34 (75–85)	175.6 (433.8)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8–3.2 (7–8)	1.6–2.4 (4–6)	
Alt. 4 TWS DV	0.1 (0.2)	30–34 (75–85)	175.6 (433.8)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8–3.2 (7–8)	1.6–2.4 (4–6)	1
Alt. 5 Base Case	0.1 (0.2)	30–34 (75–85)	175.6 (433.8)	4.5–4.9 (11–12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8-3.2 (7-8)	1.6–2.4 (4–6)	1
Alt. 5 SJN DV	0.1 (0.2)	30–34 (75–85)	175.6 (433.8)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8–3.2 (7–8)	1.6–2.4 (4–6)	
Alt. 5 TWS DV	0.1 (0.2)	30–34 (75–85)	175.6 (433.8)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8–3.2 (7–8)	1.6–2.4 (4–6)	1
Alt. 6 Base Case	0.1 (0.2)	105–115 (260–285)	219.8 (543.2)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8-3.2 (7-8)	1.6–2.4 (4–6)	1
Alt. 6 SJN DV	0.1 (0.2)	105-115 (260-285)	219.8 (543.2)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8–3.2 (7–8)	1.6–2.4 (4–6)	1
Alt. 6 TWS DV	0.1 (0.2)	105-115 (260-285)	219.8 (543.2)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8-3.2 (7-8)	1.6–2.4 (4–6)	1
Alt. 7 Base Case	0.1 (0.2)	105-115 (260-285)	219.8 (543.2)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8–3.2 (7–8)	1.6–2.4 (4–6)	1
Alt. 7 SJN DV	0.1 (0.2)	105-115 (260-285)	219.8 (543.2)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8-3.2 (7-8)	1.6–2.4 (4–6)	***************************************
Alt. 7 TWS DV	0.1 (0.2)	105-115 (260-285)	219.8 (543.2)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8-3.2 (7-8)	1.6-2.4 (4-6)	
Alt. 9 Base Case	0.1 (0.2)	30–34 (75–85)	69.4 (171.5)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8–3.2 (7–8)	46.5–50.6 (115–125)	15–17 (38–43)
Alt. 9 RD DV	0.1 (0.2)	30–34 (75–85)	69.4 (171.5)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8-3.2 (7-8)	46.5–50.6 (115–125)	1.6–2.0 (4–5)
Alt. 9 PP-E DV	0.1 (0.2)	30–34 (75–85)	69.4 (171.5)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8-3.2 (7-8)	46.5–50.6 (115–125)	15–17 (38–43)
Alt. 9 SJN DV	0.1 (0.2)	30–34 (75–85)	69.4 (171.5)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8-3.2 (7-8)	46.5–50.6 (115–125)	15-17 (38-43)
Alt. 9 TWS DV	0.1 (0.2)	30–34 (75–85)	69.4 (171.5)	4.5-4.9 (11-12)	0.8–1.2 (2–3)	15.8 (39.0)	2.8–3.2 (7–8)	46.5–50.6 (115–125)	15-17 (38-43)
Course: Motural Environment Ctudy (NIEC) 1 CA Accordate Inc	A. 40	I cotolicación A Callacter	0000						

Source: Natural Environment Study (NES), LSA Associates, Inc., 2008.

ac = areas Alt. = Alternative DV = Design Variation ha = hectares MSHCP = Multiple Species Habitat Conservation Plan

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade RD = Rider Street SJN = San Jacinto North TWS = Temescal Wash Area



Table 3.17.J Impacts to MSHCP Public/Quasi-Public Lands, ha (ac)

Alternative/DV	Cropland	Grove/ Orchard	Developed/ Ruderal	Riversidean Upland Sage Scrub	Riversidean Alluvial Fan Sage Scrub	Nonnative Grassland	Alkali Grassland	Riparian Forest	Riparian Scrub	Peninsular Juniper Woodland	Total Impacts
Alt. 4 (All Design Variations) 1.0 (2.4) 24.8 (61.4)	1.0 (2.4)	24.8 (61.4)	3.4 (8.3)	77.4 (191.4)	1.2 (3.0)	39.9 (98.7)	0.05 (0.11)	0.05 (0.11) 0.92 (2.29) 2.81 (6.93)	2.81 (6.93)	$\overline{}$	160.9 (397.6)
Alt. 5 (All Design Variations)	1.1 (2.7)	1.1 (2.7) 24.8 (61.4)	2.8 (7.0)	77.4 (191.4)	1.2 (3.0)	39.9 (98.7)	0.01 (0.03)	0.92 (2.29) 2.81 (6.93)	2.81 (6.93)	9.4 (23.1)	160.4 (396.5)
Alt. 6 (All Design Variations) 1.0 (2.4) 23.1 (57.1)	1.0 (2.4)	23.1 (57.1)	4.5 (11.1)	67.5 (166.8)	0.9 (2.3)	98.1 (242.3)	0.05 (0.11)	0.86 (2.14)	3.00 (7.41)	11.3 (28.0)	0.86 (2.14) 3.00 (7.41) 11.3 (28.0) 210.3 (519.6)
Alt. 7 (All Design Variations)	1.1 (2.7)	1.1 (2.7) 23.1 (57.1)	4.0 (9.8)	67.5 (166.8)	0.9 (2.3)	98.1 (242.3)	0.01 (0.03)	0.86 (2.14)	0.86 (2.14) 3.00 (7.41)	11.3 (28.0)	209.8 (518.5)
Alt. 9 Base Case	0.0 (0.1)	0.0 (0.1) 24.8 (61.3)	1.2 (3.0)	10.6 (26.3)	0	24.8 (61.3)	0.02 (0.05)	0.0 (0.0)	0.23 (0.57)	0	61.8 (152.7)
Alt. 9 RD DV	1.1 (2.7)	1.1 (2.7) 24.8 (61.3)	0.8 (2.0)	10.6 (26.3)	0	24.8 (61.3)	0.01 (0.03)	0.0 (0.0)	0.23 (0.57)	0	62.4 (154.2)
Alt. 9 PP-E DV	0.0 (0.1)	0.0 (0.1) 24.8 (61.3)	1.2 (3.0)	10.6 (26.3)	0	24.8 (61.3)	0.02 (0.05)	0.0 (0.0)	0.23 (0.57)	0	61.8 (152.7)
Alt. 9 SJN DV	0.0 (0.1)	0.0 (0.1) 24.8 (61.3)	1.2 (3.0)	10.6 (26.3)	0	24.8 (61.3)	0.02 (0.05)	0.0 (0.0)	0.23 (0.57)	0	61.8 (152.7)
Alt. 9 TWS DV	0.0 (0.1)	0.0 (0.1) 24.8 (61.3)	1.2 (3.0)	10.6 (26.3)	0	24.8 (61.3)	0.02 (0.05)	0.0 (0.0)	0.23 (0.57)	0	61.8 (152.7)
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	(CL) **	· · · · · · · · · · · · · · · · · · ·									

Source: Natural Environment Study (NES), LSA Associates, Inc., 2008.

ac = acres Atr. = Atternative DV = Design Variation ha = hectares MSHCP = Multiple Species Habitat Conservation Plan

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade RD = Rider Street SJN = San Jacinto North TWS = Temescal Wash Area

the listed species. Litter or dumping that may occur in proximity or within the existing or proposed conservation areas may also increase the management needs of the existing reserve for removal of trash.

Lake Mathews Multiple Species Habitat Conservation Plan
Table 3.17.K summarizes impacts to the Lake Mathews MSHCP by vegetation category.

Alternative 9, located south of Lake Mathews, does not pass through the Lake Mathews MSHCP Plan Area; therefore, there would be no direct impacts to lands or species within the Lake Mathews MSHCP Plan Area by this alternative. Indirect and cumulative impacts such as an increase in fire frequency, habitat fragmentation, and the introduction of exotic species could all occur as a result of the project. However, it should be noted that Alternative 9 is located within 14–30 m (45–100 ft) of the Lake Mathews MSHCP boundary for approximately 0.8 km (one-half mile), and within 60 m (200 ft) for another 0.8 km (one-half mile). Other than this 1.6 km (1 mi) stretch, Alternative 9 is at a minimum of 60 m (200 ft) to a maximum of 3,048 m (10,000 ft) away from the boundary of the Lake Mathews MSHCP Plan Area. Therefore, given this distance there is a low likelihood that Alternative 9 would have substantial direct or cumulative impacts to the Lake Mathews MSHCP Plan Area.

There may be minimal indirect impacts to the Lake Mathews MSHCP Plan Area within the mile stretch in which the MCP project will be located within 60 m (200 ft) of the Lake Mathews MSHCP Plan Area. Indirect effects of the project on habitat within the Lake Mathews MSHCP Plan Area may result from edge effects such as habitat fragmentation, exotic plant and animal infestations, litter, fire, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. Indirect effects may result from an increase in fire frequency, which may result in type conversion of native habitats and an increase of exotic plant species. Type conversions from more open native habitat to more dense nonnative grasslands could reduce the area of potential sensitive species habitat. The MCP project may provide additional access points for unauthorized off-road vehicle use, which may destroy native habitat and sensitive species and may also promote exotic plant infestation. Additionally, pollutants (in the form of nitrogen compounds from car emissions) may settle on the soil and stimulate the growth of nonnative species that may out-compete native species. Future development and use of the MCP may result in additional litter. Litter may also result in animal





Table 3.17.K Total Impacts to Land Cover Categories within Lake Mathews MSHCP, ha (ac)

Alternative/DV	Developed/ Ruderal	Grove/ Orchard	Lake/ Pond	Nonnative Grassland	Peninsular Juniper Woodland and Scrub	Riparian Forest	Riparian Scrub	Riversidean Alluvial Fan Sage Scrub	Riversidean Sage Scrub	Grand Total
Alt. 4 Base Case	6.3 (15.5)	0.0 (0.0)	1	17.0 (41.9)	9.4 (23.1)	1.0 (2.4)	2.6 (6.5)	1.2 (3.0)	69.1 (170.7)	106.5 (263.2)
Alt. 4 SJN DV	6.3 (15.5)	0.0 (0.0)	1	17.0 (41.9)	9.4 (23.1)	1.0 (2.4)	2.6 (6.5)	1.2 (3.0)	69.1 (170.7)	106.5 (263.2)
Alt_4 TWS DV	6.3 (15.5)	0.0 (0.0)	1	17.0 (41.9)	9.4 (23.1)	1.0 (2.4)	2.6 (6.5)	1.2 (3.0)	69.1 (170.7)	106.5 (263.2)
Alt. 5 Base Case	6.3 (15.5)	0.0 (0.0)	1	17.0 (41.9)	9.4 (23.1)	1.0 (2.4)	2.6 (6.5)	1.2 (3.0)	69.1 (170.7)	106.5 (263.2)
Alt. 5 SJN DV	6.3 (15.5)	0.0 (0.0)	1	17.0 (41.9)	9.4 (23.1)	1.0 (2.4)	2.6 (6.5)	1.2 (3.0)	69.1 (170.7)	106.5 (263.2)
Alt. 5 TWS DV	6.3 (15.5)	0.0 (0.0)	1	17.0 (41.9)	9.4 (23.1)	1.0 (2.4)	2.6 (6.5)	1.2 (3.0)	69.1 (170.7)	106.5 (263.2)
Alt. 6 Base Case	25.2 (62.3)	0.1 (0.3)	0.4 (0.9)	80.9 (200.0)	11.4 (28.2)	0.8 (2.1)	3.0 (7.5)	0.9 (2.3)	67.2 (166.2)	190.1 (469.8)
Alt. 6 SJN DV	25.2 (62.3)	0.1 (0.3)	0.4 (0.9)	80.9 (200.0)	11.4 (28.2)	0.8 (2.1)	3.0 (7.5)	0.9 (2.3)	67.2 (166.2)	190.1 (469.8)
Alt. 6 TWS DV	25.2 (62.3)	0.1 (0.3)	0.4 (0.9)	80.9 (200.0)	11.4 (28.2)	0.8 (2.1)	3.0 (7.5)	0.9 (2.3)	67.2 (166.2)	190.1 (469.8)
Alt. 7 Base Case	25.2 (62.3)	0.1 (0.3)	0.4 (0.9)	80.9 (200.0)	11.4 (28.2)	0.8 (2.1)	3.0 (7.5)	0.9 (2.3)	67.2 (166.2)	190.1 (469.8)
Alt. 7 SJN DV	25.2 (62.3)	0.1 (0.3)	0.4 (0.9)	80.9 (200.0)	11.4 (28.2)	0.8 (2.1)	3.0 (7.5)	0.9 (2.3)	67.2 (166.2)	190.1 (469.8)
Alt. 7 TWS DV	25.2 (62.3)	0.1 (0.3)	0.4 (0.9)	80.9 (200.0)	11.4 (28.2)	0.8 (2.1)	3.0 (7.5)	0.9 (2.3)	67.2 (166.2)	190.1 (469.8)
Alt. 9 Base Case	1	1	١	-	1	ı	1	-	ı	ı
Alt. 9 RD DV	ı	1	1	1	١	ı	ı	I	1	l
Alt. 9 PP-E DV	1	1	1	_	-	I	1	1	-	-
Alt. 9 SJN DV	1	-	ı	-	ı	1	-	-	-	1
Alt. 9 TWS DV	ı	ı	1	_	1	ı	1	1	1	-

ac = acres At. = Atternative DV = Design Variation ha = hectares MSHCP = Multiple Species Habitat Conservation Plan

Source: *Natural Environment Study (NES)*, LSA Associates, Inc., 2008.

ac = acres
Alt. = Alternative
DV = Design Variation
DN = Hectares
TWS = Temescal Wash Area

infestations, which may result in additional predators in the area that may prey on the listed species. Litter or dumping that may occur in proximity or within the Lake Mathews MSHCP Plan Area may also increase the management needs of the existing reserve for removal of trash.

The proposed alignments of Alternatives 4 through 7 and their design variations pass through conserved lands within the Lake Mathews MSHCP Plan Area. These lands were originally set aside as a result of the development of Lake Mathews by Metropolitan. Currently, there is no process in place for amending the Lake Mathews MSHCP to allow future development by other parties on these conservation lands, including the proposed MCP project; however, there is no language in the Lake Mathews MSHCP prohibiting an amendment. Amending the Lake Mathews MSHCP would require Metropolitan, as the Permittee, to initiate an amendment. Approval from the CDFG and USFWS would be required, and mitigation would likely consist of a purchase of land for conserving habitat, with similar values for covered species that would be impacted.

RCTC and Metropolitan have engaged in ongoing coordination since 2003, when the potential routing of the MCP south of Lake Mathews was first proposed. Quarterly meetings between the agencies provide for coordination on how the MCP not only may affect the Lake Mathews MSHCP Reserve lands, but also Metropolitan facilities within the area. Through these meetings, Metropolitan staff and legal counsel have consistently maintained that, as the Permittee for their MSHCP, they have sole authority to initiate any amendments to permit additional facilities (such as the MCP).

At a future point in time, if the County of Riverside decides to move forward with a separate, unrelated project of widening Cajalco Road through the Lake Mathews MSHCP Plan Area, as part of implementing the Riverside County General Plan Circulation Element, Metropolitan would have to agree to a plan amendment and the indirect, cumulative, and direct impacts of that action would be addressed through that amendment process.

See Appendix O for a table of regional species considered to be sensitive and their coverage under the Lake Mathews MSHCP.

El Sobrante Landfill Multiple Species Habitat Conservation Plan Alternatives 6 and 7 do not impact the El Sobrante Landfill MSHCP. Alternative 9 would directly impact 8.9 ha (22.1 ac) and indirectly impact 10.8 ha (27 ac) of





the El Sobrante Landfill MSHCP Plan Area. Alternatives 4 and 5 would each impact 9.1 ha (22.4 ac) of the El Sobrante Landfill MSHCP Plan Area. See the table in Appendix O for regional species considered to be sensitive and their coverage under the El Sobrante Landfill MSHCP.

The proposed project's impacts to the El Sobrante Landfill MSHCP would require an amendment to the El Sobrante Landfill MSHCP that would need to be initiated by the Permittee, USA Waste of California, Inc., and require approval from the CDFG and USFWS. Mitigation for the amendment would likely consist of purchase of land for conserving habitat with similar values for covered species that would be impacted.

Table 3.17.L summarizes impacts to the El Sobrante Landfill MSHCP by vegetation category. Vegetation categories not listed below are not impacted.



Alternative/DV	Nonnative Grassland	Peninsular Juniper Woodland and Scrub	Riversidean Sage Scrub	Grand Total
Alt. 4 Base Case	3.6 (8.8)	0.1 (0.2)	5.4 (13.4)	9.1 (22.4)
Alt 4 SJN DV	3.6 (8.8)	0.1 (0.2)	5.4 (13.4)	9.1 (22.4)
Alt. 4 TWS DV	3.6 (8.8)	0.1 (0.2)	5.4 (13.4)	9.1 (22.4)
Alt. 5 Base Case	3.6 (8.8)	0.1 (0.2)	5.4 (13.4)	9.1 (22.4)
Alt 5 SJN DV	3.6 (8.8)	0.1 (0.2)	5.4 (13.4)	9.1 (22.4)
Alt. 5 TWS DV	3.6 (8.8)	0.1 (0.2)	5.4 (13.4)	9.1 (22.4)
Alt. 9 Base Case	3.5 (8.6)	0.1 (0.2)	5.4 (13.3)	8.9 (22.1)
Alt. 9 RD DV	3.5 (8.6)	0.1 (0.2)	5.4 (13.3)	8.9 (22.1)
Alt 9 PP-E DV	3.5 (8.6)	0.1 (0.2)	5.4 (13.3)	8.9 (22.1)
Alt. 9 SJN DV	3.5 (8.6)	0.1 (0.2)	5.4 (13.3)	8.9 (22.1)
Alt. 9 TWS DV	3.5 (8.6)	0.1 (0.2)	5.4 (13.3)	8.9 (22.1)

Source: Natural Environment Study (NES), LSA Associates, Inc., 2008.

ac = acres

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

Alt. = Alternative

RD = Rider Street

DV = Design Variation

SJN = San Jacinto North

ha = hectares

TWS = Temescal Wash Area

MSHCP = Multiple Species Habitat Conservation Plan

Indirect effects of the project on habitat within the El Sobrante Landfill MSHCP Plan Area may result from edge effects such as habitat fragmentation, exotic plant and animal infestations, litter, fire, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. Indirect effects may result from an increase in fire frequency, which may result in type conversion of native habitats





and an increase of exotic plant species. Type conversions from more open native habitat to more dense nonnative grasslands could reduce the area of potential

sensitive species habitat. The MCP project may provide additional access points for unauthorized off-road vehicle use, which may destroy native habitat and sensitive species and may also promote exotic plant infestation. Additionally, pollutants (in the form of nitrogen compounds from car emissions) may settle on the soil and stimulate the growth of nonnative species that may out-compete native species. Future development and use of MCP may result in additional litter. Litter may also result in animal infestations, which may result in additional predators in the area that may prey on the listed species. Litter or dumping that may occur in proximity to or within the El Sobrante Landfill MSHCP Plan Area may also increase the management needs of the existing reserve for removal of trash.

Impacts resulting from the MCP project to the El Sobrante Landfill MSHCP would require: an amendment initiated by USA Waste of California, Inc. to the Habitat Conservation Plan and to the USFWS incidental take permit pursuant to Section 10(a) of the FESA; and a special use permit pursuant to the Migratory Bird Treaty Act (MBTA) and to the CDFG incidental take permit pursuant to Section 2081 of the CESA. According to the El Sobrante Landfill MSHCP, an amendment will require an amendment to the Habitat Conservation Plan addressing the new circumstances, a subsequent publication in the Federal Register, CEQA and NEPA compliance, and an intra-Service Section 7 consultation, if one is deemed necessary. The USFWS and CDFG would have at least 120 days after publication to make a determination regarding the implementation of the proposed amendment.

The amendment would need to show that the El Sobrante Landfill MSHCP would remain "whole" and that mitigation for impacts to covered species in the El Sobrante Landfill MSHCP would be required to be biologically equivalent or superior based on current site conditions. Mitigation would likely consist of a purchase of land for conserving habitat with similar values for covered species that would be impacted.

Habitat Conservation Plan for the Stephens' Kangaroo Rat
There are four Stephens' Kangaroo Rat Reserves established through the
implementation of the Habitat Conservation Plan for the Stephens' Kangaroo Rat

in western Riverside County that are located within the area of the proposed MCP project. These include Lake Mathews-Estelle Mountain Reserve (which includes the Lake Mathews MSHCP Plan Area and Lake Mathews-Estelle Mountain Reserve), Steele Peak Reserve, Motte Rimrock Reserve, and San Jacinto-Lake Perris Reserve. All of the alternatives avoid direct impacts to the Steele Peak Reserve, Motte Rimrock Reserve, and San Jacinto-Lake Perris Reserve.

Table 3.17.M provides the area of impacts to Stephens' Kangaroo Rat Reserves by each alternative. Only the Lake Mathews-Estelle Mountain Reserve would be impacted by the project (within the area impacted are three parcels of land that are managed by the BLM). No direct impacts would occur to the Steele Peak Reserve, San Jacinto-Lake Perris Reserve, or Motte Rimrock Reserve.

Alternatives 6 and 7 would result in the greatest impact, and Alternative 9 would result in the least impact.

The MCP project may result in indirect effects to the Lake Mathews-Estelle Mountain Reserve, San Jacinto-Lake Perris Reserve, and Motte Rimrock Reserve. The MCP project would not result in indirect effects to the Steele Peak Reserve since it is located more than 1.2 km (three-quarter mile) north of the Steele Peak Reserve. Although the MCP composite project footprint is located outside Motte Rimrock Reserve and has no direct impact on this Reserve, Alternative 9 is adjacent to the northwestern corner of the Motte Rimrock Reserve. The area north of Motte Rimrock Reserve is within the MSHCP Criteria Area, which means portions of this area are contemplated for conservation. Although a culvert/wildlife crossing has been designed into the MCP in this location nearest the Motte Rimrock Reserve, wildlife movement may be restricted between the Motte Rimrock Reserve and the proposed conservation area. The MCP could cause the native habitat on either side of the proposed project footprint to become fragmented.

Indirect effects of the project on habitat within the Motte Rimrock Reserve, Lake Mathews-Estelle Mountain Reserve, and San Jacinto-Lake Perris Reserve may result from edge effects such as habitat fragmentation, exotic plant and animal infestations, litter, fire, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. Indirect effects may result from an increase in fire frequency, which may result in type conversion of native habitats and an increase of exotic plant species. Type conversions from more open native habitat to more dense nonnative grasslands could reduce the area of potential sensitive species habitat. The MCP project may provide additional access points for





Table 3.17.M Total Impacts to Land Cover Categories within Stephens' Kangaroo Rat Reserve, ha (ac)

NOTE: Impacts to alkali grassland/playa and field croplands are less than 0.03 ha (0.07 ac) and are not summarized on this table.

								-	
Alternative/DV	Developed/ Ruderal	Grove/ Orchard	Nonnative Grassland	Peninsular Juniper Woodland and Scrub	Riparian Forest	Riparian Scrub	Riversidean Alluvial Fan Sage Scrub	Riversidean Sage Scrub	Grand Total
Alt. 4 Base Case	4.6 (11.4)	24.8 (61.4)	43.4 (107.3)	9.5 (23.4)	0.9 (2.3)	2.9 (7.1)	1.2 (3.0)	85.3 (210.8)	172.6 (426.6)
Alt. 4 SJN DV	4.6 (11.4)	24.8 (61.4)	43.4 (107.3)	9.5 (23.4)	0.9 (2.3)	2.9 (7.1)	1.2 (3.0)	85.3 (210.8)	172.6 (426.6)
Alt. 4 TWS DV	4.6 (11.4)	24.8 (61.4)	43.4 (107.3)	9.5 (23.4)	0.9 (2.3)	2.9 (7.1)	1.2 (3.0)	85.3 (210.8)	172.6 (426.6)
Alt. 5 Base Case	4.6 (11.4)	24.8 (61.4)	43.4 (107.3)	9.5 (23.4)	0.9 (2.3)	2.9 (7.1)	1.2 (3.0)	85.3 (210.8)	172.6 (426.6)
Alt. 5 SJN DV	4.6 (11.4)	24.8 (61.4)	43.4 (107.3)	9.5 (23.4)	0.9 (2.3)	2.9 (7.1)	1.2 (3.0)	85.3 (210.8)	172.6 (426.6)
Alt. 5 TWS DV	4.6 (11.4)	24.8 (61.4)	43.4 (107.3)	9.5 (23.4)	0.9 (2.3)	2.9 (7.1)	1.2 (3.0)	85.3 (210.8)	172.6 (426.6)
Alt. 6 Base Case	13.0 (32.1)	23.1 (57.1)	100.0 (247.2)	11.4 (28.2)	0.9 (2.1)	3.3 (8.2)	0.9 (2.3)	68.6 (169.6)	221.3 (546.8)
Alt 6 SJN DV	13.0 (32.1)	23.1 (57.1)	100.0 (247.2)	11.4 (28.2)	0.9 (2.1)	3.3 (8.2)	0.9 (2.3)	68.6 (169.6)	221.3 (546.8)
Alt. 6 TWS DV	13.0 (32.1)	23.1 (57.1)	100.0 (247.2)	11.4 (28.2)	0.9 (2.1)	3.3 (8.2)	0.9 (2.3)	68.6 (169.6)	221.3 (546.8)
Alt. 7 Base Case	13.0 (32.1)	23.1 (57.1)	100.0 (247.2)	11.4 (28.2)	0.9 (2.1)	3.3 (8.2)	0.9 (2.3)	68.6 (169.6)	221.3 (546.8)
Alt. 7 SJN DV	13.0 (32.1)	23.1 (57.1)	100.0 (247.2)	11.4 (28.2)	0.9 (2.1)	3.3 (8.2)	0.9 (2.3)	68.6 (169.6)	221.3 (546.8)
Alt. 7 TWS DV	13.0 (32.1)	23.1 (57.1)	100.0 (247.2)	11.4 (28.2)	0.9 (2.1)	3.3 (8.2)	0.9 (2.3)	68.6 (169.6)	221.3 (546.8)
Alt. 9 Base Case	ı	1	27.5 (68.0)	0.1 (0.2)	ı	0.2 (0.6)	-	16.7 (41.3)	69.4 (171.5)
Alt. 9 RD DV	ı	ı	27.5 (68.0)	0.1 (0.2)	1	0.2 (0.6)	I	16.7 (41.3)	69.4 (171.5)
Alt. 9 PP-E DV	ı	ı	27.5 (68.0)	0.1 (0.2)	1	0.2 (0.6)	ı	16.7 (41.3)	69.4 (171.5)
Alt. 9 SJN DV	1	1	27.5 (68.0)	0.1 (0.2)	-	0.2 (0.6)	ļ	16.7 (41.3)	69.4 (171.5)
Alt. 9 TWS DV	ı	ı	27.5(68.0)	0.1(0.2)	1	0.2(0.6)	I	16.7(41.3)	69.4(171.5)
			-						

MSHCP = Multiple Species Habitat Conservation Plan

Source: *Natural Environment Study (NES)*, LSA Associates, Inc., 2008.

ac = acres
Alt. = Alternative
DV = Design Variation
DN = Hectares
TWS = Temescal Wash Area

unauthorized off-road vehicle use, which may destroy native habitat and sensitive species and may also promote exotic plant infestation. Additionally, pollutants (in the form of nitrogen compounds from car emissions) may settle on the soil and stimulate the growth of nonnative species that may out-compete native species. Future development and use of MCP may result in additional litter. Litter may also result in animal infestations, which may result in additional predators in the area that may prey on the listed species. Litter or dumping that may occur in proximity to or within the Estelle Mountain-Lake Mathews Reserve, San Jacinto-Lake Perris Reserve, and Motte Rimrock Reserve may also increase the management needs of the existing reserves for removal of trash.

No Build Alternatives

Under Alternative 1A, the MCP project would not be constructed. Planned improvements in the regional and local circulation system would be constructed, as accounted for in the adopted Riverside County General Plan, the RCTC's Measure A program, and the cities' General Plans.

Alternative 1B is the same as Alternative 1A but includes implementation of Cajalco Road and Ramona Expressway, consistent with the Riverside County General Plan Circulation Element.

Impacts related to a footprint were not calculated for the No Build Alternatives; therefore, a qualitative analysis of the permanent effects of Alternatives 1A and 1B is presented here. Alternative 1A would generally result in fewer impacts to natural communities within the MCP study area than any of the MCP Build Alternatives since the MCP project would not be built and no improvements would be made to Cajalco Road or Ramona Expressway. Alternative 1B would generally result in fewer impacts than the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as MCP Build Alternatives 6 and 7 since these alternatives implement the General Plan roadway alignments in this area.

The No Build Alternatives would be required to comply with applicable habitat conservation plans in a manner similar to that described above for the Build Alternatives. The proposed projects in the No Build Alternatives would have a substantially different effect on proposed HCPs, and mitigation would be similar to that required for the proposed Build Alternatives.



3.17.3.2 Temporary Impacts

Temporary impacts to natural communities may occur during construction where habitats are temporarily disturbed during grading or other activities. For the purposes of this impact analysis, a conservative right of way footprint was established for each alternative that includes areas of cut and fill, staging areas for construction vehicles, equipment and materials, haul routes, and water quality treatment features. While some portions of this right of way footprint would only be temporarily disturbed during construction and would be revegetated with native plant species, it is not expected that this revegetation would fully restore the functions and values of the impacted habitat. Therefore, the analysis of impacts conservatively estimates a worst-case impact scenario wherein all areas within the right of way footprint are calculated as permanent impacts, with the exception of areas spanned by bridges. Impacts to riparian habitats and jurisdictional areas at the bridged areas have been calculated as permanent impacts (refer to Section 3.17.3.1) and temporary impacts.

Impacts to riparian habitats and jurisdictional areas spanned by bridges were calculated with the assumption that 10 percent of the bridged areas would be permanently impacted. Permanent impacts (consisting of the bridge supports) would likely be less than 10 percent of the bridged areas; however, since the specific location of the bridge supports are not yet determined, permanent impacts were calculated conservatively. Impacts were calculated with the assumption that the remaining 90 percent of the bridged areas would consist of temporary impacts. Typically, temporary impacts also include a 9.14 m (30 ft) buffer (not exceeding the project footprint) for the construction of bridge structures. Additional areas, based on grading plans, that the project engineer determined would be avoided or would consist of temporary impacts were also assessed individually for each bridge location. These bridges are summarized in the table "Mid County Parkway – Summary of Bridge Descriptions and Avoidance of Jurisdictional Areas" found in Appendix I (Attachment D). Temporary impacts to MSHCP riparian/riverine areas by alternative are provided in Table 3.17.N.

3.17.4 MSHCP Equivalency Analysis – Summary

This section provides a framework for determining how the Locally Preferred Alternative (Alternative 9 Temescal Wash Area Design Variation [TWS DV], which is discussed in Section 2.8 of this EIR/EIS) could be considered consistent with the

Table 3.17.N Temporary Impacts to MSHCP Riparian/Riverine Areas

_		_
ſ	_	-
l	=	Ξ,
`	ν	

		Ripari	an Commu	nity, ha (ac)		
Alternative/DV	Riversidean Alluvial Fan Sage Scrub	Marsh	Riparian Forest	Riparian Scrub	Additional CDFG Streambed and Associated Riparian Habitat ¹	Total Area, ha (ac)
Alt. 4 Base Case	0.0 (0.0)	0.1 (0.2)	1.4 (3.4)	0.8 (2.0)	2.2 (5.5)	4.5 (11.2)
Alt. 4 SJN DV	0.0 (0.0)	0.1 (0.2)	0.5 (1.2)	0.9 (2.2)	2.1 (5.1)	3.5 (8.8)
Alt. 4 TWS DV	0.0 (0.0)	0.1 (0.2)	1.4 (3.4)	0.8 (2.0)	2.2 (5.5)	4.5 (11.2)
Alt. 5 Base Case	0.0 (0.0)	0.1 (0.2)	1.4 (3.4)	0.8 (2.0)	1.7 (4.1)	4.0 (9.8)
Alt. 5 SJN DV	0.0 (0.0)	0.1 (0.2)	0.5 (1.2)	0.9 (2.2)	1.5 (3.7)	3.0 (7.3)
Alt. 5 TWS DV	0.0 (0.0)	0.1 (0.2)	1.4 (3.4)	0.8 (2.0)	1.7 (4.1)	3.9 (9.7)
Alt. 6 Base Case	0.3 (0.7)	0.1 (0.2)	1.7 (4.1)	1.2 (3.0)	2.5 (6.1)	5.7 (14.2)
Alt. 6 SJN DV	0.3 (0.7)	0.1 (0.2)	0.8 (1.9)	1.3 (3.1)	2.3 (5.7)	4.7 (11.7)
Alt. 6 TWS DV	0.3 (0.7)	0.1 (0.2)	1.7 (4.1)	1.2 (3.0)	2.4 (6.0)	5.7 (14.1)
Alt. 7 Base Case	0.3 (0.7)	0.1 (0.2)	1.7 (4.1)	1.2 (3.0)	1.9 (4.6)	5.2 (12.7)
Alt. 7 SJN DV	0.3 (0.7)	0.1 (0.2)	0.8 (1.9)	1.3 (3.1)	1.7 (4.3)	4.2 (10.3)
Alt. 7 TWS DV	0.3 (0.7)	0.1 (0.2)	1.7 (4.1)	1.2 (3.0)	1.9 (4.6)	5.1 (12.7)
Alt. 9 Base Case	0.0 (0.0)	0.1 (0.2)	0.9 (2.3)	0.5 (1.3)	2.0 (5.0)	3.6 (8.8)
Alt. 9 RD DV	0.0 (0.0)	0.1 (0.2)	0.9 (2.3)	0.5 (1.3)	0.9 (2.1)	2.4 (6.0)
Alt. 9 PP-E DV	0.0 (0.0)	0.1 (0.2)	0.9 (2.3)	0.5 (1.3)	2.0 (5.0)	3.6 (8.8)
Alt. 9 SJN DV	0.0 (0.0)	0.1 (0.2)	0.0 (0.1)	0.6 (1.4)	1.9 (4.6)	2.6 (6.4)
Alt. 9 TWS DV	0.0 (0.0)	0.1 (0.2)	0.9 (2.3)	0.5 (1.3)	2.0 (4.9)	3.5 (8.8)

Source: Natural Environment Study (NES), LSA Associates, Inc., 2008.

This category includes areas that are not categorized in the land cover mapping (Appendix A of the NES) as Riversidean Alluvial Fan Sage Scrub, Marsh, Riparian Scrub, Riparian Forest, or Oak Woodland, but that were determined to be CDFG streambed and associated riparian habitat in the Jurisdictional Delineation (Appendix L of the NES).

ac = acres

MSHCP = Multiple Species Habitat Conservation Plan PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

Alt. = Alternative

CDFG = California Department of Fish and Game RD = Rider Street

SJN = San Jacinto North

DV = Design Variation

ha = hectares

TWS = Temescal Wash Area

MSHCP by demonstrating how Alternative 9 TWS DV could be considered biologically equivalent or superior to the alignment covered in the MSHCP. Section 7.2.3 of the MSHCP outlines the process for which a regional transportation corridor, now referred to as the MCP, could be considered a Covered Activity under the MSHCP. Originally, an alignment for the west-east CETAP corridor (now the MCP) was envisioned going north of Lake Mathews, and this alignment was analyzed and permitted as a Covered Activity under the MSHCP (closely matches Alternative 2). Section 7.2.3 of the MSHCP acknowledges a process for finding consistency of an alignment that did not follow the alignment north of Lake Mathews. Section 7.2.3 contemplated that if the northern alignment was infeasible, then an alternate alignment (which is Alternative 9) involving the realignment and widening of the existing Cajalco Road south of Lake Mathews could be considered a Covered



Activity, if findings could be made that the alternative was biologically equivalent to the covered alignment north of Lake Mathews.



Alternative 2, as described in Section 2.9 of this EIR/EIS, represents the CETAP corridor north of Lake Mathews, which is identified as a Covered Activity in Section 7.3.5 of the MSHCP. As discussed in Section 2.9, Alternative 2 was withdrawn from consideration due to dam safety concerns relative to the Cajalco Dam at Lake Mathews. Alternative 9 TWS DV is the alternative that will be evaluated against Alternative 2 in the equivalency analysis. Therefore, the MSHCP consistency analysis focuses on the difference between the Covered Activity described in the MSHCP going north of Lake Mathews (Alternative 2) and the preferred alignment going south of Lake Mathews (Alternative 9).



Additionally, the actual consistency determination will occur through the MSHCP consistency process, which will be conducted on the selected, approved alternative following approval of the Final EIR/EIS. While this analysis is not required at the Draft EIR/EIS stage of the MCP project, a preliminary analysis is provided in this section of Alternative 9 TWS DV to provide sufficient information to satisfy the requirements of analysis and disclosure of environmental effects, pursuant to NEPA and CEQA. Because of the detailed data requirements needed for the MSHCP equivalency analysis, this analysis was limited to Alternative 9 TWS DV. A similar analysis would need to be prepared if a different MCP Build Alternative is ultimately selected for implementation.

The MSHCP contemplates additional mitigation lands to be contributed, as part of the analysis of consistency. RCTC has identified two generalized mitigation areas from which the additional mitigation lands are proposed to be assembled. The following analysis demonstrates that there is adequate mitigation potential in these lands, or a combination of these lands to provide sufficient rationale for consistency. Therefore, in addition to comparing the impacts of Alternative 9 TWS DV to Alternative 2, this analysis evaluates the proposed mitigation areas and documents how the mitigation areas, in conjunction with the proposed design features for Alternative 9 TWS DV, would be biologically equivalent to Alternative 2.



The actual consistency determination will occur through the MSHCP consistency process, which will be conducted on the selected, approved alignment. However, this analysis provides sufficient information to satisfy the requirements of analysis and disclosure of environmental effects, pursuant to NEPA and CEQA.

The equivalency analysis described above shall be provided by the RCTC for review and concurrence by the Wildlife Agencies in narrative and graphic form comparing the effects/benefits of the proposed project with the northerly CETAP alternative. The equivalency analysis shall consider:

- Specific project design features;
- Consideration of the siting and design guidelines;
- Incorporating guidelines for construction of wildlife crossings contained in Section 7.5.2 of the MSHCP; and
- Incorporating the Best Management Practices (BMPs) contained in Appendix C of the MSHCP.

Additionally, based on Section 7.2.3 of the MSHCP, the equivalency analysis for Alternative 9 TWS DV of the MCP project will address the following categories:

- 1) Effects on Habitats
- 2) Effects on Covered Species
- 3) Effects on Core Areas and Constrained Linkages (as identified on the MSHCP Core and Linkage map)
- 4) Effects on MSHCP Conservation Area configuration and management (such as increases or decreases in edge)
- 5) Effects on ecotones (defined as areas of adjoining Vegetation Communities, generally characterized by greater biological diversity) and other conditions affecting species diversity (such as invasion by exotics)
- 6) Effects on and consistency with existing Habitat Conservation Plans and/or Natural Communities Conservation Plans

The equivalency analysis will be completed after public review of this Draft EIR/EIS to ensure that it is based upon the most up-to-date project information, including any project refinements that may result from public comment on the document. However, for purposes of early public disclosure, a preliminary MSHCP equivalency analysis is provided below.

3.17.4.1 Description of Potential Mitigation Area

The potential mitigation area and the MCP impact area are located in the Riverside Lowlands Bioregion (the largest of all the bioregions), which is identified in the MSHCP. This bioregion's indicative vegetation types include Riversidean sage scrub and annual grasslands. Relatively arid and within the rain shadow of the Santa Ana



Mountains, this bioregion has higher disturbance areas; therefore, habitat fragmentation and urbanization are indicative of this bioregion.

In order to offset the impacts of the MCP on the MSHCP, the project contemplates utilizing additional lands that can be added to the existing MSHCP Reserve. An area comprising approximately 607 ha (1,500 ac) has been identified that is located outside the Criteria Area of the MSHCP. This 607 ha (1,500 ac) area is generally located south of Alternative 9 TWS DV in the Gavilan Hills area. The location of the potential mitigation area was chosen because of its proximity to the eastern edge of MSHCP Existing Core C. The location of the mitigation area will augment and buffer Core C from edge effects. The potential mitigation area is intended to function as a buffer to this Core on its east edge, much as the Proposed Extension of Existing Core 2 was intended for the west edge of this Core. Extending MCP through the middle of Existing Core C would result in additional edge effects around the roadway itself. However, the addition of the potential mitigation area and its proximity to the eastern edge of this feature would mitigate the edge effect introduced by the MCP.

Additionally, the proposed mitigation area also contains the same habitat types impacted by the MCP. Approximately 55 percent of the mitigation area is coastal sage scrub, 10 percent chaparral, 20 percent woodland and forest, 2 percent riparian scrub, and 10 percent grasslands. The remaining acreage is in agriculture and development. In contrast to the impact area of Alternatives 2 and 9 TWS DV, the mitigation area has numerous ecotonal interfaces. There are drainage areas supporting woodlands and riparian scrubs intertwining with grasslands, chaparral, and coastal sage scrub. The soils of the mitigation area are approximately 50 percent loam and 50 percent sandy loams. The elevation range of the mitigation area is from 457 m (1,500 ft) above sea level (asl) to 640 m (2,100 ft) asl.

3.17.4.2 Effects on Habitats

The MSHCP analyzed "take" based on the northerly CETAP alignment as a Covered Activity. Take was quantified in terms of loss of vegetation communities, or habitats under the MSHCP, and was part of the baseline analysis for the individual species analyses. For the purposes of the equivalency analysis and demonstration that the proposed mitigation is feasible, impacts and mitigation are based upon the MSHCP categories for vegetation communities; however, the vegetation mapping is based on the updated California Native Plant Society (CNPS) 2005 data. Refer to Section 3.17.2.2 for the MCP project-specific vegetation land use categories, and how the MSHCP land use categories correlate to those used for the project impacts.





Table 3.17.O depicts the acreage of "take" of vegetation communities from Alternative 2. This analysis indicates Alternative 2 had more impacts or more take than Alternative 9 TWS DV on Agricultural Land, Developed/Disturbed Land, Grasslands, Meadows/Marshes, and Riparian Scrub/Woodland and Forest. However, Alternative 9 TWS DV results in greater impacts on Chaparral, Coastal Sage Scrub, and Woodland and Forest.

Table 3.17.0 Habitat Effects by MSHCP Vegetation Community, ha (ac)

NOTE: Impacts to vegetation communities are based on updated CNPS mapping (2005); however, the categories are crosswalked and, in this analysis, are identical to the vegetation community mapping used in the MSHCP analysis.

Habitat Types (MSHCP)	Alternative 2	Alternative 9 TWS DV	Net Change (Alternative 9 TWS DV – Alternative 2)	Acreage Available within the Mitigation Area
Agricultural Land	41.2 (103.0)	(29.9) 74.8	-11.2 (-28.2)	41.6 (104.1)
Chaparral	0.0 (0.0)	1.96 (4.9)	+1.96 (+4.9)	89.6 (224.0)
Coastal Sage Scrub	95.6 (236.2)*	184.7 (456.5)*	+88.2 (+220.4)	472.7 (1181.9)
Developed/Disturbed Land	129.7 (324.2)	105.2 (263.0)	-24.5 (-61.2)	37.1 (92.7)
Grasslands	63.6 (159.0)	21.1 (52.7)	-42.5 (-106.3)	67.0 (167.6)
Meadows/Marshes	0.04 (0.1)	0.0 (0.0)	-0.04 (-0.1)	0.0 (0.0)
Riparian Scrub/	7.4 (18.5)*	3.2 (8.0)*	-4.2 (-10.5)	16.6 (41.5)
Woodland and Forest				
Woodland and Forest	5.6 (13.9)	14.6 (36.5)	+9.0 (+22.6)	147.4 (367.6)

^{* =} includes overlap acreages

ac = acres

CNPS = California Native Plant Society

ha = hectares

MSHCP = Multiple Species Habitat Conservation Plan TWS DV = Temescal Wash Area Design Variation

Evaluation of Mitigation Area



Alternative 9 TWS DV would impact more acreage of Chaparral, Coastal Sage Scrub, and Woodland and Forest habitat than Alternative 2 would. In order to mitigate this impact, a mitigation area has been studied as discussed above. As shown in Table 3.17.O, the mitigation area contains sufficient acreage of Chaparral, Coastal Sage Scrub, and Woodland and Forest to offset the net impacts resulting from Alternative 9 TWS DV.



Fragmentation Minimization

Alternative 9 TWS DV creates more impacts to some habitat types than Alternative 2, and for other habitat types has reduced impacts over Alternative 2. The mitigation area proposed by the project has ample acres of the impacted habitat types. As discussed in greater detail below, Alternative 9 TWS DV with the proposed mitigation area would offset its impacts and result in equivalent or superior conservation than Alternative 2. Additionally, the wildlife corridors and culverts proposed by the project are design features that were incorporated to reduce

Alternative 9 TWS DV impacts. The functionality of the corridors and crossings included in the MCP is also discussed below in more detail.

3.17.4.3 Effects on Covered Species

The following is a list of each MSHCP reserve feature that is affected by both Alternative 2 and Alternative 9 TWS DV alignments and the associated planning species related to each feature.

