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
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Legend

- Mid County Parkway Study Area


Project Vicinity and Study Area

KP 0.0/51.0 (PM 0.0/31.7) EA 08-053200

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Chapter 2  Project Description and Alternatives

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 STAA 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

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1. 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.

2. 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
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FIGURE 2.2.1

Legend
- Composite Project Footprint
- MSHCP Criteria Area*
- Alternative Number
- Colorado River Aqueduct

EXISTING HABITAT RESERVES
- Reserves Established by the Habitat Conservation Plan for the Stephens' Kangaroo Rat
- Reserve Established by the Lake Mathews Multiple Species Habitat Conservation Plan
- Reserve Established by the El Sobrante Landfill Multiple Species Habitat Conservation Plan

*Projected habitat reserves (Cores, Linkages and other Proposed Conservation Areas) will be assembled from portions of the Criteria Area.


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Engineering and Environmental Constraints
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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.\(^1\) 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

\(^1\) 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
Study Area Segments

FIGURE 2.3.1a

Legend

- City Limits
- Alternative Segment
- Alternative Alignment

* = Design variation.


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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.

1. 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\(^1\) 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 expressway\(^2\) 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 south.

\(^1\) 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)

\(^2\) 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)
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.
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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

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Alternative Name</th>
<th>MCP Segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>South of Lake Mathews/ North Perris (Drain)</td>
<td>Yes DV Yes N/A N/A Yes N/A N/A N/A Yes N/A N/A N/A Yes N/A N/A Yes DV Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>South of Lake Mathews/ South Perris (at Rider Street)</td>
<td>Yes DV Yes N/A N/A Yes N/A N/A N/A Yes N/A N/A N/A Yes N/A N/A Yes DV Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>General Plan North and South of Lake Mathews/North Perris (Drain)</td>
<td>Yes DV N/A Yes Yes N/A N/A Yes N/A N/A Yes N/A N/A Yes DV Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>General Plan North and South of Lake Mathews/ South Perris (at Rider Street)</td>
<td>Yes DV N/A Yes Yes N/A N/A Yes N/A N/A Yes N/A N/A Yes DV Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Far South/ Placentia Avenue</td>
<td>Yes DV N/A N/A N/A N/A Yes N/A DV Yes N/A DV Yes DV Yes</td>
</tr>
</tbody>
</table>

Source: Jacobs, 2008.
Yes = Segment applies to the Alternative
N/A = Segment not applicable to the Alternative

**MCP Segment Abbreviations:**

- **TWS** - Temescal Wash Area
- **LMS** - Lake Mathews South Segment
- **LMN-GP** - Lake Mathews North General Plan
- **LMS-GP** - Lake Mathews South General Plan
- **MV** - Mead Valley
- **FS** - Far South
- **C1** - Connector Perris 1
- **C2** - Connector Perris 2 (Design Variation)
- **C3** - Connector Perris 3
- **PD** - Perris Drain
- **RD** - Rider Street (Design Variation)
- **PP-D** - Placentia Avenue/Perris Boulevard Depressed
- **PP-E** - Placentia Avenue/Perris Boulevard Elevated
- **SJ** - San Jacinto
- **SJS** - San Jacinto South
- **SJN** - San Jacinto North
- **DV** - Design Variation

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Chapter 2  Project Description and Alternatives

2-32  Draft Mid County Parkway EIR/EIS and Section 4(f) Evaluation
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 interchanges\(^1\) 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:

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\(^1\) System interchanges are interchanges connecting two controlled access facilities (e.g., freeways) with one or more grade separation.
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Alternative 4

FIGURE 2.4.1b
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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

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

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1 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;
Alternative Segment | Interchanges | Alternative 5 (South Lake Mathews/Perris South (at Rider Street))
--- | --- | ---
Study Area | Service | Temescal Wash Design Variation (1/2 Diamond at El Cerrito) (All Alternatives)
| Service (1/2 Diamond) | System

* = Design variation.


