Appendix M  404 (b)(1) Alternatives Analysis
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MID COUNTY PARKWAY
District 8-Riv-MCP PM 0.0/16.3
District 8-Riv-215 PM 28.0/34.3
EA 08-0F3200 (PN 080000125)

404(B)(1) ALTERNATIVES ANALYSIS

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

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1.0 INTRODUCTION

This Alternatives Analysis has been prepared on behalf of the Riverside County Transportation Commission (RCTC) to assist the United States Army Corps of Engineers (USACE) in determining the proposed project’s compliance with Clean Water Act (CWA) Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredge or Fill Material (40 Code of Federal Regulations [CFR] 230). As recommended by the National Environmental Policy Act (NEPA)/Section 404 Memorandum of Understanding (MOU) Guidance Paper,¹ this Alternatives Analysis presents the full range and scope of all reasonable and practicable alternatives so as to sharply define the issues and provide a clear basis of choice among the alternatives.

1.1 PROPOSED ACTION

RCTC, in cooperation with the Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans) District 8, the County of Riverside (County), and the Cities of Perris and San Jacinto, has initiated a study of a range of alignment alternatives for a new west-east transportation corridor. The proposed action would adopt an alignment for the new corridor, named the Mid County Parkway (MCP), and construct a freeway to meet current and projected travel demand for the year 2040 for the 16 miles (mi) between Interstate 215 (I-215) in the west and State Route 79 (SR-79) in the east (Figures 1 and 2). The proposed MCP will supersede the existing designations in the Circulation Element of the County General Plan of the Hemet to Corona/Lake Elsinore (HCLE) Community and Environmental Transportation Acceptability Process (CETAP) corridor and will constitute a minor amendment to the Circulation Element of the adopted County General Plan (October 2003). RCTC may recommend this facility for adoption as a new state highway route.

1.2 PROJECT LOCATION

The project area is located in northwestern Riverside County, primarily along or parallel to the existing Ramona Expressway. Figure 1 depicts the MCP project study area and the regional location of the project. The MCP project study area ranges from 1 to 5 mi wide and is approximately 16 mi long between I-215 on the west and SR-79 on the east. The elevation on the western boundary is approximately 1,415 feet (ft) above mean sea level at the Perris Valley Storm Drain and is approximately 1,640 ft above mean sea level at Bernasconi Road in the Lakeview Area.

1.3 PROJECT HISTORY

The MCP freeway was identified as a key west-east regional transportation corridor as a result of several years of comprehensive land use and transportation planning in Riverside County through the

Alternative 4 Modified

Alternative 5 Modified

Alternative 9 Modified

SJRB DV - San Jacinto River Bridge Design Variation
SJN DV - San Jacinto North Design Variation

FIGURE 2
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Riverside County Integrated Project (RCIP). The RCIP is an unprecedented, multiyear planning effort to simultaneously prepare environmental, transportation, housing, and development guidelines for Riverside County for the first half of the 21st century. The purpose of the RCIP 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 3.0 million by 2020. Major milestones achieved in the RCIP process included a comprehensive update to the Riverside County General Plan (adopted October 2003), the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP; adopted June 2003), completion of environmental documents for two major new transportation corridors through the CETAP process (draft documents circulated for public review in July 2002), and initiation of the San Jacinto River Special Area Management Plan (SAMP).

Engineering and environmental studies were initiated in 2004 for the MCP project, originally a proposed 32 mi facility between Interstate 15 (I-15) and SR-79. In October 2008, a Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the MCP project was circulated for a 90-day public review period. During this time, RCTC received over 3,000 public comments. Two key themes emerged in the public review comments: the cost and timing of available funds for the project and concerns about the impacts to rural communities and existing habitat reserves.

In spring 2009, to address the concerns identified in public comments on the Draft EIR/EIS, the RCTC as the lead agency under the California Environmental Quality Act (CEQA), FHWA as the lead agency under NEPA, and Caltrans acting as an agent and providing oversight for the NEPA process, developed an approach for completing the EIR/EIS process for the project. This approach modified the MCP project limits from 32 mi (I-15 to SR-79) to 16 mi (I-215 to SR-79) in order to focus transportation funding where the need is the greatest, between I-215 to SR-79. On July 8, 2009, the RCTC Board formally took action to focus the MCP project between I-215 and SR-79 and to prepare a Recirculated Draft EIR/Supplemental Draft EIS for the modified project.