- Existing Core C Planning Species: Southern California rufous-crowned sparrow, Bell's sage sparrow, burrowing owl, cactus wren, northern harrier, white-tailed kite, loggerhead shrike, coastal California gnatcatcher, Stephens' kangaroo rat, bobcat, mountain lion, Munz's onion, slender-horned spine flower, and many-stemmed dudleya.
- Proposed Extension of Existing Core 2 Planning Species: Cooper's hawk, southern California rufous-crowned sparrow, Bell's sage sparrow, yellow warbler, white-tailed kite, southwestern willow flycatcher, yellow-breasted chat, loggerhead shrike, downy woodpecker, coastal California gnatcatcher, least Bell's vireo, Stephens' kangaroo rat, bobcat, mountain lion, Munz's onion, long-spined spine flower, and many stemmed dudleya.
- Proposed Linkage 3 Planning Species: Quino checkerspot butterfly, Munz's onion, many-stemmed dudleya, thread-leaved brodiaea, bobcat, Stephens' kangaroo rat, Belding's orange-throated whiptail, southern California rufouscrowned sparrow, and Bell's sage sparrow.
- Proposed Non-Contiguous Habitat Block 4 Planning Species: Bell's sage sparrow, cactus wren, coastal California gnatcatcher, Stephens' kangaroo rat, and long-spined spine flower.

Comparison of Alternative 2 and Alternative 9 TWS DV

The Conditionally Covered Activity (Alternative 9 TWS DV) has fewer impacts on suitable habitat than the Covered Activity (Alternative 2) for 8 out of 24 covered species. Species that are less affected by Alternative 9 TWS DV are the burrowing owl, yellow-breasted chat, yellow warbler, Cooper's hawk, downy woodpecker, and three state-endangered species: southwestern willow flycatcher, least Bell's vireo, and thread-leaved brodiaea. These eight species use riparian areas or grasslands as habitat, both of which are impacted less by Alternative 9 TWS DV. For these species, Alternative 9 TWS DV is superior to Alternative 2 without mitigation.





For three other species, Alternative 9 TWS DV is superior to Alternative 2 without mitigation with respect to a portion of their habitat. The northern harrier loses less primary breeding habitat with Alternative 9 TWS DV, but more secondary foraging habitat. This species has special status only when nesting, so this greater impact upon its foraging habitat is an adverse impact, but not as severe as impacting nesting habitat. With Alternative 9 TWS DV, the southern California rufous-crowned sparrow loses less secondary habitat but more primary habitat, and the state-endangered Stephen's kangaroo rat loses less primary habitat but more secondary habitat. For these two planning species and 14 others, Alternative 9 TWS DV is inferior to Alternative 2 because it entails a greater overall loss of suitable habitat.

Alternative 9 TWS DV would impact more suitable habitat than Alternative 2 would for the following wildlife species: Bell's sage sparrow, coastal cactus wren, white-tailed kite, northern harrier, southern California rufous-crowned sparrow, loggerhead shrike, Belding's orange-throated whiptail, Stephen's kangaroo rat, bobcat, mountain lion, and the federally threatened coastal California gnatcatcher and the federally endangered Quino checkerspot butterfly. The many-stemmed dudleya and long-spined spine flower, as well as the federally endangered species Munz's onion and slender-horned spine flower also lose more habitat with Alternative 9 TWS DV. These covered species primarily rely on coastal sage scrub and upland woodland and forests, habitats that are impacted more by Alternative 9 TWS DV than Alternative 2.

Evaluation of Mitigation Area



In the mitigation area, there are more acres of suitable habitat than the net difference of impacts from Alternative 9 TWS DV. For each of the 16 species impacted by Alternative 9 TWS DV, at least five times more suitable habitat than this net difference are available for conservation in the mitigation area. For example, an additional 98.8 ha (247 ac) of Quino checkerspot butterfly habitat would be impacted by Alternative 9 TWS DV than by Alternative 2. However, conservation available within the mitigation area provides up to 685.2 ha (1,713 ac) of suitable Quino checkerspot habitat, or nearly seven times more area than the net impact difference between the two routes. Furthermore, the mitigation area contains substantial areas of suitable habitat even for those species for which Alternative 9 TWS DV is superior to Alternative 2 without mitigation.

Without mitigation, the impact of Alternative 9 TWS DV on many of the covered species is substantially greater than that of Alternative 2. However, conservation land is available within the mitigation area to adequately mitigate the impacts to species



caused by Alternative 9 TWS DV. With the proposed mitigation, Alternative 9 TWS DV is superior to Alternative 2 with respect to effects on covered species.

3.17.4.4 Effects on Reserve Features

The MSHCP relies on conservation of large intact blocks of habitats (i.e., Cores) and linkage of those blocks (i.e., Linkages and Constrained Linkages). Within the area of study for this analysis, there are four reserve features of the MSHCP: Non-Contiguous Habitat Block 4, Linkage 3, Existing Core C, and Extension of Existing Core 2. Within the Alternative 2 footprint, two of these reserve features were impacted, Existing Core C and Extension of Existing Core 2. Alternative 9 TWS DV impacts all four of these reserve features. Each one of these reserve features has specific criteria as to what its function is related to in the MSHCP. Section 3 of the MSHCP describes each feature's function and they are repeated herein.

Existing Core C

Alternative 2 Impacts

Approximately 4.82 km (3 mi) of Alternative 2 extends into Existing Core C. The northerly alignment of the Alternative 2 Corridor traverses along the northern edge of Existing Core C. Alternative 2 impacted this Core in an area in which there were already edge effects from surrounding development. Alternative 2 did traverse almost through the key connection point of Proposed Linkage 3 and this Core. This area of the connection between this Core and Proposed Linkage 3 is very narrow (approximately 182.4 m [600 ft]), and Alternative 2 would have made achieving connectivity between this Core and Proposed Linkage 3 a difficult challenge at that already very narrow point. Alternative 2 would have directly impacted more Grasslands, which are associated with Stephens' kangaroo rat habitat within the Lake Mathews-Estelle Mountain Reserve. Additionally, one of the goals of Existing Core C is to provide live-in habitat for the coastal California gnatcatcher. Although previously referenced, Table 3.17.I shows fewer acres of impacts to Coastal Sage Scrub from Alternative 2 than Alternative 9 TWS DV, the elevation ranges for Coastal Sage Scrub within Alternative 2 within this Core average from 334.4 to 516.8 m (1,100 to 1,700 ft) asl. These elevation ranges are considered to be optimal elevations for coastal California gnatcatcher occurrence. Therefore, Alternative 2 would have had considerable impact to Coastal Sage Scrub that had a high potential to support coastal California gnatcatcher within this Core, as well as considerable impacts to Grasslands, which support Stephens' kangaroo rat, both of which are key species that are planned for conservation within this Core.



Alternative 9 TWS DV Impacts

Approximately 8.0 km (5 mi) of Alternative 9 TWS DV extends through Existing Core C. Alternative 9 TWS DV traverses the center portion of Existing Core C, all of which is designated as PQP land. In relation to the goal to conserve live-in habitat for coastal California gnatcatcher and to protect Stephens' kangaroo rat habitat, Alternative 9 TWS DV passes through the portion of the Core that comprises mostly of Coastal Sage Scrub and not Grasslands. Grasslands are more typical habitat for the Stephens' kangaroo rat. By comparison, Alternative 2 impacted more Grasslands habitat within this Core feature. The Coastal Sage Scrub that is impacted by Alternative 9 TWS DV has elevation ranges that are primarily from 395.2 to 577.6 m (1,300 to 1,900 ft) asl, which consists of elevations that are higher than the elevations impacted by Alternative 2. The lower elevations associated with Alternative 2 are more indicative of the elevations associated with coastal California gnatcatcher habitat. Therefore, Alternative 9 TWS DV actually avoids more of the Stephens' kangaroo rat habitat within Existing Core C, as well as impacts less suitable habitat for coastal California gnatcatcher than does Alternative 2. Related to the live-in habitat function of Existing Core C, Alternative 9 TWS DV can be considered superior to Alternative 2.



Another important function of Existing Core C is to be linked through Proposed Linkage 3. Alternative 9 TWS DV does not affect the transition area of this Core to Proposed Linkage 3, as does Alternative 2. (See below for more discussions on Proposed Linkage 3 and its relationship to the MCP.) Additionally, Alternative 9 TWS DV will also traverse into Proposed Extension of Existing Core 2 at the western end of the facility. (See below for more discussion of Extension of Existing Core 2.) Alternative 9 TWS DV crosses Existing Core C in the center of the feature, which could lead to creating internal edge effects within the feature itself, but would have fewer impacts on the important connection between this Core and Proposed Linkage 3. Therefore, from the reserve design function of this Core, Alternative 9 TWS DV is superior to Alternative 2.

Evaluation of Mitigation Area/Design Features

The location of the potential mitigation area was chosen because its location on the eastern edge of this Core augments and buffers this Core from edge effects. The potential mitigation area is intended to function as a buffer to this Core on its east edge, much like the Proposed Extension of Existing Core 2 was planned to do on the west edge of this Core. Extending the MCP through the middle of Existing Core C would create additional edge effects around the roadway itself. However, the addition of the potential mitigation area and its proximity to the eastern edge of this feature would mitigate the edge effect introduced by the MCP.

All but one of the habitats important for the planning species of this Core would have less impacts under Alternative 9 TWS DV than under Alternative 2. Additionally, for Coastal Sage Scrub habitat, which is important for the coastal California gnatcatcher, although Alternative 9 TWS DV would have greater impacts by approximately 8.0 ha (20 ac) than Alternative 2, there is a substantial amount of Coastal Sage Scrub habitat within the proposed mitigation area. With the addition of the mitigation area, Alternative 9 TWS DV becomes equivalent and superior to Alternative 2.

Extension of Existing Core 2

Alternative 2 Impacts

Alternative 2 impacts approximately 4.8 km (3 mi) of Extension of Existing Core 2 in the northern portion of its boundaries, generally following the Core's edge. The western edge of this Core is surrounded by development both in the city of Corona and Riverside County. The primary purpose of this Core is to smooth out the edges of the existing PQP lands associated with the easterly boundary adjacent to Existing Core C. Several linkages feed into this Core, and the Alternative 2 alignment did not impact the connection points of this Core with Proposed Constrained Linkage 4 to the north, Proposed Linkage 1, or Proposed Constrained Linkages 3, 5, and 6 to the south. This Core was also designed to support populations of coastal California gnatcatcher, and the Alternative 2 alignment did extend through primarily Coastal Sage Scrub habitat at elevation ranges suitable for coastal California gnatcatcher (274 to 457 m [900 to 1,500 ft] asl). The alignment of Alternative 2 bifurcated through the northern portion of this Core. Therefore, Alternative 2 did have considerable impacts related to the function and goals of this reserve feature, especially related to maintaining connectivity of coastal California gnatcatcher populations within this Core.





Alternative 9 TWS DV Impacts

Alternative 9 TWS DV impacts approximately 0.8 km (0.5 mi) of this reserve feature compared to the approximately 4.8 km (3 mi) of impacts from Alternative 2. Alternative 9 TWS DV impacts to this Core do not affect the other Linkages and Constrained Linkages that are important to the function of this Core, and given its relatively smaller area of impact compared to Alternative 2, this alignment does not substantially affect the function of this Core to act as a buffer to Existing Core C to the east. Related to the maintenance and protection of coastal California gnatcatcher

populations in this Core, Alternative 9 TWS DV is superior to Alternative 2 because it impacts less land area of Coastal Sage Scrub at appropriate elevations 273.6 to 456 m (900 to 1,500 ft) asl.

Evaluation of Mitigation Area



The proposed mitigation area is located east of Extension of Existing Core 2 in the MSHCP. Although not directly contiguous with this Core Feature, the proposed mitigation area is intended to act in the same fashion as this Core, by buffering Existing Core C and its already protected lands. Additionally, given the relatively small impact of Alternative 9 TWS DV versus those of Alternative 2, the large area (approximately 600 ha [1,500 ac]) proposed by the mitigation area will more than offset the impacts to Extension of Existing Core 2.

Since one of the stated objectives of Extension of Existing Core 2 is to provide live-in habitat for coastal California gnatcatcher, conserving the appropriate habitat types for this species is important. Alternative 9 TWS DV is superior to Alternative 2 because it impacts less acres of Coastal Sage Scrub, which is prime habitat for the coastal California gnatcatcher. Alternative 9 TWS DV would have fewer impacts to the Extension of Existing Core 2 than Alternative 2 would, and the proposed mitigation area has adequate acreage to more than make up for the loss of vegetation communities important for this feature. Therefore, Alternative 9 TWS DV is superior to that of Alternative 2 in relation to this reserve feature.

Proposed Linkage 3

Alternative 2 Impacts

Alternative 2 did not extend into Proposed Linkage 3; however, it is located less than 30.4 m (100 ft) from the connection point of Proposed Linkage 3 and Existing Core C.



Alternative 9 TWS DV Impacts

Alternative 9 TWS DV extends approximately 2.4 km (1.5 mi) across Proposed Linkage 3. Recognizing that this linkage was not impacted under Alternative 2, but also recognizing that the Alternative 9 TWS DV alignment resulted from avoidance and minimization efforts, extensive attention was paid towards how Alternative 9 TWS DV could lessen its impacts to this linkage. Proposed Linkage 3 is one of two connections from the Alberhill area to the Lake Mathews-Estelle Mountain area within Core C. Wildlife movement was considered in the design of Alternative 9 TWS DV. There are 4 bridges proposed within this reserve feature, 20 drainage

culverts, 3 wildlife culvert/crossings, and 1 overland wildlife crossing. The careful placement of these features to facilitate wildlife movement in areas of existing drainages and areas most likely used by existing wildlife populations depicts how Alternative 9 TWS DV has been designed to minimize its impacts on this reserve feature.



Additionally, Proposed Linkage 3 is cited as providing live-in habitat for coastal California gnatcatcher, Quino checkerspot butterfly, and Stephens' kangaroo rat. The elevation ranges for the portion impacted by Alternative 9 TWS DV range from 516.8 to 699.2 m (1,700 to 2,300 ft) asl, which is generally considered too high for suitable coastal California gnatcatcher habitat. Additionally, Alternative 9 TWS DV impacts very little open Grasslands habitat, which is suitable for Stephens' kangaroo rat. The approximate acreage of vegetation habitat types along the alignment of Alternative 9 TWS DV in Proposed Linkage 3 are: Chaparral (1.6 ha [4 ac]), Coastal Sage Scrub (31.6 ha [79 ac]), Grasslands (0.8 ha [2 ac]), Riparian Scrub/Woodland and Forest (0.4 ha [1 ac]), and Woodland and Forest (16 ha [40 ac]).

Regarding the function of Proposed Linkage 3 related to protecting clay soils for thread-leaved brodiaea, Munz's onion, and many-stemmed dudleya, the surveys conducted for Alternative 9 TWS DV of the MCP did not reveal any of these plants within the alignment of Alternative 9 TWS DV. In addition, there are no mapped clay soils within the footprint of the proposed alignment. Therefore, Alternative 9 TWS DV can be considered equivalent to that of Alternative 2 in relation to impacting clay soils and protecting these three plants, as there are no impacts to said resources.

Alternative 9 TWS DV would create additional hazards related to fire and edge effects. Alternative 9 TWS DV traverses through the widest portion of Proposed Linkage 3, in close proximity to existing PQP lands (Harford Springs Park). Fire suppression efforts can be made from local roadways existing in the impact area and from the MCP facility itself. Edge effects related to livestock grazing and off-road vehicle use is a concern for the area of Proposed Linkage 3. Understanding that those are activities that could be facilitated by the MCP in the Proposed Linkage 3 reserve feature, Alternative 9 TWS DV has been designed to not include any system interchanges within this reserve feature, and a large portion of it will be bridged, thereby lessening accessibility to open lands and reducing edge effect impacts to this feature.

Evaluation of Mitigation Area

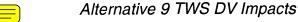
Proposed Linkage 3 is impacted only by Alternative 9 TWS DV; Alternative 2 avoided this reserve feature. Therefore, in order for Alternative 9 TWS DV to be considered equivalent or superior to that of Alternative 2, impacts associated with Alternative 9 TWS DV have to demonstrate they have been lessened and mitigated. As discussed above, the impacts to the habitat types and functionality of Proposed Linkage 3 have been lessened through the project design of wildlife crossings. Within this linkage there are 4 bridges, 20 drainage culverts, 3 wildlife culvert/crossings, and 1 overland wildlife crossing within the 2.4 km (1.5 mi) stretch of impact to this feature. Of all the reserve features impacted by Alternative 9 TWS DV, this linkage has the most crossings per length of impacts. The frequency of these crossings, their locations, and the sensitive design of each equates to a substantial design feature that has been incorporated into the project in order to lessen impacts on the functionality of this MSHCP reserve feature.

Since one of the stated objectives of Proposed Linkage 3 is to provide live-in habitat for coastal California gnatcatcher, Quino checkerspot butterfly, and Stephens' kangaroo rat, conserving the appropriate habitat types for these species is important. The proposed mitigation area has adequate acreage to more than make up for the loss of vegetation communities needed to support not only the three species listed above, but the other planning species associated with this feature.

Non-Contiguous Habitat Block 4

Alternative 2 Impacts

Alternative 2 did not extend into Non-Contiguous Habitat Block 4.



Less than 1.6 km (1 mi) of Alternative 9 TWS DV extends through Non-Contiguous Habitat Block 4. The important planning species related to this reserve feature primarily utilize Grasslands and Coastal Sage Scrub habitats. Along with these species, another key component of this reserve feature is maintaining large blocks of habitat and minimizing edge effects. Alternative 9 TWS DV would create edge effects, impact the northern portion of this feature, and comes less than 30.4 m (100 ft) from the northwestern edge of the Motte Rimrock Reserve (PQP lands), which is located within Non-Contiguous Habitat Block 4. Understanding this impact, Alternative 9 TWS DV has been designed to minimize edge effects and to maintain connectivity of the habitat block by having 8 culvert/drainages and 3 wildlife crossings/culverts planned within this reserve feature for the less than one of



3.17.4.5 Effects on Conservation Area Configuration and Management

The overall configuration of the MSHCP is represented in the Alternative 9 TWS DV alignment with the integration of Existing Core C, Extension of Existing Core 2, and Proposed Linkage 3. Non-Contiguous Habitat Block 4 was intended to be a stand-alone feature in the Plan. The relationship of Alternative 9 TWS DV and Alternative 2 to the functionality of these features working toward a large reserve was discussed above under 3.17.4.3, Effects on Reserve Features. On a macro level, Alternative 2 would have fewer impacts to the overall conservation area configuration, largely because it stayed to the northern edge of Existing Core C and Extension of Existing Core 2. However, Alternative 2 would have severed the extremely narrow connection between Proposed Linkage 3 and Existing Core C. While Alternative 9 TWS DV does extend through the middle of Proposed Linkage 3, this facility incorporates over 25 crossings in the form of bridges, culverts, and wildlife crossings. Alternatively, the location where Alternative 9 TWS DV crosses through Linkage 3 is superior to the location where Alternative 2 crossed it, because the former allows for a greater area of permeability and far more success for crossings. Additionally, because the area where Alternative 9 TWS DV extends through Proposed Linkage 3 is largely rural and the locations of Alternative 2 and Proposed Linkage 3 are more developed, the success of channeling wildlife through the MCP is far greater with less interference from development along Alternative 9 TWS DV.

The locations of the Alternative 9 TWS DV crossing of Extension of Existing Core 2 and Existing Core C completely avoid the Lake Mathews MSHCP portion of the Stephens' Kangaroo Rat Reserve within Existing Core C. Alternative 9 TWS DV also has fewer impacts to Extension of Existing Core 2 than that of Alternative 2. Furthermore, Alternative 9 TWS DV is equivalent or superior to Alternative 2 from an overall configuration standpoint because it adds the potential mitigation area to the east of Existing Core C, bulging it out and buffering the Existing Core from edge effects. It should be noted that the area proposed for the mitigation area is one that several stakeholders had requested to be included into the MSHCP during its conception. Therefore, because Alternative 9 TWS DV will essentially "deliver" that area into the MSHCP Conservation Area, this alignment is superior to Alternative 2.

3.17.4.6 Effects on Ecotones

The term "ecotone" is used to describe areas in the landscape that transition from one vegetation community or habitat type to another. For the purpose of this discussion, ecotones are synonymous with margins, edges, or transition zones. Directional spatial





roadway. The placement of these 11 crossings were planned to coincide with locations already utilized by wildlife and were placed in the most biologically superior locations. The wildlife crossings would also reduce edge effects of Alternative 9 TWS DV on the Motte Rimrock Reserve by facilitating wildlife movement on and off the Reserve.

A roadway creates additional hazards related to fire and edge effects. Alternative 9 TWS DV does traverse very closely to the Motte Rimrock Reserve. Fire suppression efforts can be made from local roadways existing in the impact area as well as from the MCP facility itself. Edge effects related to off-road vehicle use is a concern for the area of Non-Contiguous Habitat Block 4. Invasive plant species will not be used along any portion of the MCP, pursuant to Section 6.1.4 of the MSHCP. Understanding that those are activities that could be facilitated by the MCP in the Non-Contiguous Habitat Block 4 reserve feature, Alternative 9 TWS DV has been designed to not include any system interchanges within this reserve feature, thereby lessening accessibility to open lands and reducing edge effect impacts to this feature.

Evaluation of Mitigation Area/Design Features

Since one of the stated objectives of Non-Contiguous Habitat Block 4 is to provide live-in habitat for coastal California gnatcatcher, Quino checkerspot butterfly, and Stephens' kangaroo rat, conserving the appropriate habitat types for these species is important. The proposed mitigation area has adequate acreage to more than make up for the loss of vegetation communities needed to support not only the three species listed above, but the other planning species associated with this reserve feature as well.

In addition to the proposed mitigation area, Alternative 9 TWS DV is equivalent to Alternative 2 because it provides for wildlife movement and connectivity with this reserve feature through the 11 drainage/culvert/crossing facilities planned for this stretch of roadway.

Fragmentation Minimization Measures

Collectively within the four MSHCP reserve features discussed above, the Alternative 9 TWS DV alignment will include 48 wildlife crossings/culverts, which include three overland crossings, within the four MSHCP reserve features discussed above. The purpose of these wildlife crossings is to facilitate habitat movement through this area, allowing for the continued connectivity and function of each of these MSHCP reserve features. Comparatively, Alternative 2 included 15 wildlife



crossings/culverts, with no overland crossings within the comparative alignment. The design of these wildlife crossings will ensure that habitat and wildlife movement of this Core's planning species are provided by the MCP.

Alternative 9 TWS DV impacts four MSHCP reserve features, while Alternative 2 impacted only two of the four reserve features. Although Alternative 9 TWS DV does cause more impacts to MSHCP reserve features, through the project's design features (i.e., wildlife crossings) and through the package of lands provided in the proposed mitigation area, Alternative 9 TWS DV can be mitigated and shown to have equivalent, and in some cases superior, impacts over the Covered Activity Alternative 2. As shown below on Table 3.17.P, there is more than enough acreage in the proposed mitigation area of equivalent or superior habitats to offset the impacts of Alternative 9 TWS DV.





Table 3.17.P Impacts from Alternative 9 TWS DV on Reserve Features, ha (ac)

Habitat Vegetation Type	Alternative 9 TWS DV Impacts to Reserve Features	Available Habitat in Mitigation Area
Chaparral	1.44 (3.6)	89.6 (224.0)
Coastal Sage Scrub	99.52 (245.9)	472.76 (1181.9)
Grasslands	7.88 (19.7)	67.04 (167.6)
Riparian Scrub/Woodland and Forest	0.92 (2.3)	16.6 (41.5)
Woodland and Forest	14.53 (35.9)	147.04 (367.6)

ac = acres

ha = hectares

TWS DV = Temescal Wash Area Design Variation

Another component of the MCP minimization and reduction measures relates to the consideration of urban wildland interfaces. Section 6.1.4 of the MSHCP addresses the aspects of development projects that have the most potential to cause edge effects with wildland areas. Like any other development project, the MCP must show that it is consistent with Section 6.1.4 of the MSHCP as part of its MSHCP consistency determination. Contained in Section 3.17.5 is a discussion of the specific considerations and design features outlined in MSHCP Section 6.1.4 and how the MCP project, and Conditionally Covered alignment (Alternative 9 TWS DV) in particular, addresses those considerations. These design features are important features for how the MCP has been designed to be sensitive to the reserve features of the MSHCP. With incorporation of these design features, the Alternative 9 TWS DV alignment will ensure that the functionality of the MSHCP reserve features is maintained at an equivalent or superior level above that of Alternative 2.



change in vegetation in ecotones can be abrupt or gradual, but is more abrupt than on either side of the ecotone (Lloyd et al. 2000). Ecotones can be defined at any spatial scale and used to describe areas as large as the broad transitional zones between continental-scale biomes (e.g., Arctic tundra and the northern boreal forest) or as small as the local overlap between Coastal Sage Scrub and Chaparral. Defining a spatial scale for an ecotone study is important because the processes within ecotones may be scale-dependent, and quantifying those processes is scale and time-dependent as well.

The study of ecotones has risen from the desire to examine all parts of a landscape rather than merely focusing upon homogeneous and representative vegetation patches of any given landscape (Risser 1993). Researchers also have other reasons for being interested in ecotones. Some studies have indicated that ecotones may be more biodiverse than the communities they link. Ecotones may also play an important role in regulating ecosystems since they modify the flow of materials.

Studies have also demonstrated that there are "ecotonal species" not found in communities on either side of the ecotone. These ecotonal species may be favored by intermediate environmental conditions found in the ecotone or may be able to utilize different resources from both sides of the ecotone (Dunning et al. 1992). Although higher species diversity has been reported for various taxa in many different ecotones, there have also been documented cases where ecotones have intermediate or lower levels of diversity than their adjacent communities. In other words, although ecotones are commonly very biodiverse, this need not always be the case. Some researchers hypothesize that higher species diversity is a product of particular ecological conditions and of the ecology of the species present and not necessarily an intrinsic property of ecotones (Lloyd et al. 2000).

Some researchers appear to view ecotones as very unique areas with unique properties that allow them to affect species diversity, be more susceptible to climate change and exotic invasion, or otherwise be qualitatively differently from non-ecotonal areas. Other researchers argue that ecotones are merely the sum of a particular set of species and ecological conditions that can but do not necessarily promote higher species diversity or any other trend. In this line of thought, ecotones have no intrinsic properties that set them apart from other ecosystems. Whatever the case may be, ecotones are integral and dynamic parts of the natural landscape that should be considered when quantifying the biological and ecological value of any natural area.

In order to qualitatively assess the impacts the proposed project may have on ecotones, the FRAGSTATS (1994) model was used. The FRAGSTATS model is a spatial pattern analysis program used to calculate a variety of factors related to landscape structure. The model calculates three groups of factors: patches, classes and landscape. For purposes of this analysis, given the project's scale, the analysis focused on the landscape-level factor within the FRAGSTATS model.

In order to run the FRAGSTATS analysis, vegetation layer data were utilized. These data originated from 2004/2005 vegetation mapping that was verified using aerial photography and field visits.

The FRAGSTATS model measures ecotonal variation using the following metrics:

- Number of Patches refers to the number of patches of any habitat type that occurs within the area. It does not matter what the patches are identified as, so long as they are consistently identified across all modeled alternatives. For example, it does not matter if the habitat patch was called Riversidean sage scrub or coastal sage scrub, as long as it was called the same thing within both the Alternative 2 and Alternative 9 TWS DV model runs. The number of patches may affect ecological processes, including the number of subpopulations of a species, predator prey interactions, propagation of disturbances across the landscape, and other effects. The more patches, the more heterogeneity. This metric is not useful as a measurement tool as it does not project area or needs of the various species, but does indicate the number of patches. Some species may need patchiness, while others do not (McGarigal and Marks 1994).
- Patch Density can be used as an index of patchiness expressed as a certain number of patches per 100 ha (247 ac) that can facilitate comparisons between different-sized landscapes. A landscape with a greater density of patches would be considered more fragmented than a landscape with a lower density of patches (McGarigal and Marks 1994).
- Largest Patch Index at the landscape level indicates the percentage of total landscape area comprised by the largest patch (McGarigal and Marks 1994). For example, this would represent the percentage of a modeled alternative area (e.g., Alternative 2) that was covered by a single contiguous patch of a single habitat type (e.g., coastal sage scrub).
- *Total Edge* is a direct calculation of the total edge length of all patch types at the landscape level. This may not be a useful metric for landscapes of differing sizes (McGarigal and Marks 1994).

- Edge Density standardizes edge to a per-unit-area basis that allows comparisons among landscapes of varying size. However, when comparing landscapes of identical size, total edge and edge density are completely redundant. Edge indices are affected by mapping resolution, with higher resolution mapping generating more edge and less resolution mapping generating less edge. Therefore, all compared areas must be of similar resolution (McGarigal and Marks 1994).
- Landscape Shape Index measures the perimeter-to-area ratio for the landscape in its entirety. The landscape shape index treats the entire landscape as if it were one patch and any patch edges (or class edges) as though they belong to the perimeter. This is a useful index metric where the landscape boundary represents true edge, especially when comparing landscapes of varying sizes (McGarigal and Marks 1994).
- Patch Richness calculates the number of patch types present and is not affected by the relative abundance of each patch type or the spatial arrangement of patches. So, two landscapes may have different structure yet have the same richness value. Because richness does not account for the relative abundance of each patch type, rare patch types and common patch types contribute equally to richness. But, patch richness is a key element of landscape structure because the variety of landscape elements present in a landscape can have an important influence on a variety of ecological processes. Because many organisms are associated with a single patch type, patch richness often correlates well with species richness. Richness is partially a function of scale, so larger areas are generally richer because there is generally greater heterogeneity over larger areas than over comparable smaller areas. This contributes to the species-area relationship predicted by island biogeographic theory. Therefore, comparing richness among landscapes that vary in size can be problematic (McGarigal and Marks 1994).
- Patch Richness Density standardizes richness to a per-area basis that facilitates comparison among landscapes (McGarigal and Marks 1994).

Table 3.17.Q shows the quantitative results of the model run for the various metrics for: the existing condition of Alternatives 2 and 9 TWS DV, with existing open space, roads, and development; Alternative 2 implemented, but not Alternative 9 TWS DV; and Alternative 9 TWS DV implemented, but not Alternative 2. In addition, the metrics for the mitigation area as impacted and as preserved are noted.

Based on the results of this exercise, the Alternative 9 TWS DV alignment would result in more patches (462) than the Alternative 2 design (422). Alternative 9





	Existing Condition w/o Alt. 2 and 3	Alt. 2 implemented, but not Alt. 9 TWS DV	Alt 9 TWS DV Implemented, but not Alt. 2
Number of Patches (#)	385	422	462
Patch Density (#/100 ha)	27.97	30.66	33.57
Largest Patch Index (%)	13.86	33.98	29.5
Total Edge (m)	136,688	142,444	167,796
Edge Density (m/ha)	98.52	103.5	121.92
Landscape Shape Index	18.19	18.66	20.37
Patch Richness (#)	14	14	13
Patch Richness Density (#/100 ha)	1.0173	1.0173	0.9446

Alt. = Alternative

m/ha = meters per hectare

ha = hectares m = meters TWS DV = Temescal Wash Area Design Variation

III = IIICICI3

TWS DV has a larger Patch Density (33.57) than Alternative 2 (30.66), which indicates that the resulting matrix of remaining habitat would be more fragmented for Alternative 9 TWS DV. Largest Patch Index is smaller for Alternative 9 TWS DV (29.5) than for Alternative 2 (33.98) but larger than the original condition pre-project. This has little bearing on overall analysis.

Total Edge was greater in Alternative 9 TWS DV than in Alternative 2, as was the overall Edge Density and Landscape Shape Index. These matrices confirm that the resulting edge would be greater under Alternative 9 TWS DV.

Finally, Patch Richness and Patch Richness Density indicate that Alternative 9 TWS DV would result in less patch-type richness, which may suggest less species richness.

Comparison of Alternative 2 with Alternative 9 TWS DV

When considering ecotones at a large-scale biome level, there is no substantial difference between Alternative 9 TWS DV and Alternative 2. Both routes are located in western Riverside County, an ecotonal area that is intermediate between the coastal regions of the west characterized by a Mediterranean climate and the hot, dry deserts to the east (Roberts et al. 2004). Vegetation in western Riverside County includes both desert elements such as beavertail cactus (*Opuntia basilaris*) and desert willow (*Chilopsis linearis*) that are absent or uncommon farther west, as well as Coastal Sage Scrub, a vegetation community whose range does not extend much farther east.

The vegetation of both proposed project areas shows that the landscape in the Lake Mathews region is a patchy network of Grasslands and Coastal Sage Scrub, with riparian corridors running through these upland vegetation communities. Chaparral and Woodlands are less common, but also present. The patchy natural landscape is further fragmented by agricultural lands and developed or disturbed areas. In terms of the western Riverside County Mediterranean-desert ecotone, the Lake Mathews area is probably more influenced by the maritime west, since desert scrub is uncommon if not entirely absent here. Alternative 9 TWS DV is never more than about 6 to 8 km (4 or 5 mi) south of Alternative 2. At the biome level, both alignments are equivalent in terms of impacting the same ecotonal area that connects coastal communities with desert communities farther inland.

According to the results of the FRAGSTATS model analysis discussed above, Alternative 9 TWS DV results in more edge and patchiness than Alternative 2. This means that Alternative 9 TWS DV includes more ecotonal area. Increased ecotone areas were once sought after by wildlife managers as these areas result in greater species richness. However, in recent times, there has been more scientific study of these areas and it has been shown that in some areas, some species may be negatively affected by increased ecotones (Saunders et al. 1991). Forest birds may be more susceptible to cowbird parasitism, and other exotic pests may take a toll on nearby native species within the ecotone areas. Additionally, where the ecotone is development/natural habitat, adjacent uses (e.g., active parks, roads, residential areas) or byproducts (e.g., nigh lighting, noise, effluent, pesticides) may negatively affect native wildlife within the adjacent natural areas. Some species will appear to be unaffected by increased ecotone or edge, but others would be negatively affected.

Existing Core C is primarily intended for Stephens' kangaroo rat, but also for the planning species California gnatcatcher and Quino checkerspot. Stephens' kangaroo rat is a species associated with a particular habitat structure—open grasslands—though they will travel through inhospitable habitats via dirt roads. Therefore, this is a species that would be negatively affected by increased ecotone. California gnatcatcher is a species that primarily occurs in one habitat structure type (sage scrub), but occurs with frequency close to the edges of the habitat. In fact, the habitat is naturally highly fragmented (Mooney 1988) and is frequently intermixed with habitats with more or less structure (e.g., Chaparral, Grasslands). While California gnatcatchers are quite capable of occurring in areas with more fragmentation or ecotone area (Famolaro and Newman 1998), this places them at risk from increased nest predation or parasitism. Quino checkerspot butterfly occurs naturally in a mosaic of open habitats, which may occur as a result of its host and nectar plants experiencing differing phenology or growing times based on the amount of moisture available to them. Areas at the base of shrubs or certain slopes or swales may allow

some plants to persist longer. This change in slope direction or angle often correlates with different habitat types or structure. This species is probably an ecotone species that would do better with more ecotone availability.

Alternative 2 would not lead to much increased edge or ecotone within Existing Core C. Alternative 9 TWS DV, however, would increase the amount of edge and ecotone area. This would likely have a negative effect on Stephens' kangaroo rat. While an increase in ecotone might not affect California gnatcatcher, a potential increase in nest predation and parasitism might. Quino checkerspot butterfly is not expected to be impacted by increased ecotone.

Extension of Core C is intended for the planning species: Stephens' kangaroo rat, California gnatcatcher, and Quino checkerspot butterfly. Since Alternative 2 primarily runs along the northern edge of this area, it would cause minimal increase to ecotone and edge in this area. Alternative 9 TWS DV bisects this area and would increase ecotone. The relative effects to the focused species is the same as outlined above for Existing Core C.

The Proposed Linkage 3 planning species include Stephens' kangaroo rat, California gnatcatcher, Quino checkerspot butterfly, and bobcat. Bobcat utilize a much wider range of habitats than the other three, and this area covers a wide variety of habitats including grassland, scrub, chaparral, woodlands, and riparian areas. Since most of its prey items (rodents and birds) occur at ecotonal areas, it is likely that bobcat is less affected by increases in ecotone. In fact, increased ecotone is likely to increase rodent populations and thus provide additional food resources.

Alternative 2 would not increase the amount of ecotone or edge very much in this area. Alternative 9 TWS DV would increase the amount of ecotone and would thus potentially negatively affect Stephens' kangaroo rat, but probably be neutral for California gnatcatcher, Quino checkerspot butterfly, and bobcat.

Table 3.17.R shows the ecotones assumed to be present in Alternative 2 and Alternative 9 TWS DV as well as the ecotones assumed to be present in the mitigation area. Naturally occurring ecotones are those between two communities, neither of which is Agricultural Land or Developed/Disturbed Land. These ecotones have more biological value than ecotones involving anthropogenic land covers because they are less disturbed and are more likely to support both special-status species and native species in general.





Ecotone ¹	Alt. 2	Alt. 9 TWS DV	Mitigation Area
Coastal Sage Scrub-Agricultural Land	X	Х	Х
Coastal Sage Scrub-Developed/Disturbed Land	X	Х	Х
Coastal Sage Scrub-Grasslands	X	Х	Х
Coastal Sage Scrub-Riparian Scrub/Woodland and Forest	X	Х	Х
Coastal Sage Scrub-Chaparral		Х	Х
Coastal Sage Scrub-Woodland and Forest	X	Х	Х
Chaparral-Developed/Disturbed Land			Х
Chaparral-Grasslands		Х	Х
Chaparral-Riparian Scrub/Woodland and Forest			Х
Chaparral-Woodland and Forest		Х	Х
Grasslands-Agricultural Land	X		
Grasslands-Developed/Disturbed Land	Х	Х	Х
Grasslands-Riparian Scrub/Woodland and Forest		Х	Х
Grasslands-Woodland and Forest	Х	Х	Х
Riparian Scrub/Woodland and Forest-Agricultural Land	X		
Riparian Scrub/Woodland and Forest-Developed/Disturbed Land	Х	Х	Х
Riparian Scrub/Woodland and Forest-Woodland and Forest		Х	Χ
Woodland and Forest-Agricultural Land	Х		Х
Woodland and Forest–Developed/Disturbed Land	Х		Х
Agricultural Land–Developed/Disturbed Land	Х	X	Х
Total Number of Different Ecotones	13	14	18
Total Number of Naturally Occurring Ecotones	4	9	10

Chaparral-Agricultural Land ecotones do not occur within any of the three areas.

Alternative 2 and Alternative 9 TWS DV would impact 13 and 14 different ecotones, respectively. However, Alternative 9 TWS DV impacts more than twice as many naturally occurring ecotones. The naturally occurring ecotones impacted by Alternative 9 TWS DV but not impacted by Alternative 2 are: Chaparral—Grasslands; Chaparral—Woodland and Forest; Grasslands—Riparian Scrub/Woodland and Forest; and Riparian Scrub/Woodland and Forest—Woodland and Forest. Because vegetation boundaries tend to run north-south in Alternative 9 TWS DV, these impacted ecotonal areas are generally limited by the width of the proposed west-east MCP and are therefore likely to be fairly small.

All four of the ecotones impacted by Alternative 9 TWS DV and not impacted by Alternative 2 are found in the mitigation area. In the mitigation area, the potential area occupied by these four ecotones (the boundaries between the adjacent communities) is substantial in comparison to that impacted by Alternative 9 TWS DV. It is expected that more area of these four naturally occurring ecotones would be conserved in the mitigation area than would be impacted by Alternative 9 TWS DV. The mitigation area further conserves large areas of naturally occurring

Alt. = Alternative

TWS DV = Temescal Wash Area Design Variation

X = ecotone is present within alternative or mitigation area.

ecotones that would be equally impacted by Alternative 2 and Alternative 9 TWS DV. The mitigation area would also conserve Chaparral–Riparian Scrub/Woodland and Forest ecotonal areas, which do not occur in Alternative 2 or Alternative 9 TWS DV.



Before mitigation, the impact of Alternative 9 TWS DV on naturally occurring landscape-level ecotones is substantially greater than that of Alternative 2. However, conservation of the mitigation area more than adequately mitigates for the impacts to ecotones caused by Alternative 9 TWS DV. After mitigation, Alternative 9 TWS DV is superior to Alternative 2 with respect to ecotone conservation.

3.17.4.7 Effects on Other Existing Habitat Conservation Plans/Natural Communities Conservation Plans

Key environmental constraints considered in developing the initial MCP Build Alternatives included the need to avoid or minimize impacts to a number of existing and planned habitat reserve areas, including those associated with the Lake Mathews MSHCP, the Habitat Conservation Plan for the Stephens' Kangaroo Rat (which includes lands adjacent to both Lake Mathews and Lake Perris), and Criteria Areas identified for conservation in the western Riverside County MSHCP. Additionally, the El Sobrante Landfill MSHCP is also located within the alignment of Alternative 9 TWS DV but not located within the alignment of Alternative 2.

The constraints presented by each of these reserves and Habitat Conservation Plans have been considered relative to the successful implementation of an MCP Alternative. Amendments to the respective Habitat Conservation Plans for those reserves would be required to allow for new or expanded roads within the reserves. The lead agencies for the MCP project (RCTC, Caltrans, and FHWA) do not have the ability to amend the existing Habitat Conservation Plans, and these reserves present a potential constraint to the implementation of an MCP Alternative. For example, as the Permittee for the El Sobrante Landfill MSHCP, USA Waste of California, Inc. would need to initiate an amendment to the El Sobrante Landfill MSHCP to authorize construction of the MCP through reserve lands associated with the El Sobrante Landfill MSHCP. The timing and successful approval of such an amendment would be outside the jurisdiction and control of RCTC, FHWA, and Caltrans, as they are not signatories to the permit. Similarly, an amendment to the Habitat Conservation Plan for the Stephens' Kangaroo Rat Reserve would require action on the part of the RCHCA. Although amending the Habitat Conservation Plan for the Stephens' Kangaroo Rat Reserve would still be outside the jurisdiction and control of RCTC,

FHWA, and Caltrans, that Habitat Conservation Plan is written to allow for future amendments and therefore is not as restrictive as the El Sobrante Landfill MSHCP.

The initial parkway alternative north of Lake Mathews (Alternative 2) traverses parts of the reserve lands associated with the Lake Mathews MSHCP. While the alternatives north of Lake Mathews avoid habitat fragmentation south of Lake Mathews, they did not accomplish a full avoidance of the Lake Mathews MSHCP Reserve Areas because these lands extend east and north of Lake Mathews. Given the constraints related to the fragmentation resulting from encroachment into the Lake Mathews MSHCP Reserve and the previously mentioned engineering constraints associated with Cajalco Dam that render the alignment north of Lake Mathews impracticable, RCTC determined that it was prudent to consider alternatives that provided full avoidance of the Lake Mathews MSHCP and Cajalco Dam facilities, ultimately resulting in the proposed Far South alignment (Alternative 9 TWS DV).



By choosing Alternative 9 TWS DV as the "locally preferred" alternative, RCTC essentially completed a most important siting and design element, which is that Alternative 9 TWS DV in and of itself avoids impacts to the Metropolitan Reserve/ Habitat Conservation Plan land as well as minimizes the impacts to the Habitat Conservation Plan for the Stephens' Kangaroo Rat Reserve.

As stated above, Alternative 2 would have impacted two Habitat Conservation Plans/Natural Communities Conservation Plans. The first one being the Lake Mathews MSHCP and Natural Communities Conservation Plan (July 1995), and the second the RCHCA Habitat Conservation Plan for the Stephens' Kangaroo Rat in western Riverside County (March 1996).



Alternative 9 TWS DV does not impact the Lake Mathews MSHCP and Natural Communities Conservation Plan, but does impact the RCHCA Habitat Conservation Plan for the Stephens' Kangaroo Rat. Alternative 9 TWS DV would impact approximately 68.3 ha (168.7 ac) of the Habitat Conservation Plan for the Stephens' Kangaroo Rat. Pursuant to the Habitat Conservation Plan for the Stephens' Kangaroo Rat, the impacts shall be mitigated on a 1:1 basis for occupied habitat. All of the impact areas in the Habitat Conservation Plan for the Stephens' Kangaroo Rat are occupied; therefore, the MCP project will mitigate (i.e., replace) with occupied Stephens' kangaroo rat habitat.

Alternative 9 TWS DV impacts the USA Waste of California, Inc. MSHCP for the El Sobrante Landfill (2001). Although the MCP project was redesigned to avoid impacts

to the El Sobrante Landfill MSHCP, the MCP project still would result in approximately 11 ha (27 ac) of impacts. USA Waste of California, Inc. will be required to amend the El Sobrante Landfill MSHCP to accommodate the impact to their Habitat Conservation Plan. It will be RCTC's responsibility, in working with USA Waste of California, Inc. to provide replacement lands that have equivalent function and values as the lands impacted.

In addition to these Habitat Conservation Plans, Alternative 9 TWS DV comes in close proximity (within 30.4 m [100 ft]) to the Motte Rimrock Reserve, which is a Core Reserve within the Habitat Conservation Plan for the Stephens' Kangaroo Rat. This Core Reserve is approximately 255.2 ha (638 ac) and includes 134 ha (335 ac) of occupied Stephens' kangaroo rat habitat (Habitat Conservation Plan for the Stephens' Kangaroo Rat, March 1996). The Motte Rimrock Reserve is largely comprised of lands owned by the University of California, Riverside, and is used actively for research, management, and monitoring. The MCP alignment does not enter within this reserve area, but there could be edge effects and indirect impacts of the roadway coming in close proximity to this Stephens' kangaroo rat Core that otherwise would not be impacted by Alternative 2.