FIGURE 2.4.2a

KP 0.0511 (PM 0.0317) EA 08-4F3200

I:\JCV531\GIS_Final\ProjectDescriptions\EB_320\new\proj_desc\alt5_31_090707.mxd (6/9/2008)
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Figure 2.4.2b

Legend

- Alternative Segment
- Planned Road
- Study Area
- Interchanges
- Service System

* = Design variation.

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

Alternative 5

KP 0.0510 (PM 0.08317) EA 06.4F3200
Chapter 2 Project Description and Alternatives

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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

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 Mathews\(^1\) 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

\(^1\) 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.
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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)

Legend
- Alternative Segment
- Interchanges
- Study Area
- Service
- Service (1/2 Diamond)
- System

* = Design variation.


FIGURE 2.4.3a
Chapter 2 Project Description and Alternatives

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FIGURE 2.4.3b

Legend
- Alternative Segment
- Planned Road
- Study Area
- Alternative 6 (General Plan North and South of Lake Mathews/North Perris (Drain))
- Interchanges
- Service
- System

* = Design variation.


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

Alternative 6
(C1 (Connector Perris 1)
*C2 (Connector Perris 2)
C3 (Connector Perris 3)

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

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 Mathews\(^1\) 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.

\(^1\) 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.
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FIGURE 2.4.4b

Legend

Alternative Segment
- Planned Road
- Interchanges
- Study Area
- Alternative 7 (General Plan North and General Plan South of Lake Mathews/Perris South (at Rider Street))
- San Jacinto North Design Variation (All Parkway Alternatives)
- System


* = Design variation.

Alternative 7
KP 0.0/51.0 PM 0.0/51.7 EA 0.0/87.0 0.0/51.7 EA 0.0/87.0

I:\CV\V5\GIS_Final\Project\Description\ER_EISmap_project_desc_e9352_030707.mxd (4/9/2008)
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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

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
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**Legend**
- Alternative Segment
- Planned Road
- Study Area
- Interchanges
- Alternative 9 (Far South / Placentia Avenue)
- Perris and Placentia Interchange Design Variation (Alternative 9 Elevated Grade)
- San Jacinto North Design Variation (All Parkway Alternatives)
- Rider Design Variation (Alternative 9)

* = Design variation.

**Source:** TBM (2006), Jacobs Engineering (02/2007)

**FIGURE 2.4.5b**
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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

---

1 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:
Typical Cross Sections: General Plan Roadways in Alternatives 6 and 7

SOURCE: Jacobs Engineering (2007)

Figure 2.5.1

Typical Cross Sections: General Plan Roadways in Alternatives 6 and 7

SOURCE: Jacobs Engineering (2007)
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Typical Cross Sections: General Plan

TYPICAL SECTION
4-LANE EXPRESSWAY
FROM CAJALCO ROAD TO EL SOBRANTE ROAD/CAJALCO ROAD JOIN POINT

TYPICAL SECTION
4-LANE ARTERIAL
FROM I-15 TO EL SOBRANTE ROAD

SOURCE: Jacobs Engineering (2007)
• 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

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


DV = Design Variation
L-11 = Trumpet
DV = Design Variation
L-11 = Trumpet
L-1 = Compact Diamond
mod = modified
L-2 = Spread Diamond
L-2 = Spread Diamond
N/A = not applicable
L-7 = Two-Quadrant Cloverleaf
L-7 = Two-Quadrant Cloverleaf
L-8 = Two-Quadrant Cloverleaf
PP-E = Placentia Avenue/Perris Boulevard Elevated Grade
L-8 = Two-Quadrant Cloverleaf
SJN = San Jacinto North
L-9 = Partial Cloverleaf
Figure 2.5.3
Typical Local Street Interchanges

SOURCE: Caltrans Highway Design Manual (November, 2001)
E:\PCC\51\Local Interchanges.doc (4/24/08)
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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 lanes. 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.