1.4 NEPA/SECTION 404 INTEGRATION PROCESS MOU

In 2003, in accordance with the 1994 MOU for the NEPA and Section 404 Integration Process for Surface Transportation Projects in Arizona, California, and Nevada (NEPA/Section 404 MOU), RCTC initiated coordination to implement the MOU policies in developing the EIS and Section 404 permitting for the MCP project. The NEPA/Section 404 MOU implements the FHWA, USACE, and United States Environmental Protection Agency (EPA) policies of improved interagency coordination and integration of NEPA and Section 404 procedures.

The NEPA/Section 404 MOU applies to projects requiring FHWA action under NEPA and a USACE individual permit under Section 404 of the CWA. The signatory agencies to the NEPA/Section 404 MOU for the MCP project include FHWA, EPA, USACE, the United States Fish and Wildlife Service (USFWS), the National Marine Fisheries Service, and Caltrans. In 2006, the agencies entered into an updated MOU for projects in California.
2.0 PROJECT PURPOSE

The basic project purpose, as defined in 40 CFR 230.10(a)(3), is to construct a transportation facility that is not water-dependent. The overall project purpose is to provide a transportation facility that will effectively and efficiently accommodate regional west-east movement of people, goods, and services between and through the cities of Perris and San Jacinto. More specifically, the selected alternative would:

- Provide increased capacity to support the forecasted travel demand for the 2040 design year;
- Provide a limited-access facility;
- Provide roadway geometrics to meet state highway design standards;
- Accommodate the Surface Transportation Assistance Act of 1982 (STAA) National Network for large trucks; and
- Provide a facility that is compatible with a future multimodal transportation system.

In June 2010, pursuant to the 2006 NEPA/CWA Section 404 MOU, and on the behalf of the transportation agencies, Caltrans sent letters to USACE, EPA, and USFWS requesting a formal “Agree/Disagree” response for the modified MCP purpose and need. In July 2010, Caltrans received letters from USACE and EPA indicating their final agreement and a letter from USFWS indicating no further comments.
3.0 SECTION 404(B)(1) GUIDELINES

The Section 404(b)(1) Guidelines (Guidelines) are the substantive environmental standards by which all Section 404 permit applications are evaluated. The Guidelines were published by the EPA in December 1980. The Guidelines provide that discharges of dredged or fill material into waters of the United States (U.S.), including wetlands, should not occur unless it can be demonstrated that such discharges will not result in unacceptable adverse effects on the aquatic ecosystem. No discharge of dredge or fill material is permitted if there is a practicable alternative to the proposed discharge that would have a less adverse impact on the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences (40 CRF 230.10[a]).

The Guidelines are the subject of extensive additional guidance issued by the EPA and the USACE. The Memorandum to the Field from the EPA and USACE dated July 13, 2000, titled “Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements,” provides guidance on the level of analysis appropriate for a Section 404(b)(1) alternatives analysis. The Memorandum provides that the Guidelines:

“Do not contemplate that the same intensity of analysis will be required for all types of projects but instead envision a correlation between the scope of the evaluation and the potential extent of adverse impacts on the aquatic environment. The Introduction to Section 230.10(a) recognizes that the level of analysis required may vary with the nature and complexity of each individual case.”

…

“The Guidelines provide the USACE and USEPA with discretion for determining the necessary level of analysis to support a conclusion as to whether or not an alternative is practicable. Practicable alternatives are those alternatives that are available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” 40 CFR 230.10(a)(2).

…

“[I]f an alternative is unreasonably expensive to the applicant, the alternative is not ‘practicable.’” Guidelines Preamble, “Economic Factors,” 45 Federal Register 85343 (December 24, 1980).
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4.0 ALTERNATIVES DEVELOPMENT

4.1 DEVELOPMENT OF MCP ALTERNATIVES

Beginning with the initiation of the project studies for the MCP in 2004, the MCP Alternatives have been developed and refined through a multiple agency coordination process, working as a collaborative group referred to as the Small Working Group (SWG). The SWG includes representatives from RCTC, FHWA, USFWS, EPA, USACE, California Department of Fish and Game (CDFG), Caltrans District 8, and the County of Riverside. The alternatives development process as undertaken by the SWG originally resulted in eight alternatives that were intended to provide a reasonable range of alternatives to satisfy the Purpose and Need for the project. A description of the alternatives development process for the original MCP project is provided in Chapter 2 of the original Draft EIR/EIS for the MCP Project (2008).