Indirect Impacts Related to Habitat Fragmentation and Wildlife Movement

Because the MSHCP reserve features aim to conserve the largest areas of unfragmented habitat in the project vicinity, project impacts on these features are closely related to the project impacts on habitat fragmentation and wildlife movement in the area. The section below summarizes the impacts of alternatives on reserve features and evaluates the effects of conservation of the mitigation area.

Alternative 2 Impacts

Existing Core C

Approximately 4.8 km (3 mi) of Alternative 2 extends into Existing Core C. The northerly alignment of the Alternative 2 Corridor, which is a Covered Activity under the MSHCP, traverses along the northern edge of Existing Core C. Alternative 2 impacted this Core in an area in which there were existing edge effects from surrounding development. Alternative 2 also traverses almost through the key connection point of Proposed Linkage 3 and this Core. The vicinity of the connection between this Core and Proposed Linkage 3 is very narrow (approximately 182.4 m [600 ft]), and Alternative 2 would have made



achieving connectivity between this Core and Proposed Linkage 3 a difficult challenge at that already very narrow point.

Extension of Existing Core 2

Alternative 2 impacts approximately 4.8 km (3 mi) of Extension of Existing Core 2 in the northern portion of its boundaries, generally following the Core's edge. The western edge of this Core is surrounded by development both in the city of Corona and the unincorporated county of Riverside. The primary purpose of this Core is to smooth out the edges of the existing PQP lands associated with the easterly boundary adjacent to Existing Core C. Several linkages feed into this Core, and the Alternative 2 alignment did not impact the connection points of this Core with Proposed Constrained Linkage 4 to the north, Proposed Linkage 1, or Proposed Constrained Linkages 3, 5 and 6 to the south.

Proposed Linkage 3

Alternative 2 does not extend into Proposed Linkage 3. However, it comes to within less than 30.4 m (100 ft) from the connection point of Proposed Linkage 3 and Existing Core C.

Non-Contiguous Habitat Block 4

Alternative 2 does not extend into Non-Contiguous Habitat Block 4.

Alternative 9 TWS DV Impacts

Existing Core C

Approximately 8.0 km (5 mi) of Alternative 9 TWS DV extends through Existing Core C. Alternative 9 TWS DV traverses the center portion of Existing Core C, all of which are designated PQP lands. Existing Core C was designed to be connected to Proposed Linkage 3. Alternative 9 TWS DV does not affect the transition area of this Core to Proposed Linkage 3 as Alternative 2 would. Additionally, Alternative 9 TWS DV will also traverse into Proposed Extension of Existing Core 2 at the western end of the facility. Alternative 9 TWS DV crosses Existing Core C in the center of the feature, which could lead to creating internal edge effects within the feature itself, but does not come as close as Alternative 2 to the important connection between this Core and Proposed Linkage 3. Alternative 9 TWS DV has been designed to include five wildlife crossing structures within Existing Core C.





Extension of Existing Core 2

Alternative 9 TWS DV impacts approximately 0.8 km (one-half mile) of this reserve feature, compared to the approximately 4.8 km (3 mi) of impacts from Alternative 2. Alternative 9 TWS DV impacts to this Core do not affect the other Linkages and Constrained Linkages that are important to the function of this Core. Given the relatively smaller area of impact of Alternative 9 TWS DV as compared to Alternative 2, this alignment does not substantially affect the function of this Core to act as a buffer to Existing Core C to the east.



Extension of Proposed Linkage 3

Alternative 9 TWS DV extends approximately 2.4 km (1.5 mi) across Proposed Linkage 3. Recognizing that this linkage was not impacted under Alternative 2, extensive attention was paid towards how Alternative 9 TWS DV could lessen its impacts to this linkage. Because Proposed Linkage 3 is one of two connections from the Alberhill area to the Lake Mathews-Estelle Mountain area within Core C, wildlife movement is an important consideration in this reserve feature. There are 4 bridges proposed within this reserve feature, 20 drainage culverts, 3 wildlife culvert/crossings, and 1 overland wildlife crossing. These features have been carefully placed to facilitate wildlife movement in areas of existing drainages and areas most likely used by existing wildlife populations. These features have been sized appropriately, sited at appropriate distances to convey wildlife, and the intermediary areas will be fenced with wildlife jump-outs to direct wildlife to the crossing structures.



Impacts to Non-Contiguous Habitat Block 4

Less than 1.6 km (1 mi) of Alternative 9 TWS DV extends through Non-Contiguous Habitat Block 4, coming to within less than 30.4 m (100 ft) of the northwestern edge of the Motte Rimrock Reserve (PQP lands), which is located within Non-Contiguous Habitat Block 4. Understanding this impact, Alternative 9 TWS DV has been designed to minimize edge effects and to maintain connectivity of the habitat block by having 8 culvert/drainages and 3 wildlife crossings/culverts planned within this reserve feature for the less than 1.6 km (1 mi) of roadway. The placements of these 11 crossings were planned to coincide with locations already utilized by wildlife. The wildlife crossings will also reduce edge effects of Alternative 9 TWS DV on the Motte Rimrock Reserve by facilitating wildlife movement on and off the Reserve.



Evaluation of Mitigation Area/Design Features

The Potential Mitigation Area was chosen because its location on the eastern edge of Core C augments and buffers this Core from edge effects. The Potential Mitigation Area is intended to function as a buffer to this Core on its east edge, much like the Proposed Extension of Existing Core 2 was planned to do on the west edge of this Core. The Potential Mitigation Area has adequate acreage to more than make up for the loss of vegetation communities needed to support species whose habitats in any reserve feature are more impacted by Alternative 9 TWS DV than by Alternative 2 (see Table 3.17.P). This acreage will be acquired so that it protects a contiguous block of habitat situated adjacent to Core C.



On a macro level, Alternative 2 would have fewer impacts to the overall MSHCP reserve features largely because it stayed to the northern edge of Existing Core C and Extension of Existing Core 2. However, Alternative 2 would have severed the extremely narrow connection between Proposed Linkage 3 and Existing Core C. While Alternative 9 TWS DV does extend through the middle of Proposed Linkage 3, this facility incorporates over 25 crossings in the form of bridges, culverts, and wildlife crossings. Alternatively, the location where Alternative 9 TWS DV crosses through Linkage 3 is superior to the location where Alternative 2 crosses it, because the former allows for a greater area of permeability and far more success for crossings. Additionally, because the area where Alternative 9 TWS DV extends through Proposed Linkage 3 is largely rural, and the location of Alternative 2 and Proposed Linkage 3 is more developed, the success of channeling wildlife across the MCP is far greater along Alternative 9 TWS DV. Alternative 9 TWS DV also has fewer impacts to Extension of Existing Core 2 than Alternative 2. While portions of Cajalco Road will remain open after construction of Alternative 9 TWS DV, this road would experience a substantial reduction in local traffic only. High-speed traffic would be contained within the Alternative 9 TWS DV alignment of MCP. As a result of the wildlife crossing features incorporated into the Alternative 9 TWS DV design (i.e., wildlife crossing structures, fencing, jump-outs), roadkill is expected to be reduced from the existing condition while still maintaining genetic flow.

Finally, Alternative 9 TWS DV is equivalent or superior to Alternative 2 from an overall configuration standpoint because it adds the Potential Mitigation Area to the east of Existing Core C, bulging it out and buffering the Existing Core from edge effects. It should be noted that the Proposed Mitigation Area is one that several stakeholders had requested be included in the MSHCP during its conception.

Therefore, because Alternative 9 TWS DV will essentially "deliver" that area into the MSHCP Conservation Area, this alignment is superior to Alternative 2.

Effects on Large Mammal Movement

In the vicinity of the proposed MCP alignments, mountain lion and bobcat are the two large mammal planning species in the western Riverside MSHCP. Both species are highly mobile, have large home ranges, and require large corridors to disperse and accommodate movement. Juveniles especially need sufficient cover to move safely. According to the western Riverside MSHCP:

Dispersal connections through marginal habitat should be as short as possible. Movements that could be made within one night could occur across marginal habitats, but longer movements will require refugia for resting, such as rockpiles, brushpiles, windfalls, hollow snags, and hollow trees. Riparian habitat and dense and rocky chaparral or coastal sage scrub along longer movement corridors would be ideal.

Although home range and mobility will vary between large mammal species, large mammals are not as sensitive to small-scale habitat fragmentation as smaller animals because they are generally more mobile. However, they also need much larger areas to meet their resource needs, which include food items but also a source of water.

The proposed MCP is a high-speed, four- to six-lane highway south of Lake Perris and Mead Valley. Large mammals, including mountain lions, bobcats, coyotes, and mule deer, will not be able to cross the MCP safely without adequate overpasses and underpasses to reduce the chance of mortality from vehicle collisions. Open bridges are the preferred undercrossing for large mammals. Culverts should be at least 3.0–6.1 m (10–20 ft) wide to accommodate movement, with fencing (including jumpouts) and varying degrees of vegetative cover to funnel large mammals through.

According to the MSHCP, the only potential large mammal connections between the Lake Mathews-Estelle Mountain region and the Santa Ana Mountains to the west are along Indian Canyon and possibly Horse Thief Canyon. Neither proposed alignments for the MCP would impact these canyons.

Alternative 2 Impacts

Alternative 2 would almost sever the connection between Existing Core C and Proposed Linkage 3, which consists of a thin band of vegetation within a disturbed and developed area. This band of vegetation is less than 182.4 m (600 ft) wide and is







the only continuous connection between the large habitat areas called out for conservation in Linkage 3 and Existing Core C. Although Alternative 2 does not impact this vegetation directly, the presence of a high-speed highway within 30.4 m (100 ft) of this connection could discourage large mammals from using the already narrow corridor to disperse between Linkage 3 and Existing Core C. Alternative 2 would also cut through open space in the northwest areas of Core C and Extension of Existing Core 2, fragmenting suitable habitat and restricting movement for large mammals west of Lake Mathews.

Alternative 9 TWS DV Impacts



The 8.04 km (5 mi) of Alternative 9 TWS DV that extend through Existing Core C would substantially impact large mammal movement, possibly isolating populations on both sides of the road. However, Alternative 9 TWS DV does not affect the transition area of this Core to Proposed Linkage 3, as does Alternative 2. Alternative 9 TWS DV also crosses through Linkage 3 and Non-Contiguous Habitat Block 4 and would impede large mammal movement in those Reserve areas. This impact may not be as substantial in Non-Contiguous Block 4, which probably does not support substantial large mammal populations due to its smaller size and isolation in the midst of developed and disturbed areas.

Evaluation of Mitigation Area/Design Features

The addition of the Potential Mitigation Area and its proximity to the eastern edge of Existing Core C will mitigate the habitat fragmentation introduced by the MCP in this area. The Potential Mitigation Area will buffer Core C from edge effects and provide substantial acreages of suitable habitat for large mammals. Although not directly contiguous with it, the Mitigation Area effectively widens Core C, providing more area for large mammal movement and dispersal. Alternative 9 TWS DV has been designed to include at least five wildlife crossings within the boundaries of Existing Core C in order to facilitate movement. These include a combination of bridge and culvert structures.



To reduce the impacts of Alternative 9 TWS DV on Linkage 3, Alternative 9 TWS DV has been designed to incorporate wildlife crossing structures that will be suitable for large mammals. These crossing structures were planned to coincide with locations already utilized by wildlife. Four bridges, the preferred crossing method for large mammals, will be built. These bridges will have widths of 50.77, 184.53, 193.34, and 440.19 m (167, 607, 636, and 1,448 ft) and average around 12.2 to 15.2 m (40 to 50 ft) in height (range between 3.04 m [10 ft] at the edges to over 30.4 m

[100 ft] in height). In addition, there will be 20 drainage culverts, 3 wildlife undercrossings/culverts, and 1 overland wildlife crossing within the stretch of impact in Proposed Linkage 3. Large mammals will not be able to use the regular drainage culverts, but will be able to use the 3 wildlife undercrossings/culverts that have been purposely "oversized" (6.08 m [20 ft] tall, 7.7 m [25.3 ft] wide, varying lengths) to accommodate wildlife usage. Mountain lions use undercrossings more often than overcrossings. The distance between the planned undercrossings conforms to the distance between crossings used by deer (1.6 to 1.8 km [0.96 to 1.08 mi] apart) (Ford 1980; Ward et al. 1980), and wildlife crossing structures used by mountain lions are correlated to those used by deer (Gloyne and Clevenger 2001). The overland wildlife crossing that is planned for Proposed Linkage 3 is 24.0 m (79 ft) wide and will also facilitate large mammal movement between both sides of the MCP. Though the planning species in Non-Contiguous Habitat Block 4 do not include large mammals, three wildlife crossings/culverts that will accommodate large mammals are also planned for that area. Since it has been shown that structure installations are ineffectual without directional fencing and jump-out structures, these have also been incorporated into the project to direct wildlife into the appropriate crossing structures. Fencing will be installed between crossing structures within the Cores and Linkages and will extend beyond the furthest crossing structure into non-Core and Linkage areas as appropriate to minimize end runs. The many wildlife crossing areas and design, together with the addition of Mitigation Area to Existing Core C, will mitigate the impacts that Alternative 9 TWS DV would have on large mammal movement.

Effects on Small Mammal Movement

In the vicinity of the proposed MCP alignments, Stephens' kangaroo rat is the only small mammal that is a planning species in the western Riverside MSHCP. The Stephens' kangaroo rat is a planning species within all four of the reserve features under consideration. The western Riverside MSHCP characterizes the movements and habitat connectivity needs of this species:

Agriculture and urbanization in the Plan Area has resulted in fragmentation of existing Stephens' kangaroo rat habitat. Even though kangaroo rats (*Dipodomys* spp.) generally are quite mobile, the Stephens' kangaroo rat is relatively sedentary in its dispersal behavior, with juvenile females moving on average 10 m (32.8 ft) and juvenile males moving 21 m (68.9 ft) (Price *et al.* 1994). However, Price *et al.* also point out that males are capable of making longer movements of more than 400 m (1,312 ft). Price and Kelly (1992) suggest that

although long distance movements are rare, they may play an important role in genetic exchange between local populations and maintenance of genetic variability. Metcalf *et al.* (2001) suggest that within continuous habitat, occasional long dispersal incidents could maintain genetic differentiation based on limited mitochondrial and nuclear gene flow...

Because the Stephens' kangaroo rat is relatively sedentary, occasional long-distance movements notwithstanding, functional habitat connections more than a few hundred meters in length should contain permanent resident habitat. Kangaroo rats are opportunists in their colonization and use of habitat (*e.g.*, fallow fields, graded housing pads) and often occupy areas that have poor value for other native species. Generally the core reserves and the smaller interstitial occupied habitat patches would be connected by natural landscapes.

Roadkill observations indicate that Stephens' kangaroo rats do attempt to cross twolane paved roads. This species will not be able to cross the MCP safely without adequate crossings. This species does not readily use small culverts, but will use large underpasses if appropriately situated or larger culverts and overland crossings. Other smaller wildlife will use small culverts to cross roads, allowing individuals to pass between Core areas.

The Lake Mathews-Estelle Mountain Reserve and the Motte Rimrock Reserve in the MCP project area together contain 1,840 ha (4,600 ac) of habitat occupied by Stephens' kangaroo rat, over a third of the acreage occupied by this species within Core reserves of the MSHCP.

Alternative 2 Impacts

Within Existing Core C, Alternative 2 impacts a considerable amount of Grasslands acreage associated with the Stephens' kangaroo rat habitat within the Lake Mathews-Estelle Mountain Reserve, fragmenting this species' habitat. Alternative 2 also directly impacts several populations of Stephens' kangaroo rat in disturbed habitat east of Lake Mathews that are outside of the Core reserve.

Alternative 9 TWS DV Impacts

Alternative 9 TWS DV passes through the portion of Existing Core C that is comprised mostly of Coastal Sage Scrub and not Grasslands, which are more typical habitat for the Stephens' kangaroo rat. By comparison, Alternative 2 impacts more

Grasslands habitat within this Core feature. Alternative 9 TWS DV also impacts very little Grasslands habitat in Proposed Linkage 3. However, in both Proposed Linkage 3 and Non-Contiguous Habitat Block 4, Alternative 9 TWS DV would separate large grasslands north of the alignment from comparably large grasslands south of the alignment, thereby impeding Stephens' kangaroo rat movement within these reserve features. Finally, Alternative 9 TWS DV comes to within 30.4 m (100 ft) from the Motte Rimrock Reserve within Non-Contiguous Habitat Block 4, which contains 134 ha (335 ac) of occupied Stephens' kangaroo habitat, but was designed to avoid impacting the Reserve.

Evaluation of Mitigation Area/Design Features

The addition of the Potential Mitigation Area and its proximity to the eastern edge of Existing Core C will mitigate habitat fragmentation introduced by the MCP in this area. The Potential Mitigation Area will buffer Existing Core C from edge effects and provide 472.8 ha (1,182 ac) of suitable habitat for Stephen's kangaroo rat. The Mitigation Area includes a large grassland in its northeast corner that could be critical for Stephens' kangaroo rat because it is the only grassland large enough to provide optimal live-in habitat for this species in the Estelle Mountain region, which is dominated by coastal sage scrub, a less ideal habitat for the rat.

To reduce the impacts of Alternative 9 TWS DV on Linkage 3, Alternative 9 TWS DV has been designed to incorporate wildlife crossing points that will be suitable for Stephen's kangaroo rat and other small mammals. The primary crossing structure is the overland wildlife crossing bridge. This structure was designed for Stephens' kangaroo rat and is situated between two known occupied areas on appropriate topography. Since the species is less likely to use small culverts to move through and project bridges and larger culverts are primarily situated around drainage features or other less suitable habitat, placement of a wildlife overcrossing structure was the only way to convey Stephens' kangaroo rat across Alternative 9 TWS DV. The bridge has been designed to include barriers to protect wildlife from headlights, will include sufficient refuge for crossing individuals to use, will include appropriate substrate and drainage, and will be sparsely vegetated so as to encourage use by kangaroo rats. At a minimum, within Stephens' kangaroo rat occupied areas, finer mesh fencing will be installed at ground level to reduce the potential of kangaroo rat movement across MCP. Use by other wildlife is secondary but expected. In addition to this crossing structure, there are 4 bridges, 20 drainage culverts, and 3 additional wildlife culvert/crossings in this Linkage for smaller wildlife to use. To maintain habitat connectivity within Non-Contiguous Habitat Block 4, 8 culvert/drainages and



3 wildlife crossings/culverts have been included in the design of Alternative 9 TWS DV for smaller wildlife. These 11 crossings will also reduce edge effects of Alternative 9 TWS DV on Motte Rimrock Reserve by facilitating wildlife movement on and off the Reserve. The many wildlife crossing areas, together with the addition of Mitigation Area to Existing Core C, will mitigate the impacts that Alternative 9 TWS DV would have on small mammal movement.

Effects on Reptile Movement

In the vicinity of the proposed MCP alignments, Belding's orange-throated whiptail is the only reptile that is a planning species in the western Riverside MSHCP. Although Belding's orange-throated whiptail is only a planning species in Proposed Linkage 3, suitable habitat for it is also present in Existing Core C and Proposed Extension of Existing Core 2.

The average home range for this species is 0.04 ha (0.11 ac), so most of the Linkages connecting the Core habitat areas within the MSHCP probably also function as live-in habitat for Belding's orange-throated whiptails. However, habitat in Proposed Linkage 3 and the Motte Rimrock Reserve in Non-Contiguous Habitat Block 4 may become isolated from other habitat by development or high-density roadways such as the MCP. According to the species account in the MSHCP, these areas are expected to continue to support whiptail populations, though they would be more vulnerable to extirpation as a result of a catastrophic event or as a result of demographic or genetic stochasticity.

Alternative 2 Impacts



Alternative 2 would impact and fragment suitable Coastal Sage Scrub habitat for Belding's orange-throated whiptail within Proposed Extension of Existing Core 2. Alternative 2 would also almost sever the connection between Existing Core C and Proposed Linkage 3, a thin band of vegetation within a disturbed and developed area. This band of vegetation is less than 182.4 m (600 ft) wide and is the only continuous connection between the large habitat areas called out for conservation in Proposed Linkage 3 and Existing Core C. Although Alternative 2 does not impact this vegetation directly, the presence of a high-speed highway within 30.4 m (100 ft) of this connection could discourage reptiles from using the already narrow corridor to disperse between Proposed Linkage 3 and Existing Core C. Although Belding's orange-throated whiptail populations will be able to persist in Linkage 3, they will be isolated and more vulnerable to stochastic events.

Alternative 9 TWS DV Impacts

Alternative 9 TWS DV would substantially fragment suitable habitat for this species and other reptiles within Non-Contiguous Habitat Block 4, Proposed Linkage 3, Existing Core C, and Extension of Existing Core 2. However, Alternative 9 TWS DV does not threaten the connection between Existing Core C and Proposed Linkage 3, which is critical for preventing the isolation of populations in Proposed Linkage 3. Alternative 9 TWS DV impacts approximately 0.8 km (1/2 mi) of suitable habitat within Existing Core 2, compared to approximately 4.8 km (3 mil) of impacts from Alternative 2.

Evaluation of Mitigation Area/Design Features

The addition of the Potential Mitigation Area and its proximity to the eastern edge of Existing Core C will mitigate habitat fragmentation introduced by the MCP in this area. The Potential Mitigation Area will buffer Existing Core C from edge effects and provide 578.8 ha (1,447 ac) of suitable habitat for Belding's orange-throated whiptail. The Mitigation Area includes chaparral, a vegetation type used by whiptails that is not as abundant in existing preserve areas.

To reduce the impacts of Alternative 9 TWS DV on Proposed Linkage 3, Alternative 9 TWS DV has been designed to incorporate wildlife crossing structures that will be suitable for Belding's orange-throated whiptails and other reptiles. Within this Linkage there are 4 bridges, 20 drainage culverts, 3 wildlife culvert/crossings, and 1 overland wildlife crossing. To maintain habitat connectivity within Non-Contiguous Habitat Block 4, 8 culvert/drainages and 3 wildlife crossings/culverts have been included in the design of Alternative 9 TWS DV. Existing Core C includes 5 crossing structures. Belding's orange-throated whiptail will be able to utilize all of the wildlife crossings described above, including the many regular-sized drainage culverts. The many wildlife crossing areas, together with the addition of Mitigation Area to Existing Core C, will mitigate the impacts that Alternative 9 TWS DV would have on reptile movement.

Effects on Bird Movement

The following birds are planning species in one or more of the reserve features in the vicinity of the proposed MCP alignments: southern California rufous-crowned sparrow, Bell's sage sparrow, burrowing owl, cactus wren, northern harrier, white-tailed kite, loggerhead shrike, coastal California gnatcatcher, Cooper's hawk, yellow warbler, white-tailed kite, southwestern willow flycatcher, yellow-breasted chat, downy woodpecker, and least Bell's vireo.



These species use a variety of different habitat types, including Coastal Sage Scrub, Chaparral, Oak Woodland, Riparian Scrub, and Woodland, and open habitats such as Marshes and Grasslands. They also exhibit varying degrees of sensitivity to habitat fragmentation. Some species can occupy disturbed, fragmented landscapes while others, such as the southern California rufous-crowned sparrow, are secretive species that are substantially more abundant in larger, unfragmented habitat patches. Raptors have larger habitat needs but may be less sensitive to habitat fragmentation because of very high mobility and an ability to use disturbed habitats such as Agricultural Land.

Birds are relatively mobile compared to other small animals and will not require special crossings to move from one side to the other of the MCP. However, the presence of a high-speed, four-lane highway is still likely to discourage smaller birds from crossing and may even prevent some species from occupying or using suitable habitat on either side of the road. The MCP will impact bird species differently depending on each species' habitat needs, current occupied habitat, mobility, and sensitivity to habitat fragmentation.

Alternative 2 Impacts



Approximately 4.82 km (3 mi) of Alternative 2 extends into Existing Core C. Alternative 2 also traverses almost through the key connection point of Proposed Linkage 3 and this Core. This area of the connection between this Core and Proposed Linkage 3 is very narrow (approximately 182.4 m [600 ft]), and Alternative 2 would have made achieving connectivity between this Core and Proposed Linkage 3 a difficult challenge at that already very narrow point. Alternative 2 also impacts approximately 4.8 km (3 mi) of Extension of Existing Core 2 in the northern portion of its boundaries, generally following the Core's edge.

Alternative 2 would have greater impacts and more take than Alternative 9 TWS DV on Agricultural Land, Developed/Disturbed Land, Grasslands, Meadows/Marshes, and Riparian communities. Therefore, bird movement within these habitats will likely have greater impacts resulting from Alternative 2 than from Alternative 9 TWS DV. Species whose local movements might be more constrained by Alternative 2 include burrowing owl. Species which might use the habitats on either side (e.g., southwestern willow flycatcher, least Bell's vireo, yellow-breasted chat, yellow warbler, downy woodpecker) are either highly mobile or are migratory species and are unlikely to have movement or dispersal affected by Alternative 2.



Alternative 9 TWS DV Impacts

Approximately 8.0 km (5 mi) of Alternative 9 TWS DV extends through Existing Core C. Alternative 9 TWS DV does not affect the transition area of this Core to Proposed Linkage 3, as does Alternative 2. Additionally, Alternative 9 TWS DV will also traverse into Proposed Extension of Existing Core 2 at the western end of the facility. Alternative 9 TWS DV crosses Existing Core C in the center of the conservation feature, which could lead to creating internal edge effects within the feature itself, but does not come as close as Alternative 2 to the important connection between this Core and Proposed Linkage 3. Alternative 9 TWS DV also impacts approximately 0.8 km (one-half mile) of Extension of Existing Core 2, compared to the approximately 4.8 km (3 mi) of impacts from Alternative 2. Alternative 9 TWS DV impacts to this Core do not affect the other Linkages and Constrained Linkages that are important to the function of this Core. Given the relatively smaller area of impact of Alternative 9 TWS DV as compared to Alternative 2, this alignment does not substantially affect the function of this Core to act as a buffer to Existing Core C to the east. Alternative 9 TWS DV extends approximately 2.4 km (1.5 mi) across Proposed Linkage 3 and less than 1.6 km (1 mi) into Non-Contiguous Habitat Block 4.

Alternative 9 TWS DV results in greater impacts than Alternative 2 on Chaparral, Coastal Sage Scrub, and Woodland and Forest. Alternative 9 TWS DV would likely result in greater impacts to bird movement within these habitats than by Alternative 2. Species whose movements and dispersal that might be more impacted by Alternative 9 TWS DV include coastal California gnatcatcher and cactus wren. Bell's sage sparrow and loggerhead shrike are more mobile species which are less likely to have dispersal and movement affected by Alternative 9 TWS DV. It is unlikely that a highway will substantially impede the movement and dispersal of Cooper's hawk, northern harrier, or white-tailed kite due to the large ranges and high mobility of these species, regardless of habitat loss caused by build-out of the MCP.



Evaluation of Mitigation Area/Design Features

The addition of the Potential Mitigation Area and its proximity to the eastern edge of Existing Core C will mitigate habitat fragmentation introduced by the MCP in this area. The Potential Mitigation Area will buffer Core C from edge effects and provide suitable habitat for all bird species. The Mitigation Area includes Chaparral and Woodland and Forest, vegetation types used by some bird species that are not as abundant in existing preserve areas in the Lake Mathews vicinity. In the Mitigation Area, there are more acres of suitable habitat for all species than the net difference of

impacts from Alternative 9 TWS DV. Although not directly contiguous with it, the Mitigation Area effectively widens Core C, providing more area for bird movement and dispersal. It is expected that birds will cross under the bridges when travelling through scrub or chaparral habitats and will use the wildlife overcrossing to an extent. It is highly unlikely that they will use the culverts. Conservation of the Mitigation Area adequately mitigates for the impacts to bird movements caused by Alternative 9 TWS DV.

Effects on Insect Movement

In the vicinity of the proposed MCP alignments, the Quino checkerspot butterfly is the only insect that is a planning species in the western Riverside MSHCP. Quino checkerspot is only a planning species in Proposed Linkage 3.

The Lake Mathews-Estelle Mountain area was historically occupied by Quino checkerspot populations up to the 1980s, but these populations have been extirpated. It is assumed that this species no longer exists within the areas affected by the MCP project and stands little chance of recovery in the area. Therefore, connectivity for this planning species is not necessary. However, other insects will require connectivity across the proposed alignments.

It is difficult to estimate the effects of the proposed project on various insect species, because movement patterns vary widely. Some are able to fly great distances, while others walk short distances to disperse. The MCP project could result in mortality to various insect species that attempt to cross the facility.

Alternative 2 Impacts

Approximately 4.8 km (3 mi) of Alternative 2 extend into Existing Core C.

Alternative 2 also traverses almost through the key connection point of Proposed Linkage 3 and this Core. This area of the connection between this Core and Proposed Linkage 3 is very narrow (approximately 182.4 m [600 ft]), and Alternative 2 would have made achieving connectivity between this Core and Proposed Linkage 3 a difficult challenge at that already very narrow point. Alternative 2 also impacts approximately 4.8 km (3 mi) of Extension of Existing Core 2 in the northern portion of its boundaries, generally following the Core's edge. These Alternative 2 impacts would fragment suitable insect habitat, thereby impeding individuals from dispersing between populations.





Alternative 9 TWS DV Impacts

Approximately 8.0 km (5 mi) of Alternative 9 TWS DV extend through Existing Core C. Alternative 9 TWS DV does not affect the transition area of this Core to Proposed Linkage 3, as does Alternative 2. Additionally, Alternative 9 TWS DV will also traverse into Proposed Extension of Existing Core 2 at the western end of the facility. Alternative 9 TWS DV crosses Existing Core C in the center of the feature, which could lead to creating internal edge effects within the feature itself, but does not come as close as Alternative 2 to the important connection between this Core and Proposed Linkage 3. Alternative 9 TWS DV also impacts approximately 0.8 km (onehalf mile) of Extension of Existing Core 2, compared to the approximately 4.8 km (3 mi) of impacts from Alternative 2. Alternative 9 TWS DV impacts to this Core do not affect the other Linkages and Constrained Linkages that are important to the function of this Core. Given the relatively smaller area of impact of Alternative 9 TWS DV as compared to Alternative 2, this alignment does not substantially affect the function of this Core to act as a buffer to Existing Core C to the east. Alternative 9 TWS DV extends approximately 2.4 km (1.5 mi) across Proposed Linkage 3, an impact avoided by Alternative 2. Alternative 9 TWS DV also extends less than 1.6 km (1 mi) into Non-Contiguous Habitat Block 4. These Alternative 9 TWS DV impacts would fragment suitable insect habitat, possibly impeding individuals from dispersing between populations.



Evaluation of Mitigation Area/Design Features

The addition of the Potential Mitigation Area and its proximity to the eastern edge of Existing Core C will mitigate habitat fragmentation introduced by the MCP in this area. The Potential Mitigation Area will buffer Core C from edge effects and provide suitable habitat for various insects. Although not directly contiguous with it, the Mitigation Area effectively widens Core C, providing more area for insect movement and dispersal. Conservation of the Mitigation Area adequately mitigates for any potential impacts to Quino checkerspot butterfly movements caused by Alternative 9 TWS DV.



To reduce the impacts of Alternative 9 TWS DV on Linkage 3, Alternative 9 TWS DV has been designed to incorporate wildlife crossing points that may be suitable for some insect species. Within this Linkage there are 4 bridges, 20 drainage culverts, 3 wildlife culvert/crossings, and 1 overland wildlife crossing. The various types of crossings will satisfy the movement criteria for a wide variety of insects. To maintain habitat connectivity within Non-Contiguous Habitat Block 4, 8 culvert/drainages and 3 wildlife crossings/culverts have been included in the design

of Alternative 9 TWS DV. The many wildlife crossing areas, together with the addition of Mitigation Area to Existing Core C, will mitigate the potential impacts that Alternative 9 TWS DV would have on insect dispersal and movement.

3.17.5 Avoidance, Minimization, and/or Mitigation Measures

Sensitive plant communities of Diegan Coastal Sage Scrub, Riversidean Sage Scrub, and Peninsular Juniper Woodland cover extensive areas of the BSA and vicinity; therefore, impacts to these areas could not be entirely avoided. However, during project design, efforts were made to minimize impacts. Whenever feasible, the project footprint was aligned with existing roadways, where native habitats have already been removed or disturbed by development or other land use. In addition, the MCP alignment for the Locally Preferred Alternative (Alternative 9 TWS DV) east and west of Gavilan Road would be bridged over steep canyons rather than filling in those areas to reduce impact to natural plant communities.

The greatest area of avoidance and minimization of impacts to the natural environment proposed by the project are the design of crossings to promote wildlife movement, connectivity of habitat, and also to minimize impacts to the aquatic environment. Extensive meetings and discussions have taken place over the years with the wildlife agencies (USFWS and CDFG) to design and place the proposed wildlife crossings in the most advantageous locations and still meet various engineering constraints. The proposed wildlife crossings have been included in the design of all MCP Build Alternatives and are shown in Appendix I (Attachment E). The types of crossings include bridges (allowing animals to cross under the parkway), land crossings (allowing animals to cross over the parkway), and undercrossings (allowing animals to cross under the parkway via oversized culverts). The design criteria specified in the MSHCP were incorporated into the design of the wildlife crossings. These design criteria met or in most cases exceeded all the MSHCP specific measurement guidelines.

Wildlife crossings are designed at key locations within the MSHCP Criteria Area to maintain habitat connectivity through the Core Area and Linkages, avoid impacts to major drainages in the composite footprint, and cross steep terrain. The design of





¹ Culverts are sized larger than needed to contain the flow, specifically to meet the needs of the wildlife species.

these bridges provides more than adequate undercrossing widths and heights for wildlife for all of the MCP Build Alternatives.

The proposed bridges that provide areas for undercrossings by wildlife range from 30 m (98 ft) to 1,720 m (5,643 ft) in length and from 3 to 45 m (10 to 148 ft) in height. The proposed bridge designs would provide a connection between Core Areas and Linkages for wildlife to safely move between adjacent habitats.

The proposed combined wildlife crossing/drainage culverts are designed to be 8 m (25 ft) in width and 6 m (20 ft) in height. The combined wildlife crossing/drainage culverts are designed to allow water to flow through drainages with benches for wildlife to pass through culverts during water flow. Additionally, there is one undercrossing for the sole purpose of facilitating wildlife movement that is 8 m (25 ft) in width and 3 m (10 ft) in height. The wide openings of the undercrossings and combined crossing/drainage culverts would allow sufficient light for wildlife to see from the opening of the undercrossing to the end. Land crossings over the parkway are designed to be approximately 24 m (79 ft) in width and would be vegetated to provide cover for various wildlife species. These land crossings will be fenced to deter the animals from accessing the roadway; however, construction of jump-outs and one-way gates would allow animals to escape should they enter into the fenced parkway right of way.

In order to reduce indirect impacts resulting from habitat fragmentation along the MSHCP, Lake Mathews MSHCP, El Sobrante Landfill MSHCP, and Habitat Conservation Plan for the Stephens' Kangaroo Rat Conservation Areas, the project has incorporated engineering design measures, such as bridges and wildlife land crossings, that will facilitate habitat connectivity and wildlife movement along these conservation areas. In particular, the bridge crossing labeled South Lake Mathews Viaduct, as shown in Appendix I (Attachment E) and summarized in the table shown in Appendix I (Attachment F), will facilitate wildlife movement between the Lake Mathews MSHCP and El Sobrante Landfill MSHCP Plan Areas. This bridge is 804 m (2,638 ft) in length for Alternative 9 and 532 m (1,745 ft) in length for Alternatives 4 and 5.

There are two combined wildlife crossing/drainage culverts (7.7 m [25 ft] wide and 6 m [20 ft] tall) located north of the Motte Rimrock Reserve that will minimize habitat fragmentation by creating a wildlife crossing between Motte Rimrock Reserve and the proposed MSHCP Conservation Area to the north. Also, as summarized in





Appendix I (Attachment E), a 807 m (2,638 ft) long bridge has been designed to facilitate wildlife movement between the Lake Mathews MSHCP and El Sobrante Landfill MSHCP Plan Areas. Further, another bridge spanning the floodplain of the San Jacinto River for 1,317 m (4,321 ft) will reduce impacts to habitat fragmentation and facilitate wildlife movement.

In addition to Mitigation Measures HCP-1, HCP-2, and HCP-3, mitigation for impacts of the Locally Preferred Alternative (Alternative 9 TWS DV) to Habitat Conservation Plans will be achieved through compliance with provisions of the MSHCP, the El Sobrante Landfill MSHCP, and the Habitat Conservation Plan for the Stephens' Kangaroo Rat. The western Riverside County MSHCP was conceived and developed and is being implemented specifically to address the direct, indirect, cumulative, and growth-related effects on species and habitats from activities covered by the MSHCP, including the MCP project. These same requirements would apply to MCP Build Alternatives, in addition to compliance with provisions of the Lake Mathews MSHCP.

Prior to and during construction, the Riverside County Transportation Commission (RCTC) will adhere to the guidelines in the Multiple Species Habitat Conservation Plan (MSHCP) Section 6.1.4, Section 6.4, Section 7.5.3, and Appendix C to reduce edge effects on the MSHCP Conservation Area.

Adherence to MSHCP Section 6.1.4

Indirect impacts to the MSHCP Conservation Area, including Lake Mathews-Estelle Mountain Reserve, San Jacinto-Lake Perris Reserve, and Motte Rimrock Reserve, will be minimized by reducing edge effects to preserved habitat (by following the MSHCP Guidelines pertaining to the Urban/Wildlands Interface). Indirect impacts of exotic plant infestations, litter, and fire will be reduced by regular roadside maintenance to remove litter and weeds from the right of way. The following is a summary and discussion of MSHCP Section 6.1.4, Urban/Wildlands Interface Guidelines, and project features incorporated into the design of the MCP to reduce edge effects.

Drainage

The Urban/Wildlands Interface Guidelines indicate that proposed developments in proximity to the MSHCP Conservation Area are to incorporate measures, including measures required through the National Pollutant Discharge Elimination System

(NPDES) requirements, to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions.

In particular, measures will be put in place to avoid discharge of untreated surface runoff from developed and paved areas into the MSHCP Conservation Area. Storm water systems will be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials, or other elements that might degrade or harm biological resources or ecosystem processes within the MSHCP Conservation Area. This will be accomplished for the MCP project using a variety of methods including detention basins, biofiltration swales, or media filters. Erosion control for portions of the project under the jurisdiction of Caltrans will be reviewed and approved by Caltrans.

Toxics

Land uses proposed in proximity to the MSHCP Conservation Area that use chemicals or generate bioproducts that may adversely affect wildlife species or water quality are to incorporate measures to ensure that the application of such chemicals does not result in discharge to the MSHCP Conservation Area. Measures such as those employed to address drainage issues shall be implemented.

The detention basins, biofiltration swales, and media filters, as discussed above under drainage, will clean and remove contaminants prior to discharge into sensitive areas or divert contaminated waters away from sensitive areas.

Lighting

Night lighting is to be directed away from the MSHCP Conservation Area and habitat with long-term conservation value for Los Angeles pocket mouse, San Bernardino kangaroo rat, and least Bell's vireo to protect species within the MSHCP Conservation Area and habitat with long-term conservation value from direct night lighting. Shielding shall be incorporated in project designs to ensure ambient lighting in the MSHCP Conservation Area is not increased.

There will be no lighting on the MCP project mainline, with the exception of a portion of Alternatives 6 and 7. For the Lake Mathews North General Plan (LMN-GP) Segment portion of Alternatives 6 and 7, lighting is proposed from the intersection at La Sierra Avenue/El Sobrante Road to the MCP/El Sobrante Road interchange per Riverside County roadway standards. Lighting will not be placed on the section from La Sierra Avenue/El Sobrante Road west to I-15 due to the

alignment location in environmentally sensitive habitat reserve areas. Lighting will only be located at the system and service interchanges, which are all located outside PQP lands. For any interchanges located near PQP land, the lighting will be shielded and directed to focus downward so as to illuminate only the MCP and connecting roads in order to minimize light leakage outside the Caltrans required safety lighting areas and to ensure that ambient lighting in the MSHCP Conservation Area is not increased.

Noise

Proposed noise-generating land uses affecting the MSHCP Conservation Area are to incorporate setbacks and/or berms, to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations, and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed residential noise standards.

Sound walls will be provided where necessary to provide noise attenuation of substantial adverse noise impacts of the MCP Alternatives for existing noise-sensitive land uses. However, no walls are proposed adjacent to conservation areas, as these areas are meant to be kept as open and permeable as possible for wildlife and scenic resources. Creating sound walls along these areas would conflict with other considerations meant to enhance wildlife. Habitat reserves located within the MCP study area do not require noise attenuation, as the Noise Abatement Criteria only applies to areas with frequent human use. Noise levels in the reserve areas south of Lake Mathews range from approximately 54 to 65 A-weighted decibels (dBA) and are not anticipated to exceed residential noise standards.

Invasives

A list of plants that should be avoided adjacent to the MSHCP Conservation Area is summarized in Table 6-2 of the MSHCP and in Appendix P of the NES. For portions of the project that are adjacent to the MSHCP Conservation Area, avoidance of these species is to be incorporated into the project design or landscape plans. Considerations in reviewing the applicability of this list shall include: proximity of planting areas to the MSHCP Conservation Areas; species considered in the planting plans; resources being protected within the MSHCP Conservation Area and their relative sensitivity to invasion; and barriers to plant and seed dispersal such as walls, topography, and other features.

MCP landscaping for unpaved areas within the project right of way will focus on native plant species, particularly in areas adjacent to undeveloped land and reserve areas with native plant species. None of the species listed in the MSHCP that should be avoided adjacent to the Conservation Area will be utilized as part of the landscaping plans. Seed mixtures for portions of the project under Caltrans jurisdiction shall be approved by a Caltrans District Landscape Architect.

Indirect impacts of invasive plant species will be reduced by regular roadside maintenance to remove litter and weeds from the right of way.

Barriers

Proposed land uses adjacent to the MSHCP Conservation Area are to incorporate barriers, where appropriate, in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping in the MSHCP Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls, signage, and/or other appropriate mechanisms.

Permanent fencing will be installed along the right of way limits for the entire length of the MCP, including areas adjacent to MCP Conservation Areas. The height of fencing in areas designated as reserve areas may be as high as 3 m (10 ft) to provide protection to wildlife.

Retaining walls will be provided along the MCP roadway and can be used to minimize or reduce the amount of grading in areas or to minimize or avoid impacts to biological resources.

Sound walls will also be provided where necessary (as described in Section 3.15, Noise, of this EIR/EIS) to provide noise attenuation of substantial adverse noise impacts of the MCP project. Refer to the discussion in Section 3.17.5.4, Noise.

In order to reduce impacts resulting from habitat fragmentation within the MSHCP Conservation Area, the project has incorporated engineering design measures such as bridges and wildlife land crossings that will facilitate habitat connectivity and wildlife movement within the MSHCP Conservation Area.

Grading/Land Development

Manufactured slopes associated with proposed site development are not to extend into the MSHCP Conservation Area.









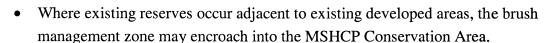
There will not be any manufactured slopes outside of the project footprint. An Equivalency Analysis will be prepared for portions of the project footprint that are conditionally covered as part of the Cajalco Road realignment and widening and that run through the MSHCP Conservation Area. Impacts to these areas (including any manufactured slopes) will be mitigated by the purchase of off-site conservation lands.

Adherence to MSHCP Section 6.4

Fuels Management

As a covered activity, the MCP project will comply with the fuels management guidelines that are provided in Section 6.4 of the MSHCP.

Fuels management focuses on hazard reduction for humans and their property. Fuels management for human safety shall continue in a manner that is compatible with public safety and conservation of biological resources. Fuels management for human hazard reduction involves reducing fuel loads in areas where fire may threaten human safety or property, suppressing fires once they have started, and providing access for fire suppression equipment and personnel. It is recognized that brush management to reduce fuel loads and protect urban uses and public health and safety shall occur where development (including roadways such as the MCP project) is adjacent to the MSHCP Conservation Area. The following scenarios related to brush management adjacent to the MSHCP Conservation Area are pertinent to the MCP project:



- Where Reserve Assembly proceeds adjacent to existing developed areas, MSHCP
 Conservation Area boundaries should be established to avoid such encroachment
 wherever possible. When acquiring lands for the MCP project, RCTC shall
 evaluate fire management issues.
- In accordance with existing policies, brush management shall be incorporated in the MCP project boundaries and shall not encroach into the MSHCP Conservation Area.