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1 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
Chapter 2  Project Description and Alternatives

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


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
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Figure 2.5.4b

Legend
- Right-of-Way (All Alternatives)
- Retaining Wall
- Cut
- Fill

Cut, Fill and Retaining Wall
KP: 0.051.0 (PM 0.051.7) EA: 08-0F3200

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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>
<thead>
<tr>
<th>Alternative</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>15,181 m (49,789 ft)</td>
</tr>
<tr>
<td>5</td>
<td>14,329 m (46,992 ft)</td>
</tr>
<tr>
<td>6</td>
<td>14,916 m (48,920 ft)</td>
</tr>
<tr>
<td>7</td>
<td>14,064 m (46,123 ft)</td>
</tr>
<tr>
<td>9</td>
<td>8,760 m (28,731 ft)</td>
</tr>
</tbody>
</table>


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 solids\(^1\) (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, pathogens\(^3\), litter, biochemical oxygen demand\(^4\), and total dissolved solids.

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1. Total suspended solids are the dry-weight measurement of particles suspended in water.
3. 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.
4. 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.
solids\(^1\). 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

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

**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.

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\(^1\) 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

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Excavation</th>
<th>Fill</th>
<th>Imported Borrow</th>
<th>Disposal Off Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>10,246,200</td>
<td>16,711,070</td>
<td>6,464,870</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>10,309,279</td>
<td>16,504,893</td>
<td>6,195,614</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>10,171,760</td>
<td>16,992,885</td>
<td>6,821,125</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>10,234,839</td>
<td>16,786,708</td>
<td>6,551,869</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>23,473,805</td>
<td>19,241,157</td>
<td>0</td>
<td>4,232,648</td>
</tr>
</tbody>
</table>

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.
Figure 2.5.5

Viable Mines / Borrow Sites

1. Corona Pit
2. 3m Corona Quarry
3. Eagle Canyon Quarry
4. Maitri Road Pit
5. Pacific Clay Borrow Pit
6. Riverside Co. Gravel Pit
7. Riverside Co. Gravel Pit
8. Cabazon Pit
9. Barney Stone Quarry
10. Horowitz Quarry
11. Mountain Avenue Pit No. 2

Landfills / Disposal Sites

101. All American Aggregates
102. Badlands
103. El Sobrante
104. Lamb Canyon


Local Borrow and Disposal Sites

I:\JCV531\GIS_Final\EIR_EIS\0806402_EIR_EIS_Final\Local_Borrow_and_Disposal_sites.mxd (3/29/2008)
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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 landscape-level 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

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### Table 2.5.F Earthwork Truck Hours by Alternative

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

Source: Jacobs, 2008.
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.1 This is a corrugated steel arch structure (or elliptical structure or circular culvert structure) that has a 3 x 6 m (10 x 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.

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1 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.
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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

<table>
<thead>
<tr>
<th>Category</th>
<th>Estimated Cost Breakdown (billions of dollars)</th>
<th>Locally Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alternative 4</td>
<td>Alternative 5</td>
</tr>
<tr>
<td>Engineering</td>
<td>0.73</td>
<td>0.68</td>
</tr>
<tr>
<td>Right of Way</td>
<td>3.64</td>
<td>3.39</td>
</tr>
<tr>
<td>Right of Way</td>
<td>0.78</td>
<td>0.85</td>
</tr>
<tr>
<td>Construction</td>
<td>2.71</td>
<td>2.39</td>
</tr>
<tr>
<td>Environmental Mitigation</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>Total Cost</td>
<td>4.37</td>
<td>4.07</td>
</tr>
</tbody>
</table>

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.
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- 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 impacts 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