This next section describes the development of the alternatives that are evaluated in the Recirculated Draft EIR/Supplemental Draft EIS. The range of alternatives is intended to meet the requirements for alternatives analysis under the CEQA, 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).

4.1.1 Development of the Modified MCP Alternatives

The RCTC and the MCP project team have worked closely with FHWA and Caltrans to develop a modified set of alternatives to be evaluated in the Recirculated Draft EIR/Supplemental Draft EIS in response to RCTC’s Board action in July 2009. The following summarizes the main changes from the set of alternatives evaluated in the Draft EIR/EIS and the modified set of alternatives evaluated in this Recirculated Draft EIR/Supplemental Draft EIS:

- Project limits for the build alternatives change to I-215 in the west and SR-79 in the east. The portion of the original alternatives west of I-215 is no longer under consideration.
- The horizontal alignment for Alternative 9 Modified between Perris Boulevard in the west and the Perris Valley Storm Drain in the east through the City of Perris has shifted approximately 1,000 ft north to avoid Paragon Park.
- Alternative 9 Modified includes a local interchange at Redlands Avenue to replace the local interchange previously proposed at Perris Boulevard.
- Improvements to I-215 include the following: (1) the addition of one auxiliary lane between the MCP/I-215 systems interchange and the adjacent service interchange to the north and south to facilitate movement from the MCP and the I-215; (2) the addition of an operational/mixed flow lane from MCP to the Van Buren Boulevard interchange to accommodate additional traffic on the I-215 as a result of the MCP; and (3) the addition of an operational/mixed-flow lane from Nuevo Road to Cajalco-Ramona Expressway to facilitate weaving on the I-215 (previous build alternatives included collector-distributor roads and realignment of I-215 to accommodate...
weaving movements in this section of I-215); (4) the addition of a new interchange at Placentia Avenue; and (5) modification of the existing interchange at Cajalco Road/Ramona Expressway.

In December 2010, pursuant to the 2006 NEPA/CWA Section 404 MOU, and on the behalf of the transportation agencies, Caltrans sent letters to USACE, EPA, and USFWS requesting a formal “Agree/Disagree” response for the modified MCP set of alternatives. In January 2011, Caltrans received letters from USACE, EPA, and USFWS indicating their final agreement on the modified set of alternatives to be evaluated in this Recirculated Draft EIR/Supplemental Draft EIS.

### 4.1.2 No Action Alternative

A specific Section 404 No Action Alternative has been developed as part of this Section 404(b)(1) alternatives analysis. The Section 404 No Action Alternative identifies what measures are needed (e.g., bridges) to fully avoid dredge or fill within waters of the U.S. so that a Section 404 permit would not be required for the MCP project. This alternative is discussed in Section 6.6 in this report.

### 4.2 AGENCY CONCURRENCE ON THE MODIFIED MCP ALTERNATIVES

As discussed above in Section 4.1.1, in January 2011, USACE, EPA, and USFWS indicated their final agreement on the modified set of alternatives to be evaluated in this Recirculated Draft EIR/Supplemental Draft EIS.
5.0 ALTERNATIVES CONSIDERED AND WITHDRAWN FROM FURTHER STUDY

Several alternatives were evaluated and eliminated from further study during the alternatives refinement and EIR/EIS process. Table 1 identifies and describes these alternatives and provides a summary of the decision to remove these alternatives from further study.

As noted in Table 1, the MCP 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 220 ft right of way, which is a much larger facility than Alternatives 6 and 7 (combination Parkway and General Plan Alternatives), and which includes General Plan improvements to El Sobrante Road north of Lake Mathews as included in the adopted Riverside County Circulation Element of the General Plan. RCTC determined that the General Plan improvements could be constructed and still meet the dam safety criteria stipulated by the Metropolitan Water District of Southern California (Metropolitan), whereas Alternatives 2 and 3 did not.