Adherence to MSHCP Appendix C and Section 7.5.3

Best Management Practices and Construction Guidelines

As a covered project, the project will comply with the Standard BMPs and Construction Guidelines that are provided in the MSHCP. The Standard BMPs (provided in Appendix P of the NES) are found in Appendix C of the MSHCP, and the Construction Guidelines provided in MSHCP Section 7.5.3 are also listed below:



- Plans for water pollution and erosion control will be prepared for all Discretionary Projects involving the movement of earth in excess of 50 cubic yards. The plans will describe sediment and hazardous materials control, dewatering or diversion structures, fueling and equipment management practices, use of plant material for erosion control. Plans will be reviewed and approved by the County of Riverside and participating jurisdiction prior to construction.
- Timing of construction activities will consider seasonal requirements for breeding birds and migratory nonresident species. Habitat clearing will be avoided during species active breeding season defined as March 1 to June 30¹.
- Sediment and erosion control measures will be implemented until such time that soils are determined to be successfully stabilized.
- Short-term stream diversions will be accomplished by use of sand bags or other
 methods that will result in minimal in-stream impacts. Short-term diversions will
 consider effects on wildlife.
- Silt fencing or other sediment trapping materials will be installed at the downstream end of construction activities to minimize the transport of sediments off site.
- Settling ponds where sediment is collected will be cleaned in a manner that
 prevents sediment from re-entering the stream or damaging/disturbing adjacent
 areas. Sediment from settling ponds will be removed to a location where sediment
 cannot re-enter the stream or surrounding drainage area. Care will be exercised
 during removal of silt fencing to minimize release of debris or sediment into
 streams.
- No erodible materials will be deposited into water courses. Brush, loose soils, or
 other debris material will not be stockpiled within stream channels or on adjacent
 banks.
- The footprint of disturbance will be minimized to the maximum extent feasible.
 Access to sites will occur on pre-existing access routes to the greatest extent possible.
- Equipment storage, fueling and staging areas will be sited on nonsensitive upland habitat types with minimal risk of direct discharge into riparian areas or other sensitive habitat types.

Although this is the date specified in Appendix C of the MSHCP, in order to comply with the Migratory Bird Treaty Act, clearing for this project will be conducted from September 16–February 28/29.

- The limits of disturbance, including the upstream, downstream and lateral extents, will be clearly defined and marked in the field. Monitoring personnel will review the limits of disturbance prior to initiation of construction activities.
- During construction, the placement of equipment within the stream or on adjacent banks or adjacent upland habitats occupied by covered species that are outside of the project footprint will be avoided.
- Exotic species removed during construction will be properly handled to prevent sprouting or regrowth.
- Training of construction personnel will be provided.
- Ongoing monitoring and reporting will occur for the duration of the construction activity to ensure implementation of BMPs.
- When work is conducted during the fire season (as identified by the Riverside County Fire Department) adjacent to coastal sage scrub or chaparral vegetation, appropriate firefighting equipment (e.g., extinguishers, shovels, water tankers) shall be available on site during all phases of project construction to help minimize the chance of human-caused wildfires. Shields, protective mats, and/or other fire prevention methods shall be used during grinding, welding, and other spark-inducing activities. Personnel trained in fire hazards, preventative actions, and responses to fires shall advise contractors regarding fire risk from all construction-related activities.
- Active construction areas shall be watered regularly to control dust and minimize impacts to adjacent vegetation.
- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any
 other toxic substances shall occur only in designated areas within the proposed
 grading limits of the project site. These designated areas shall be clearly marked
 and located in such a manner as to contain runoff.
- Waste, dirt, rubble, or trash shall not be deposited in the Conservation Area or on native habitat.
- HCP-2 During final design, the Riverside County Transportation Commission (RCTC) will coordinate with USA Waste of California, Inc. to amend the El Sobrante Landfill Multiple Species Habitat Conservation Plan (El Sobrante Landfill MSHCP) to address the Mid County Parkway (MCP) project and its effects on the Plan's easterly conservation area. The amendment will address the addition of mitigation lands to the Plan that would offset the loss of functions, values, and species covered under the Plan.

HCP-3

During final design, the Riverside County Transportation Commission (RCTC) will coordinate with the Riverside County Habitat Conservation Authority (RCHCA) to amend the Habitat Conservation Plan for the Stephens' Kangaroo Rat to address the Mid County Parkway (MCP) project and its effects on the Habitat Conservation Plan Conservation Area. The amendment will address the addition of mitigation lands to the Habitat Conservation Plan on a 1:1 basis per the Habitat Conservation Plan to offset the loss of functions, values, and species covered under this Habitat Conservation Plan. The replacement habitat for the Habitat Conservation Plan for the Stephens' Kangaroo Rat must be approved by the wildlife agencies and must be contiguous to the current Stephens' Kangaroo Rat Reserve lands. In addition, replacement lands for lands impacted in the Stephens' Kangaroo Rat Reserve lands that are managed by the federal Bureau of Land Management (BLM) shall also require BLM approvals through a right of way encroachment application. These lands would be managed by the RCHCA through an agreement with RCTC.



In addition to the measures listed above, the measures presented later in Sections 3.18 through 3.22 would minimize impacts to natural communities, including riparian habitat.

The following general measures would be implemented to avoid, minimize, and/or compensate impacts to biological resources, including those discussed in Sections 3.18 through 3.21.

BIO-1

During construction, the Riverside County Transportation
Commission (RCTC) will ensure that impacts to areas that provide
long-term conservation value for species identified in the Multiple
Species Habitat Conservation Plan (MSHCP) as Narrow Endemic
Plant Species, Criteria Area Plant Species, and Additional Survey
Species are avoided and minimized, as defined in the MSHCP.
Avoidance and minimization will be achieved by confining
disturbance to areas not identified as having long-term conservation
value as much as feasible, and not exceeding the limits identified in
this Environmental Impact Report/Environmental Impact Statement
(EIR/EIS). Disturbance will be controlled by erecting barrier

fencing or other appropriate means of demarcating construction limits.

During final design, the Riverside County Transportation
Commission (RCTC) will ensure that notes are placed on project
construction plans, informing contractors that areas designated with
long-term conservation value outside the project footprint are
environmentally sensitive and that construction activity is excluded
from those areas.

During construction, the Riverside County Transportation

Commission (RCTC) will contract a qualified/authorized biological

monitor to ensure that disturbance outside the footprint is avoided
and seasonal restrictions are observed.

3.18 Wetlands and Other Waters

This section of the document focuses on the issues covered in Sections 5.4 of the Natural Environment Study (NES) (LSA Associates, Inc., 2008), the Jurisdictional Delineation and Assessment Report (2007; Revised 2008; Appendix L of the NES) and the Potential Impacts of Alternative Corridor Alignments to Waters of the United States, Riparian Ecosystems, and Threatened and Endangered Species: Mid County Parkway Project, Riverside County, California (ERDC 2008). Detailed discussions and maps of identified jurisdictional features are provided in the Jurisdictional Delineation and Assessment Report. The draft 404(b)(1) Alternatives Analysis is provided in Appendix N and the Conceptual Mitigation Plan is provided in Appendix Q.

3.18.1 Regulatory Setting

Wetlands and other waters are regulated under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is administered by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (EPA).

Caltrans, FHWA, USACE, EPA, and the U.S. Fish and Wildlife Service entered into a memorandum of understanding (MOU) to integrate NEPA and the Clean Water Act for EIS projects that have five or more acres of permanent impact to Waters of the



United States. Under this MOU, the signatory agencies agree to coordinate at three checkpoints: 1) purpose and need, 2) identification of range of alternatives, and 3) preliminary determination of the least environmentally damaging practicable alternative (LEDPA) and conceptual mitigation plan. The goal of the MOU procedure is to streamline the environmental review process by integrating the procedural requirements of NEPA with the substantive requirements of Section 404 of the CWA, beginning at the early stages of project development and continuing through the final stages of the environmental evaluation. This multi-agency integration helps to ensure all applicable environmental requirements, laws, and regulations are achieved in a quality and timely manner. The integration process also enables the USACE to more efficiently adopt the federal lead agency's EIS in support of its independent NEPA compliance responsibilities.

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

At the state level, wetlands and waters are regulated primarily by the Department of Fish and Game (CDFG) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed, bank, or channel, of any river, stream or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section for additional details.



3.18.2 Affected Environment

3.18.2.1 USACE and CDFG Jurisdiction

Areas under the jurisdiction of USACE differ from those under the jurisdiction of CDFG; therefore, the following text describes the basis of USACE and CDFG jurisdiction over various waters.

USACE jurisdiction extends laterally to the ordinary high water mark or beyond the ordinary high water mark to the limit of any adjacent wetlands, if present. The ordinary high water mark is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area."

In this section, USACE jurisdictional areas are described as either wetland or non-wetland areas. The USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions." In order to satisfy the USACE wetland definition, an area must possess three wetland characteristics: (1) hydrophytic vegetation¹, (2) hydric soils², and (3) wetland hydrology³. Generally, non-wetland waters are those within the ordinary high water mark that are not wetlands.

CDFG regulated streams and rivers, which are defined by the presence of a channel, bed, and banks. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by CDFG. CDFG has not defined wetlands for jurisdictional purposes. CDFG generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, alders, and other vegetation typically associated with the

Plant life that grows, and is typically adapted for life, in permanently or periodically saturated soils.

Soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions (i.e., absence of oxygen) in the upper part.

Areas with wetland hydrology are those where the presence of water has an overriding influence on vegetation and soil characteristics due to anaerobic and reducing conditions, respectively.

banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFG jurisdiction based on riparian habitat will automatically include any wetland areas. Wetlands not associated with a lake, stream, or other regulated area are generally not subject to CDFG jurisdiction.

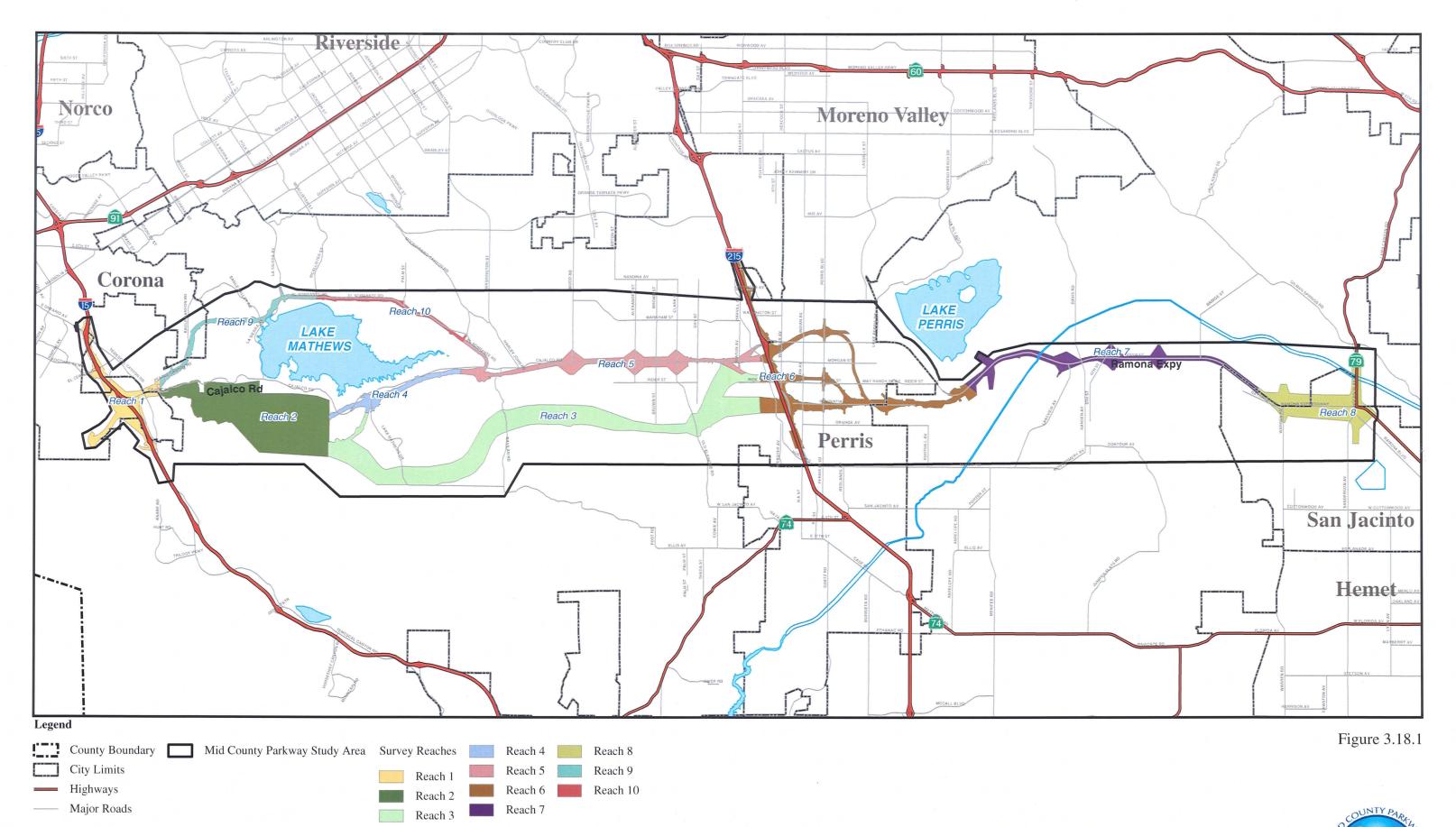
Typically, USACE jurisdictional areas are located within CDFG jurisdictional areas, because CDFG jurisdiction often extends to riparian areas that lack evidence of an ordinary high water mark or one or more of the requisite wetland criteria (hydrology, hydric soils, hydrophytic vegetation) and therefore are not regulated by USACE. Therefore, USACE jurisdictional areas are usually smaller areas located within CDFG jurisdictional areas.

3.18.2.2 Jurisdictional Areas in the MCP Study Area

The MCP study area is located within the Santa Ana River watershed and the San Jacinto River watershed. The Hydrologic Units within which the project study area lie are the Santa Ana River Hydrologic Unit and the San Jacinto Valley Hydrologic Unit, which are further divided into Hydrologic Areas and Hydrologic Sub-Areas (HSAs).

The MCP project encompasses the following HSAs within the Santa Ana River Hydrologic Unit: Temescal HSA, Arlington HSA, Bedford HSA, and Cajalco HSA. The MCP project encompasses the following HSAs within the San Jacinto Valley Hydrologic Unit: Perris Valley HSA, Lakeview HSA, Hemet HSA, and Gilman Hot Springs HSA.

The *Jurisdictional Delineation and Assessment Report* divided the study area into geographic "Reaches," as shown in Figure 3.18.1. The definition of each Reach was based on watersheds and similarity of wetland areas for the MCP project. Reaches defined in the Jurisdictional Delineation are different than the "riparian reaches" described in USACE reports (see discussion in Section 3.18.2.3, Functions and Values). During the field surveys for the MCP delineation, numerous distinct jurisdictional features were identified within the MCP study area and included perennial, ephemeral, and intermittent drainages and wetlands. USACE and CDFG jurisdictional areas are summarized by Reach in Table 3.18.A. The study area contains approximately 45.59 hectares (ha) (112.65 acres [ac]) of USACE jurisdictional waters, of which 16.75 ha (41.39 ac) consist of wetlands. The study area also contains approximately 104.2 ha (257.5 ac) of CDFG jurisdictional area.



SOURCE: TBM (2006); LSA (2/07)

5,500 11,000 22,000 Feet 3,500 7,000 Meters Jurisdictional Delineation Reaches KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

Table 3.18.A Summary of CDFG and USACE Jurisdictional Areas

		Jurisdictional	Areas, ha (ac)	
Reach	CDFG Total		USACE	
	CDFG TOTAL	Wetland	Nonwetland	USACE Total
1	9.37 (23.16)	1.34 (3.32)	4.88 (12.05)	6.22 (15.38)
2	17.17 (42.42)	2.51 (6.21)	2.73 (6.75)	5.24 (12.96)
3	25.74 (63.61)	2.46 (6.08)	5.46 (13.50)	7.92 (19.58)
4	5.62 (13.88)	0.58 (1.44)	2.03 (5.01)	2.61 (6.45)
5	12.69 (31.35)	3.42 (8.45)	0.93 (2.29)	4.35 (10.74)
6	5.37 (13.26)	0.74 (1.84)	4.17 (10.31)	4.92 (12.15)
7	2.00 (4.94)	1.00 (2.48)	0.65 (1.61)	1.66 (4.09)
8	21.94 (54.22)	4.17 (10.31)	7.43 (18.37)	11.61 (28.68)
9	3.48 (8.61)	0.27 (0.67)	0.37 (0.91)	0.64 (1.59)
10	0.83 (2.06)	0.24 (0.59)	0.19 (0.46)	0.42 (1.04)
Total	104.21 (257.50)	16.73 (41.39)	28.84 (71.26)	45.59 (112.65)

Source: Jurisdictional Delineation and Assessment Report, LSA Associates, Inc. 2008.

ac = acres

CDFG = California Department of Fish and Game

ha = hectares

USACE = United States Army Corps of Engineers

The USACE reviewed the *Jurisdictional Delineation and Assessment Report* and issued its verification of the report by letter dated April 10, 2008 (copy provided in Appendix J of this EIR/EIS).

The average annual rainfall based on a central portion of the study area (City of Perris) is 26.4 centimeters (cm) (10.4 inches [in]), per the Western Regional Climate Center (http://www.wrcc.dri.edu/htmlfiles/ca/ca.ppt.html). Within the Biological Study Area (BSA) for the MCP project, the total area of developed area (as described in the NES) that would correspond to the amount of impervious surfaces is approximately 27 percent.

3.18.2.3 Functions and Values

The functions and values of the identified wetlands within the MCP study area were initially qualitatively assessed in the Jurisdictional Delineation using the functions and values described in the Wetland Evaluation Technique (WET; Adamus et al. 1987). This methodology provides a cursory understanding of the quality of the functions and values of the wetlands affected by each of the Build Alternatives. The WET manual describes several functions and values of wetlands considered beneficial to society, including: groundwater recharge/discharge, flood flow alteration, sedimentation stabilization, sediment/toxicant retention, nutrient removal/transformation, and production export. The results of the functions and values assessment are summarized in Table 3.18.B for all the Reaches and associated

Table 3.18.B Wetlands Functions and Values

Reach	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	Reach 9	Reach 10
Alternative	4,5,6,7,9	4,5,6,7,9	6	4,5,6,7	4,5,6,7	4,5,6,7,9	4,5,6,7,9	4,5,6,7,9	9	9
Function/Value										
Groundwater Discharge/Recharge	Moderate	High	High	Moderate	High	Low	Moderate	Moderate	High	Moderate
Flood Flow Alteration	Low	High	High	Moderate	Moderate	Low	Moderate	High	High	Low
Sediment Stabilization	Moderate	High	High	Moderate	High	Low	Moderate	Moderate	High	Low
Sediment/Toxicant Retention	Moderate	High	High	High	High	Moderate	Moderate	High	High	Low
Nutrient Removal/ Transformation	Low	High	High	Moderate	High	Moderate	High	High	High	Moderate
Production Export	High	High	High	Low	High	Low	Low	High	High	Low
Wildlife Habitat	Moderate	High	High	Moderate	Low	Low	Moderate	Moderate	High	Low
Uniqueness/Heritage	High	High	High	Moderate	Moderate	Low	Moderate	Moderate	Moderate	Low
Recreation	Low	High	High	Pow	Low	Low	MOT	Low	Low	Low

Source: Jurisdictional Delineation and Assessment Report, LSA Associates, Inc. 2008.

alternatives. The ranking of quality (high, moderate, and low) correlates directly with the functions and values that collectively exist within each Reach. Most Reaches share multiple alternatives, which results in shared wetland qualities as well. Functions and values with mostly high ratings per Reach are associated with high wetlands quality; these occur in mostly undisturbed and undeveloped areas on Reaches 2, 3, and 9 and are associated with all the alternatives (Alternatives 4, 5, 6, 7, and 9, and their respective design variations). The functions and values with mostly low ratings per Reach are associated with low wetlands quality; these occur primarily in developed areas or adjacent to developed areas on Reaches 6 and 10 (Alternatives 4, 5, 6, 7, and 9 and their respective design variations). For most of the alternatives that share common Reaches, the range of wetlands quality ranges from low to high. All of the alternatives contain some high-quality wetlands.

The functions, or integrity, of the identified waters of the United States and riparian ecosystems in each MCP project alternative were further assessed at a watershed level using a suite of hydrologic, water quality, and habitat integrity indicators identified in the report titled *Potential Impacts of Alternative Corridor Alignments to Waters of the United States, Riparian Ecosystems, and Threatened and Endangered Species: Mid County Parkway Project, Riverside County, California* (ERDC 2008).

Riparian ecosystem integrity was assessed by first identifying "riparian reach" assessment units and then assessing each riparian reach using a suite of hydrologic, water quality, and habitat integrity indicators (Smith 2003, 2006). A riparian reach was defined as a segment of the main stem, bankfull stream channel and the adjacent riparian ecosystem exhibiting relatively homogenous characteristics with respect to geology, geomorphology, channel morphology, substrate type, vegetation communities, and cultural alteration. The boundaries of the aquatic resources study area included not only the riparian reaches that are in the direct impact area of the Build Alternatives, but also include (for indirect and cumulative effects) the local drainage and drainage basin of each riparian reach.

Fifteen assessment criteria were used to evaluate the impacts of each Alternative to waters of the United States and riparian ecosystems. These indicators represent the physical, chemical, and biological characteristics and processes of riparian ecosystems at three spatial levels: (1) the riparian reach proper, (2) uplands adjacent to the riparian reach, and (3) the drainage basin of the riparian reach. Multi-indicators related to land use/land cover, vegetation communities, hydrology, sediment, and disturbance factors were used. Indicator metrics were measured in the field using

ground data collection methods supplemented with aerial photography. Indicator metrics were scaled to a culturally unaltered "reference condition," and selected indicators were then combined into hydrology, water quality, and habitat integrity indices for each riparian reach.

The functional (integrity) assessment was applied to these indicators in order to qualitatively and quantitatively assess and compare potential direct and indirect impacts of the Build Alternatives of the proposed MCP project on waters of the United States and riparian ecosystems. The quantity of riparian ecosystem in a riparian reach is represented by the extent (i.e., acres or miles) of riparian ecosystem in a riparian reach. A qualitative assessment was conducted using integrity indices for hydrologic, water quality, and habitat of a riparian reach. Integrity units are calculated by multiplying the hydrologic, water quality, and habitat integrity indices of a riparian reach by the acres of riparian ecosystem in a riparian reach. This provides an integrated measure of riparian ecosystem quality and quantity in a riparian reach. The results of this effort augment the findings in the *Jurisdictional Delineation and Assessment Report*.

3.18.3 Environmental Consequences

3.18.3.1 Permanent Impacts

Build Alternatives

Table 3.18.C shows the area of direct impacts to wetlands and nonwetland waters under USACE jurisdiction. Table 3.18.D shows the area of direct impacts to CDFG jurisdictional areas per land use type. The impacts summarized in Tables 3.18.C and D take into consideration jurisdictional areas avoided by the construction of bridges and exclude areas that will be impacted by the SR-79 realignment project prior to construction of the MCP project.

Alternative 9 would result in fewer impacts to both CDFG riparian habitat and streambeds, and wetlands and nonwetland waters of the United States under USACE jurisdiction, followed by Alternatives 4 and 5, and then Alternatives 6 and 7.





Alternative/DV	Pe	ermanent Impacts, ha	(ac)
Alternative/DV	Wetlands	Nonwetlands	USACE Total
Alt. 4 Base Case	1.8 (4.5)	4.2 (10.5)	6.0 (14.9)
Alt. 4 SJN DV	2.6 (6.3)	4.1 (10.1)	6.6 (16.4)
Alt. 4 TWS DV	1.8 (4.5)	4.1 (10.1)	5.9 (14.5)
Alt. 5 Base Case	1.7 (4.3)	4.2 (10.5)	6.0 (14.8)
Alt. 5 SJN DV	2.5 (6.2)	4.1 (10.0)	6.6 (16.2)
Alt. 5 TWS DV	1.7 (4.3)	4.1 (10.1)	5.8 (14.4)
Alt. 6 Base Case	2.2 (5.4)	4.7 (11.7)	6.9 (17.2)
Alt. 6 SJN DV	3.0 (7.3)	4.6 (11.3)	7.5 (18.6)
Alt. 6 TWS DV	2.2 (5.4)	4.6 (11.3)	6.8 (16.8)
Alt. 7 Base Case	2.1 (5.3)	4.7 (11.7)	6.9 (17.0)
Alt. 7 SJN DV	2.9 (7.2)	4.6 (11.3)	7.5 (18.5)
Alt. 7 TWS DV	2.1 (5.3)	4.6 (11.3)	6.7 (16.6)
Alt. 9 Base Case	0.7 (1.7)	3.6 (8.8)	4.2 (10.5)
Alt. 9 RD DV	0.3 (0.8)	2.7 (6.7)	3.0 (7.5)
Alt. 9 PP-E DV	0.7 (1.7)	3.6 (8.8)	4.2 (10.5)
Alt. 9 SJN DV	1.4 (3.5)	3.4 (8.4)	4.8 (11.9)
Alt. 9 TWS DV	0.7 (1.7)	3.4 (8.4)	4.1 (10.1)

Source: Natural Environment Study, LSA Associates, Inc. 2008.

ac = acres

Alt = Alternative

DV = Design Variation

ha = hectares

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

RD = Rider Street SJN = San Jacinto North TWS = Temescal Wash Area

USACE = United States Army Corps of Engineers

This page intentionally left blank

Table 3.18.D Area of Direct Impacts to CDFG Jurisdictional Areas per Land Use Type

NOTE: Impacts to CDFG jurisdictional areas generally encompass USACE jurisdictional areas.

							Dire	ect Impacts, ha	(ac)						
Alternative/DV	Alkali Grassland/ Playa	Chaparral	Dairy & Livestock Feedyards	Developed/ Ruderal	Diegan Coastal Sage Scrub	Field Croplands	Grove/ Orchard	Marsh	Non-Native Grassland	Peninsular Juniper Woodland and Scrub	Riparian Forest	Riparian Scrub	Riversidean Alluvial Fan Sage Scrub	Riversidean Sage Scrub	Total Impacts
Alt 4 Base Case	0.03 (0.07)	0.00 (0.00)	0.00 (0.01)	4.12 (10.17)	0.00 (0.01)	1.64 (4.06)	0.02 (0.04)	0.00 (0.00)	0.85 (2.11)	0.17 (0.42)	1.72 (4.26)	1.87 (4.62)	0.00 (0.00)	0.80 (1.98)	11.3 (27.8)
Alt 4 SJN DV	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	4.08 (10.08)	0.00 (0.01)	1.54 (3.80)	0.02 (0.04)	0.00 (0.00)	0.85 (2.11)	0.17 (0.42)	2.42 (5.97)	1.87 (4.63)	0.00 (0.00)	0.80 (1.98)	11.8 (29.1)
Alt 4 TWS DV	0.03 (0.07)	0.00 (0.00)	0.00 (0.01)	3.95 (9.77)	0.00 (0.01)	1.64 (4.06)	0.02 (0.04)	0.00 (0.00)	0,85 (2.11)	0.17 (0.42)	1.72 (4.26)	1.87 (4.62)	0.00 (0.00)	0.80 (1.98)	11.1 (27.4)
Alt 5 Base Case	0.03 (0.07)	0.00 (0.00)	0.00 (0.01)	4.01 (9.92)	0.00 (0.01)	1.55 (3.84)	0.02 (0.04)	0.00 (0.00)	0.85 (2.11)	0.17 (0.42)	1.72 (4.26)	1.99 (4.91)	0.00 (0.00)	0.80 (1.98)	11.2 (27.6)
Alt 5 SJN DV	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	3.98 (9.83)	0.00 (0.01)	1.45 (3.59)	0.02 (0.04)	0.00 (0.00)	0.85 (2.11)	0.17 (0.42)	2.42 (5.97)	1.99 (4.92)	0.00 (0.00)	0.80 (1.98)	11.6 (28.9)
Alt 5 TWS DV	0.03 (0.07)	0.00 (0.00)	0.00 (0.01)	3.85 (9.51)	0.00 (0.01)	1.55 (3.84)	0.02 (0.04)	0.00 (0.00)	0.85 (2.11)	0.17 (0.42)	1.72 (4.26)	1.99 (4.91)	0.00 (0.00)	0.80 (1.98)	11.0 (27.2)
Alt 6 Base Case	0.03 (0.07)	0.00 (0.00)	0.00 (0.01)	4.54 (11.23)	0.03 (0.08)	1.66 (4.11)	0.08 (0.20)	0.00 (0.00)	1.37 (3.39)	0.46 (1.13)	2.04 (5.04)	3.44 (8.51)	0.01 (0.03)	0.91 (2.26)	14.6 (36.1)
Alt 6 SJN DV	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	4.50 (11.13)	0.03 (0.08)	1.56 (3.86)	0.08 (0.20)	0.00 (0.00)	1.37 (3.39)	0.46 (1.13)	2.73 (6.75)	3.44 (8.51)	0.01 (0.03)	0.91 (2.26)	15.1 (37.4)
Alt 6 TWS DV	0.03 (0.07)	0.00 (0.00)	0.00 (0.01)	4.38 (10.82)	0.03 (0.08)	1.66 (4.11)	0.08 (0.20)	0.00 (0.00)	1.37 (3.39)	0.46 (1.13)	2.04 (5.04)	3.44 (8.51)	0.01 (0.03)	0.91 (2.26)	14.4 (35.7)
Alt 7 Base Case	0.03 (0.07)	0.00 (0.00)	0.00 (0.01)	4.44 (10.98)	0.03 (0.08)	1.58 (3.90)	0.08 (0.20)	0.00 (0.00)	1.37 (3.39)	0.46 (1.13)	2.04 (5.04)	3.56 (8.80)	0.01 (0.03)	0.91 (2.26)	14.5 (35.9)
Alt 7 SJN DV	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	4.40 (10.88)	0.03 (0.08)	1.47 (3.64)	0.08 (0.20)	0.00 (0.00)	1.37 (3.39)	0.46 (1.13)	2.73 (6.75)	3.57 (8.81)	0.01 (0.03)	0.91 (2.26)	15.1 (37.2)
Alt 7 TWS DV	0.03 (0.07)	0.00 (0.00)	0.00 (0.01)	4.28 (10.57)	0.03 (0.08)	1.58 (3.90)	0.08 (0.20)	0.00 (0.00)	1.37 (3.39)	0.46 (1.13)	2.04 (5.04)	3.56 (8.80)	0.01 (0.03)	0.91 (2.26)	14.4 (35.5)
Alt 9 Base Case	0.03 (0.07)	0.20 (0.49)	0.00 (0.01)	2.24 (5.53)	0.00 (0.01)	0.59 (1.47)	0.14 (0.35)	0.00 (0.00)	0.54 (1.34)	0.07 (0.17)	0.36 (0.89)	1.11 (2.75)	0.00 (0.00)	1.13 (2.79)	6.4 (15.9)
Alt 9 RD DV	0.03 (0.07)	0.20 (0.49)	0.00 (0.01)	1.59 (3.94)	0.00 (0.01)	0.43 (1.07)	0.14 (0.35)	0.00 (0.00)	0.55 (1.35)	0.07 (0.17)	0.32 (0.79)	0.94 (2.32)	0.00 (0.00)	0.81 (2.01)	5.1 (12.6)
Alt 9 PP-E DV	0.03 (0.07)	0.20 (0.49)	0.00 (0.01)	2.24 (5.53)	0.00 (0.01)	0.59 (1.47)	0.14 (0.35)	0.00 (0.00)	0.54 (1.34)	0.07 (0.17)	0.36 (0.89)	1.11 (2.75)	0.00 (0.00)	1.13 (2.79)	6.4 (15.9)
Alt 9 SJN DV	0.00 (0.01)	0.20 (0.49)	0.00 (0.00)	2.24 (5.43)	0.00 (0.01)	0.49 (1.22)	0.14 (0.35)	0.00 (0.00)	0.54 (1.33)	0.07 (0.17)	1.05 (2.59)	1.12 (2.76)	0.00 (0.00)	1.13 (2.79)	6.9 (17.1)
Alt 9 TWS DV	0.03 (0.07)	0.20 (0.49)	0.00 (0.01)	2.07 (5.12)	0.00 (0.01)	0.59 (1.47)	0.14 (0.35)	0.00 (0.00)	0.54 (1.34)	0.07 (0.17)	0.36 (0.89)	1.11 (2.75)	0.00 (0.00)	1.13 (2.79)	6.3 (15.5)
Source: Natural Environ	nment Study ISA	Associates Inc 200	na							· · · · · · · · · · · · · · · · · · ·					

ac = acres

Alt = Alternative CDFG = California Department of Fish and Game

DV = Design Variation ha = hectares

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade RD = Rider Street

SJN = San Jacinto North

TWS = Temescal Wash Area

USACE = United States Army Corps of Engineers

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank

As previously discussed, the objective of the USACE ERDC study was to quantitatively and qualitatively analyze and compare the direct and indirect impacts of the MCP Build Alternatives on waters of the United States and riparian ecosystems.

Direct and indirect impacts of the MCP Build Alternatives were assessed by simulating the changes that could be expected to occur as a result of implementation of each alternative, and then comparing the simulated results to baseline conditions. Normalized rank scores were calculated by dividing the potential impact (e.g., length, area, integrity units) of each alternative corridor alignment by the potential impact of the alternative corridor alignment with the greatest impact. Corridors with the lowest normalized rank scores have the least potential impact. Tables 3.18.E and 3.18.F summarize the results and normalized rank scores for criteria assessing potential impacts to waters of the United States and riparian ecosystems. These criteria include direct impacts to waters of the United States and riparian ecosystems within the project footprint as well as indirect impacts measured in terms of both quantity and quality of affected areas.

Overall, the impact of all the MCP Build Alternatives to riparian ecosystems was minimal given the relatively large size of the permanent impact footprint associated with the project alternatives. The minimal impact reflects the strategic placement of alternative corridor alignments to avoid riparian ecosystems to the extent feasible. Under this analysis, Alternative 9 had the least impact among the MCP Build Alternatives to aquatic resources and riparian ecosystems. Alternatives 4 and 5 had the second greatest impact and Alternatives 6 and 7 had the greatest impact.

Table 3.18.E summarizes the normalized rank scores for the 10 criteria assessing impacts to waters of the United States and riparian ecosystems (7 criteria assess only direct impacts, and 3 criteria assess both direct and indirect impacts).

In addition to the 10 criteria for aquatic resources, there are 5 additional criteria pertaining to nonaquatic resources, such as critical habitat of upland species and Multiple Species Habitat Conservation Plan (MSHCP) areas. The normalized rank scores for all 15 criteria are shown in the table below as the sum total with a possible range of 0–15. The sum of normalized rank scores provides a general indication of the overall potential impact of each alternative corridor alignment. For example, alternative corridor alignments with values near the maximum value of 15 consistently had the greatest level of potential impact across all criteria. However, it







Table 3.18.E Potential Direct Impacts to Waters of the United States and Riparian Ecosystems

NOTE: Criteria assessing threatened, endangered, or sensitive species habitat are not included in this tabulation.

Г		Г	Г	Г	l .	Г
	Sum of Normalized Rank Scores ¹	6.0	7.8	9.7	9.6	2.8
npacts	Criterion 8c: Change in quantity of habitat integrity units in	9.0	6.0	1.0	6.0	0.3
Direct and Indirect Impacts	Criterion 8b: Change in quantity of water quality integrity units in riparian reaches	9.0	1.0	1.0	1.0	0.1
Direct an	Criterion 8a: Change in quantity of hydrologic integrity units in riparian	9.0	9.0	1.0	1.0	0.3
	Criterion 7c: Change in quantity of habitat integrity units in riparian ecosystems	0.5	9.0	1.0	6.0	0.2
	Criterion 7b: Change in quantity of water quality integrity units in riparian	9.0	1.0	1.0	1.0	0.0
acts	Criterion 7a: Change in quantity of hydrologic integrity units in riparian ecosystems	9.0	0.7	1.0	1.0	0.1
Direct Impacts	Criterion 4: Area of aquatic resources	9.0	2.0	1.0	1.0	0.2
	Criterion 3: Area of riparian ecosystems	9.0	0.6	1.0	1.0	0.2
	Criterion 2: Length of main stem and tributary stream channels	9.0	6.0	2.0	1.0	9.0
	Criterion 1: Non- wetland waters stream channels	0.7	0.8	1.0	1.0	6.0
	Alt.	4	5	6	7	6

Source: Potential Impacts of Alternative Corridor Alignments to Waters of the United States, Riparian Ecosystems, and Threatened and Endangered Species: Mid County Parkway Project, Riverside County, California, ERDC 2008.

1 Normalized Rank Score is calculated by dividing the potential impact of each alternative corridor by the potential impact of each alternative corridor alignment with the greatest impact Alt. = Alternative



		_
~		$\overline{}$
	_	_
ı		
L		_
	v	

Alternative	Sum of Normalized Rank Scores	
4	9.1	
5	10.8	
6	14.1	
7	14.1	
9	6.1	

Source: Potential Impacts of Alternative Corridor Alignments to Waters of the United States, Riparian Ecosystems, and Threatened and Endangered Species: Mid County Parkway Project, Riverside County, California, ERDC 2008.

should be noted that this aggregation of normalized rank scores assumes equal weight for all 15 criteria, which includes biases and redundancies that result for equally weighing all 15 criteria.

Additional indirect impacts of the project on jurisdictional areas adjacent to the project footprint may result from edge effects such as exotic plant infestations, pollutants from storm water runoff from the parkway, and unauthorized recreational use. Treated storm water runoff from the parkway to riparian/riverine areas would provide additional water to maintain wetlands, nonwetland waters, and streambeds.

Indirect impacts were expected to change several indicators related to Land Use/Land Cover at the buffer, local drainage, and drainage basin spatial scales within local drainage or drainage basin of a riparian reach, even if the MCP Build Alternative did not directly impact a riparian reach. Indirect impacts to riparian ecosystems were assessed with the direct effects, as summarized in Criteria 8a–8c in Table 3.18.E.



Based on the collective temporary and permanent impacts, Alternative 9 TWS DV is the least environmentally damaging of all of the MCP Build Alternatives, impacting a total of 7.7 ha (19.1 ac) of USACE jurisdictional areas. Alternative 9 Rider Street Design Variation (RD DV) and Alternative 9 San Jacinto North Design Variation (SJN DV) impact smaller amounts of USACE jurisdictional areas (5.6 ha [13.8 ac] and 7.4 ha [18.3 ac], respectively), but these design variations have costs, and other community and socioeconomic impacts (e.g., displacement of large employment-generating land uses) that render them impracticable, as discussed in the Section 404(b)(1) Alternatives Analysis (Appendix N). The high quality wetlands impacted by Alternative 9 are located in segments (TWS, San Jacinto [SJ], and San Jacinto South [SJS]) that are common to Alternatives 4, 5, 6, and 7, and their design variations.

Impacts to wetlands and other jurisdictional waters would necessitate a Section 1602 Agreement for Streambed Alteration from the CDFG, a Section 401 water quality certification from the RWQCB, and a Section 404 permit from the USACE. Coordination efforts with these agencies are discussed further in Chapter 5.0, Summary of Public Involvement Process/Consultation/Tribal Coordination.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, there would be no permanent impacts to wetlands along these roadways under Alternative 1A. Therefore, permanent impacts to wetlands and other waters in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than impacts that would occur as a result of the MCP Build Alternatives.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. Under Alternative 1B, permanent impacts to wetlands and other waters would be expected to be less than the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as Build Alternatives 6 and 7, since these alternatives implement the General Plan roadway alignments in this area.

Discussions of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that implementation of the MSHCP would not have a substantial adverse impact on any wetland or other sensitive natural community identified in local or regional plans, policies, or regulations or by the Wildlife Agencies.

As part of the CEQA review of applications for Covered Activities within the MSHCP Plan Area, pursuant to Section 6.1.2 of the MSHCP, mapping of riparian, riverine, vernal pools, and other potentially jurisdictional wetland areas is required. The riparian/riverine policy calls for avoidance and minimization of impacts to wetland habitat throughout the Plan Area in accordance with existing regulatory standards that call for conservation and mitigation of wetland functions and values. Together, the inclusion of substantial acreages of wetland vegetation communities within the MSHCP Conservation Area and implementation of the Riparian/Riverine/

Vernal Pool policy incorporated in the MSHCP would reduce identified impacts to wetland vegetation communities to a level below significance.

Direct and indirect impacts on sensitive vegetation communities and covered species, including species and habitats associated with wetlands and other waters, are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide coverage under CEQA and NEPA for an amendment to the MSHCP that would be pursued for the selected alignment. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 TWS DV, which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV. The criteria addressed in that analysis includes consideration of impacts on species and habitats that are associated with wetlands and other waters. The finding of the analysis in Section 3.17 is that Alternative 9 TWS DV, including the mitigation lands that are available to demonstrate consistency with the MSHCP, provides an equivalent or superior level of conservation compared with what was anticipated and analyzed in the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts on wetlands or other waters beyond that previously analyzed in the MSHCP EIR/EIS.







3.18.3.2 Temporary Impacts

Build Alternatives

Table 3.18.G shows the area of temporary impacts to wetlands and nonwetland waters under USACE jurisdiction. Table 3.18.H shows the area of temporary impacts to CDFG jurisdictional areas by land use. The impacts summarized in the tables below take into consideration jurisdictional areas avoided by the construction of bridges and exclude areas that will be impacted by the State Route 79 (SR-79) project prior to the construction of the MCP project.

Impacts to jurisdictional areas and riparian habitats spanned by bridges were calculated with the assumption that 10 percent of the bridged areas would be permanently impacted. Permanent impacts (consisting of the bridge supports) will likely be less than 10 percent of the bridged areas; however, since the specific location of the bridge supports are not yet determined, permanent impacts were calculated conservatively. Impacts were calculated with the assumption that the remaining 90 percent of the bridged areas would consist of temporary impacts.

Typically, temporary impacts also include an approximate 9-meter (m) (30-foot [ft]) buffer (not exceeding the project footprint) for the construction of bridge structures. Additional areas, based on grading plans, that the project engineer determined would be avoided or would consist of temporary impacts were also assessed individually for each bridge location. These bridges are summarized in the table "Mid County Parkway – Summary of Bridge Descriptions and Avoidance of Jurisdictional Areas" found in Appendix I, Attachment D.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, there would be no temporary impacts to wetlands and other waters along these roadways under Alternative 1A. Therefore, temporary impacts to wetlands and other waters in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than for under the MCP Build Alternatives.





Altomotive/DV	Tempor	ary Impacts, ha (ac)	
Alternative/DV	Wetlands	Nonwetlands	USACE Total
Alt. 4 Base Case	2.2 (5.4)	1.8 (4.4)	3.9 (9.8)
Alt. 4 SJN DV	1.2 (2.9)	1.8 (4.4)	3.0 (7.3)
Alt. 4 TWS DV	2.2 (5.4)	1.8 (4.4)	4.0 (9.8)
Alt. 5 Base Case	1.9 (4.6)	1.4 (3.5)	3.3 (8.2)
Alt. 5 SJN DV	0.9 (2.2)	1.4 (3.5)	2.3 (5.8)
Alt. 5 TWS DV	1.9 (4.6)	1.4 (3.6)	3.3 (8.2)
Alt. 6 Base Case	2.3 (5.7)	1.9 (4.7)	4.2 (10.4)
Alt. 6 SJN DV	1.3 (3.3)	1.9 (4.7)	3.2 (8.0)
Alt. 6 TWS DV	2.3 (5.7)	1.9 (4.7)	4.2 (10.5)
Alt. 7 Base Case	2.0 (5.0)	1.6 (3.8)	3.6 (8.9)
Alt. 7 SJN DV	1.1 (2.6)	1.6 (3.8)	2.6 (6.4)
Alt. 7 TWS DV	2.0 (5.0)	1.6 (3.9)	3.6 (8.9)
Alt. 9 Base Case	1.8 (4.5)	1.6 (4.0)	3.5 (8.6)
Alt. 9 RD DV	1.6 (3.9)	1.4 (3.5)	3.0 (7.4)
Alt. 9 PP-E DV	1.8 (4.5)	1.6 (4.0)	3.5 (8.6)
Alt. 9 SJN DV	0.9 (2.1)	1.6 (4.0)	2.5 (6.1)
Alt. 9 TWS DV	1.8 (4.5)	1.6 (4.0)	3.5 (8.6)

Source: Natural Environment Study, LSA Associates, Inc. 2008.

ac = acres Alt. = Alternative DV = Design Variation

ha = hectares

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

RD = Rider Street SJN = San Jacinto North TWS = Temescal Wash Area

USACE = United States Army Corps of Engineers

Table 3.18.H Temporary Impacts to CDFG Jurisdictional Areas by Land Use Category

NOTE: Impacts to CDFG jurisdictional areas generally encompass USACE jurisdictional areas.