<table>
<thead>
<tr>
<th>Alternative Number</th>
<th>Alternative Name</th>
<th>Description</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>North Lake Mathews/ North Perris Alternative</td>
<td>Provide a six- to eight-lane, limited-access facility north of Lake Mathews and a north alignment through the city of Perris</td>
<td>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.</td>
</tr>
<tr>
<td>3</td>
<td>North Lake Mathews/ South Perris Alternative</td>
<td>Provide a six- to eight-lane, limited-access facility north of Lake Mathews and a south alignment through the city of Perris</td>
<td>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.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval</th>
<th>Timeline</th>
</tr>
</thead>
</table>
| United States Fish and Wildlife Service (USFWS) | - Section 7 consultation for Threatened and Endangered Species  
- Section 7 consultation with USACE on Section 404 permit  
- Concur on RCTC’s MSHCP Consistency Determination  
- Concurrence on Determination of Biologically Equivalent or Superior Preservation (DBESP)  
- Approval of amendment to western Riverside County MSHCP  
- 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. | 1. Section 7 consultations are to be conducted following identification of a Preferred Alternative and preparation of the MSHCP Consistency Determination, which will serve as the Biological Assessment (BA).  
2. The MSHCP Consistency Determination and DBESP will be prepared and submitted for USFWS concurrence following identification of a Preferred Alternative and prior to approval of the Final EIS.  
3. The amendment to the MSHCP will be requested by RCTC after the Record of Decision is approved for the MCP EIS.  
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. |
| United States Army Corps of Engineers (USACE) | - Section 404 Permit for filling or dredging waters of the United States | Application to be submitted following identification of a Preferred Alternative |
| United States Department of the Interior–Bureau of Land Management (BLM) | - Approval of replacement lands pursuant to the Habitat Conservation Plan for the Stephens’ kangaroo rat; applicable only to BLM-managed lands | 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. |
| California Department of Fish and Game (CDFG) | - 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 MSHCP (USA Waste is permittee)  
- Approval of replacement lands pursuant to the Habitat Conservation Plan for the Stephens’ kangaroo rat  
- Concurrence on DBESP  
- Approval of any amendments to the Lake Mathews MSHCP and Natural Communities Conservation Plan. | 1. Section 1602 Notification is to be submitted and agreement obtained prior to the start of construction.  
2. The MSHCP Consistency Determination and DBESP will be prepared and submitted for CDFG concurrence following identification of a Preferred Alternative and prior to certification of the Final EIR.  
3. The amendment to the MSHCP will be requested by 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. |
## Table 2.10.A Permits and Approvals Needed

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Water Resources Control Board</td>
<td>• Water Discharge Permit, approval of Notice of Intent to comply with General Construction Activity NPDES Permit.</td>
<td>Application to be submitted prior to construction</td>
</tr>
<tr>
<td>Western Riverside County Regional Conservation Authority (RCA)</td>
<td>• Concur on RCTC’s MSHCP Consistency Determination</td>
<td>To be conducted following approval of a Preferred Alternative</td>
</tr>
</tbody>
</table>
| County of Riverside, Riverside County Habitat Conservation Agency (RCHCA) | • Approval of replacement lands pursuant to the Habitat Conservation Plan for the Stephens’ kangaroo rat  
• Section 4(f) consultation                                            | 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.                                           |
| Regional Water Quality Control Board 8, Santa Ana Region (RWQCB)       | • Section 401 Water Quality certification                                         | Application to be submitted following approval of a Preferred Alternative                                                                  |
| County of Riverside, Cities of Corona, Perris, and San Jacinto         | • 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) | 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.                                                |
| Riverside County Flood Control District (RCFCD)                       | • Encroachment permits for improvements affecting RCFCD facilities               | Application(s) to be submitted prior to construction                                                                                    |
| Metropolitan Water District of Southern California                    | • For Alternatives 4, 5, 6, or 7, Lake Mathews Habitat Conservation Plan amendment and Section 4(f) consultation | To be determined after the approval of a Preferred Alternative                                                                            |
| USA Waste                                                             | • For Alternatives 4, 5, or 9, El Sobrante Landfill MSHCP standard amendment      | To be determined after the approval of a Preferred Alternative                                                                            |
| State Historic Preservation Officer                                  | • Concurrence with the agencies’ determinations of eligibility and on the findings of effect. | 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). |
Table 2.10.A Permits and Approvals Needed

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interested Native American</td>
<td>• Required consultation under Section 106 of the National 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.</td>
<td>Native American Consultation for the MCP is ongoing.</td>
</tr>
<tr>
<td>Tribes</td>
<td></td>
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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
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