					Temporary Im	Temporary Impacts, ha (ac)				
Alternative/DV	Alkali Grassland/ Playa	Developed/ Ruderal	Field Croplands	Marsh	Non-Native Grassland	Riparian Forest	Riparian Scrub	Riversidean Alluvial Fan Sage Scrub	Riversidean Sage Scrub	Total Temporary Impacts
Alt 4 Base Case	0.02 (0.06)	1.93 (4.77)	0.12 (0.30)	0.09 (0.22)	0.13 (0.32)	1.27 (3.13)	0.41 (1.02)	00.00 (0.00)	0.06 (0.15)	4.0 (10.0)
Alt 4 SJN DV	0.01 (0.03)	1.79 (4.42)	0.08 (0.20)	0.09 (0.22)	0.13 (0.32)	0.40 (0.98)	0.42 (1.05)	0.00 (0.00)	0.06 (0.15)	3.0 (7.4)
Alt 4 TWS DV	0.02 (0.06)	1.91 (4.72)	0.12 (0.30)	0.09 (0.22)	0.13 (0.32)	1.27 (3.13)	0.41 (1.02)	0.00 (0.00)	0.06 (0.15)	4.0 (9.9)
Alt 5 Base Case	0.02 (0.06)	1.35 (3.34)	0.13 (0.32)	0.09 (0.22)	0.13 (0.32)	1.27 (3.13)	0.41 (1.02)	0.00 (0.00)	0.06 (0.15)	3.5 (8.6)
Alt 5 SJN DV	0.01 (0.03)	1.21 (2.98)	0.09 (0.22)	0.09 (0.22)	0.13 (0.32)	0.40 (0.98)	0.42 (1.05)	0.00 (0.00)	0.06 (0.15)	2.4 (6.0)
Alt 5 TWS DV	0.02 (0.06)	1.33 (3.29)	0.13 (0.32)	0.09 (0.22)	0.13 (0.32)	1.27 (3.13)	0.41 (1.02)	00.0) 00.0	0.06 (0.15)	3.4 (8.5)
Alt 6 Base Case	0.02 (0.06)	1.97 (4.88)	0.12 (0.30)	0.09 (0.22)	0.24 (0.60)	1.49 (3.69)	0.64 (1.58)	0.12 (0.29)	0.13 (0.32)	4.8 (11.9)
Alt 6 SJN DV	0.01 (0.03)	1.83 (4.53)	0.08 (0.20)	0.09 (0.22)	0.24 (0.60)	0.62 (1.53)	0.65 (1.61)	0.12 (0.29)	0.13 (0.32)	3.8 (9.3)
Alt 6 TWS DV	0.02 (0.06)	1.95 (4.83)	0.12 (0.30)	0.09 (0.22)	0.24 (0.60)	1.49 (3.69)	0.64 (1.58)	0.12 (0.29)	0.13 (0.32)	4.8 (11.9)
Alt 7 Base Case	0.02 (0.06)	1.39 (3.44)	0.13 (0.32)	0.09 (0.22)	0.24 (0.60)	1.49 (3.69)	0.64 (1.58)	0.12 (0.29)	0.13 (0.32)	4.2 (10.5)
Alt 7 SJN DV	0.01 (0.03)	1.25 (3.09)	0.09 (0.22)	0.09 (0.22)	0.24 (0.60)	0.62 (1.53)	0.65 (1.61)	0.12 (0.29)	0.13 (0.32)	3.2 (7.9)
Alt 7 TWS DV	0.02 (0.06)	1.37 (3.39)	0.13 (0.32)	0.09 (0.22)	0.24 (0.60)	1.49 (3.69)	0.64 (1.58)	0.12 (0.29)	0.13 (0.32)	4.2 (10.5)
Alt 9 Base Case	0.02 (0.06)	1.77 (4.38)	0.13 (0.32)	0.09 (0.22)	0.13 (0.32)	0.91 (2.24)	0.41 (1.02)	00.0) 00.0	00.00 (0.00)	3.5 (8.6)
Alt 9 RD DV	0.02 (0.06)	0.71 (1.76)	0.04 (0.10)	0.09 (0.22)	0.13 (0.32)	0.91 (2.24)	0.41 (1.02)	0.00 (0.00)	00.00 00.00	2.3 (5.7)
Alt 9 PP-E DV	0.02 (0.06)	1.78 (4.39)	0.13 (0.32)	0.09 (0.22)	0.13 (0.32)	0.91 (2.24)	0.41 (1.02)	00.0) 00.0	00.0) 00.0	3.5 (8.6)
Alt 9 SJN DV	0.01 (0.03)	1.63 (4.03)	0.09 (0.22)	0.09 (0.22)	0.13 (0.32)	0.04 (0.09)	0.42 (1.05)	00.0) 00.0	00.0) 00.0	2.4 (6.0)
Alt 9 TWS DV	0.02 (0.06)	1.75 (4.33)	0.13 (0.32)	0.09 (0.22)	0.13 (0.32)	0.91 (2.24)	0.41 (1.02)	0.00 (0.00)	0.00 (0.00)	3.4 (8.5)
Source: LCA 2008										

Source: LSA 2008.

ac = acres
Alt = Alternative
CDFG = California Department of Fish and Game
DV = Design Variation
ha = hectares

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade RD = Rider Street SJN = San Jacinto North TWS = Temescal Wash Area

3.18.4 Avoidance, Minimization, and/or Mitigation Measures

Initial design of the MCP Build Alternatives focused on avoidance of waters and wetlands while still meeting Caltrans geometric design standards. The USACE Special Area Management Plan (SAMP) data for this area were initially used, which provided a landscape-level view of the waters and wetlands within the composite project footprint. The MCP Build Alternatives were aligned to avoid these areas as much as possible. In locations where full avoidance alignments were not practical, bridges and, in some cases, retaining walls were used to avoid the waters and wetlands. When the draft *Jurisdictional Delineation and Assessment Report* was completed, the project-specific data were compared with the SAMP data to ensure waters and wetlands were avoided as much as possible. A summary table of bridge descriptions and avoidance of jurisdictional areas is included in Appendix I, Attachment D.

Mitigation to ensure that impacts to riparian/riverine areas (which encompass CDFG and USACE jurisdictional areas) are mitigated sufficiently pursuant to Section 6.1.2 of the western Riverside County MSHCP will also sufficiently mitigate for impacts to jurisdictional areas. A Conceptual Mitigation Plan identifying mitigation ratios, locations, and performance standards is provided in Appendix Q of this EIR/EIS. This Conceptual Mitigation Plan would apply to any of the MCP Build Alternatives, but the actual combination of on-site versus off-site mitigation would vary between alternatives. Prior to the initiation of construction, the RCTC will obtain a Determination of Biologically Equivalent or Superior Preservation (DBESP), as required under the MSHCP.

WET-1

Prior to construction, the Riverside County Transportation Commission (RCTC) shall obtain a Section 404 permit from the United States Army Corps of Engineers (USACE), a Section 1602 Agreement for Streambed Alteration from the California Department of Fish and Game (CDFG), and a Section 401 water quality certification or waiver from the Santa Ana Regional Water Quality Control Board (RWQCB). Specific mitigation requirements shall be negotiated with each agency during the permit process and shall incorporate approaches and measures identified in the Conceptual Mitigation Plan (Appendix Q) and those described below.



WET-2

Prior to and during construction, the Riverside County Transportation Commission (RCTC) will mitigate permanent impacts to wetlands at a minimum ratio of 1.5:1 in order to achieve no net loss of wetlands. Mitigation will occur through habitat restoration and/or enhancement of on-site areas along the length of the Mid County Parkway (MCP) to the extent practical. If it is infeasible to mitigate entirely on site, in accordance with the Conceptual Mitigation Plan, alternative off-site mitigation would occur. Off-site mitigation such as enhancement, creation, and restoration would occur. Mitigation for temporal loss of habitat value and other compensatory mitigation beyond the basic 1.5:1 replacement ratio could then occur through purchase of mitigation bank credits for removal of giant reed (Arundo donax) from a location approved by the United States Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) under guidelines described by the resource and regulatory agencies through the permitting process, or through participation in another approved habitat mitigation bank. The actual amount of mitigation will be determined in coordination with the resource and regulatory agencies based on the quality and quantity of jurisdictional resources to be affected with consideration of the results from the study entitled Potential Impacts of Alternative Corridor Alignments to Waters of the United States, Riparian Ecosystems, and Threatened and Endangered Species: Mid County Parkway Project, Riverside County, California (ERDC 2008).

Temporary impacts to USACE jurisdictional areas will be mitigated at a 1:1 replacement ratio on site through revegetation efforts or through an approved mitigation bank.

WET-3

Prior to and during construction, the Riverside County Transportation Commission (RCTC) will mitigate impacts to aquatic resources (i.e., nonwetland aquatic habitat such as deep streams and ponds without hydrophytic vegetation) at a minimum ratio of 3:1. Mitigation will occur through habitat restoration and/or enhancement of on-site areas along the length of the Mid County Parkway (MCP) to the extent practical. If it is infeasible to mitigate entirely on site, in accordance with the Conceptual Mitigation Plan, alternative off-site mitigation would occur. Off-site mitigation such as enhancement, creation, and

restoration would occur. Mitigation for temporal loss of habitat value and other compensatory mitigation beyond the basic 1:1 replacement ratio could then occur through purchase of mitigation bank credits for removal of giant reed (Arundo donax) from a location approved by the United States Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) under guidelines described by the resource and regulatory agencies through the permitting process, or through participation in another approved habitat mitigation bank. The actual amount of mitigation will be determined in coordination with the resource and regulatory agencies based on the quality and quantity of jurisdictional resources to be affected with consideration of the results from the study entitled Potential Impacts of Alternative Corridor Alignments to Waters of the United States, Riparian Ecosystems, and Threatened and Endangered Species: Mid County Parkway Project, Riverside County, California (ERDC 2008). Temporary impacts to aquatic areas will be mitigated at a 1:1 replacement ratio on site through revegetation efforts or through an approved mitigation bank.

WET-4

During final design, the Riverside County Transportation Commission (RCTC) will develop a Habitat Mitigation Monitoring Plan (HMMP) to restore impacted riparian habitats and shall incorporate the applicable approaches and measures identified in the Conceptual Mitigation Plan (Appendix Q). The HMMP will be subject to United States Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) approval. The HMMP will, at a minimum, meet the following requirements:

- A habitat replacement and/or enhancement ratio of at least 1:1 for temporary impacts, 1.5:1 for permanent impacts to wetlands, and 3:1 for permanent impacts to nonwetland aquatic resources;
- A success criterion of at least 80 percent cover of native riparian vegetation for replaced habitat; and
- Additional requirements, including a 3-year establishment period for the replacement habitat, regular trash removal, and regular maintenance and monitoring activities to ensure the success of the mitigation plan.

This page intentionally left blank

3.19 Plant Species

The analysis of potential impacts of the proposed project on plant species is based on the *Natural Environment Study* (NES) (LSA Associates, Inc. 2008).

3.19.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) share regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species Section 3.21 in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including CDFG fully protected species and species of special concern, USFWS candidate species, and non-listed California Native Plant Society (CNPS) rare and endangered plants.

The statutory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et. seq. See also 50 CFR Part 402. The statutory requirements for CESA can be found at California Fish and Game Code, Section 2050, et. seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100-21177.

3.19.2 Affected Environment

The natural communities in the project Biological Study Area (BSA) include a variety of plant species considered sensitive by USFWS, CDFG, and CNPS. A literature review resulted in a list of 35 sensitive plant species that may occur in or within the vicinity of the Biological Study Area (BSA). Eleven (11) of these species are federally or state listed as endangered or threatened or are candidates for listing and are discussed in more detail later in Section 3.21.

The western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) requires habitat assessments, surveys, and impact evaluations for certain special-status plant (Narrow Endemic Plant Species Survey Areas [NEPSSAs] and Criteria Area Species Survey Areas [CASSAs]) species within the designated survey areas for each species. These survey areas are referred to as NEPSSAs and CASSAs in the MSHCP, and each survey area is associated with a suite of species that require assessment of impact potential. Habitat assessments and surveys were conducted for 19 species, pursuant to MSHCP requirements. The following five species were found within their designated survey areas:

- San Jacinto Valley crownscale (Atriplex coronata var. notatior)
- Smooth tarplant (Centromadia pungens ssp. laevis)
- Many-stemmed dudleya (Dudleya multicaulis)
- Coulter's goldfields (Lasthenia glabrata ssp. coulteri)
- Spreading navarretia (Navarretia fossalis)

Munz's onion (*Allium munzii*) and additional many-stemmed dudleya may be found during a 2008 focused survey of previously unsurveyed habitat north of the El Sobrante Landfill. In August 2007, the MCP alignment in this area was shifted to avoid a many-stemmed dudleya mitigation area. These two species are inferred to be present in the unsurveyed habitat pending the results of the 2008 focused survey. These two species as well as San Miguel savory (*Satureja chandleri*) are also inferred to be present in a few small unsurveyed areas outside of the project footprint, but within 30 meters (m) (100 feet [ft]) of the project footprint south of Lake Mathews.

San Jacinto Valley crownscale is federally listed as endangered, spreading navarretia is federally listed as threatened, and Munz's onion are federally listed as endangered and state listed as threatened; therefore, these species are discussed in more detail later in Section 3.21, Threatened and Endangered Species.

Two MSHCP survey species were also found outside of their designated survey areas. Smooth tarplant was found outside of its designated survey areas at various locations along Ramona Expressway near the east end of the project. These occurrences were along road edges and in other highly disturbed areas. Round-leaved filaree (*Erodium macrophyllum*) was found outside of its designated survey areas at two locations: The first occurrence, consisting of about 20,000 individuals, was found south of Lake Mathews near Cajalco Road, partially within the footprint of Alternatives 6 and 7; the second occurrence, consisting of about 7,000 individuals, was found south of Lake



Mathews near the extreme south edge of the BSA. The second occurrence was not within the footprint of any project alternative.

In addition to the 9 MSHCP survey species discussed above, the following 10 special-status species identified in the literature search were found to be present or have suitable habitat present in the BSA:

- California screw-moss (*Tortula californica*)
- Chaparral sand-verbena (Abronia villosa var. aurita)
- Plummer's mariposa lily (Calochortus plummerae)
- Intermediate mariposa lily (Calochortus weedii var. intermedius)
- Long-spined spineflower (Chorizanthe polygonoides var. longispina)
- Palmer's grapplinghook (Harpagonella palmeri)
- Mesa horkelia (Horkelia cuneata ssp. puberula)
- Robinson's pepper-grass (Lepidium virginicum var. robinsonii)
- Santiago Peak phacelia (*Phacelia suaveolens* ssp. *keckii*)
- San Bernardino aster (Symphyotrichum defoliatum [Aster defoliatus])



Only two of these species, long-spined spineflower and Palmer's grapplinghook, were observed in the BSA during the surveys. Most of the long-spined spineflower were within the footprint of Alternatives 4, 5, 6, and 7. Palmer's grapplinghook were observed in the BSA south of Lake Mathews, but not within the project footprint. It is unlikely that any additional populations of these species occur within the BSA.

California screw-moss, Plummer's mariposa lily, intermediate mariposa lily, mesa horkelia, Santiago Peak phacelia, and San Bernardino aster each have a low probability of occurrence within the BSA. These species are not known from the project vicinity, and much of the habitat in the BSA that may be suitable for these species was surveyed as part of the NEPSSA and CASSA species surveys.

Most of the suitable habitat for chaparral sand-verbena within the BSA was surveyed as part of the NEPSSA and CASSA focused species surveys. The remaining potential habitat within the project footprint is of low quality and expected to have few, if any, individuals of this species. This remaining potential habitat is along the San Jacinto River at the extreme eastern end of the project site. The BSA at the west side of the existing bridge was surveyed in 2004 for a San Jacinto River maintenance project. Although chaparral sand-verbena was found and mapped approximately 122 m (400 ft) west of the BSA as part of that study, it was not found in the portion of the

BSA surveyed during focused surveys for the MCP. Based on the degree of disturbance and habitat conditions, no more than a few individuals of this species are expected to occur within the portion of the footprint not surveyed during focused surveys.

Robinson's pepper-grass is uncommon to locally common in chaparral and coastal sage scrub communities in western Riverside County, southern San Bernardino County, San Diego County, Los Angeles County, and Orange County. Much of the potential habitat for this species was surveyed during the NEPSSA and CASSA plant species surveys. Robinson's pepper-grass was not observed during those surveys; however, it is widely scattered in western Riverside County and may occur in chaparral, Riversidean upland sage scrub, and Diegan coastal sage scrub in other areas of the BSA. Given that this species is not listed as threatened or endangered, is relatively widespread in the region, and occupies relatively common habitats, focused surveys were not conducted.

Areas having long-term conservation value were identified in the BSA for smooth tarplant, many-stemmed dudleya, and Coulter's goldfields. Additional areas inferred to be occupied by many-stemmed dudleya and San Miguel savory were also identified in the BSA in the unsurveyed portions of the Lake Mathews South General Plan (LMS-GP), Lake Mathews South (LMS), and Far South (FS) Segments. Areas having long-term conservation value were identified in the Perris Drain (PD) and San Jacinto (SJ) Segments for smooth tarplant, in the LMS-GP Segment for many-stemmed dudleya, and in the SJ Segment for Coulter's goldfields (near the San Jacinto River).

Smooth tarplant, many-stemmed dudleya, round-leaved filaree, Palmer's grapplinghook, and long-spined spineflower are Lake Mathews MSHCP target species. The occurrences of smooth tarplant, many-stemmed dudleya, and Palmer's grapplinghook found during the surveys are not within the Lake Mathews MSHCP Plan Area. The long-spined spineflower locations were within the Lake Mathews MSHCP Plan Area. One of the two occurrences of round-leaved filaree is within the Lake Mathews MSHCP Plan Area.

Other Lake Mathews MSHCP target species observed in the BSA include small-flowered morning-glory (*Convolvulus simulans*) and Great Valley phacelia (*Phacelia ciliata*). Great Valley phacelia, even though a Lake Mathews MSHCP target species, is not considered to be sensitive by regulatory agencies or the CNPS. Small-flowered

morning-glory is a species that is monitored by the CNPS (a CNPS List 4 species) but is not considered rare.

Long-spined spineflower and many-stemmed dudleya are El Sobrante Landfill MSHCP target species. All of the many-stemmed dudleya locations found during the surveys are within the El Sobrante Landfill MSHCP Plan Area except for one population of 30 individuals. The long-spined spineflower locations found during the surveys are not within the El Sobrante Landfill MSHCP Plan Area.

3.19.3 Environmental Consequences

3.19.3.1 Permanent Impacts

Build Alternatives

MSHCP NEPSSA and CASSA Survey Species

Alternatives 4, 5, and 9 would result in 3.07 hectares (ha) (7.58 acres [ac]) of direct impacts to areas inferred to have long-term conservation value for many-stemmed dudleya. A shared portion of Alternatives 4, 5, and 9 has been realigned in order to avoid all currently known locations of many-stemmed dudleya. Alternatives 6 and 7 would result in 0.01 ha (0.02 ac) of direct impacts to areas inferred to have long-term conservation value for this species. Impacts to this species are based on the "worst-case" inference that this species is present throughout the areas that may be suitable habitat in the BSA that have not been surveyed. All of the areas of suitable habitat within the composite project footprint will be surveyed in 2008. The actual area of impact to many-stemmed dudleya may be less based on the results of the 2008 surveys.

All Build Alternatives would result in 0.84 ha (2.08 ac) of direct impacts to areas of long-term conservation value for smooth tarplant and 0.63 ha (1.55 ac) of direct impacts to areas of long-term conservation value for Coulter's goldfields since the recorded populations of these species are within the SJ Segment, which is common to all five Build Alternatives.

Wherever feasible, the project footprint was aligned with existing roadways, where native habitats have already been removed or disturbed by development or other land use. The MCP Build Alternatives have been located to avoid the greatest concentrations of many-stemmed dudleya habitat areas suitable for long-term conservation.







The MCP Build Alternatives would avoid much of the Coulter's goldfields habitat areas suitable for long-term conservation. Any effort to avoid additional habitat areas would be limited by the adjacent San Jacinto Wildlife Area along the north edge of the MCP right of way. Shifting the footprint south would result in a greater impact to this species.

The MCP Build Alternatives would not impact San Miguel savory because the areas with an inferred presence of suitable habitat for this species in the BSA would not be directly impacted by the project footprint.

Indirect impacts of the project on smooth tarplant and Coulter's goldfields populations adjacent to the project footprint within the San Jacinto floodplain may result from edge effects such as increased potential for fire, exotic plant infestations, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. Fire risk increases the potential to require vegetation clearing and removal of habitat adjacent to road. Increased fire frequency may result in type conversion of native habitats and an increase of exotic plant species. Exotic plant infestations may out-compete these special-status species in their native habitat. Additional access points for unauthorized off-road vehicle use may result from the MCP project. Off-road vehicle use may destroy native habitat and these sensitive species and may also promote exotic plant infestation. Additionally, pollutants (in the form of nitrogen compounds from car emissions) may settle on the soil and stimulate the growth of nonnative species, which may out-compete native species.

Species Not Requiring Surveys



Most of the 900 individuals of long-spined spineflower that were observed within the BSA are within the footprint of Alternatives 4, 5, 6, and 7, and would be impacted under these Alternatives. Approximately 100 individuals of Palmer's grapplinghook were observed in the BSA south of Lake Mathews, but not within the MCP project footprint; therefore, they would not be impacted by the MCP project. Because it is unlikely that any additional populations of these species occur within the BSA, additional impacts to these species are not expected.

California screw-moss, Plummer's mariposa lily, intermediate mariposa lily, mesa horkelia, Santiago Peak phacelia, and San Bernardino aster each have a low probability of occurrence within the BSA. Therefore, impacts to these species are not expected.

Few if any individuals of chaparral sand-verbena are expected to occur within the project footprint. Therefore, impacts to this species are not anticipated.

Robinson's pepper-grass was not observed in the BSA, but may occur in chaparral or coastal sage scrub communities in areas of the BSA that were not part of the focused plant survey. Given that this species is relatively widespread in the region and occupies relatively common habitats, any impacts by a linear project footprint would not be expected to impair the long-term existence of large or important populations.

Indirect impacts to any populations of these species that occur in the project vicinity may result from edge effects, such as an increase in fire potential, exotic plant infestations, unauthorized recreational use, and pollutants associated with the parkway. However, most of the habitat suitable for these species in the project vicinity is within existing reserves or within the MSHCP Criteria Area where development would be limited by MSHCP Cell Criteria.

Additional indirect impacts of the project on areas adjacent to the project footprint may result from edge effects such as exotic plant infestations, unauthorized recreational use, and pollutants associated with vehicle and pedestrian use of the parkway.

No Build Alternatives

Under Alternative 1A, the MCP project would not be constructed. Planned improvements in the regional and local circulation system, as accounted for in the adopted Riverside County General Plan, RCTC's Measure A program, and city General Plans would be implemented assuming 2035 land use conditions.

Alternative 1B is the same as Alternative 1A but includes implementation of Cajalco Road and Ramona Expressway consistent with the Riverside County General Plan Circulation Element.

Impacts related to a footprint were not calculated for the No Build Alternatives; therefore, a qualitative analysis of the permanent effects of Alternatives 1A and 1B is presented here. Alternative 1A would generally result in fewer impacts to plant species than any of the proposed Build Alternatives since the MCP project would not be built and no improvements would be made to Cajalco Road or Ramona Expressway. Alternative 1B would generally result in fewer impacts than the Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between Interstate 15 (I-15) and El Sobrante Road, the impacts of Alternative 1B would be the

same as Build Alternatives 6 and 7, since these alternatives follow the General Plan roadway alignments in this area.



Discussions of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species, including plant species, are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures. Impacts to native grasslands were identified as an unavoidable adverse impact.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP that would be pursued for the selected alignment. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 Temescal Wash Area Design Variation (TWS DV) which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV. The criteria addressed in that analysis includes consideration of impacts on plant species. The finding of the analysis in Section 3.17 is that Alternative 9 TWS DV, including the mitigation lands that are available to demonstrate consistency with the MSHCP, provides an equivalent or superior level of conservation compared with what was anticipated and analyzed in the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts on plant species beyond that previously analyzed.

3.19.3.2 Temporary Impacts

Temporary impacts to plant species may occur during construction where habitats are temporarily disturbed during grading or other activities. For purposes of this impact analysis, a conservative right of way footprint was established for each alternative that includes areas of cut and fill, staging areas for construction vehicles, equipment and materials, haul routes, and water quality treatment features. While some portions of this right of way footprint will only be temporarily disturbed during construction and would be revegetated with native plant species, it is not expected that this revegetation would fully restore the functions and values of the impacted habitat. Therefore, the analysis of impacts conservatively estimates a worst case impact scenario wherein all areas within the right of way footprint are calculated as permanent impacts, with the exception of areas spanned by bridges. Impacts to riparian habitats and jurisdictional areas at the bridged areas have been identified as temporary and permanent impacts.

3.19.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to Mitigation Measures BIO-1 through BIO-3 and HCP-1 (listed in Section 3.17) and U&ES-5 (listed in Section 3.5) of this EIR/EIS, the following measure will be implemented in order to avoid and minimize impacts to sensitive plant species during construction of the MCP project. This measure would apply to all MCP Build Alternatives.



PS-1

Prior to construction, the Riverside County Transportation Commission (RCTC) will obtain a Determination of Biological Equivalent or Superior Preservation (DBESP) for impacts to smooth tarplant and Coulter's goldfields pursuant to Section 6.1.3 of the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), where 10 percent or more of those portions of the site that provide for the long-term conservation value of smooth tarplant or Coulter's goldfields are impacted. A DBESP may also be required for any impacts to areas that are occupied by many-stemmed dudleya (based on the results of the 2008 focused surveys in the area north of the El Sobrante Landfill MSHCP Plan Area). Mitigation provided in the DBESP will demonstrate that equivalent or superior conservation for the species will be achieved through either location and preservation of

populations that are not already proposed for conservation in the MSHCP, and/or restoration or enhancement of existing populations within the proposed conservation area.

3.20 Animal Species

The analysis of impacts of the proposed project on animal species is based on the *Natural Environment Study* (NES) (LSA Associates, Inc., 2008).

3.20.1 Regulatory Setting

Many laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA Fisheries) and the California Department of Fish and Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 3.21 below. All other special-status animal species are discussed here, including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act
- Marine Mammal Protection Act
- Bald [and Golden] Eagle Protection Act of 1940

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1601 1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

3.20.2 Affected Environment

A literature review resulted in a list of 69 sensitive animal species that may occur in or within the vicinity of the Biological Study Area (BSA). Of these 69 sensitive wildlife species, 12 are listed as federal and/or State-endangered or threatened, or proposed endangered or threatened, and are discussed later in Section 3.21, Threatened and Endangered Species. Two of the remaining 57 sensitive wildlife

species, San Diego mountain king snake (*Lampropeltis zonata pulchra*) and San Diego cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) are considered to be absent due to a lack of suitable habitat.

Focused surveys were conducted for burrowing owl and Los Angeles pocket mouse, pursuant to western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) requirements. Survey results were as follows:



- **Burrowing Owl.** Burrowing owls were observed at three separate sites within the BSA and project footprint of Alternative 9 during the 2006 surveys. No burrowing owls, burrowing owl burrows, or other burrowing owl sign (e.g., tracks, feathers, or pellets) were observed within the BSA for Alternatives 4, 5, 6, and 7, and their design variations in 2005 or 2006. However, there is suitable habitat within the project footprint that the burrowing owl may subsequently occupy because it is a mobile species.
- Los Angeles Pocket Mouse. The Los Angeles pocket mouse was captured within Riversidean sage scrub and nonnative grasslands in the BSA at two locations:

 (1) southwest of the San Jacinto River and Lake Perris, and (2) northeast of the San Jacinto River and Sanderson Avenue. At the survey area south of Lake Perris, the nonnative grassland is not considered to be suitable for long-term conservation for the species; however, the Riversidean sage scrub is considered occupied by the Los Angeles pocket mouse. The survey area adjacent to the San Jacinto River, east of Sanderson Avenue, was determined to have long-term conservation value for the Los Angeles pocket mouse based on the trapping results conducted for an adjacent property owner west of Sanderson Avenue in areas contiguous with the MCP project; this off-site property is located outside the MSHCP designated survey area for Los Angeles pocket mouse.

During the 2005 and 2006 field surveys, the following other special status animal species were observed within the BSA: western spadefoot toad (*Spea hammondii*), Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), coast horned lizard (*Phrynosoma coronatum*), northern red-diamond rattlesnake (*Crotalus exsul*), Cooper's hawk (*Accipiter cooperi*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), Bell's sage sparrow (*Amphispiza belli belli*), golden eagle (*Aquila chrysaetos*), short-eared owl (*Asio flammeus*), northern harrier (*Circus cyaneus*), California yellow warbler (*Dendroica petechia brewsteri*), white-tailed kite (*Elanus leucurus*), California horned lark (*Eremophilia alpestris actia*), prairie falcon (*Falco mexicanus*), yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius*)

ludovicianus), white-faced ibis (*Pelagadis chihi*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and San Diego desert woodrat (*Neotoma lepida intermedia*).

The following species from the literature search were not found during the 2005 and 2006 field surveys; however, habitat that may be suitable is present within the BSA for these species: arroyo chub (Gila orcutti), silvery legless lizard (Anniella pulchra pulchra), coast patch-nosed snake (Salvadora hexalepis virgultea), coast range newt (Taricha torosa torosa), two-striped garter snake (Thamnophis hammondii), southwestern pond turtle (Emys marmorata pallida), sharp-shinned hawk (nesting) (Accipiter striatus), tricolored blackbird (Agelaius tricolor), long-eared owl (Asio otus), ferruginous hawk (Buteo regalis), merlin (Falco columbarius), purple martin (Progne subis), pallid bat (Antrozous pallidus), Townsend's big-eared bat (Corynorhinus townsendii), spotted bat (Euderma maculatum), western mastiff bat (Eumops perotis), big free-tailed bat (Nyctinomops macrotis), pocketed free-tailed bat (Nyctinomops femorasacca), southern grasshopper mouse (Onychomys torridus ramona), and American badger (Taxidea taxus).

3.20.3 Environmental Consequences

3.20.3.1 Permanent Impacts

Build Alternatives

Burrowing Owl

Habitat that may be suitable for burrowing owl covers large areas in the project vicinity. However, burrowing owls were not determined to be present within the impact area for Alternatives 4, 5, 6, 7, nor within three of the four design variations of Alternative 9. Burrowing owls were only determined to be present within the Rider Street Design Variation of Alternative 9. The Alternative 9 Rider Street Design Variation would result in 1.6 hectares (ha) (3.9 acres [ac]) of direct impacts to burrowing owl foraging habitat and burrows occupied by two pairs and six juveniles. Additionally, there would be direct impacts to the foraging habitat of a single unpaired female, located immediately outside of the project footprint. The foraging habitat of the two pairs observed within the footprint overlaps with the foraging habitat of the single unpaired resident female that was observed just outside the project footprint. There are no other impacts to occupied burrowing owl habitat for any other design variation along Alternative 9.

Indirect impacts to burrowing owls and suitable habitat on adjacent lands may result from edge effects such as future development, plant and animal infestations, litter, fire, unauthorized recreational use, increase in lighting at night, headlamp glare, noise, and pollutants associated with vehicle use of the parkway. Indirect impacts of exotic plant and animal infestations, litter, and fire would be reduced by regular roadside maintenance to remove litter and weeds from the right of way. Indirect effects resulting from an increase in light, glare, and noise associated with vehicles and daytime and nighttime construction activities would be reduced by incorporating shielded lighting and sound walls near environmentally sensitive areas.

Burrowing owls were not observed within Alternatives 4, 5, 6, and 7; therefore, direct and indirect impacts to burrowing owls along these alternatives are not anticipated.

Los Angeles Pocket Mouse

All of the MCP Build Alternatives and Design Variations would directly impact approximately 16.2 ha (40.0 ac) of Los Angeles pocket mouse occupied habitat suitable for long-term conservation in the vicinity of the San Jacinto River just east of Lake Perris and the San Jacinto River area near the MCP/State Route 79 (SR-79) interchange.

Indirect effects of the project on Los Angeles pocket mouse occupied areas may result from edge effects such as exotic plant and animal infestations and unauthorized recreational use. Additional indirect effects may result from an increase in light, glare, and noise associated with vehicles and daytime and nighttime construction activities.

Animal Species Not Requiring Surveys

Impacts to other nonlisted special status species could occur in the form of direct mortality, habitat loss, and habitat fragmentation.

The white-tailed kite and golden eagle are fully protected by the state and are covered by the MSHCP; however, take of these species is not authorized under the MSHCP permits and is prohibited by the Fish and Game Code.

Impacts to all other special status animal species are covered by the MSHCP, except for the silvery legless lizard, coast patch-nosed snake, two-striped garter snake, short-eared owl, long-eared owl, pallid bat, Townsend's big-eared bat, spotted bat, western mastiff bat, free-tailed bat, southern grasshopper mouse, and American badger. These species have a low to moderate occurrence probability and were not observed during



field studies within the BSA. These species are widespread in distribution and are not state or federally listed as threatened or endangered. Because habitat that may be suitable for these species covers large areas of the BSA, impacts to these species could not be entirely avoided. However, wherever feasible, the project footprint was aligned with existing roadways, where native habitats have already been removed or disturbed by development or other land use.

Indirect impacts of the project on animal species within areas adjacent to the project footprint may result from edge effects such as exotic plant and animal infestations, litter, fire, unauthorized recreational use, and increases in light, noise, and pollutants associated with vehicle use of the parkway.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, there would be no permanent impacts to special-status animal species along these roadways under Alternative 1A. Therefore, impacts to special-status animal species in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than for that under the MCP Build Alternatives.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan, including the improvements to Cajalco Road and Ramona Expressway. Under Alternative 1B, permanent impacts to special-status animal species would be expected to be less than that for the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between Interstate 15 (I-15) and El Sobrante Road, the impacts of Alternative 1B would be the same as Build Alternatives 6 and 7 since these alternatives follow the General Plan roadway alignments in this area.

Discussions of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species, including animal species, are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP



would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 Temescal Wash Area Design Variation (TWS DV), which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV. The criteria addressed in that analysis includes consideration of impacts on animal species. The finding of the analysis in Section 3.17 is that Alternative 9 TWS DV, including the mitigation lands that are available to demonstrate consistency with the MSHCP, provides an equivalent or superior level of conservation compared with what was anticipated and analyzed in the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts on animal species beyond that previously analyzed.

3.20.3.2 Temporary Impacts

Temporary impacts to animal species may occur during construction where habitats are temporarily disturbed during grading or other activities. For the purposes of this impact analysis, a conservative right-of-way footprint was established for each alternative that includes areas of cut and fill, staging areas for construction vehicles, equipment and materials, haul routes, and water quality treatment features. While some portions of this right-of-way footprint will only be temporarily disturbed during construction and would be revegetated with native plant species, it is not expected that this revegetation would fully restore the functions and values of the impacted wildlife habitat. Therefore, the analysis of impacts conservatively estimates a worst-case impact scenario wherein all areas within the right-of-way footprint are calculated as permanent impacts, with the exception of areas spanned by bridges. Impacts to riparian habitats and jurisdictional areas at the bridged areas have been identified as temporary and permanent impacts.

3.20.4 Avoidance, Minimization, and/or Mitigation Measures



Habitat that may be suitable for burrowing owl covers large areas affected by all MCP Build Alternatives in the project area. By minimizing the project footprint, impacts (loss of suitable burrowing owl habitat) were greatly minimized. Impacts to occupied burrowing owl burrows from Alternative 9 (the only MCP Build Alternative with occupied burrows), including the Locally Preferred Alternative (Alternative 9 TWS DV), were avoided by minimization of the project footprint.

The project was redesigned to avoid impacts to the Stephens' Kangaroo Rat Reserve, which include reducing the impacts to Los Angeles pocket mouse in the vicinity of Lake Perris, east of the existing Bernasconi Road, by aligning the MCP Build Alternatives as much as possible to the south of habitat suitable for Los Angeles pocket mouse. Also, the realignment of Bernasconi Road near Lake Perris, which is required for the MCP project, was designed in order to avoid a majority of habitat suitable for the Los Angeles pocket mouse. In the vicinity of the MCP/SR-79 interchange, the project was also redesigned to widen Lamb Canyon Road on the west side in order to avoid all impacts to Los Angeles pocket mouse occupied habitat that exists east of the road.

The following measures applicable to all MCP Build Alternatives will be implemented in order to avoid and minimize impacts to sensitive animal species during construction of the MCP project:

- AS-1 Within 30 days prior to ground disturbance, the Riverside County Transportation Commission (RCTC) will conduct focused burrowing owl surveys in accordance with the *Riverside County Environmental Programs Department Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan* (dated Oct 24, 2005), where suitable habitat occurs within the Multiple Species Habitat Conservation Plan (MSHCP) Conservation Area.
- AS-2 Prior to and during construction, the Riverside County Transportation Commission (RCTC) will ensure that take of active burrowing owl nests is avoided. If focused burrowing owl surveys determine that the project site supports burrowing owls, the burrowing owls will be passively relocated. Passive relocation (use of one-way doors and



collapse of burrows) will take place when owls are present outside of the nesting season.

=

AS-3 Prior to construction, the Riverside County Transportation
Commission (RCTC) will obtain a Determination of Biologically
Equivalent or Superior Preservation (DBESP) for impacts to Los
Angeles pocket mouse near Lake Perris, where 90 percent or more
of those portions of the site that provide for the long-term
conservation value of Los Angeles pocket mouse cannot be
avoided. As part of the DBESP, the RCTC will determine
appropriate mitigation that will consist of acquisition of occupied or
other suitable habitat off site or participation in an approved habitat
mitigation bank. Land to be acquired could be either habitat that is
occupied by the Los Angeles pocket mouse and/or could be habitat
that is restored or enhanced in order to provide suitable habitat for
the Los Angeles pocket mouse.

During construction, the Riverside County Transportation Commission (RCTC) will ensure that vegetation clearing is conducted outside nesting season (March 1–September 15). If suitable habitat is present for species protected by the Migratory Bird Treaty Act (MBTA), clearing within nesting season shall be preceded by surveys to ensure that non-listed nesting birds are not taken.

3.21 Threatened and Endangered Species

The analysis of impacts of the proposed project on threatened and endangered species is based on the *Natural Environment Study* (NES) (LSA Associates, Inc. 2008).

3.21.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion, which includes (for animal species) an incidental take authorization. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct." As provided in Section 10[a][1][B] of FESA, the USFWS may authorize incidental take of threatened and endangered fish and wildlife species with a permit contingent on compliance with approved Habitat Conservation Plans.

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The California Department of Fish and Game (CDFG) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects requiring a Biological Opinion under Section 7 of the FESA, CDFG may

also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code. As provided in Section 2835 of the Fish and Game Code, the CDFG may permit the take of any identified species whose conservation and management is provided for in a CDFG-approved Natural Communities Conservation Plan. A Natural Communities Conservation Plan identifies and provides for the regional or areawide protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity.

The Bald Eagle Protection Act of 1940 provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds.

3.21.2 Affected Environment

On January 23, 2006, the USFWS provided a list of threatened, endangered, or proposed plant and wildlife species that may be present in the project area. This letter is included in Appendix L.

The following 26 threatened or endangered and candidate species that may occur within the Biological Study Area (BSA) were identified through a literature review:

Plant Species:

- Munz's onion (*Allium munzii*) federally listed as endangered and state listed as threatened
- San Diego ambrosia (*Ambrosia pumula*) federally listed as endangered)
- Braunton's milk-vetch (*Astragalus brauntonii*) federally listed as endangered
- San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*) federally listed as endangered
- Spreading navarretia (Navarretia fossalis) federally listed as threatened
- Nevin's barberry (Berberis nevinii) federally and state listed as endangered
- Thread-leaved brodiaea (*Brodiaea filifolia*) federally listed as threatened and state listed as endangered
- Slender-horned spineflower (*Dodecahema leptoceras*) federally and state listed as endangered
- San Diego button-celery (*Eryngium aristulatum* var. *parishii*) federally and state listed as endangered

- California Orcutt grass (*Orcuttia californica*) federally and state listed as endangered
- Brand's phacelia (*Phacelia stellaris*) federal candidate for listing

Animal Species:

- Riverside fairy shrimp (Streptocophalus woottoni) federally listed as endangered
- Vernal pool fairy shrimp (*Branchinecta lynchia*) federally listed as threatened
- Quino checkerspot butterfly (*Euphydryas editha quino*) federally listed as endangered
- Arroyo toad (*Bufo californicus*) federally listed as endangered
- California red-legged frog (*Rana aurora draytonii*) federally listed as threatened
- Swainson's hawk (*Buteo swainsoni*) state listed as threatened
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) state listed as endangered
- American peregrine falcon (*Falco peregrinus anatum*) state listed as endangered
- Bald eagle (*Haliaeetus leucocephalus*) federally delisted; state listed as endangered
- Coastal California gnatcatcher (*Polioptila californica californica*) federally listed as threatened
- Bank swallow (*Riparia riparia riparia*) state listed as threatened
- Least Bell's vireo (*Vireo belli pusillus*) federally and state listed as endangered
- Southwestern willow flycatcher (*Empidonax traillii extimus*) federally and state listed as endangered
- San Bernardino Merriam's kangaroo rat (*Dipodomys merriami parvus*) federally listed as endangered
- Stephens' kangaroo rat (*Dipodomys stephensi*) federally listed as endangered and state listed as threatened

Focused protocol surveys were conducted in suitable habitat within the BSA for species requiring focused surveys under the Multiple Species Habitat Conservation Plan (MSHCP). Since existing available information was not sufficient to disclose the impacts and mitigation measures for all species in the MSHCP, the MSHCP

incorporated survey requirements to receive coverage of those species. Focused surveys were conducted for the following species: San Bernardino kangaroo rat, least Bell's vireo, southwestern willow flycatcher, Riverside fairy shrimp, vernal pool fairy shrimp, Munz's onion, San Diego ambrosia, San Jacinto Valley crownscale, thread-leaved brodiaea, slender-horned spineflower, spreading navarretia, and Brand's phacelia.

Surveys were not conducted for other threatened, endangered species, or candidate species because no suitable habitat exists for these species within the MSHCP designated survey areas, and incidental take is authorized for these species outside the designated survey areas (see discussion in Section 3.17). Within the MSHCP survey areas, where target species are determined to be present, areas having long-term conservation value for those species must be in compliance with MSHCP provisions (avoidance or mitigation until conservation goals for species are met).

Of the 26 threatened and endangered species and candidate species that may occur in the BSA, 14 species were determined to be absent from the project BSA based on species distribution and/or the lack of suitable habitat in the area. The following 12 threatened and endangered species were found or inferred to be present or have suitable habitat present in the BSA (including three species with designated critical habitat within the BSA):

- San Jacinto Valley crownscale federally listed as endangered
- Spreading navarretia federally listed as threatened
- Munz's onion federally listed as endangered; state listed as threatened
- Quino checkerspot butterfly federally listed as endangered; critical habitat designated in 2002
- Arroyo toad federally listed as endangered; critical habitat¹ designated in 2005
- Swainson's hawk state listed as threatened
- Bald eagle federally delisted and state listed as endangered
- Coastal California gnatcatcher federally listed as threatened; critical habitat designated in 2007
- Least Bell's vireo federally and state listed as endangered; critical habitat² designated in 2004



The BSA is located outside the designated critical habitat for arroyo toad, least Bell's vireo, and southwestern willow flycatcher.

² Ibid.

- Southwestern willow flycatcher federally and state listed as endangered; critical habitat¹ designated in 2005
- San Bernardino Merriam's kangaroo rat federally listed as endangered; critical habitat designated in 2002
- Stephens' kangaroo rat federally listed as endangered and state listed as threatened

3.21.3 Environmental Consequences

3.21.3.1 Permanent Impacts

Build Alternatives

Impacts to threatened, endangered, and candidate species are based upon surveys conducted within designated survey areas for designated species, per MSHCP requirements. Additional areas that support listed species may occur outside designated survey areas and within the project footprint; however, impacts to areas outside these survey areas were considered when preparing the MSHCP and are mitigated by RCTC's participation as a Permittee under the MSHCP.

The following table summarizes impacts to threatened, endangered, and candidate species, based on impacts to areas of designated critical habitat, areas known to consist of suitable habitat for other listed species (such as coastal California gnatcatcher and Stephens' kangaroo rat), and areas determined to have long-term conservation value for MSHCP survey species determined to be present. The section following Table 3.21.A discusses the potential for these listed species to be impacted by the project and the lack of impacts to other listed species. Figures 3.21.1a and 3.21.1b show the relationship of the composite project footprint for all of the MCP Build Alternatives with respect to critical habitat areas and known locations of listed species.

The BSA is located outside the designated critical habitat for arroyo toad, least Bell's vireo, and southwestern willow flycatcher.

This page intentionally left blank

Table 3.21.A Impacts to Threatened and Endangered Species

Alternative / DV	Permanent Impacts, ha (ac)								
	Spreading Navarretia (Area of Long-Term Conservation Value)	Munz's Onion (Area Inferred to be Present within MSHCP Survey Area) ¹	Coastal California Gnatcatcher, Final Critical Habitat (12/19/2007)	Coastal California Gnatcatcher (Riversidean Upland Sage Scrub) ²	San Bernardino Kangaroo Rat, Final Critical Habitat (4/23/2002) ³	San Bernardino Kangaroo Rat (within MSHCP Survey Area) ⁴	Quino Checkerspot Butterfly, Final Critical Habitat (4/15/2002) ⁵	Least Bell's Vireo (Occupied Riparian Habitat)	Stephens' Kangaroo Rat (Reserve Areas) ⁶
Alt. 4 Base Case	0. 31 (0.77)	3.07 (7.58)	13.6 (33.5)	149.1 (368.4)	1.2 (2.9)	0.4 (1.0)	63.8 (157.6)	2.5 (6.1)	168.0 (415.1)
Alt. 4 SJN DV	0. 31 (0.77)	3.07 (7.58)	13.6 (33.5)	149.1 (368.3)	1.2 (2.9)	0.3 (0.8)	63.8 (157.6)	2.5 (6.1)	168.0 (415.1)
Alt. 4 TWS DV	0. 31 (0.77)	3.07 (7.58)	13.6 (33.5)	149.1 (368.4)	1.2 (2.9)	0.4 (1.0)	63.8 (157.6)	2.5 (6.1)	168.0 (415.1)
Alt. 5 Base Case	0. 31 (0.77)	3.07 (7.58)	13.6 (33.5)	148.0 (365.8)	1.2 (2.9)	0.4 (1.0)	63.8 (157.6)	2.5 (6.1)	168.0 (415.1)
Alt. 5 SJN DV	0. 31 (0.77)	3.07 (7.58)	13.6 (33.5)	148.0 (365.8)	1.2 (2.9)	0.3 (0.8)	63.8 (157.6)	2.5 (6.1)	168.0 (415.1)
Alt. 5 TWS DV	0. 31 (0.77)	3.07 (7.58)	13.6 (33.5)	148.0 (365.8	1.2 (2.9)	0.4 (1.0)	63.8 (157.6)	2.5 (6.1)	168.0 (415.1)
Alt. 6 Base Case	0. 31 (0.77)	0.01 (0.02)	0.0 (0.0)	171.2 (423.0)	1.2 (2.9)	0.4 (1.0)	56.6 (140.0)	3.4 (8.5)	218.7 (540.3)
Alt. 6 SJN DV	0. 31 (0.77)	0.01 (0.02)	0.0 (0.0)	171.2 (423.0)	1.2 (2.9)	0.3 (0.8)	56.6 (140.0)	3.4 (8.5)	218.7 (540.3)
Alt. 6 TWS DV	0. 31 (0.77)	0.01 (0.02)	0.0 (0.0)	171.2 (423.0)	1.2 (2.9)	0.4 (1.0)	56.6 (140.0)	3.4 (8.5)	218.7 (540.3)
Alt. 7 Base Case	0. 31 (0.77)	0.01 (0.02)	0.0 (0.0)	170.1 (420.4)	1.2 (2.9)	0.4 (1.0)	56.6 (140.0)	3.4 (8.5)	218.7 (540.3)
Alt. 7 SJN DV	0. 31 (0.77)	0.01 (0.02)	0.0 (0.0)	170.1 (420.4)	1.2 (2.9)	0.3 (0.8)	56.6 (140.0)	3.4 (8.5)	218.7 (540.3)
Alt. 7 TWS DV	0. 31 (0.77)	0.01 (0.02)	0.0 (0.0)	170.1 (420.4)	1.2 (2.9)	0.4 (1.0)	56.6 (140.0)	3.4 (8.5)	218.7 (540.3)
Alt. 9 Base Case	0. 31 (0.77)	3.07 (7.58)	16.2 (40.1)	165.0 (407.7)	1.2 (2.9)	0.4 (1.0)	132.6 (327.6)	0.9 (2.2)	68.3 (168.7)
Alt. 9 RD DV	0. 31 (0.77)	3.07 (7.58)	16.2 (40.1)	149.8 (370.1)	1.2 (2.9)	0.4 (1.0)	132.6 (327.6)	0.9 (2.2)	68.3 (168.7)
Alt. 9 PP-E DV	0. 31 (0.77)	3.07 (7.58)	16.2 (40.1)	164.9 (407.6)	1.2 (2.9)	0.4 (1.0)	132.6 (327.6)	0.9 (2.2)	68.3 (168.7)
Alt. 9 SJN DV	0. 31 (0.77)	3.07 (7.58)	16.2 (40.1)	165.0 (407.6)	1.2 (2.9)	0.3 (0.8)	132.6 (327.6)	0.9 (2.2)	68.3 (168.7)
Alt. 9 TWS DV	0. 31 (0.77)	3.07 (7.58)	16.2 (40.1)	165.0 (407.7)	1.2 (2.9)	0.4 (1.0)	132.6 (327.6)	0.9 (2.2)	68.3 (168.7)

Source: Natural Environment Study (NES), LSA Associates, Inc., 2008

NOTE: Actual direct impacts to primary constituent elements of critical habitat for all species would be smaller and would be based on the amount of suitable habitat within these areas.

⁶ Impacts to Stephens's kangaroo rat are based on impacts to Stephens' Kangaroo Rat Reserve areas.

ac = acres

Alt. = Alternative DV = Design Variation ha = hectares

MSHCP = Multiple Species Habitat Conservation Plan

PP-E = Placentia Avenue/Perris Boulevard Elevated Grade

RD = Rider Street SJN = San Jacinto North

SR-79 = State Route 79

TWS = Temescal Wash Area



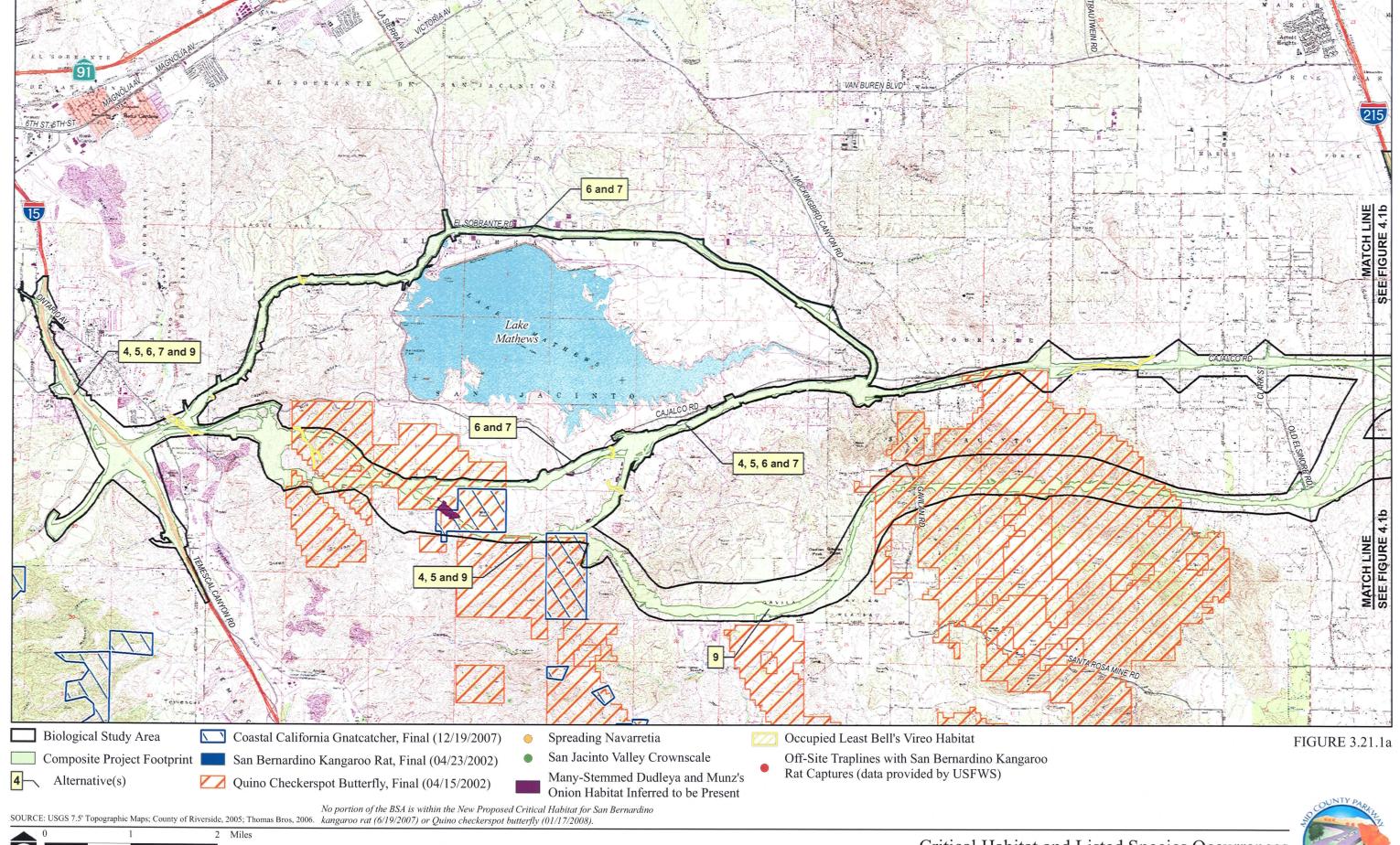
¹ Impacts to Munz's onion are based on inferring that this species is present throughout the areas of potentially suitable habitat that have not been surveyed. All of the areas inferred to be present by this species will be surveyed in 2008. Actual impacts are likely to be smaller, and will be calculated following the 2008 focused survey.

Impacts to coastal California gnatcatcher habitat are based on inferring all potentially suitable habitat (i.e., Riversidean upland sage scrub) within the project footprint is occupied by this species. Actual impacts are likely to be much smaller.

No impacts to new proposed critical habitat for San Bernardino kangaroo rat (6/19/07).

Impacts to San Bernardino kangaroo rat include approximately an additional 0.3 ha (0.7 ac) west of SR-79 in areas outside the MSHCP designated survey area for this species. No impacts to new proposed critical habitat for this species (6/19/07). ⁵ No impacts to new proposed critical habitat for Quino checkerspot butterfly (1/17/08).

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

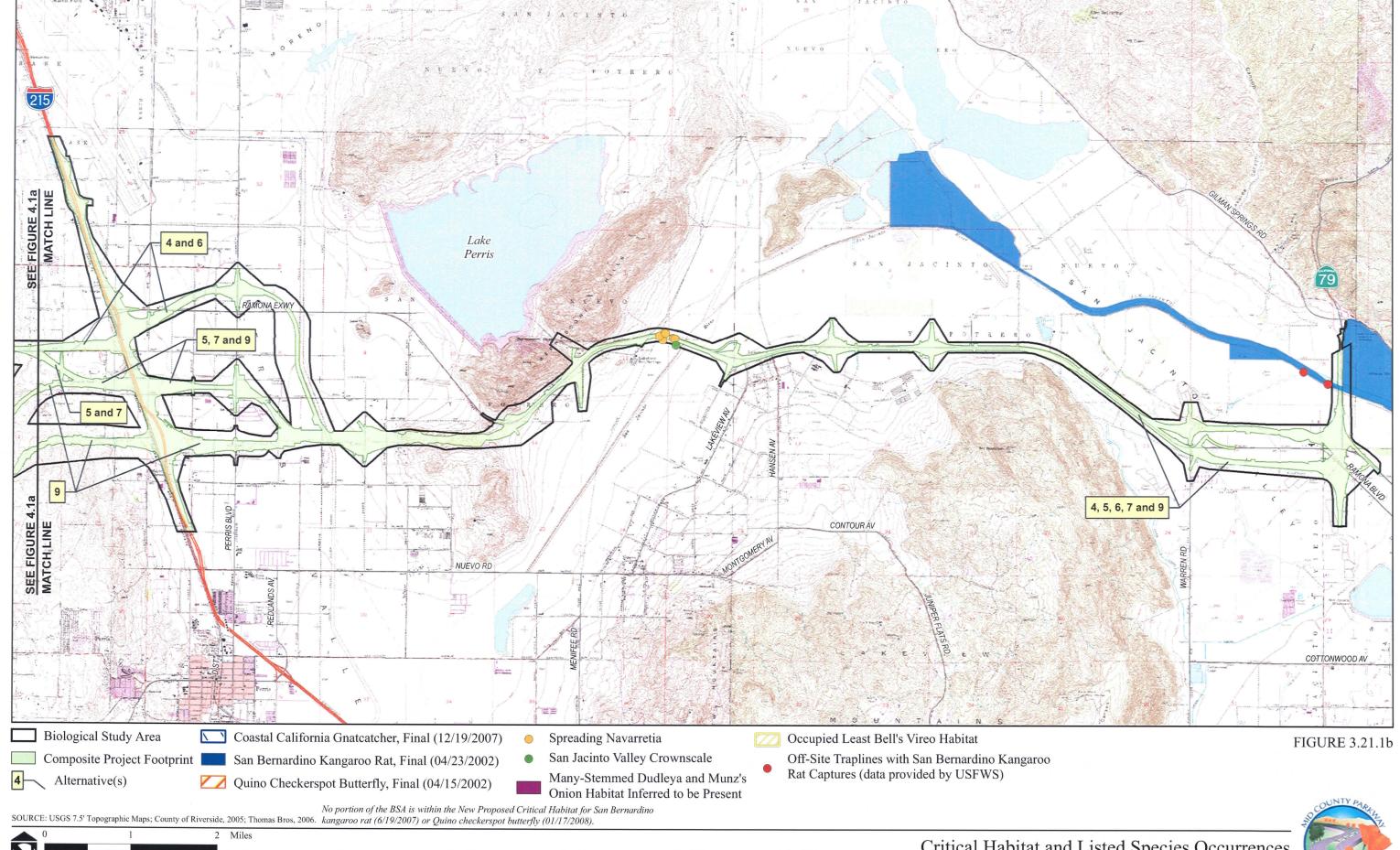


Critical Habitat and Listed Species Occurrences
KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200

Kilometers

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This page intentionally left blank



Critical Habitat and Listed Species Occurrences KP 0.0/51.0 (PM 0.0/31.7) EA 08-0F3200



3 Kilometers

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Mea	hapter 3 Affected Environme	t, Environmental Consequences.	. and Mitigation Measure
--	-----------------------------	--------------------------------	--------------------------

This page intentionally left blank



San Jacinto Valley Crownscale

The San Jacinto Valley crownscale was not observed within the project footprint for any of the MCP Build Alternatives. Four individuals of this species were found within the BSA, located 61 meters (m) (200 feet [ft]) south of the composite project footprint in an area dominated by nonnative grasses and considered to be of low quality for the species. Therefore, the proposed project would not impact areas occupied by San Jacinto Valley crownscale.

Spreading Navarretia

All MCP Build Alternatives would directly impact 0.31 hectare (ha) (0.77 acre [ac]) of area suitable for long-term conservation value for spreading navarretia within the MSHCP designated survey area for this species. Indirect impacts of the project on spreading navarretia populations may occur within the San Jacinto floodplain in areas located within 11–30 m (35–100 ft) of the project footprint and additional areas within the watershed that contribute substantial surface flows to the occupied habitat.

Indirect impacts of the project on these plant populations adjacent to the project footprint may result from edge effects such as increased potential for fire, exotic plant infestations, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. Fire risk increases the potential to require vegetation clearing and removal of habitat adjacent to the road. Increased fire frequency may result in type conversion of native habitats and an increase of exotic plant species. Exotic plant infestations may out-compete these special status species in their native habitat. Additional access points for unauthorized off-road vehicle use may result from the MCP project. Off-road vehicle use may destroy native habitat and these special status species and may also promote exotic plant infestation. Additionally, pollutants (in the form of nitrogen compounds from car emissions) may settle on soil and stimulate the growth of nonnative species, which may out-compete native species.



Munz's Onion

Alternatives 4, 5, and 9 would result in 3.07 ha (7.58 ac) of direct impacts to areas inferred to be occupied by Munz's onion. Alternatives 6 and 7 would result in 0.01 ha (0.02 ac) of direct impacts to areas inferred to be occupied by Munz's onion. Impacts to Munz's onion are based on a worst-case scenario in which it is inferred this species is present throughout areas in the BSA that may be suitable habitat but have not been surveyed. All of the areas assumed to be impacted will be surveyed in 2008 (survey results were not available at the time the Draft EIR/EIS was printed). Actual impacts to Munz's onion may be less, depending upon the survey results.

Indirect impacts may result in areas of inferred presence by Munz's onion. Indirect impacts of the project on any plant populations determined to be present adjacent to the project footprint may result from edge effects such as increased potential for fire, exotic plant infestations, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. Fire risk increases the potential to require vegetation clearing and removal of habitat adjacent to the road. Increased fire frequency may result in type conversion of native habitats and an increase of exotic plant species. Exotic plant infestations may out-compete these special status species in their native habitat. Additional access points for unauthorized off-road vehicle use may result from the MCP project. Off-road vehicle use may destroy native habitat and these sensitive species and may also promote exotic plant infestation. Additionally, pollutants (in the form of nitrogen compounds from car emissions) may settle on soil and stimulate the growth of nonnative species, which may out-compete native species.

Fairy Shrimp

There will be no project impacts to sensitive fairy shrimp species (Riverside fairy shrimp and vernal pool fairy shrimp). Sensitive fairy shrimp species have been determined to be absent from the BSA based on results of focused surveys in 2005–2006 and 2006–2007.

Arroyo Toad

The BSA is not located within the MSHCP designated survey area for the arroyo toad. It is highly unlikely that the project would result in impacts to the arroyo toad based on the low likelihood that the arroyo toad would be found within the BSA. According to the Recovery Plan for the Arroyo Toad (USFWS 1999), the nearest occurrence of the arroyo toad (from 1975), is likely extirpated and is located approximately 10 kilometers (km) (6 miles [mi]) east of the eastern boundary of the BSA. According to Table 9-2 of the MSHCP, individual arroyo toads within areas outside the MSHCP Conservation Area would be subject to Incidental Take restrictions consistent with the Plan.

Indirect effects of the project on areas that may be occupied by arroyo toad may result from edge effects such as exotic plant and animal infestations, litter, fire, and unauthorized recreational use, and pollutants associated with vehicle use of the parkway. Additional indirect effects may result from an increase in light, glare, and noise associated with vehicles and daytime and nighttime construction activities.

Swainson's Hawk

There would be no take of Swainson's hawk nesting habitat because there is no suitable nesting habitat within the BSA. Impacts to foraging habitat of this raptor would be minimal because adjacent areas not to be disturbed would still sufficiently provide adequate foraging habitat.

Indirect effects of the project on foraging areas that may be used by Swainson's hawk may result from edge effects such as exotic plant and animal infestations, litter, fire, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. These edge effects may result in type conversion of native habitats and an increase of exotic plant species. Type conversions from more open native habitat to more dense nonnative grasslands could reduce the area of potential habitat for prey species or other special status species. Additional indirect effects may result from an increase in light, glare, and noise associated with vehicles and daytime and nighttime construction activities.

Bald Eagle

The composite project footprint of all of the MCP Build Alternatives avoids all portions of Lake Mathews and any adjacent habitat suitable for nesting by the bald eagle. Therefore, there would be no take of the bald eagle nesting habitat, and impacts to foraging habitat of this raptor would be minimal.

Indirect effects of the project on areas that may be occupied or used as foraging habitat by bald eagles may result from edge effects such as exotic plant and animal infestations, litter, fire, unauthorized recreational use, and pollutants associated with vehicle use of the parkway. These edge effects may result in type conversion of native habitats and an increase of exotic plant species. Type conversions from more open native habitat to more dense nonnative grasslands could reduce the area of potential habitat for prey species or other special status species. Additional indirect effects may result from an increase in light, glare, and noise associated with vehicles and daytime and nighttime construction activities.

Least Bell's Vireo

=

Previously referenced Table 3.21.A shows the direct impacts that each alternative would have a habitat suitable for long-term conservation for the least Bell's vireo. Alternatives 4, 5, 6, and 7 would each impact five nesting pairs/individual least Bell's vireo, and Alternative 9 would impact two nesting least Bell's vireo pairs.

Project impacts to the least Bell's vireo would occur in the form of loss of nesting habitat within the project footprint. Project impacts in the form of direct mortality (e.g., destruction of nests and mortality of young) could be avoided by conducting vegetation clearing outside the nesting season (March 1–September 15).

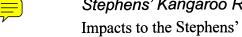
Indirect effects of the project on least Bell's vireo-occupied areas adjacent to the project footprint located along Temescal Wash and Cajalco Road may result from edge effects such as exotic plant and animal infestations, and unauthorized recreational use. Additional indirect effects may result from exotic plant and animal infestations, unauthorized recreational use, and an increase in light, glare, and noise associated with vehicles and daytime and nighttime construction activities. Increased fire frequency may result in type conversion of native habitats and an increase of exotic plant species, which may not provide habitat for the least Bell's vireo. The MCP project may provide additional access points for unauthorized off-road vehicle use, which may destroy native habitat and may also promote exotic plant infestation. Future development and use of MCP may result in additional litter. Litter may also result in animal infestations, which may result in additional predators in the area that may prey on the least Bell's vireo.

Southwestern Willow Flycatcher



Since there were no nesting pairs of southwestern willow flycatcher observed within the BSA and all observations of willow flycatchers were determined to be migrating, and therefore a different subspecies, the MCP Build Alternatives would not impact the southwestern willow flycatcher. While other subspecies of willow flycatcher are included in the State listing of the species as a whole, they do not breed in the project area, and there would be little or no impacts to migrating individuals.

Stephens' Kangaroo Rat



Impacts to the Stephens' Kangaroo Rat Reserve would range between 68.3 ha (168.7 ac) and 218.7 ha (540.3 ac) due to impacts to portions of the Lake Mathews-Estelle Mountain Reserve Within the Lake Mathews-Estelle Mountain Reserve, there are 14 parcels of land managed by the federal Bureau of Land Management for the protection of sensitive species under the Habitat Conservation Plan for the Stephens' kangaroo rat. Oversight for the Habitat Conservation Plan for the Stephens' kangaroo rat is carried out by the Riverside County Habitat Conservation Agency.

Indirect effects of the project on areas that may be occupied by Stephen's kangaroo rat may result from edge effects such as exotic plant and animal infestations, litter,

fire, and unauthorized recreational use. Additional indirect effects may result from an increase in light, glare, and noise associated with vehicles and daytime and nighttime construction activities. Increased fire frequency may result in type conversion of native habitats and an increase of exotic plant species. Type conversions from more open native habitat to more dense nonnative grasslands could reduce the area of potential sensitive species habitat. The MCP project may provide additional access points for unauthorized off-road vehicle use, which may destroy native habitat and sensitive species and may also promote exotic plant infestation. Future development and use of MCP may result in additional litter. Litter may also result in animal infestations, which may result in additional predators in the area that may prey on the listed species. Increased lighting and noise resulting from MCP and vehicles on the parkway may affect the listed species that may be present; in particular, lighting may affect Stephens' kangaroo rat since it is a nocturnal species. If moonlight can affect the surface activity of kangaroo rats (Daly et al. 1992; Lockard and Owings 1974; Price et al. 1984), artificial lighting associated with the MCP project could also affect behavior. Also, owls and other predators may be able to hunt more efficiently under artificial light, thus increasing predation risk to the Stephens' kangaroo rat (MSHCP 2003).

Although the MCP composite project footprint is located outside Motte Rimrock Reserve and has no direct impact on this reserve, Alternative 9 is adjacent to the northwestern corner of the Motte Rimrock Reserve. Thus, Alternative 9 may result in edge effects and habitat fragmentation along the Motte Rimrock Reserve.

Coastal California Gnatcatcher

The MCP project will not result in impacts to individual coastal California gnatcatchers due to restrictions of vegetation clearing outside the nesting season; however, the project would result in the loss of coastal California gnatcatcher foraging and nesting habitat and loss of coastal California gnatcatcher critical habitat. There would be between 148.0 ha (365.8 ac) and 171.2 ha (423.0 ac) of impacts to Riversidean Sage Scrub habitat within the various alternatives for the project, of which a portion may be suitable for or occupied by the coastal California gnatcatcher. Impacts to areas designated as Final Critical Habitat for the coastal California gnatcatcher range from no impact to 16.2 ha (40.1 ac).

Indirect effects of the project on areas potentially occupied by the coastal California gnatcatcher may result from edge effects such as exotic plant and animal infestations, litter, fire, and unauthorized recreational use. Additional indirect effects may result



from an increase in light, glare, and noise associated with vehicles and daytime and nighttime construction activities. Increased fire frequency may result in type conversion of native habitats and an increase of exotic plant species. Type conversions from more open native habitat to more dense nonnative grasslands could reduce the area of potential sensitive species habitat. The MCP project may provide additional access points for unauthorized off-road vehicle use, which may destroy native habitat and sensitive species and may also promote exotic plant infestation. Future development and use of MCP may result in additional litter. Litter may also result in animal infestations, which may result in additional predators in the area that may prey on the listed species.

San Bernardino Kangaroo Rat

No San Bernardino kangaroo rats were captured during the focused survey in 2005 for the MCP project. However, San Bernardino kangaroo rats were captured in the vicinity of the San Jacinto River and SR-79 during a 2006 focused survey conducted for a separate project located adjacent to the MCP project. The occupied habitat within the MCP project area contains habitat suitable for long-term conservation for the San Bernardino kangaroo rat within the San Jacinto River (excluding the concrete spillway and riprap) located within the MSHCP-designated San Bernardino kangaroo rat survey area. All MCP Build Alternatives will impact 1.2 ha (2.9 ac) of designated critical habitat for San Bernardino kangaroo rat (2002). The MCP project will not result in any impact to the 2007 proposed critical habitat for San Bernardino kangaroo rat. In addition, within the MSHCP survey area for this species, the MCP project will directly impact 0.4 ha (1.0 ac) of San Bernardino kangaroo rat occupied habitat, suitable for long-term conservation under all of the alternatives and design variations, except the San Jacinto North Design Variation (SJN DV) that will impact 0.3 ha (0.8 ac).

Indirect effects of the project on areas occupied by San Bernardino kangaroo rat may result from edge effects such as exotic plant and animal infestations, litter, fire, and unauthorized recreational use, and pollutants associated with vehicle use of the parkway. Additional indirect effects may result from an increase in light, glare, and noise associated with vehicles and daytime and nighttime construction activities. Increased fire frequency may result in type conversion of native habitats and an increase of exotic plant species, which may not provide habitat for the San Bernardino kangaroo rat. The MCP project may provide additional access points for unauthorized off-road vehicle use, which may destroy native habitat and sensitive species and may also promote exotic plant infestation. Future development and use of

MCP may result in additional litter. Litter may also result in animal infestations, which may result in additional predators in the area that may prey on the San Bernardino kangaroo rat. Artificial lighting may also affect surface activity of these nocturnal mammals. Also, owls and other predators may be able to hunt more efficiently under artificial light, thus increasing predation risk (MSHCP 2003).

Quino Checkerspot Butterfly

The Quino checkerspot butterfly is determined to be extirpated from the Lake Mathews area, according to the MSHCP; thus, direct impacts to this species are not anticipated. Additionally, areas within the MCP composite project footprint are not located within new proposed critical habitat for this species (January 2007); however, impacts to final designated Quino checkerspot butterfly critical habitat (April 2002) in the Lake Mathews area would consist of between 56.7 ha (140.0 ac) and 132.6 ha (327.6 ac).

Indirect impacts on critical habitat may result from growth-related effects of the project (discussed in Section 3.3 of this EIR/EIS). However, approximately half of the designated critical habitat areas for Quino checkerspot butterfly in the MCP project vicinity are within existing reserves or within the MSHCP Criteria Area, where development would be limited by MSHCP Cell Criteria.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, there would be no permanent impacts to threatened and endangered species along these roadways under Alternative 1A. Therefore, impacts to threatened and endangered species in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than under the MCP Build Alternatives.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. Under Alternative 1B, permanent impacts to threatened and endangered species would be expected to be less than for the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between Interstate 15 (I-15) and El Sobrante Road, the impacts of Alternative 1B would be the same as for Build Alternatives 6 and 7, since these alternatives follow the General Plan roadway alignments in this area.



Discussions of Impacts Relative to MSHCP Amendment

The EIR/EIS for the MSHCP found that direct and indirect impacts on sensitive vegetation communities and covered species, including threatened and endangered species, are reduced through implementation of the MSHCP, which includes assembly of an approximately 202,340 ha (500,000 ac) reserve system, adaptive management and monitoring, as well as other protection measures.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 TWS DV, which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.

Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV. The criteria addressed in that analysis includes consideration of impacts on threatened and endangered species. The finding of the analysis in Section 3.17 is that Alternative 9 TWS DV, including the mitigation lands that are available to demonstrate consistency with the MSHCP, provides an equivalent or superior level of conservation compared with what was anticipated and analyzed in the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts on threatened and endangered species beyond that previously analyzed.

3.21.3.2 Temporary Impacts

Temporary impacts to threatened or endangered species may occur during construction where habitats, populations, or individuals are temporarily disturbed during grading or other activities. For purposes of this impact analysis, a conservative right of way footprint was established for each alternative that includes areas of cut and fill, staging areas for construction vehicles, equipment and materials, haul routes, and water quality treatment features. While some portions of this right of way





footprint will only be temporarily disturbed during construction and would be revegetated with native plant species, it is not expected that this revegetation would fully restore the functions and values of the impacted wildlife habitat. Therefore, the analysis of impacts conservatively estimates a worst-case impact scenario wherein all areas within the right of way footprint are calculated as permanent impacts, with the exception of areas spanned by bridges. Although impacts to riparian habitats and jurisdictional areas at the bridged areas have been identified as temporary or permanent impacts, impacts to threatened or endangered species in these areas are all considered to be permanent impacts within the project footprint.

3.21.4 Avoidance, Minimization, and/or Mitigation Measures

The MCP project has incorporated engineering design measures, such as bridges and wildlife land crossings, that would facilitate movement of listed species across the MCP within the western Riverside County MSHCP area.

Critical habitat areas for Quino checkerspot butterfly cover large areas in the project vicinity that could not be feasibly avoided, and the critical habitat for San Bernardino kangaroo rat could not be entirely avoided at the State Route 79 (SR-79) crossing of the San Jacinto River at the east end of the BSA. Alternatives 6 and 7 avoid critical habitat for coastal California gnatcatcher. For all MCP Build Alternatives, efforts were made to minimize impacts to critical habitat areas by aligning the project footprint with existing roadways, where primary constituent elements of critical habitats are less likely to occur. The widening of SR-79 north of the San Jacinto River crossing that would occur within the MCP project (Figure 3.21.1b) would do so primarily on the west side of the existing highway so as to avoid critical habitat of San Bernardino kangaroo rat in that area. Impacts to the portion of the critical habitat within the San Jacinto River would be minimized by spanning the San Jacinto River floodplain with a bridge crossing.

In addition to the mitigation measures listed in Sections 3.17 through 3.20, the following measures applicable to all MCP Build Alternatives will be implemented in order to avoid and minimize impacts to threatened and endangered species during construction of the MCP project. In addition to the measures listed below, prior to the

Primary constituent elements are those physical or biological habitat features that are essential to the species. These include food sources and sites for breeding, reproduction, shelter, etc.

approval of the Final EIS, FHWA will conduct a Section 7 Consultation with the USFWS for impacts to coastal California gnatcatcher, Quino checkerspot butterfly, San Bernardino kangaroo rat, least Bell's vireo, and spreading navarretia. The Section 7 consultation will be based upon the MSHCP consistency documentation prepared by RCTC.



- TE-1
- Prior to construction, the Riverside County Transportation Commission (RCTC) will obtain a Determination of Biologically Equivalent or Superior Preservation (DBESP) for impacts to habitat suitable for long-term conservation for spreading navarretia, least Bell's vireo, and San Bernardino kangaroo rat where 10 percent or more of those portions of the site that provide for the long-term conservation value are impacted, pursuant to Section 6.1.2 and Section 6.1.3 of the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). A DBESP may also be required for any impacts to habitat suitable for long-term conservation for Munz's onion (pending the results of the focused surveys in the area north of the El Sobrante Landfill MSHCP Area in late 2008). Mitigation provided in the DBESP will demonstrate that equivalent or superior conservation for the species will be achieved through either location and preservation of populations that are not already proposed for conservation in the MSHCP, and/or restoration or enhancement of existing populations within the proposed conservation area.
- TE-2 During construction, the Riverside County Transportation Commission (RCTC) will adhere to the Guidelines for the Siting and Design of Planned Roads Within the Criteria Area and Public/Quasi-Public Lands (Multiple Species Habitat Conservation Plan, Sections 7.5.1, 7.5.3, and Appendix C) for avoiding take of active nests.
- TE-3 Prior to construction, the Riverside County Transportation
 Commission (RCTC) will mitigate for impacts to the Habitat
 Conservation Plan for the Stephens' Kangaroo Rat Reserve lands
 through replacement mitigation lands pursuant to the requirements of
 the Habitat Conservation Plan for the Stephens' kangaroo rat
 (replacement of occupied habitat at a ratio of 1:1). This mitigation will
 occur through RCTC's purchase of mitigation lands that are known to
 be occupied by Stephens' kangaroo rat (surveys to confirm presence of

Stephens' kangaroo rat will be conducted prior to acquisition of these mitigation lands). These lands would then be managed by the Riverside County Habitat Conservation Agency through an agreement with RCTC. The 1:1 replacement of occupied habitat will also provide replacement of Public/Quasi-Public Lands at a 1:1 ratio, consistent with the Multiple Species Habitat Conservation Plan (MSHCP) requirements. The 1:1 replacement of occupied habitat will also meet the requirements for the 14 parcels managed by the federal Bureau of Land Management.

This page intentionally left blank

3.22 Invasive Species

3.22.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999 directs the use of the state's noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

3.22.2 Affected Environment

The California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory is based on information submitted by members, land managers, botanists, and researchers throughout the state as well as published sources. The inventory highlights nonnative plants that are serious problems in wildlands (natural areas that support native ecosystems, including national, state, and local parks, ecological reserves, wildlife areas, national forests, Bureau of Land Management lands, etc.). The inventory categorizes plants as High, Moderate, or Limited based on the species' negative ecological impact in California. Plants categorized as "High" have severe ecological impacts. Plants categorized as "Moderate" have substantial and apparent, but not severe, ecological impacts. Plants categorized as "Limited" are invasive, but their ecological impacts are minor on a statewide level. There were 47 invasive/exotic plant species observed within the Biological Study Area (BSA) for the MCP project. Of these 47, the invasive plant ratings are as follows: 7 species are categorized as "High," 19 species are categorized as "Moderate," and 21 species are categorized as "Low."

Species observed within that BSA that are rated as "High" include hottentot-fig (Carpobrotus edulis), fennel (Foeniculum vulgare), yellow star-thistle (Centaurea solstitialis), Mediterranean tamarisk (Tamarix ramosissima), giant reed (Arundo donax), red brome (Bromus madritensis ssp. rubens), and pampas grass (Cortaderia

selloana). Of these, red brome was observed in grassland and scrub areas throughout the BSA. The remaining species were observed in isolated patches.

3.22.3 Environmental Consequences

3.22.3.1 Permanent Impacts

Build Alternatives

The construction of the MCP Build Alternatives has the potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that its seed is spread along the highway. During the operation of the MCP facility, vehicles using the facility also have the potential to spread invasive species; however, these impacts would be minimal since areas adjacent to the facility will be landscaped with native species that should outcompete the invasive species. Mitigation Measures IS-1 through IS-4, provided below, will avoid or reduce the impact of invasives from spreading from or into the project area during project construction.

No Build Alternatives

The construction of other projects included in the No Build Alternatives would have similar potential to spread invasive species as described in the Build Alternatives above. Similar measures to reduce this impact would be implemented for the No Build Alternatives as described above for the Build Alternatives.

Discussions of Impacts Relative to MSHCP Amendment

The EIR/EIS for the Multiple Species Habitat Conservation Plan (MSHCP) analyzed potential edge effects that were anticipated to occur to species and habitats within the MSHCP Conservation Area resulting from land uses and activities in take-authorized areas in proximity to the MSHCP Conservation Area. Edge effects analyzed included use of exotic landscape plant materials that may invade native vegetation communities within the MSHCP Conservation Area.

The MSHCP EIR/EIS discussed features incorporated into the MSHCP that will minimize edge effects, including implementation of the Land Use Guidelines Pertaining to the Urban/Wildlands Interface (Section 6.1.4 of the MSHCP). These Guidelines include measures to control invasion of exotic species into the MSHCP Conservation Area. The EIR/EIS concluded that, with features incorporated to control edge effects, the MSHCP's edge effects are substantially reduced.

The MSHCP includes coverage of a regional transportation corridor upon which the project alternatives for the MCP have been developed. An amendment to the MSHCP would be required to provide coverage to a modified alignment for the transportation corridor. This discussion is provided as a supplemental environmental analysis to provide supporting documentation under CEQA and NEPA for such an amendment to the MSHCP. It should be noted that this discussion pertains specifically to the analysis of consistency for Alternative 9 TWS DV, which has been identified as the Locally Preferred Alternative. If a different alternative were to be pursued for coverage, additional CEQA/NEPA analysis may be needed.



Section 3.17 contains a detailed analysis of the effects of providing coverage of Alternative 9 TWS DV under the MSHCP, pursuant to the specific criteria identified in the MSHCP to demonstrate consistency. As noted in Section 3.17, a consistency determination is not being made at this time. However, the analysis contained in Section 3.17 provides a framework for consistency and identifies the environmental effects of MSHCP coverage for Alternative 9 TWS DV. In addition, the analysis contained in this section addresses measures consistent with the requirements of the MSHCP relative to the control of invasive species, such that consistency with the MSHCP can be demonstrated. Therefore, impacts related to invasive species would not be of a different character or intensity compared with what was anticipated and analyzed in the MSHCP EIR/EIS. Therefore, an amendment to the MSHCP to provide coverage for Alternative 9 TWS DV would not result in impacts related to invasive species beyond that previously analyzed.

3.22.3.2 Temporary Impacts

Impacts related to invasive species are considered permanent impacts because the introduction of invasive species into previously undisturbed areas would permanently affect the habitat. Therefore, impacts related to invasive species are described below under permanent impacts.

3.22.4 Avoidance, Minimization, and/or Mitigation Measures

The following mitigation measures applicable to all MCP Build Alternatives will be implemented during construction of the MCP project to avoid potential adverse impacts related to invasive species. Additionally, to avoid potential adverse impacts during operation of the facility, Mitigation Measure U&ES-5 will also be implemented to further prevent the spread of invasive species within the right of way by complying with fuel modification requirements.

- IS-1 During construction, the Riverside County Transportation Commission (RCTC) will ensure that bare soil will be landscaped with California Department of Transportation (Caltrans) recommended seed mix and container plants from locally adapted species to preclude the invasion of noxious weeds. Seed mixtures for portions of the project under Caltrans jurisdiction shall be approved by a Caltrans District Landscape Architect. The use of site-specific materials adapted to local conditions increases the likelihood that revegetation will be successful and maintains the genetic integrity of the local ecosystem. Prior to construction, RCTC will require the Project Biologist to make arrangements well in advance of planting (at least 9 months prior) to ensure that plant materials are located and available for the scheduled planting time. Sufficient time shall be allocated for a professional seed company to visit the project site during the appropriate season and collect the native plant seed. If local propagules are not available or cannot be collected in sufficient quantities, materials collected or grown from other sources within southern California shall be substituted. For widespread native herbaceous species that are more likely to be genetically homogeneous, site specificity is a less important consideration, and seed and container plants from commercial sources may be used.
- Prior to construction, the Riverside County Transportation
 Commission (RCTC) will require that the Project Biologist certify
 seed purity by planting seed labeled under the California Food and
 Agricultural Code or that has been tested within a year by a seed
 laboratory certified by the Association of Official Seed Analysts or by
 a seed technologist certified by the Society of Commercial Seed
 Technologists.
- During construction, the Riverside County Transportation Commission (RCTC) will require that the Construction Contractor ensure that construction equipment is cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds both before mobilizing to arrive at the site and before leaving the site. Construction equipment will be cleaned at established truck wash facilities within the project vicinity.

- During construction, the Riverside County Transportation Commission (RCTC) will require that the Construction Contractor ensure that trucks carrying vegetation shall be covered and that vegetative materials removed from the site shall be disposed of in accordance with all applicable laws and regulations.
- During construction, the Riverside County Transportation Commission (RCTC) will require that the Construction Contractor ensure that if material is obtained from a borrow site, the material will be inspected for the presence of noxious weeds and invasive plants to ensure that the material does not contain noxious weeds or invasive plants.
- The Riverside County Transportation Commission (RCTC) will require that, during construction, the Construction Contractor control, kill, and remove noxious weeds and invasive plants from the project site, subject to verification by the Project Biologist.



This page intentionally left blank

3.23 Relationship Between Local Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

3.23.1 Introduction

Implementation of the MCP Build Alternatives will result in attainment of short-term and long-term transportation objectives at the expense of some long-term social, aesthetic, biological, noise, parkland, and other land use impacts. The proposed MCP transportation improvements are based on State and local comprehensive planning efforts that consider the need for present and future traffic requirements within the context of present and future land use development. As a Community and Environmental Transportation Acceptability Process (CETAP) transportation corridor, the MCP project is an integral component of the long-range planning for Riverside County conducted under the Riverside County Integrated Project (RCIP).

3.23.2 Environmental Consequences

3.23.2.1 Build Alternatives

Short-term losses and impacts of all MCP Build Alternatives project include:

- Economic losses experienced by businesses from temporary displacements, relocations, or traffic detours;
- Temporary construction impacts to residents and visitors such as increased noise, impaired air quality from dust and debris, increased nighttime light, blocked viewsheds, and motorized and nonmotorized traffic delays or detours;
- Temporary loss of productivity on and near sites used as the temporary construction staging areas; and
- Disruption of recreational activities at Paragon Park due to partial acquisition of the park.

Short-term benefits of the MCP project include:

• Increased jobs and revenue generated during construction.

Long-term losses of the MCP project would include:

- Permanent impacts to plant resources, wildlife resources and open space;
- Permanent impacts to residents and visitors such as increased noise levels, increased nighttime light, and altered viewsheds;



- Permanent impacts to community character and cohesion;
- Consumption of construction materials and energy;
- Permanent removal of residential and nonresidential uses and possible permanent loss of those uses in the communities along the MCP alignments if they are not relocated in the immediate project vicinity; and
- Permanent loss of archaeological sites and the values associated with those sites.

Long-term gains of the MCP project would include:

- An improvement of the regional transportation network in this part of Riverside County;
- Increased access and congestion relief on local streets and highways; and
- Improvement to water resources and storm water management facilities, including surface water and floodplains.
- A net increase in public parklands in Perris.

3.23.2.2 No Build Alternatives

Alternative 1A would not change the overall existing conditions of the MCP study area as described throughout Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures. Therefore, Alternative 1A would not result in the losses/impacts described above and would not provide the benefits of the MCP project described above.

Under Alternative 1B, impacts to the existing condition described throughout Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, would be expected to be less than the MCP Build Alternatives since Alternative 1B includes improvements to Cajalco Road and Ramona Expressway as a part of the Riverside County General Plan Circulation Element. Similar to Alternative 1A, Alternative 1B would not provide the full benefits of the MCP described above.

3.23.3 Conclusions

Implementation of the MCP project would result in trade-offs between addressing transportation needs and goals (short and long term) and adverse environmental impacts (short and long term).

The MCP project would provide a direct and continuous route connecting major population and employment centers in an area of western Riverside County that is currently undergoing substantial population and employment growth. The MCP



project would provide increased capacity and a limited access parkway compatible with a future multimodal transportation system, accommodate the Surface Transportation Assistance Act (STAA) National Network for trucks, and provide roadway geometrics to meet State highway design standards.



The MCP project is proposed as the west-east intracounty transportation corridor planned under CETAP. As discussed in Section 3.6, the existing roads and intersections in the MCP study area will operate at unacceptable levels of service into 2035 without implementation of the MCP project. The MCP project would serve to improve traffic conditions in the region. The long-term benefits to the community (through transportation improvements) will be weighed against the short-term and long-term environmental impacts of the MCP project.

This page intentionally left blank

3.24 Irreversible and Irretrievable Commitments of Resources That Would Be Involved in the Proposed Project

3.24.1 Build Alternative



The construction of the MCP Preferred Alternative (Alternative 9 Temescal Wash Area Design Variation [TWS DV]) involves a commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the proposed MCP project is considered an irreversible commitment during the time period that the land is used for the highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. There is no reason to believe such a conversion would ever be necessary or desirable for the foreseeable future.

Considerable amounts of fossil fuels, labor, public capital, and highway construction materials such as cement, aggregate, and bituminous material would be expended and not retrievable following construction of the MCP project. Additionally, large amounts of labor and natural resources are used in the making of construction materials, and these are generally not retrievable. However, they are not in short supply, and their use would not have an adverse effect upon continued availability of these resources. Construction of the MCP project would also require a substantial one-time expenditure of both state and federal funds, which are not retrievable; savings in travel time and improved transportation system efficiency would offset this use of materials, labor, resources, and funds. In addition to the costs of construction and right of way would be the ongoing costs for roadway maintenance, including pavement, roadside litter/sweeping, signs and markers, electrical, and storm maintenance.

The commitment of these resources to the MCP project is based on the concept that residents, workers, travelers, and others in the immediate area, region, and state would benefit from the improved quality of the transportation system in western Riverside County. These benefits would consist of improved accessibility, travel time, and safety, which are expected to outweigh the commitment of these resources.

3.24.2 No Build



The No Build Alternatives (Alternatives 1A and 1B) would not result in any irretrievable commitment of resources because Alternatives 1A and 1B would not result in the construction of the MCP project.

As stated previously in Chapter 2 of this EIR/EIS, Alternative 1A represents improvements made to the planned street network under the Riverside County General Plan Circulation Element, except for future improvements to Cajalco Road and Ramona Expressway. Under Alternative 1A, the MCP project would not be constructed. Alternative 1B is the same as Alternative 1A, but includes the future improvements to Cajalco Road and Ramona Expressway. Because Alternatives 1A and 1B consider improvements to the planned street network consistent with the Riverside County General Plan Circulation Element, there would be irretrievable commitments of resources resulting from these improvements, but not as a result of the MCP project.

3.25 Cumulative Impacts

3.25.1 Regulatory Setting

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

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of wildlife movement corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 Code of Federal Regulations (CFR), Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

3.25.2 Methodology

Construction and operation of any of the MCP Build Alternatives would result in direct and indirect impacts that could contribute to cumulative effects to the built and natural environment when combined with other related past, present, and reasonably foreseeable future actions.

Cumulative impacts were identified by comparing the impacts of the proposed MCP project and other past, current, or proposed actions in the area to establish whether, in the aggregate, they could result in cumulative environmental impacts. Both direct and indirect impacts are assessed. Past actions that have most affected resources and land

uses in western Riverside County are its transformation from rural to urban/suburban communities; public works projects such as flood control and utility infrastructure projects; and the development of the state and interstate highway systems, as well as a network of county and city roads, to support the developing communities.

The cumulative effects analysis focuses on those issues and resources that would be affected by the aggregation of stress factors on the environment and does not address in detail those topics that would not have additional environmental effects from the cumulative condition. The analysis provided in this section considered the effects of the other projects and the MCP Build Alternatives in assessing whether a particular environmental parameter would experience cumulative adverse impacts. Specific geographic boundaries for cumulative effects are determined for each environmental topic analyzed and may vary accordingly. In most cases, the cumulative study area for the MCP Build Alternatives is the MCP study area; however, some topics have larger or smaller areas of assessment due to the sensitivity and/or availability of the resource.

Future actions anticipated to occur include further growth within the county and incorporated city areas and conversion from rural or open space to urban and suburban developed conditions. The growth will require continued expansion of supporting infrastructure such as roadways, commercial uses, public services, and utilities. The anticipated growth is reflected in the regionally adopted growth projections and is planned for in the Riverside County General Plan and the General Plans of affected cities.

The following eight steps serve as guidelines for identifying and assessing cumulative impacts and are based on the *Guidance for Preparers of Cumulative Impact Analysis* (June 2005, Caltrans).¹

- Identify the resources to consider in the cumulative impact analysis by gathering input from knowledgeable individuals and reliable information sources. This process is initiated during project scoping and continues throughout the NEPA/CEQA analysis.
- 2. Define the geographic boundary or Resource Study Area (RSA) for each resource to be addressed in the cumulative impact analysis.
- 3. Describe the current health and historical context of each resource.



www.dot.ca.gov/ser/guidance.htm#cumulative; accessed on October 16, 2007.

- 4. Identify the direct and indirect impacts of the proposed project that might contribute to a cumulative impact on the identified resources.
- 5. Identify a set of other current and reasonably foreseeable future actions or projects and their associated environmental impacts to include in the cumulative impact analysis.
- 6. Assess cumulative impacts.
- 7. Report the results of the cumulative impact analysis.
- 8. Assess the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact.

3.25.3 Identification of Resources/Issues to Consider for Cumulative Impacts

As discussed in Sections 3.1 through 3.22 of this EIR/EIS, the proposed MCP project would cause direct or indirect impacts to a number of resources in the human, physical, and natural environment; therefore, many of the resources discussed in the previous sections were considered in the analysis of cumulative impacts, including:

- Growth-Related Effects
- Farmlands/Timberlands
- Community Impacts/Relocations
- Visual/Aesthetics
- Cultural Resources
- Paleontology
- Natural Communities
- Wetlands and Other Waters
- Plant Species
- Animal Species
- Threatened and Endangered Species



Those resources for which cumulative effects are not anticipated or for which the impacts were already analyzed in a cumulative context are briefly discussed below. Discussion of cumulative impacts to the resources listed above are provided later in Section 3.25.5.

- Future and Existing Land Uses. It is anticipated that future development will be implemented in a manner that is consistent with adopted land use and resource plans, and that the local agency General Plans will be amended to reflect the approved MCP route alignment and facility type.
- Consistency with State, Regional, and Local Plans. The evaluation of plan consistency is considered a project-related evaluation and is discussed in Section 3.1.2 of this EIR/EIS. The state, regional, and local plans reviewed for this evaluation provide a broader planning context for the MCP project.
- Parks and Recreation. As discussed in Section 3.1.3 of the EIR/EIS, the MCP project would impact 3.60 ha (8.95 ac) of Paragon Park. None of the cumulative projects would impact Paragon Park. Future parks are planned as part of the County and City General Plan Land Use Element; therefore, build out of the future land uses would not result in impacts to parks and recreation. Most of the cumulative transportation projects consist of improvements to existing roadways and freeways, which would limit impacts to only those parks and recreational facilities that are immediately adjacent to the existing roadways and freeways.
- Environmental Justice. As discussed in Section 3.4.3 of this EIR/EIS, the MCP project would not result in disproportionate adverse effects to low income and/or minority populations. The adopted land use plans of the county and the three cities provide for housing and employment opportunities for all people in Riverside County, regardless of ethnicity or income. The effects of other transportation and public infrastructure projects on low income and/or minority populations will be assessed as part of the environmental review of those projects. Based on the census data reviewed for the MCP project, it would appear that any adverse effects on these populations would be offset by beneficial effects of the projects in terms of improved mobility or other public services.
- **Utilities/Emergency Services.** As discussed in Section 3.5 of this EIR/EIS, the MCP project would not result in adverse effects to utilities and emergency services, except for short-term effects during construction.
- Hydrology and Floodplains. As discussed in Section 3.9 of this EIR/EIS, although the MCP project would encroach on floodplains, it would result in a minimal change in the capacity of the San Jacinto River, Cajalco Creek, Temescal Wash, Bedford Canyon Wash, and Perris Valley Storm Drain to carry water and will improve existing flooding conditions in the project area by providing improved highway crossings of these floodplains. Cumulative land use and transportation projects would comply with the applicable Riverside County General Plan safety policies to reduce flooding and ensure the storm drain

- systems have sufficient capacity to accommodate any increase in storm flows due to increased impervious surfaces and runoff.
- Water Quality. As discussed in Section 3.10 of this EIR/EIS, the MCP project would not result in adverse effects to water quality. Cumulative land use and transportation projects would be required to comply with National Pollutant Discharge Elimination System (NPDES) requirements and to implement water quality BMPs at the time of development and therefore would not contribute to a cumulative adverse effect to water quality.
- Traffic and Transportation. As discussed in Section 3.6 of this EIR/EIS, the MCP project would not result in adverse effects to traffic circulation in the MCP study area, except for short-term effects during construction. The MCP project would have a beneficial effect by improving regional and local mobility. The analysis of future traffic conditions in the 2035 design year is a cumulative analysis in that it considers traffic generated by future planned land uses and the effect of future planned transportation improvements.
- Geology/Soils/Seismic/Topography. As discussed in Section 3.11 of this EIR/EIS, any adverse effects of the MCP project to geology, soils, etc., is localized and limited to the grading limits of the project. While other projects would impact the geology at their project sites, the impacts would be localized and not impact regional geology; therefore impacts of other projects are not considered important cumulative impacts.
- Hazardous Waste and Materials. As discussed in Section 3.13 of this EIR/EIS, implementation of the MCP project would not result in a substantial permanent adverse impact related to hazardous waste and materials. Future land use and transportation projects would comply with the County of Riverside Hazardous Waste Management Plan and the General Plan policies related to hazardous materials, which would ensure that there would be no adverse hazardous material impacts resulting from future development in Riverside County.
- Air Quality. The analysis of air quality provided in Section 3.14 of this EIR/EIS is a cumulative analysis in that it considers the emissions of traffic generated by future planned land uses and the effects of other future planned transportation improvements. The CEQA analysis in Chapter 4 of this EIR/EIS contains a discussion of the possible impacts of the MCP with regard to climate change.
- **Noise.** The analysis of noise impacts provided in Section 3.15 of this EIR/EIS is a cumulative analysis in that it considers the traffic noise generated by future planned land uses and the effects of other future planned transportation improvements on the noise environment.

• Energy. The analysis of energy impacts provided in Section 3.16 of this EIR/EIS is a cumulative analysis in that it considers the energy usage of traffic generated by future planned land uses and the effects of other future planned transportation improvements on regional energy consumption.

3.25.4 Identification of Cumulative Plans and Projects

This section identifies the adopted plans and related projects that may, in concert with the proposed MCP project, have a cumulative adverse effect on sensitive resources in the MCP study area and western Riverside County. Adopted plans that will direct future growth, development, and open space preservation include the Riverside County General Plan, the General Plans of the three affected cities—Corona, Perris and San Jacinto—and the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Historical land use trends are examined along with recent development proposals and transportation projects in the MCP study area.

3.25.4.1 Riverside County General Plan Overview

The Riverside County General Plan was adopted in 2003 and provides policy direction and permitted land use intensities for future development in the county. The General Plan was developed as part of the Riverside County Integrated Project (RCIP), a three-part regional planning effort that also included the MSHCP and that guides the preservation of natural open space areas to provide habitat and linkages for protected species. The third component of the RCIP was the intra- and inter-county transportation planning effort known as the Community and Environmental Transportation Acceptability Process (CETAP), which identified regional transportation facilities needed to support the General Plan land uses. The MCP project is the east-west, intra-county CETAP transportation corridor, previously known as the Hemet to Corona/Lake Elsinore (HCLE) corridor.

The General Plan is intended to help guide Riverside County to achieve an integrated and coordinated land use, open space, and transportation system. Central to the vision for Riverside County is the desire to maintain and enhance the character of Riverside County, including its natural resources and unique communities, by clearly defining areas suitable for future growth and those suitable for preservation and maintenance. Key to this goal is the need to focus future growth into a pattern that complements and incorporates the transportation and multipurpose open space systems. The General Plan directs future growth to areas that are well served by public facilities

and services, and preserves significant environmental features such as drainage ways, lands subject to extreme natural hazards, or lands that offer scenic beauty.

Land Use

The General Plan land use designations and applicable area plan policies for the MCP study area reflect and implement the basic tenets of the General Plan described above. The planned community centers in the MCP study area include the three municipalities: the City of Corona in the western portion of the study area, the City of Perris in the center of the study area, and the City of San Jacinto at the eastern terminus of the study area. All three communities are located in areas where the proposed MCP project will connect with interstate or state highways. Multipurpose open space opportunities in the MCP study area include the Lake Perris State Recreation Area and multiple county and city parks and school playgrounds. (See Section 3.1 of the EIR/EIS for more information about recreation resources.) In addition, biological conservation areas are provided for in the existing Habitat Conservation Plan areas managed by the Metropolitan Water District of Southern California (Metropolitan) and the Riverside County Habitat Conservation Agency (RCHCA), and through additional preservation as a result of the MSHCP, which is described in more detail below.

Much of the unincorporated portions of Riverside County are divided into 19 area plans. The purpose of these area plans is to provide more detailed land use and policy direction regarding local issues such as land use, circulation, open space, and other topical areas. The five area plans in the MCP study area include Temescal Canyon, Lake Mathews/Woodcrest, Mead Valley, Lakeview/Nuevo, and San Jacinto Valley, and are described in Section 3.1 of this EIR/EIS.

3.25.4.2 General Plans of Affected Cities City of Corona

The Corona General Plan (2004) states that approximately 30 percent of the city is planned for housing; 4 percent for commercial and office uses; 12 percent for industrial uses; 37 percent for public, parks, and open spaces; and 17 percent as undeveloped or not committed as permanent open space. Less than 1 percent of the lands continue to be used for agricultural purposes. By 2030, the population of Corona is projected to increase 37.2 percent to over 170,000 people. Some of the forecasted growth would be accommodated through the re-use of existing underutilized parcels and redevelopment of older developments.



The portion of the City within the MCP study area is located in the vicinity of Interstate 15 (I-15) and Cajalco Road, and includes a mix of rural and low density residential uses, commercial and light industrial uses, and open space along the Temescal Wash.

City of Perris

The City of Perris updated six of the seven mandatory General Plan Elements in 2005–2006. The MCP study area transects the northern portion of the city in City of Perris Planning Areas 1, 2, 3, 4, and a portion of 5. The plans for these areas as expressed in the Land Use Element include a development pattern that is consistent with existing land uses and infrastructure. For example, air cargo-related uses are proposed near the March Air Reserve Base "Inland Port;" residential uses are proposed to continue in the area adjacent to the Lake Perris State Recreation Area; continued residential and retail/commercial core is proposed for the central city area; and business park development is proposed along Interstate 215 (I-215). A conversion of agricultural land to light industrial and distribution center uses is planned along the I-215 corridor. Between 1990 and 2000, the population of the City of Perris increased 45 percent, from 21,460 to 36,189. It is projected to increase 145 percent by 2030. There is 64 percent of land designated for residential use remaining for development. Similarly, vast tracts of vacant land are designated for employment-generating uses.¹ Much of this vacant land has already received approvals for development or is in the entitlement process.

City of San Jacinto

The city of San Jacinto encompasses an area of approximately 70 square kilometers (km²) (27 square miles [mi²]) and had a population of 23,779 in 2000. The City of San Jacinto Draft General Plan (2006) promotes the preservation of natural and historic resources while allowing a range of land uses including agriculture. The City of San Jacinto General Plan designations within the MCP study area include light industrial, residential, commercial, public, and conservation land uses.² Between 1990 and 2000, the population of the city of San Jacinto increased by 46.7 percent, from 16,210 to 23,779; by 2030, it is projected to increase 79.2 percent, which is over 42,000 people.



http://www.cityofperris.org/planning/pdfs/Land_Use_Element.pdf, January 2, 2007.

http://www.ci.san-jacinto.ca.us/files/Introduction%20Element.pdf, January 2, 2007.

3.25.4.3 Western Riverside County MSHCP

The western Riverside County MSHCP was described previously in Section 3.17 (Natural Communities) but is discussed further here to provide context for the assessment of cumulative impacts. It is a regional Habitat Conservation Plan and Natural Communities Conservation Plan to enhance and maintain biological diversity and ecosystem processes while allowing for future development and economic growth. The MSHCP provides a programmatic method for mitigating the direct, indirect, and cumulative adverse effects of covered activities (General Plan land use and circulation projects, including the MCP as the west-east, intra-county CETAP corridor) to 146 special-interest species and their associated habitats in western Riverside County. The MSHCP plan area encompasses approximately 5,090 km² (1.966 mi²) and includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto. Ultimately, the MSHCP Reserve will contain approximately 200,000 hectares (ha) (500,000 acres [ac]) assembled from federal and state lands, local public lands, and private sector lands.

The MSHCP Reserve will be assembled through a combination of the following methods:

- Conservation of existing public lands
- Local acquisition of private lands
- Federal and state acquisition of private lands
- Private and public development contributions
- Regional infrastructure

The MSHCP's strategy for assembly of the additional 61,900 ha (153,000 ac) needed to create the envisioned 200,000 ha (500,000 ac) MSHCP Reserve takes a balanced approach. It allocates responsibility for assembling the MSHCP Reserve equitably among the County of Riverside, the 14 cities in western Riverside County, RCTC, Caltrans, and other private and public entities engaged in construction activities that impact covered species. The implementation strategy relies heavily on incentives to encourage private property owners to conserve lands through the land-use entitlement process. Where incentives are not sufficient, conservation will require the purchase of properties from willing sellers.

Over 8,000 ha (20,000 ac) of privately owned land is within MSHCP criteria area within the MCP study area. All or portions of this criteria area may be acquired through purchase or other means for the MSHCP Reserve. The analysis of cumulative effects of the MCP project considers the ability of the MCP project to induce and/or redirect growth in the study area compared to the current, adopted General Plan recommendations for the study area, with consideration given to the anticipated commitment to significant areas of natural open space for the purpose of habitat conservation.

3.25.4.4 Cumulative Land Development Projects Historical Trends

The cumulative adverse effects to sensitive resources resulting from land and infrastructure development in the MCP study area dates back to the late 1800s. The town of Perris was incorporated first in 1886 and then again in 1922 in its new (present day) location. The Lakeview area was settled in the 1890s and experienced a brief boom in the 1930s during the construction of the Colorado River Aqueduct. The city of Corona was incorporated in 1896 as a town of 1,434 persons founded on an agriculture-based economy. Founded in 1870 and incorporated in 1888, San Jacinto is the oldest incorporated city in Riverside County, and its growth was based on an economy of agriculture, lumber, and tourism.

By 1974, the population of Riverside County had reached nearly 500,000, up from 459,000 in the 1970 census. Between 1980 and 1990, the number of residents in Riverside County grew by over 76 percent, making Riverside the fastest growing county in California. By 1992, the county was "home" to over 1.3 million residents, more than the entire population of 13 states. The United States Census estimated the population of Riverside County in 2005 at almost 2 million (1,946,419), a 20 percent increase above the 2000 population of 1,545,387.

The proposed MCP project is located in an area of western Riverside County that is currently undergoing substantial population and employment growth. The population in western Riverside County is expected to increase by over 1 million people between 2000 and 2025, a more than 85 percent increase. Growth in employment is expected to occur at an even higher rate, with an over 115 percent increase in the number of





jobs. 1 Growth trends in the MCP study area were previously discussed in Section 3.2 (Growth).

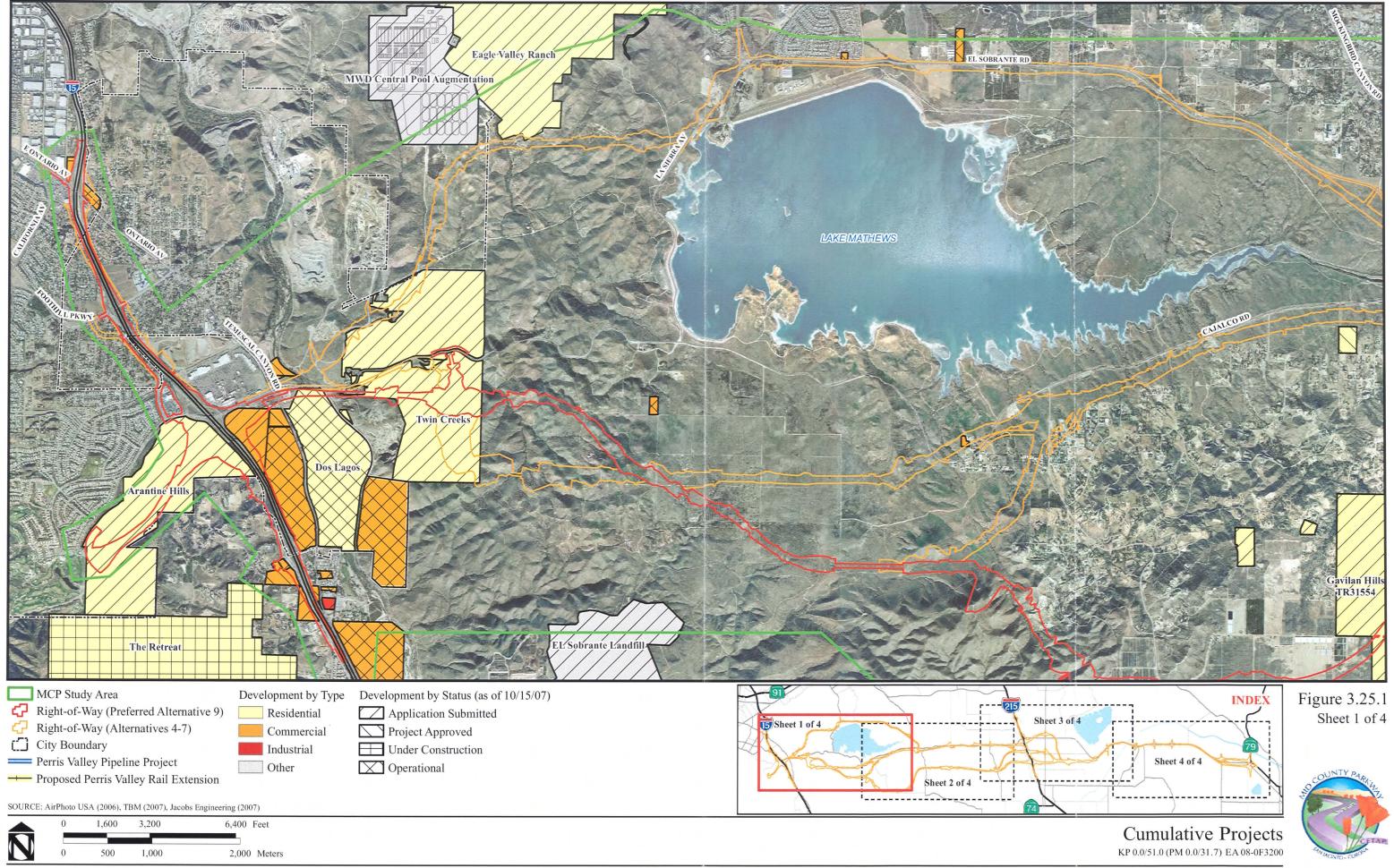
Planned Specific Projects

As of October 2007, there are over two dozen active development projects in the MCP study area under the jurisdiction of either the County of Riverside or the Cities of Corona, Perris, and San Jacinto. The active development includes projects that are at the pre-application stage, projects for which an application has been submitted and is still under consideration, projects which have been approved and are pending construction, approved projects under construction, and recently constructed projects that are now operational. Most of the projects within the MCP study area are residential or mixed-use developments. Proposed and recently constructed commercial development is concentrated in areas where the MCP corridor intersects with I-15, I-215 and State Route 79 (SR-79). Proposed and approved industrial development projects are located in the city of Perris. These projects are shown in Figure 3.25.1, Cumulative Projects.

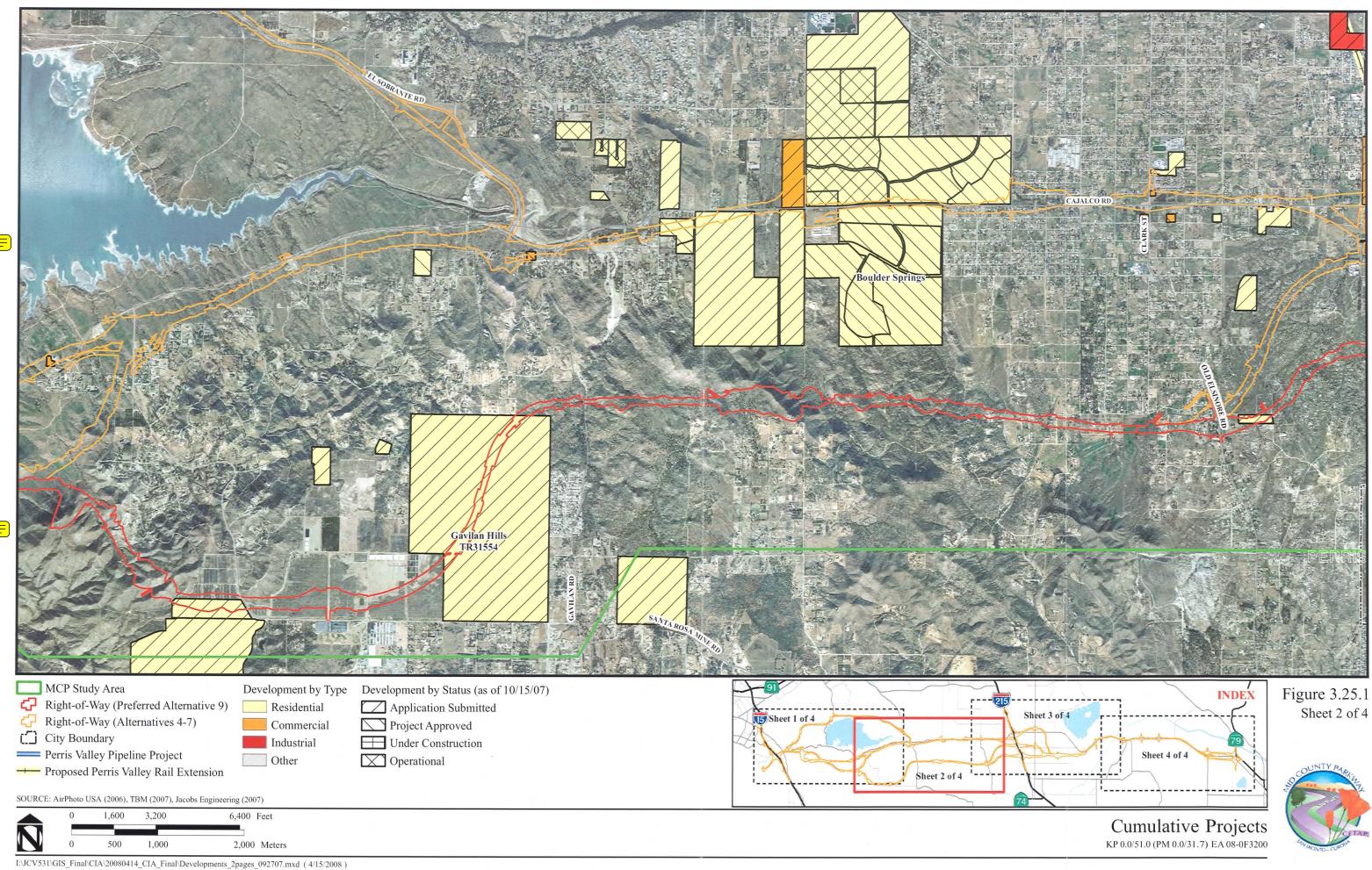
One major cumulative project located just north and outside of the MCP study area along I-215 is the redevelopment of the former March Air Force Base (AFB), which encompasses approximately 2,600 ha (6,500 ac) straddling I-215. March AFB was first established as a military installation in 1918 and has operated almost continually since. In July 1993, March AFB was selected to be realigned and was subsequently converted from an active duty base to an Air Reserve Base, effective April 1, 1996. The decision to realign March AFB resulted in approximately 1,780 ha (4,400 ac) of property and facilities being declared surplus and available for disposal actions, as well as joint use of the airfield.

Prior to base realignment, the base employed over 10,000 military personnel and civilian employees. The existence of the base in its pre-realignment condition contributed an estimated \$500 million annually to the regional economy. With the announcement of realignment, the regional economic loss with the change in military mission at March AFB was immediately recognized. While base realignment and the associated loss to the region came at an inopportune time, the opportunities relative to the planning and implementation of new uses and providing for unmet needs of the region have arisen. The March Joint Powers Authority (JPA) is planning and

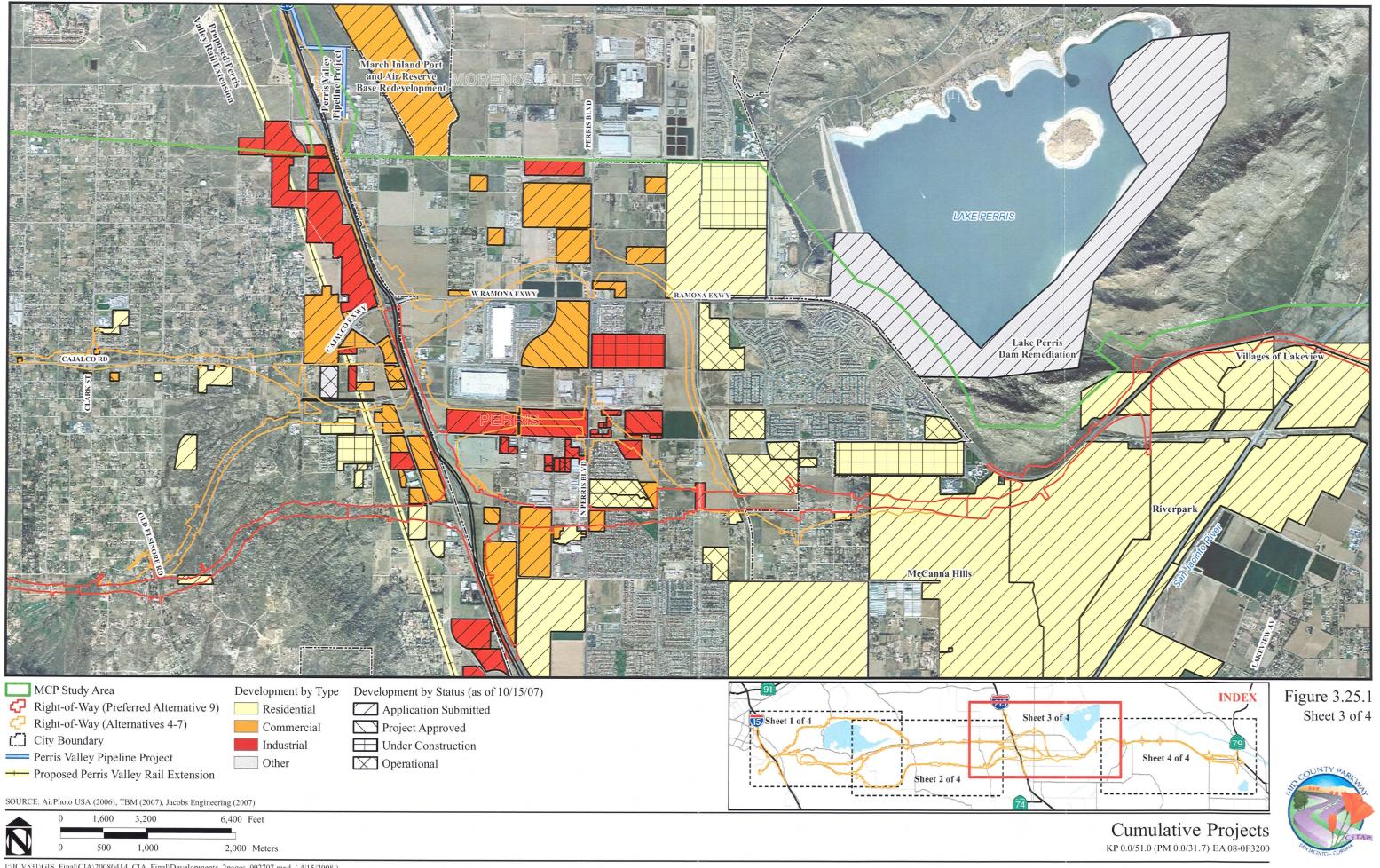
¹ 2004 Regional Transportation Plan, Southern California Association of Governments.



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



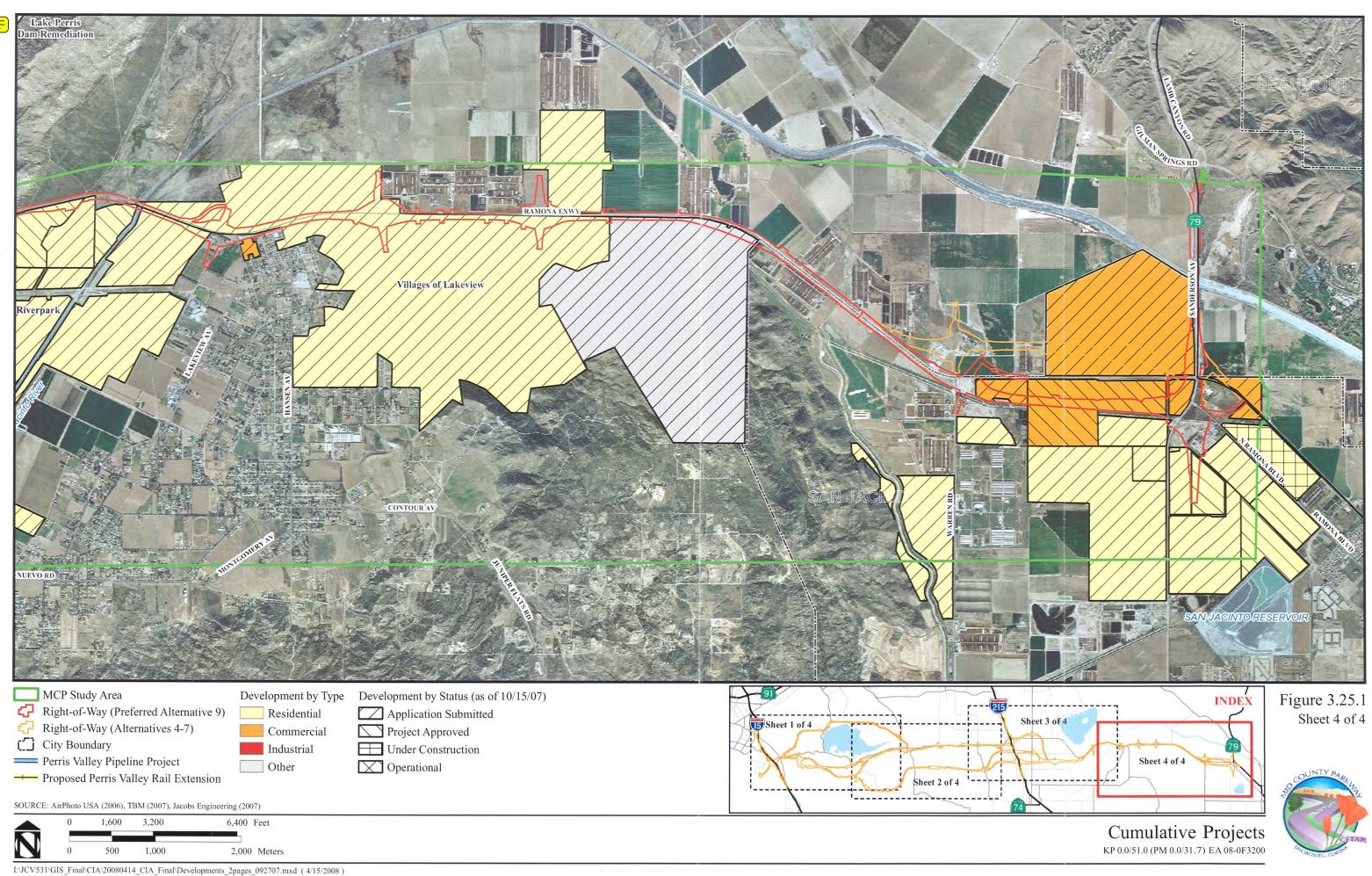
Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures



Chapter 3	Affected Environment,	Environmental Co	onsequences.	and Mitigation	Measures
Jilapici J	Ancolog Environment,		onscyacnicos,	una mugaton	moadared

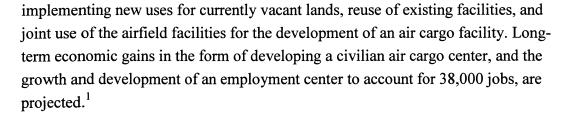
This page intentionally left blank

3.25-18



Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures





Related Major Public Works Projects

Perris Dam Remediation Project

Construction of the Perris Dam Remediation project is estimated to begin in 2010 and be completed by 2012. All projects concerning the Perris Dam are anticipated to be complete by fall 2014. Lake Perris is the southernmost State Water Project Facility and the southern terminus of the East Branch of the California aqueduct. The Lake Perris State Recreation Area is one of the state's most popular recreation destinations, with an average attendance of 1.1 million visitors. Recreational activities at the Lake Perris State Recreation Area, including water sports, rock climbing, and the use of the trail from the climbing area, would be affected temporarily during construction of the proposed project.²

Central Pool Augmentation and Water Quality Project

The Central Pool Augmentation and Water Quality (CPA) project is an approved but not built Metropolitan public works project west of Lake Mathews. The Final EIR was certified in August 1995. The CPA project is a proposed system of raw water conveyance, water treatment, and treated water delivery facilities to augment Metropolitan's existing facilities that provide drinking water to the Central Pool, which consists of the major urban areas of Los Angeles, Orange, southern Ventura County, and southwestern San Bernardino County. The project originates in western Riverside County at the Lake Mathews reservoir, which will provide source water to the project. The project consists of a drinking water treatment plant and 3.7- or 4.0-meter (m) (12- or 13-foot [ft]) diameter pipelines and tunnels to convey up to 11 cubic meters (400 cubic feet) per second of treated water to existing water distribution facilities in western Riverside County and southern Orange County. The objectives of the CPA project are to meet treated water demand needs in the Central Pool for the next 20 years and to strengthen the reliability of the water system. The CPA project will also enhance groundwater replenishment by increasing the



http://www.marchjpa.com/about.html; site accessed October 17, 2007.

http://www.perrisdam.water.ca.gov; site accessed September 27, 2008.

operational flexibility of Metropolitan's distribution system into the Central Pool. There is no estimated construction date for the CPA project at this time.

Perris Valley Pipeline

The Perris Valley Pipeline is a major water line that will provide substantial water reliability and quality benefits to a significant portion of western Riverside County. Construction is expected to begin in September 2007 and be completed in late 2009. The Metropolitan Water District of Southern California, Western Municipal Water District, and Eastern Municipal Water District are developing the \$110 million project jointly. When completed, the pipeline will enhance the treated water delivery capacity in Eastern and Western service areas by up to 568 million liters (150 million gallons) per day.

The Perris Valley Pipeline will consist of 10.5 kilometers (km) (6.5 miles [mi]) of 244-centimeter (cm) (96-inch [in]) pipeline from Metropolitan's Henry J. Mills Water Treatment Plant, east along Alessandro Boulevard and then south to Oleander Street in the right of way paralleling I-215. The Eastern Municipal Water District is constructing a separate 1.2 m (4.0 ft) diameter, 9.7 km (6.0 mi) long water pipeline that will connect its service area to the Perris Valley Pipeline at Cactus Avenue.¹

Related Transportation Projects

Major transportation projects in the MCP study area were previously discussed in Chapter 1 of this EIR/EIS and shown in Figure 1.2.4. These related improvements are on facilities that represent future connections or are complementary to the MCP project, and are considered in the assessment of cumulative effects.

Most of the major transportation projects consist of freeway widening or interchange improvement projects, which are expected to have limited impacts. Some of the projects (such as the SR-79 realignment) have a greater potential to impact resources of concern, specifically aquatic, biological, and cultural resources. These projects are covered activities under the MSHCP and are considered part of the MSCHP. These projects are also part of the Riverside County General Plan Circulation Element; therefore, their impacts were considered in the General Plan EIR/EIS.

The County of Riverside's proposed improvement project to realign and widen Cajalco Road in the area south of Lake Mathews is of particular concern with regard to cumulative impacts. As noted in Section 2.6.3 of this EIR/EIS, it is RCTC's intent

http://www.perrisvalleypipeline.com/; accessed September 27, 2008.



to use the coverage provided in Section 7.2.3 of the MSHCP for the MCP project. This same coverage could also be used by the County of Riverside for the Cajalco Road realignment and widening project. The MSHCP only provides conditional coverage for one transportation facility south of Lake Mathews. To address this concern, the County of Riverside and RCTC have agreed that, in the event that County road improvements to Cajalco Road precede construction of the MCP project in the area described in Section 7.2.3 of the MSHCP (south of Lake Mathews), any existing improvements at the time the MCP project is complete would be subject to the design considerations identified in the MSHCP. Specifically, when the MCP is constructed, any portions of the existing or future improved Cajalco Road south of Lake Mathews from Gavilan Road 5.5 km (3.4 mi) west that are not needed to provide for local access will be removed and restored to a natural state consistent with the conditions in Section 7.2.3 of the MSHCP.

3.25.4.5 Summary of Cumulative Impact Considerations

The MCP study area is approximately 29,000 ha (55,000 ac) in size. The potential for the MCP project to result in or contribute to cumulative adverse environment effects is defined in part by the recent adoption of applicable General Plans for the County and the Cities in the study area, the existing development and future development patterns, and existing and planned open space preservation in accordance with the MSHCP.

As described above, the adopted General Plans include provisions for additional open space preservation as well as additional development. Approximately 23 percent of the MCP study area is already developed (see previous Figure 3.1.1, Existing Land Use). In addition to existing land uses, there are over two dozen active or recently approved development projects in the MCP study area that represent a commitment of land for thousands of additional residential units plus commercial and industrial uses.

3.25.5 Environmental Consequences



The cumulative effects or contributions to adverse cumulative effects that could result from the MCP project are discussed below. A key resource document for this analysis was the EIR for the Riverside County General Plan update approved in October 2003 (General Plan EIR). The General Plan EIR provides a comprehensive assessment of environmental impacts that would result from the build out of General Plan land uses and infrastructure.

3.25.5.1 Growth-Related Effects

The cumulative resource study area for growth-related effects is western Riverside County. As described above, historically, growth in western Riverside County has been characterized by the conversion of raw land to agricultural uses followed by development associated with the defense industry and post-World War II urbanization. By 1974, the population of Riverside County had reached nearly 500,000, up from 459,000 in the 1970 census. Between 1990 and 2000, the number of residents in Riverside County grew by over 32 percent, making Riverside County the fastest growing county in California. By 2000, the County was home to over 1.3 million residents, more than the entire population of 13 states. According to the Riverside County General Plan, the population of Riverside County is expected to nearly double to 2.8 million people by 2020.

Growth-related effects of the MCP Build Alternatives are discussed in Section 3.2 of this EIR/EIS. Implementation of any of the MCP Build Alternatives would involve improvement to existing and proposed service interchanges to provide service-level connectivity to the study area as well as providing regional connectivity of these highways with the MCP project. The systems interchanges are proposed in locations where interchanges already exist, where development has already occurred, and where additional development is planned for in the adopted land use plans of the local jurisdictions. The MCP project, as connected with other highways through these interchanges, will make the study area more regionally accessible and will accommodate future growth and development in a manner consistent with that proposed in the adopted land use plans for the area.

The current and reasonably foreseeable future actions or projects that may affect growth-related effects are the projects identified in Section 3.25.4, as well as continued land and infrastructure development in accordance with adopted General Plans and open space preservation in accordance with the adopted MSHCP.

The land use designations in the Riverside County General Plan accommodate the projected growth and also support a more favorable jobs-to-housing ratio compared to current conditions where many residents of Riverside County are traveling to surrounding counties to work. The approved General Plan provides for an increase in employment opportunities closer to where people are and will be living; therefore, the





Introducing the Counties of Riverside and San Bernardino (Bank of America, 1975).

General Plan EIR found that the General Plan would have a beneficial impact on the jobs/housing balance for Riverside County and the Southern California Association of Governments (SCAG) region. However, the General Plan EIR also found that development at the scale and intensity permitted under the General Plan would result in cumulative population increases in the county and the region.

Build Alternatives

The effects of the implementation of the adopted General Plans and the development projects listed above, when combined with any of the proposed MCP Build Alternatives, include increased mobility to support job growth, an improved jobs/housing balance, and projected population increases. In addition, while Section 3.2 of this document recognizes that development may intensify and/or hasten in the FS Segment, intensification of land use in this area is not anticipated. The adopted Riverside County General Plan identifies other areas in the MCP study area that are better suited to more dense residential development for geographic and topographic reasons. For Alternative 9, the planned interchanges at Lake Mathews Drive and at Old Elsinore Road are in an area characterized by existing and planned rural, very low density and low density residential uses. The presence of the MCP project interchanges at these locations, outside the area originally contemplated for the westeast CETAP corridor in the Riverside County General Plan, may affect the rate, type, amount, and location of growth in this area. While additional growth in this area is constrained by topography and existing land use patterns, including the overall rural character of the areas, these two interchanges could hasten the build out of these areas or result in landowners submitting development applications for more intense uses than those in the adopted General Plan. As mentioned above, all future development projects would be subject to their own environmental review process, and would be required to develop mitigation measures to offset impacts to resources of concern. The development intensity of the area around the interchanges with Lake Mathews Drive and Old Elsinore Road is ultimately within the control of the local appointed and elected officials. Neither project mitigation nor mitigation for cumulative effects is feasible to modify approved population projections and adopted regional and local land use plans and resource plans that define the future development pattern of Riverside County.

No Build Alternatives

No Build Alternatives 1A and 1B would both involve construction and improvement of the street network without implementation of an MCP facility. These alternatives would not make the study area more regionally accessible, and would not increase





mobility to the degree that it would support substantial job growth. Therefore, it is unlikely that an improved jobs/housing balance would be achieved with these alternatives. Even without the MCP project, population increases are still likely to occur as a result of regional population growth trends and in accordance with the approved land use designations in the adopted county and city General Plans. If the MCP project (which is included in both the Regional Transportation Plan and local General Plans) is not approved and a No Build Alternative is selected, amendments to approved population projections and adopted regional and local land use plans and resource plans may be warranted.

3.25.5.2 Farmlands/Timberlands

As discussed in Section 3.3 of this EIR/EIS, all of the MCP Build Alternatives will impact farmlands. There are no timberlands in the project study area; therefore, there is no project-related change to timberlands that would contribute to cumulative effects to this resource.

The cumulative resource study area for farmlands is Riverside County. The Riverside County General Plan found that approximately 137,190 ha (339,000 ac) of land in the County were devoted to agricultural uses, including 108,050 ha (267,000 ac) in unincorporated areas and 29,130 ha (72,000 ac) within cities. Of the 108,050 ha (267,000 ac) of land in the unincorporated county that are actively utilized for agricultural production, 85,790 ha (212,000 ac) are designated as "prime," "of Statewide importance," or "Unique" farmland.

Historically, farmland has been under pressure for conversion to suburban and urban uses, particularly since World War II. Currently, the health of agricultural resources in Riverside County is characterized by continued pressure from urbanization, foreign competition, and rising production costs. Direct impacts of urbanization to agricultural use are the conversion of farmland to nonagricultural use as the result of land development. Indirect effects include increased air pollution, livestock predation by pets, crop diseases from inadequate care of off-farm ornamental plants, restrictions on pesticide use and burning, and requirements to set aside on-farm buffer zones. Production cost increases result from rising land values, water scarcity, theft and vandalism of farm equipment, crop pilferage, road congestion, and personal injury liability resulting from trespassing on farms.

Agriculture was identified as the largest industry in Riverside County in terms of dollar value. The total gross valuation of agricultural crops in the county in 2001 was

\$1,124,908,400. This amount represents an increase of \$76,346,800 over the 2000 gross value. The economic value of agricultural uses is increasing at the same time that the resource is experiencing pressure from several sources, including development and urbanization pressures.

Farmland conversion is occurring at a rapid rate in Riverside County. Based on the *Farmland Conversion Report* 2002-2004, published by the California Department of Conservation, between the years 2002 and 2004, 18,688 ha (46,719 ac) of agricultural land in Riverside County were converted to nonagricultural uses.

Build Alternatives

The MCP Build Alternatives result in project impacts that include the conversion of existing farmland to roadway as a result of right of way acquisition. MCP Build Alternatives 4 through 7 will result in the acquisition of between 370.4 ha (915.3 ac) and 430.7 ha (1,064.4 ac) of farmland. The impact to designated farmlands and existing agricultural uses as a result of Alternatives 4 through 7 is generally within that contemplated by the General Plan because the MCP project is one of the designated CETAP corridors included in the General Plan. Alternative 9 will result in the acquisition of 332.7 ha (822.2 ac) of farmland. As shown previously in Table 3.3.C, Alternative 9 would impact 0.18 percent of the prime/unique farmlands and 0.14 percent of the total farmlands in Riverside County. Alternative 9 has the lowest impact of all MCP Build Alternatives to agricultural uses due primarily to its routing south of Mead Valley through the Gavilan Hills area.

The current and reasonably foreseeable future actions or projects that may affect farmlands are the projects identified in Section 3.25.4. While the related transportation projects could result in the conversion of small areas of farmlands, most of the project involves widening existing facilities where such impacts would be limited to minor edge effects to existing farmlands.

The impact to designated farmlands and existing agricultural uses as a result of the MCP project is generally within that contemplated by the General Plan because the MCP project is one of the designated CETAP corridors included in the General Plan. Therefore, additional mitigation for cumulative effects of the MCP project is not warranted.

No Build Alternatives

No Build Alternatives 1A and 1B would both involve construction and improvement of the street network without implementation of the MCP project. These alternatives



could result in "edge" impacts to existing agricultural uses, particularly in cases where additional right of way acquisition is required to implement planned improvements. Indirect effects could also result from impacts to access or other operational constraints and increased noise, air quality, or other effects of road construction and widening. Acquisition of additional right of way for these projects could also result in the direct conversion of designated farmlands to transportation uses.

3.25.5.3 Community Impacts/Relocations

The cumulative study area for community impacts/relocations is the same as the MCP project study area. The cumulative study area consists of undeveloped, developed, and developing areas. The health of this resource changes as land or infrastructure development results in property acquisitions and relocations. In the cumulative study area, housing for relocations is available because abundant housing stock was developed during the most recent decade, and additional residential developments are currently planned (as shown in Figure 3.25.1).

Relocations occur when development, redevelopment, or infrastructure projects are located in areas where residential and commercial developments currently exist. Development of vacant land does not displace residential units or people. The General Plan EIR found that, without the exact location of new development, it was not possible to determine whether build out of Riverside County would result in displacement of residential units or people. As shown in Figure 3.25.1, most of the planned development is located in currently vacant areas. However, widening of roadways adjacent to existing development may result in the displacement and relocation of businesses and residents.

Build Alternatives

The MCP Build Alternatives would result in the acquisition of nonresidential (dairies, agriculture, sod farms, open storage, big box distribution, manufacturing, and retail), residential (mobile homes, single-family, multifamily), and municipal (fire station, police station, school district offices, and a high school) properties.

Combined with the proposed MCP project, anticipated cumulative impacts resulting from the cumulative projects in the MCP study area include the acquisition of residential and nonresidential properties and the displacement of occupants. Most displacement of residential and nonresidential properties would be anticipated to occur along existing or planned roadways as the planned street network is developed.





Properties along I-15 and I-215 in the MCP study area may be affected by right of way acquisition required for the MCP project as well as by future improvement projects to I-15 and I-215.

All relocations required for the MCP project and other cumulative projects would be handled in accordance with Federal and State laws requiring that prior to any property acquisition or relocations, relocation analysis must be prepared and adequate and appropriate compensation provided. The Uniform Relocation Assistance and Real Property Acquisitions Policies Act (Uniform Act) of 1970 (Public Law 91-646, 84 Stat. 1894) mandates that certain relocation services and payments be made available to eligible residents, businesses, and nonprofit organizations displaced by development. The Uniform Act requires that comparable, decent, safe, and sanitary replacement housing that is within a person's financial means be made available before that person may be displaced. Considering the abundant housing stock developed during the most recent decade and the amount of planned residential developments (as shown in Figure 3.25.1), a sufficient number of "comparable replacement dwellings" meeting decent, safe, and sanitary standards exist within the cumulative study area to provide adequate relocation opportunities for displaced residents affected by all cumulative projects. The exception is those displaced from mobile homes (the MCP Build Alternatives will impact 40 to 45 mobile homes). The current inventory for mobile home unit sales and rentals is scarce. The area lacks inkind mobile home replacement housing suitable as decent, safe, and sanitary. One option is for mobile home displacees to relocate into slightly larger single-family residences, resulting in a housing-of-last-resort entitlement. "Last Resort Housing" payments combined with additional resources in finding suitable single-family or multifamily residential replacement housing is anticipated.

Because the MCP project and all other cumulative projects would comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 (Public Law 91-646, 84 Stat. 1894), additional mitigation for cumulative effects is not warranted.

No Build Alternatives

The No Build Alternatives include the construction of planned roadway improvements without implementation of the MCP project. Implementation of these alternatives would affect properties immediately adjacent to the roads, particularly where new right of way acquisition is required for roadway widening. Right of way

acquisition may displace both residential and non-residential properties along the roadways.

3.25.5.4 Visual/Aesthetics

The cumulative resource study area for visual and aesthetics is the MCP project study area, including portions of the cities of Corona, Perris and San Jacinto as well as the unincorporated area between the cities (see Figure 2.1.1, Project Vicinity and Study Area). Historically, visual resources in the cumulative study area have been characterized by the conversion of raw land to agriculture uses, followed by development associated with the defense industry and post-World War II urbanization. Currently, the health of this resource is determined to a large extent by the effectiveness of local municipalities and the County of Riverside in implementing adopted General Plans that identify areas appropriate for new and more intensive development to accommodate project growth, as well as identifying areas that are to remain as natural or recreation open space. The current and reasonably foreseeable future actions or projects that may affect this resource are the projects identified on Figure 3.25.1, as well as continued development and open space preservation in accordance with adopted General Plans and the adopted MSHCP.

The Riverside County General Plan includes policies to improve the visual character of the built environment, including the concentration of growth and preservation of rural and open space character in certain areas of the county; providing for the permanent preservation of important natural and scenic resources; incorporating open space within developed areas; ensuring the compatibility of existing and new development; maintaining or enhancing the character of the individual project site and the immediate area; conserving view corridors, skylines and scenic vistas; and imposing restrictions on development activities that may adversely affect the existing visual characteristics of areas within the county. Mitigation in the General Plan EIR includes design review of development projects. Even with these policies in place, future development of unincorporated areas of the county may alter the characteristics of locally or regionally important visual resources. The General Plan EIR found that the conversion of open space to urban land was a significant and unavoidable project and cumulative effect (under CEQA) of the General Plan land uses by causing the obstruction of existing open views and/or obstructing distant panoramic views from existing development.

Riverside County Ordinance Number 655 restricts the permitted use of certain light fixtures that emit undesirable light rays into the night sky and that have a detrimental

effect on astronomical observation and research. This ordinance and mitigation specified in the General Plan EIR were found to reduce the impact of light and glare from development allowed by the General Plan to a level that is less than significant under CEQA.

The effects of the cumulative development and transportation projects described above include contributing to a change from a county characterized by large undeveloped areas, including open space and agricultural landscapes, to a more developed, urbanized landscape. The Perris Dam Remediation Project will have localized, short-term effects to aesthetics, but will not notably alter the character and visual conditions of the recreation area.

Build Alternatives

All of the MCP Build Alternatives would contribute to a cumulative effect with regard to visual impacts and change of visual character within the MCP study area. As one of the fastest growing areas in the United States, western Riverside County in general and the MCP study area in particular are changing from open space and agricultural landscapes to a more urbanized one. As discussed previously in Section 3.7, Visual/Aesthetics, tracts of vacant land within the MCP study area are either approved or planned for future land development. The provision of transportation infrastructure such as the MCP project typically accompanies the development of land for residential or commercial purposes. Although the MCP project would contribute to a cumulative visual impact within the MCP study area, this new transportation facility was expected and planned in the Riverside County General Plan.

The MCP project would contribute to the cumulative change in visual character of the MCP study area from rural to urban by introducing a major transportation facility and its associated activity, which did not exist there before, particularly in the portion of the MCP study area between I-15 and I-215.

The visual impacts of the MCP project include the introduction a major transportation facility and large bridge structures within existing open space (habitat reserve), rural, and agricultural areas. The MCP project would also alter existing landforms due to grading and construction of various cut and fill slopes. Compared to MCP Build Alternatives 4 through 7, more extensive landform alteration would occur under Alternative 9 due to its alignment through the Gavilan Hills and the area south of Lake Mathews near Monument Peak.







In addition, light and glare would increase as a result of the MCP in those areas that are currently open space or are rural in character. Alternatives 4, 5, and 9 would increase light and glare in the open space (habitat reserve) areas south of Lake Mathews and in the open space/agricultural areas between the McCanna Hills and SR-79. Alternative 9 would also introduce a new source of light and glare in the Gavilan Hills area. This would be an adverse effect to area residents near the MCP project where the light from vehicles traveling at night would encroach on viewers' enjoyment of the night sky in this area.

Combined with the proposed MCP project, anticipated cumulative impacts to the visual environment include the conversion of open space, rural, and agricultural areas to urbanized residential developments.

Project mitigation is identified in Section 3.7, Visual/Aesthetics, and includes: the development and implementation of a landscape plan for MCP; saving existing mature trees; incorporating attractive walls, medians, and other visually pleasing hardscape into the final design of the MCP project; and aesthetic enhancements for sound walls in the final design. Cumulative projects are anticipated to be conditioned to comply with the applicable City and County design requirements, open space policies, and land use policies.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and Ramona Expressway would remain as they are today, Alternative 1A would not change the existing visual setting and would not create visual impacts to the MCP study area.



Under Alternative 1B, the MCP project would not be constructed, but both Cajalco Road and Ramona Expressway would be constructed to their ultimate width and alignment as shown in the Riverside County General Plan. The widening of Ramona Expressway between I-215 easterly to SR-79 would include some removal of agricultural land but would not include the construction of any interchange structures in this area. The effects of widening and realigning Cajalco Road and El Sobrante Road in the area from I-15 west to the existing Cajalco Road/El Sobrante Road intersection would result in the same visual effects as MCP Build Alternatives 6 and 7. Through Mead Valley, the widening of Cajalco Road to its General Plan Circulation Element width would result in the removal of mature ornamental

vegetation as well as some existing residences and businesses but would not include the construction of any interchange structures in this area.

3.25.5.5 Cultural Resources

As discussed in Chapter 3.8 of this EIR/EIS, all of the MCP Build Alternatives will impact cultural resources. Under Section 106, the consideration of indirect and cumulative impacts is limited to those impacts caused by a single project and is required when applying the criteria of adverse effect on historic properties (36 CFR §800.5(a)(1). Delineating the area of potential effect (APE) is also part of the Section 106 process. Under NEPA and CEQA, however, cumulative impacts refer to the cumulative effects of multiple past, present, and future projects. The study area for cumulative effects on cultural resources is defined as the MCP APE.

According to the Riverside County General Plan EIR, the cultural resource characteristics of Riverside County reflect human settlement, exploitation, arts, crafts, technology, ideology, and past environmental conditions. Prehistoric land use of the APE and surrounding areas has been prevalent for thousands of years. The area was also settled historically by Euro-Americans in the late 1800s. The APE and surrounding areas therefore contain numerous cultural resources that are under constant pressure by modern land uses such as agriculture, livestock and dairy farming, and urban and suburban development. These land uses can and do destroy cultural resources. The health of this resource is fragile because there are a limited number of cultural resources, and they cannot be replaced. The health of cultural resources in the APE is determined by following NEPA and CEQA guidelines, and by local municipalities and the County of Riverside implementing adopted General Plans that identify cultural resources and provide goals, policies, and measures to protect them.

The Riverside County General Plan EIR identifies areas of sensitivity for cultural resources. In the MCP APE, the area between I-15 and I-215 is classified as having high sensitivity for cultural resources. Most of this area is within the jurisdiction of the County of Riverside and is subject to these General Plan policies. The MCP project and other transportation improvement projects are also subject to NEPA and CEQA policies regarding cultural resources. The regulations implementing Section 106 of the National Historic Preservation Act acknowledge that a project's adverse effects include any that are reasonably foreseeable, even if they may occur later in time, are farther removed in distance (indirect), or are cumulative.

The direct impacts to cultural resources from the MCP project are the destruction of cultural resources within the APE. Indirect effects include possible looting and vandalism of cultural resources that would be more accessible to the general public due to the presence of the MCP. In addition, cultural resources are subject to damage and destruction by natural erosion and erosion exacerbated by excavation for the MCP project and other cumulative projects. The current and reasonably foreseeable future actions or projects that may affect this resource are the projects identified on Figure 3.25.1, as well as continued development in areas of known and currently unknown cultural resources.

The MCP would cumulatively contribute to the loss of cultural resources, some of which have been determined to be significant under NEPA and/or CEQA. Avoidance and preservation of cultural resources is preferred, and specific measures for the identification of cultural resources that can be feasibly preserved are being studied. These may include parcel acquisition for preservation in perpetuity.

However, in instances where avoidance is not possible, mitigation measures to reduce project impacts are presented in Chapter 3.8 of this EIR/EIS. They include:

- Mitigative archaeological excavations of sites recommended as eligible for listing in the National and California Registers as outlined in Chapter 3.8 of this EIR/ EIS.
- Monitoring of all ground disturbing activities during construction of the MCP that
 are within known cultural resources, or in areas that are sensitive for cultural
 resources, by a qualified archaeologist and Native American monitor.

Build Alternatives



As discussed in Section 3.8, Alternative 9 would result in impacts to significant cultural resources, as would all Build Alternatives. Six significant cultural resources recommended as eligible or eligible for listing in the National Register of Historic Places (National Register) and/or the California Register of Historical Resources (California Register) are within the APE of Alternative 9. Three of these six sites will be protected by designation as an Environmentally Sensitive Area (ESA) and will be fenced off and avoided during construction. Although the MCP project and the cumulative projects will occur in compliance with the applicable Federal and State regulations identified in Section 3.8.1, there would still be a cumulative adverse effect to these resources.

Three significant cultural resources that may be eligible for listing in the National Register and California Register are within the APE of Alternative 5. Four significant cultural resources that may be eligible for listing in the National Register and California Register are within the APE of Alternatives 4 and 7. Five significant cultural resources that may be eligible for listing in the National Register and California Register are within the APE of Alternative 6. Table 3.25.A lists the significant cultural resources affected by the MCP Build Alternatives and how they may be impacted by other cumulative projects, as well as other mitigation measures that have been proposed.



In addition to these measures, other measures that could be considered by the County for mitigating impacts to Sites P-33-1649, P-33-1650/P-33-16687, P-33-12230, P-33-13791, and P-33-16598 include: (1) redesigning development plans to avoid the sites or minimize impacts to the sites where avoidance is not feasible; (2) conducting testing and data recovery to ensure that archaeological data from these sites are not lost prior to construction; and (3) providing for archaeological and Native American monitoring during construction. For the CBJ Burrows Dairy, no development plans are available from the City of San Jacinto to determine the extent of the impact. Assuming that the dairy and its various buildings would be fully demolished as a result of future development plans, the City of San Jacinto could provide mitigation in the form of historical recordation of the dairy and provision of historical information and/or interpretive exhibits at the site of the new development, at City Hall, or at a local museum. For the Cajalco Tin Mine District, Metropolitan should consider placement of facilities for the Central Pool Augmentation project in areas that will not affect resources within the Cajalco Tin Mine District. Where avoidance is not possible, Metropolitan could provide mitigation in the form of historical recordation of the mining district and provision of historical information and/or interpretive exhibits at the site of the project, at Metropolitan's offices, or at a local museum.

No Build Alternatives

Because no improvements to Cajalco Road and Ramona Expressway would be made under Alternative 1A, this Alternative would not impact significant cultural resources in the cumulative study area. Three significant cultural resources that may be eligible for listing in the National Register and California Register would likely be affected by Alternative 1B, which involves widening of Cajalco Road and Ramona Expressway as called for in the Riverside County General Plan Circulation Element.

Table 3.25.A Cultural Resources Cumulative Impacts

				A 14.2	.,	44.44	1	
Resources Determined	Significant Under	Summary of MCP Project Effect	5 ■		Resource	MOF Alternatives that impact Resource	IIIpacı	Cumulative Projects Effects and Additional
Significant	NEPA/CEQA		4	2 6	7	စ	NCS 6	Mitigation
P-33-1512, Prehistoric Quarry Site	NEPA/CEQA	Alternative 9 would result in the physical destruction of the southern third of P-33-1512, with the exception of the southernmost tip.				×		Resource is located within a reserve area and is not planned for future development
P-33-1649, Prehistoric Quarry, ESA	Assumed Eligible/Avoided	Resource will be protected by ESAs and will have no adverse effect. No substantial adverse change.				×		Resource may be impacted by a proposed residential development, for which an application has been submitted. It is not clear what impacts this project will have on the site. RCTC will work with the County to provide cultural resource site information so that it can be considered in preparing the development site plan.
P-33-1650/33- 16687, Prehistoric Quarry Site	NEPA/CEQA	Alternative 9 would result in the physical destruction of roughly the eastern 60 percent of the site.				×		Resource may be impacted by a proposed residential development for which an application has been submitted. It is not clear what impacts this project will have on the site. RCTC will work with the County to provide cultural resource site information so that it can be considered in preparing the development site plan.
P-33-4759/H, Cajalco Tin Mine District	NEPA/CEQA	Alternatives 6 and 7 both pass through Site 33-4759, the 1-square-mile Cajalco Tin Mine District, resulting in the same use/take of this historic site: 25.2 ha (62.5 ac). Alternatives 4, 5, and 9 completely avoid this site.		×	×			Resource may be impacted by Metropolitan's Central Pool Augmentation project and the proposed Eagle Valley Ranch residential development. It is not clear what impacts, if any, these projects will have on the resource. RCTC will work with Metropolitan and the County to provide cultural resource site information so that it can be considered in preparing the development site plan.
P-33-7640, C.B. Bullock House	CEQA	The resource would be impacted by Alternatives 4 and 6 and may result in a substantial adverse change to the site under CEQA. Alternatives 5, 7, and 9 completely avoid this site.	×	×				The resource is located in an area designated as a community center in the Riverside County General Plan. No known developments are currently proposed at this site.



Table 3.25.A Cultural Resources Cumulative Impacts

Resources	Significant		MCP	Altern	ative	MCP Alternatives that Impact	npact	
Determined	Under	Summary of MCP Project Effect		~	Resource	Se Se		Cumulative Projects Effects and Additional
Significant	NEPA/CEQA		4 5	9	7	6	9 SJN	Mitigation
P-33-12230, Prehistoric Habitation Site, ESA	Assumed Eligible/Avoided	Resource will be protected by ESAs and will have no adverse effect. No substantial adverse change.				×		Resource may be impacted by the proposed Gavilan Hills residential development for which an application has been submitted. It is not clear what impacts this project will have on the site. RCTC will work with the County to provide cultural resource site information so that it can be considered in preparing the development site plan.
P-33-13791, Prehistoric Village Site	NEPA/CEQA	Three site loci (33-816, 33-817, and 33-818) are located within the current MCP direct APE for Alternatives 4, 5, 6, and 7. Alternatives 4, 5, 6, and 7 result in the same use of this historic site: 8.3 ha (20.5 ac). Alternative 9 is the only alternative that completely avoids this site.	×	×	×			This site is located in an area slated for residential development by Boulder Springs Venture, LLC. It is not clear what impacts the housing development will have on the site. RCTC will work with the County to provide cultural resource site information so that it can be considered in preparing the development site plan.
P-33-16598, Multi-use Prehistoric Site	NEPÁ/CEQA	Alternative 9 would result in the physical destruction of the northeastern 7 percent of P-33-16598. The area that would be impacted is highly disturbed and does not contribute to the overall site eligibility for the National or California Registers. Therefore, the direct effect would not be adverse to the site (historic property) under NEPA, and there would not be a substantial adverse change to the site (historical resource) under CEQA. The same impacts would occur as a result of all MCP Build Alternatives.	× ×	×	×	×		This site is located in an area that is slated for a large mixed use development by Lewis Homes. The developer and the County are working with the County and the involved Native American Tribes to keep the site parcels in open space to protect the resource.

Table 3.25.A Cultural Resources Cumulative Impacts

NEPA/CEQA Alternative 9 TWS DV would result in the physical destruction of 95 percent of P-33-16679. Therefore, there would be an adverse effect to this site (historic property) under NEPA and a substantial adverse change to the site (historical resource) under CEQA. Assumed Resource will be protected by ESAs and will have no adverse effect. No substantial adverse change. CEQA The CBJ Dairy falls within the APE for Alternatives 4, 5, 6, 7, and 9. The majority of the resource and its structures are located within the SJN DV. Only a small portion of the open space found on the eastern end of the property falls into the SJS Segment alignment, which is common	Resources Determined	Significant	Summary of MCP Project Effect	MCF	Alte	rnati	MCP Alternatives that Impact Resource	mpact	Cumulative Projects Effects and Additional
NEPA/CEQA Alternative 9 TWS DV would result in the physical destruction of 95 percent of P-33-16679. Therefore, there would be an adverse effect to this site (historic property) under NEPA and a substantial adverse change to the site (historical resource) under CEQA. Assumed Resource will be protected by ESAs and mill have no adverse effect. No substantial adverse change. CEQA The CBJ Dairy falls within the APE for Alternatives 4, 5, 6, 7, and 9. The majority of the resource and its structures are located within the SJN DV. Only a small portion of the open space found on the eastern end of the property falls into the SJS Segment alignment, which is common	gnificant	NEPA/CEQA	-		5 6	7	စ	NCS 6	Mitigation
Assumed Eligible/Avoided will have no adverse effect. No substantial adverse change. CEQA The CBJ Dairy falls within the APE for Alternatives 4, 5, 6, 7, and 9. The majority of the resource and its structures are located within the SJN DV. Only a small portion of the open space found on the eastern end of the property falls into the SJS Segment alignment, which is common	79, c Site	EPA/CEQA					×		The resource is located in the MSHCP Critical Area and is designated as rural residential in the Riverside County General Plan. No known developments are currently proposed at this site.
CEQA The CBJ Dairy falls within the APE for X Alternatives 4, 5, 6, 7, and 9. The majority of the resource and its structures are located within the SJN DV. Only a small portion of the open space found on the eastern end of the property falls into the SJS Segment alignment, which is common	-	igible/Avoided	Resource will be protected by ESAs and will have no adverse effect. No substantial adverse change.				×		The resource is located in the MSHCP Criteria Area and is designated as rural community (2 ac minimum) in the Riverside County General Plan. No known developments are currently proposed at this site.
to all MCP Build Alternatives. No effect except under SJN DV.		EQA			×	×	×	×	The resource will be impacted by the SR-79 Realignment Project and a proposed commercial development. It is not clear what impacts these projects will have on the site. RCTC will work with the City of San Jacinto to provide site information so that it can be considered in preparing the development site plan in coordination with both the MCP project and the SR-79 project.

APE = Area of Potential Effect ac = acres

California Register = California Register of Historical Resources CEQA = California Environmental Quality Act

County = Riverside County

ESA = Environmentally Sensitive Area ha = hectares

MCP = Mid County Parkway Metropolitan = Metropolitan Water District of Southern California

MSHCP = Multiple Species Habitat Conservation Plan
National Register = National Register of Historic Places
NEPA = National Environmental Policy Act
RCTC = Riverside County Transportation Commission
RCTC = Riverside County Transportation Commission
SJN DV = San Jacinto North Design Variation
SJS = San Jacinto South
SR-79 = State Route 79
TWS DV = Temescal Wash Area Design Variation

3.25.5.6 Paleontology

The cumulative study area for this resource is the same as the MCP study area. The health of this resource is fragile because there are a limited number of paleontological resources in the cumulative study area and they are a nonrenewable resource. Land and infrastructure development can destroy paleontological resources; therefore, the health of this resource is determined to a large extent by the effectiveness of local municipalities and the County of Riverside in implementing adopted General Plans that identify areas of high paleontological sensitivity and include goals, policies, and actions to preserve these resources. The current and reasonably foreseeable future actions or projects that may affect this resource are the projects identified on Figure 3.25.1 as well as continued development in areas of high paleontological sensitivity. In addition, paleontological resources are subject to damage and destruction by natural erosion and erosion exacerbated by excavation and grading. Resources may also be damaged and removed from meaningful stratigraphic context by vandalism and unauthorized collecting by construction crews and after-hours visitors.

Although grading activities of development projects removes paleontological resources from the ground, the finding, excavation, and preservation of fossils allows the opportunity to contribute to the body of knowledge of the history of Western Riverside County, which is a beneficial cumulative impact. Development of a Paleontological Resource Impact Mitigation Program ("PRIMP" for Riverside County and Society of Vertebrate Paleontology, and "PMP" for Caltrans) that plans for fossil recovery and institutional storage is in accord with guidelines of the international Society of Vertebrate Paleontology.

Build Alternatives

There are sensitive paleontological resource localities in formations that are crossed by the MCP Build Alternatives.

Because ground-disturbing activities associated with the MCP project may impact paleontological resources, a project-specific Paleontological Mitigation Plan (PMP) shall be completed prior to construction as described in Mitigation Measure PAL-1. Additional mitigation for cumulative effects is not warranted because paleontological conditions and finds are localized and specific to each area of development.

Combined with the proposed MCP project, anticipated cumulative impacts include the continued destruction and recovery of paleontological resources as a result of



excavation associated with construction of other land development and infrastructure projects. The cumulative projects will also be required to comply with the applicable Federal and State regulations identified in Section 3.12.1.

No Build Alternatives

Under the MCP No Build Alternatives, the permanent impacts discussed above for the MCP Build Alternatives would not occur for the MCP project itself, but impacts to paleontological resources would occur for the other transportation improvement projects included in the No Build Alternatives.

3.25.5.7 Natural Communities

The cumulative study area for natural communities is western Riverside County. The health of this resource is determined to a large extent by the effectiveness of local municipalities and the County of Riverside in implementing the adopted western Riverside County MSHCP. Historically, this resource has become more fragmented over time by development. Since its approval in 2004, implementation of the western Riverside County MSHCP allows for development while maintaining the health of this resource by providing for conservation of species and habitats and a coordinated system of linkages to connect conservation areas.

The western Riverside County MSHCP provides a comprehensive, habitat-based approach to the protection of covered species by focusing on conservation and management of lands essential for their long-term conservation. This approach is consistent with United States Fish and Wildlife (USFWS) regulations concerning the designation of critical habitat in providing for the protection of "those physical and biological features essential to the conservation" of the species (MSHCP, Volume 3, Section 14.2). As a regional plan, the MSHCP serves to provide mitigation for cumulative impacts to covered species and their habitats. Project consistency with the MSHCP ensures that the cumulative impacts to those species are effectively mitigated.

The MSHCP provides guidelines that would avoid and minimize impacts to sensitive habitats known to occur in the vicinity of planned development and planned roadways while permitting continued development and the construction, operation, and maintenance of roadways. The MSHCP EIR/EIS (Riverside County Transportation and Land Management Agency, 2004) concluded that because of features incorporated into the MSHCP and the additional mitigation measures included in the

EIR/EIS, impacts to sensitive vegetation communities would be reduced to less than significant levels under CEQA.

Build Alternatives

Alternatives 4, 5, 6, and 7 would permanently impact 1,128 ha (2,786 ac), 1,094 ha (2,704 ac), 1,331 ha (3,289 ac), and 1,298 ha (3,207 ac) of natural communities, respectively, as detailed previously in Table 3.17.B. In addition to impacting the Metropolitan reserve lands established by the Lake Mathews MSHCP, which is not impacted by Alternative 9, these alternatives also impact the Habitat Conservation Plan for the Stephen's kangaroo rat and El Sobrante Landfill MSHCP reserve areas. Therefore, Alternatives 4, 5, 6, and 7 would have a greater contribution to cumulative adverse effects to natural communities than Alternative 9.



Alternative 9 would permanently impact 1,067 ha (2,637 ac) of natural communities, as detailed previously in Table 3.17.B. Project construction would contribute to the incremental loss of natural communities in the region. Cumulative impacts to sensitive natural communities of the MCP project are covered by the MSHCP since the project is a covered activity under the MSHCP as the west-east intra-county CETAP corridor. The MCP project would comply with the provisions of the MSHCP.

In addition to MCP's compliance with the provisions of the MSHCP, project mitigation includes implementation of Mitigation Measures BIO-1 through BIO-3 to avoid, minimize, and/or compensate impacts to biological resources, including those discussed in Sections 3.18 through 3.21, by protecting the long-term conservation value of sensitive areas and requiring construction monitoring to ensure compliance with all applicable provisions of the MSHCP and other biological resource mitigation measures or permit conditions.

In addition, Mitigation Measures HCP-1 and HCP-3 are mitigation specifically identified to address the impacts to habitat conservation plans. These measures address edge effects to existing habitat conservation areas and require that RCTC coordinate with USA Waste to amend the El Sobrante Landfill MSHCP to address the MCP project and its effects on that Plan's easterly conservation area. The amendment will address the addition of mitigation lands to the El Sobrante Landfill MSHCP that would offset the loss of functions, values, and species covered under that Plan.

Compliance with provisions of the MSHCP, the El Sobrante Landfill MSHCP, and the Habitat Conservation Plan for the Stephens' kangaroo rat address the direct, indirect, cumulative, and growth-related effects on covered species and habitats in western Riverside County resulting from activities covered by the MSHCP, including the MCP project.

Combined with cumulative projects, construction of the MCP would contribute to the incremental loss of natural communities in the region; however, the MSHCP provides a comprehensive approach to the regional conservation of natural communities and, as a regional plan, serves to provide mitigation for cumulative impacts to such habitats. The cumulative projects would be consistent with the MSHCP, which would ensure that the cumulative impacts to those habitats are effectively mitigated.

No Build Alternatives

Alternative 1A would result in fewer impacts to natural communities than any of the proposed Build Alternatives since the MCP project would not be built and no improvements would be made to Cajalco Road or Ramona Expressway. Alternative 1B would result in fewer impacts than the Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as Build Alternatives 6 and 7 since these Alternatives implement the General Plan roadway alignments in this area.

3.25.5.8 Wetlands and Other Waters

The cumulative study area for wetlands and other waters is western Riverside County, specifically the Santa Ana River and San Jacinto River watersheds. Historically, the health of this resource has declined as over 80 percent of historical wetlands in California have been destroyed. Major loss of wetland habitat occurred during the mid-1950s to mid-1970s, but since then the rate of loss has decreased. Currently, the health of this resource is determined to a large extent by the effectiveness of federal restoration efforts.¹

Approximately 60 percent of western Riverside County (304,686 ha (752,870 ac) out of the 509,428 ha (1,258,780 ac) within the MSHCP Plan Area) is reasonably foreseeable for development, based on anticipated impacts projected by the MSHCP within the next 75 years. Planned activities that are covered under the MSHCP include seven types of roadways, freeways, CETAP corridors, and other major facilities that have been identified in the Riverside County General Plan Circulation Element, flood control facilities, waste/wastewater facilities, electrical utility facilities, and natural gas facilities. Projects that may impact high—value or sensitive





United States Geological Survey. http://geochange.er.usgs.gov/sw/impacts/hydrology/wetlands/; site accessed October 21, 2007.

wetlands include the SR-79 Realignment project, San Bernardino to Moreno Valley Corridor, Orange County to Riverside County Corridor, the San Jacinto River Flood Control Project, bridge projects crossing the Santa Ana River and the San Jacinto River, as well as other projects.

To mitigate for impacts resulting from these and other reasonably foreseeable projects covered under the MSHCP, approximately 202,350 ha (500,000 ac) in the MSHCP Plan Area are to be assembled as Conservation Area. Since the existing MSHCP database does not provide project-specific level of detail for vegetation mapping, the MSHCP requires certain local implementation measures that require additional information that must be gathered during the long-term implementation of the MSHCP. These local implementation measures require identifying and mapping of riparian/riverine areas and vernal pools, as well as other habitats for species survey requirements.

Riparian/riverine areas are defined by the MSHCP as lands that contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby freshwater source, or areas with freshwater flow during all or a portion of the year. Additionally, drainage vegetated by upland species may meet the definition of riparian/riverine areas if it is determined that the functions and values of the drainage have the potential to affect species downstream within the MSHCP Conservation Area. A functions and values assessment of the mapped riparian/riverine and vernal pool areas is required under the MSHCP and should consider hydrologic regimen, flood storage and flood flow, modification, nutrient retention and transformation, sediment trapping and transport, toxicant trapping, public use, wildlife habitat, and aquatic habitat. The functions and values assessment should focus on riparian/riverine areas and those functions that may affect downstream values within the MSHCP Conservation Area. Additionally, the assessment of these riparian/riverine and vernal pool areas shall include identification and mapping of these areas as well as consideration of species composition, topography/hydrology, and soil analysis.

Where impacts occur to riparian/riverine areas or vernal pools, the MSHCP requires that an avoidance alternative be selected and that measures shall be incorporated into the project design to ensure the long-term conservation of the areas to be avoided, and their associated functions and values, through the use of deed restrictions, conservation easement, or other appropriate mechanisms. If avoidance is infeasible, then those impacts that are unavoidable shall be mitigated in that a determination of

biologically equivalent or superior preservation shall be made to ensure replacement of any lost functions and values of habitat as it relates to covered species.

A functional assessment and programmatic wetland delineation for the San Jacinto River and Upper Santa Margarita River watersheds within the MSHCP Plan Area is currently being developed by the United States Army Corps of Engineers (USACE). This effort is part of the USACE Special Area Management Plan (SAMP) process currently underway for those watersheds. As data assembled through the SAMP process becomes available, the requirements may be reviewed and reduced (with the concurrence of the wildlife agencies).

The guidelines in the western Riverside County MSHCP include design criteria that avoid and minimize impacts to sensitive habitats known to occur in the vicinity of planned development and planned roadways, including riparian and riverine environments. Impacts to wetlands and other waters would be reduced to less than significant levels under CEQA due to the features incorporated into the MCP project that are provided pursuant to the requirements of the MSHCP and the additional mitigation measures included in the MSHCP EIR/EIS. This is consistent with the conclusions of the MSHCP EIR/EIS.

Build Alternatives

Waters of the United States were identified and riparian ecosystems were assessed at a watershed level for the areas impacted by the MCP Build Alternatives. The findings of this assessment are contained in the report titled *Potential Impacts of Alternative Corridor Alignments to Waters of the United States, Riparian Ecosystems, and Threatened and Endangered Species: Mid County Parkway Project, Riverside County, California* (US Army Engineer Research and Development Center, 2008). The objective of this study was to analyze and compare the direct and indirect impacts of the MCP Build Alternatives on waters of the United States and riparian ecosystems. The results of the report indicate that overall, the impact of all the MCP Build Alternatives to riparian ecosystems was minimal given the relatively large size of the permanent impact footprint associated with the project alternatives. The minimal impact reflects the strategic placement of the alignments for each MCP Build Alternative to avoid riparian ecosystems to the extent feasible.

In the evaluation of impacts of each MCP Build Alternative to hydrologic, water quality, and habitat integrity of riparian ecosystems, it was determined that Alternatives 6 and 7 had the greatest impact, Alternatives 4 and 5 had the second

greatest impact, and Alternative 9 had the least impacts. For the specified criteria, the level of impact generally correlated with the size of the permanent impact footprint associated with each Build Alternative.

Based on the Jurisdictional Delineation, Alternative 9 would result in 4.5 ha (11.1 ac) of permanent impacts and 3.4 ha (8.5 ac) of temporary impacts to USACE jurisdictional areas. As discussed in the Conceptual Mitigation Plan, there are adequate mitigation opportunities available on site and off site to compensate for these impacts that would result in a no net loss of wetlands and wetland functions.

The MCP project is required to obtain a Section 404 permit from the USACE, a Section 1602 Agreement for Streambed Alteration from the California Department of Fish and Game (CDFG), and a water quality certification or waiver from the Santa Ana Regional Water Quality Control Board (RWQCB). Additionally, a Determination of Biologically Equivalent or Superior Preservation (DBESP) must be made for impacts to riparian/riverine areas that encompass the USACE, RWQCB, and CDFG jurisdictional areas. Wetland habitat would be mitigated at a minimum 1.5:1 ratio. Detailed mitigation requirements will incorporate measures addressed in the Conceptual Mitigation Plan for the MCP project. The cumulative projects shown in Figure 3.25.1 would be subject to similar mitigation requirements as the MCP project. Because each cumulative project would be required to replace impacted wetlands and nonwetland waters, additional mitigation for cumulative effects of the MCP project is not warranted.



No Build Alternatives

Under Alternative 1A, because Cajalco Road and Ramona Expressway would remain as they are today, there would be no permanent impacts to wetlands or other waters along these roadways under this Alternative. Therefore, permanent impacts to wetlands and other waters in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than for under the MCP Build Alternatives.

Under Alternative 1B, permanent impacts to wetlands and other waters would be expected to be less than the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as Build Alternatives 6 and 7 since these Alternatives implement the General Plan roadway alignments in this area.

3.25.5.9 Plant Species

The cumulative study area for plant species is western Riverside County. Historically, the health of this resource has become more degraded by development over time. Since its approval in 2004, implementation of the western Riverside County MSHCP allows for development of covered activities while maintaining the health of this resource by providing for conservation of species and habitats. The MSHCP provides a comprehensive approach to the regional conservation of plant habitats and covered species; as a regional plan, it serves to provide mitigation for cumulative impacts to habitats and covered species. The sensitive species in the section that are not covered also benefit from the conservation measures of the MSHCP because they occupy some of the same habitats.

The MSHCP provides guidelines that would avoid and minimize impacts to sensitive plant habitats known to occur in the vicinity of planned development and planned roadways while permitting continued development and the construction, operation, and maintenance of roadways. The MSHCP EIR/EIS concluded that, because of features incorporated into the MSHCP, impacts to listed and nonlisted plant species covered by the MSHCP would be at less than significant levels under CEQA. However, the MSHCP EIR/EIS concluded that impacts to plant species not covered by the MSHCP would not be mitigated and would therefore remain significant.

Build Alternatives

The MCP Build Alternatives would contribute to the incremental loss of many-stemmed dudleya, Coulter's goldfields, and target plant species within the El Sobrante Landfill. Specifically, Alternatives 4, 5, and 9 would impact 3.07 ha (7.58 ac) of habitat inferred to have long-term conservation value for many-stemmed dudleya. A shared portion of Alternatives 4, 5, and 9 has been realigned in order to avoid all currently known locations of many-stemmed dudleya. Alternatives 6 and 7 would impact 0.01 ha (0.2 ac) of habitat suitable for long-term conservation for many-stemmed dudleya. This location is within the Lake Mathews-Estelle Mountain Reserve and would not be impacted by any cumulative projects. All MCP Build Alternatives would impact 0.63 ha (1.55 ac) of habitat suitable for long-term conservation of Coulter's goldfields. These populations are located in the area near the San Jacinto River and may be impacted either by approved development projects or widening of the Ramona Expressway.

As a regional plan, the western Riverside County MSHCP serves to provide mitigation for cumulative impacts to sensitive plant species and their habitats. The

MCP project would comply with the requirements of the MSHCP. Project consistency with the MSHCP would ensure that the cumulative impacts are effectively mitigated; therefore, additional mitigation for cumulative effects of the MCP project to sensitive plant species is not warranted.

No Build Alternatives

Alternative 1A would generally result in less impacts to plant species than any of the proposed MCP Build Alternatives since the MCP project would not be built, and no improvements would be made to Cajalco Road or Ramona Expressway. Alternative 1B would generally result in less impacts than the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as Alternatives 6 and 7 since these alternatives follow the General Plan roadway alignments in this area.

3.25.5.10 Animal Species

The cumulative study area for animal species is western Riverside County. Historically, the health of this resource has become more degraded by development over time. Since its approval in 2004, implementation of the western Riverside County MSHCP allows for development of covered activities while maintaining the health of this resource by providing for conservation of species and habitats and a coordinated system of linkages that provide for wildlife connectivity between conservation areas.

The MSHCP provides guidelines that would avoid and minimize impacts to sensitive animal habitats known to occur in the vicinity of planned development and planned roadways while permitting continued development and the construction, operation, and maintenance of roadways. The MSHCP EIR/EIS concluded that because of features incorporated into the MSHCP and the additional mitigation measures included in the EIR, impacts to animal species would be reduced to less than significant levels under CEQA.

Build Alternatives

All MCP Build Alternatives would contribute to the incremental loss of 16.2 ha (40.0 ac) of habitat with long-term conservation value for the Los Angeles pocket mouse. The habitat impacted by the MCP project would also be impacted by approved development projects near the San Jacinto River and the SR-79 Realignment project. Per the MSHCP, proposed inclusion of approximately 13,185 ha

(32,581 ac) (62 percent) of suitable conserved habitat for this species in the MSHCP conservation area would minimize cumulative impacts to the species.

As a regional plan, the western Riverside County MSHCP serves to provide mitigation for cumulative impacts to sensitive animal species and their habitats. The MCP project would comply with the requirements of the MSHCP. Project consistency with the MSHCP would ensure that the cumulative impacts are effectively mitigated; therefore, additional mitigation for cumulative effects of the MCP to sensitive animal species is not warranted.

No Build Alternatives

Under Alternative 1A, because Cajalco Road and Ramona Expressway would remain as they are today, there would be no permanent impacts to animal species along these roadways under this alternative. Therefore, impacts to special-status animal species in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than for that under the MCP Build Alternatives.

Under Alternative 1B, permanent impacts to animal species would be expected to be less than that for the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as Build Alternatives 6 and 7 since these alternatives follow the General Plan roadway alignments in this area.

3.25.5.11 Threatened and Endangered Species

The cumulative study area for threatened and endangered species is western Riverside County. Historically, the health of this resource has become more degraded by development over time. Threatened and endangered species and their habitats are protected under the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 CFR Part 402 and the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. Project proponents are required to consult with the USFWS and CDFG to ensure that they do not jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat.

Build Alternatives

All MCP Build Alternatives would impact 0.31 ha (0.77 ac) of habitat with long-term conservation value for spreading navarettia, most of which is in the San Jacinto River floodplain and therefore not expected to be developed. All MCP Build Alternatives would also impact approximately 0.4 ha (1.0 ac) of habitat with long-term

conservation value for San Bernardino kangaroo rat, and 1.2 ha (2.9 ac) of designated critical habitat for San Bernardino kangaroo rat. This habitat may also be impacted by the SR-79 Realignment project.

Alternatives 4 and 5 would impact 13.6 ha (33.5 ac) and Alternatives 6 and 7 would impact no final critical habitat for coastal California gnatcatcher. Alternative 9 would impact 16.2 ha (40.1 ac) of proposed critical habitat for coastal California gnatcatcher. The area affected is within the Lake Mathews-Estelle Mountain Reserve and would not be impacted by any cumulative projects.

Alternatives 4 and 5 would impact 63.8 ha (157.6 ac) and Alternatives 6 and 7 would impact 56.6 ha (140.0 ac) of designated critical habitat for Quino checkerspot butterfly. Alternative 9 would impact 132.6 ha (327.6 ac) of designated critical habitat for Quino checkerspot butterfly. Most of this land is within existing reserves or MSHCP Criteria Area; therefore, there would be little or not impact from cumulative projects.

Alternatives 4 and 5 would impact 2.5 ha (6.1 ac) and Alternatives 6 and 7 would impact 3.4 ha (8.5 ac) of least Bell's vireo habitat with long-term conservation value. Alternative 9 would impact 0.9 ha (2.2 ac) of least Bell's vireo habitat with long-term conservation value. Most of this habitat is within an area of Temescal Wash where no additional development is proposed.

Combined with cumulative projects, any of the MCP Build Alternatives would contribute to the incremental loss of potentially suitable habitat for the spreading navarettia, San Bernardino kangaroo rat, coastal California gnatcatcher, Quino checkerspot butterfly, and least Bell's vireo. The MCP project and other cumulative projects would comply with the requirements of the MSHCP, which as a regional plan serves to provide mitigation for cumulative impacts to threatened and endangered species and their habitats. Project consistency with the MSHCP would ensure that the cumulative impacts are effectively mitigated. In addition, cumulative projects would undergo review by the USFWS and CDFG to ensure that they do not jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Therefore, additional mitigation for cumulative effects of the MCP to threatened and endangered animal species is not warranted.

No Build Alternatives

Under Alternative 1A, the planned street network would be constructed, except for improvements to Cajalco Road and Ramona Expressway. Because Cajalco Road and





Ramona Expressway would remain as they are today, there would be no permanent impacts to threatened and endangered species along these roadways under Alternative 1A. Therefore, impacts to threatened and endangered species in the vicinity of Cajalco Road and Ramona Expressway would be less for Alternative 1A than under the MCP Build Alternatives.

Under Alternative 1B, the planned street network would be developed according to the Circulation Element of the Riverside County General Plan. Under Alternative 1B, permanent impacts to threatened and endangered species would be expected to be less than for the MCP Build Alternatives since it would widen Cajalco Road and Ramona Expressway. Between I-15 and El Sobrante Road, the impacts of Alternative 1B would be the same as for Build Alternatives 6 and 7, since these alternatives follow the General Plan roadway alignments in this area.

3.25.6 **Summary**

Riverside County.



In summary, the MCP project would not contribute to cumulative adverse impacts related to growth, community impacts/relocations, and hydrology and floodplains.

Cumulative impacts to natural communities, plant species, animal species, and threatened and endangered species will be mitigated through compliance by RCTC and other permittees with the MSHCP. Cumulative impacts to wetlands and other waters will be mitigated through compliance by RCTC and other agencies with the provisions of the SAMP for the San Jacinto River watershed, once it is approved. For cultural and paleontological resources, RCTC will work with those agencies responsible for approval of the cumulative projects to provide information on these resources from the MCP project that may be useful to those agencies in mitigating impacts to those resources. The cumulative loss of farmlands has been previously acknowledged by the County and the Cities of Corona, Perris, and San Jacinto as an unavoidable adverse impact resulting from the planned growth within western