The 32 mi parkway alternatives (Alternatives 4, 5, 6, 7, and 9) between I-15 in the west and SR-79 in the east were eliminated from further analysis as a result of the modification to the project limits in response to the concerns expressed during public review of the Draft EIR/EIS circulated October 2008 to January 2009.
Table 1: Summary of Alternatives Withdrawn from Further Study

<table>
<thead>
<tr>
<th>Alternative Number</th>
<th>Alternative Name</th>
<th>Description</th>
<th>Comment</th>
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<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>
<tr>
<td>4</td>
<td>South Lake Mathews/North Perris (Drain) Alternative</td>
<td>Provide a six- to eight-lane controlled-access parkway located south of Lake Mathews that follows a northern alignment through the City of Perris, adjacent to the Perris Drain.</td>
<td>Identified through initial planning and rerouted as a result of engineering feasibility issues identified in engineering studies and the Value Analysis study conducted by Caltrans in 2005. This alternative was eliminated due to the modification to the project limits in response to the concerns expressed during public review of the Draft EIR/EIS circulated October 2008 to January 2009.</td>
</tr>
<tr>
<td>5</td>
<td>South Lake Mathews/South Perris (Rider Street) Alternative</td>
<td>Provide a six- to eight-lane controlled-access parkway located south of Lake Mathews that follows a southern alignment through the City of Perris along Rider Street.</td>
<td>Identified through initial planning. This alternative was eliminated due to the modification to the project limits in response to the concerns expressed during public review of the Draft EIR/EIS circulated October 2008 to January 2009.</td>
</tr>
<tr>
<td>6</td>
<td>General Plan/North Perris (Drain) Alternative</td>
<td>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. Includes a four-lane urban arterial north of Lake Mathews, a four-lane controlled-access expressway south of Lake Mathews, west of El Sobrante Road, and a six- to eight-lane controlled access parkway east of El Sobrante Road. Alternative 6 follows a northern alignment through the City of Perris.</td>
<td>Identified through initial planning and rerouted as a result of engineering feasibility issues identified in engineering studies and the Value Analysis study conducted by Caltrans in 2005. This alternative was eliminated due to the modification to the project limits in response to the concerns expressed during public review of the Draft EIR/EIS circulated October 2008 to January 2009.</td>
</tr>
</tbody>
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<th>Description</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>General Plan/South Perris Alternative</td>
<td>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. Includes a four-lane urban arterial north of Lake Mathews, a four-lane controlled-access expressway south of Lake Mathews, west of El Sobrante Road, and a six- to eight-lane controlled access parkway east of El Sobrante Road. Alternative 6 follows a southern alignment through the City of Perris along Rider Street.</td>
<td>Identified through initial planning. This alternative was eliminated due to the modification to the project limits in response to the concerns expressed during public review of the Draft EIR/EIS circulated October 2008 to January 2009.</td>
</tr>
<tr>
<td>9</td>
<td>Far South/Placentia Avenue Alternative</td>
<td>Provide 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.</td>
<td>Identified in engineering studies and the Value Analysis study conducted by Caltrans in 2005 to avoid the Metropolitan Habitat Conservation Plan Reserve. This alternative was eliminated due to the modification to the project limits in response to the concerns expressed during public review of the Draft EIR/EIS circulated October 2008 to January 2009.</td>
</tr>
</tbody>
</table>

Caltrans = California Department of Transportation  
DWR = State Department of Water Resources  
EIR = Environmental Impact Report/  
EIS = Environmental Impact Statement  
I-5 = Interstate 15  
Metropolitan = Metropolitan Water District of Southern California  
SR-79 = State Route 79
6.0 ALTERNATIVE ROADWAY ALIGNMENTS ANALYZED AND BROUGHT FORWARD FOR FURTHER REVIEW

Descriptions of the three MCP Build Alternatives (Alternatives 4 Modified, 5 Modified, and 9 Modified), two design variations (San Jacinto River Bridge Design Variation [SJRB DV] and San Jacinto North Design Variation [SJN DV]), and two No Project/No Action Alternatives (Alternatives 1A and 1B) that are evaluated in the Recirculated Draft EIR/Supplemental Draft EIS are provided below.

Figure 2 shows the alignments of the MCP Alternatives.

6.1 ALTERNATIVE 4 MODIFIED: NORTH PERRIS (DRAIN)

Alternative 4 Modified proposes a six-lane controlled access freeway. Alternative 4 Modified follows a northern alignment through the City of Perris, adjacent to the Perris Drain (as shown in Figure 2). System interchanges (a freeway-to-freeway type interchange) are proposed for all MCP Build Alternatives at I-215 and SR-79. Descriptions of these system interchanges are as follows:

- The MCP/I-215 interchange is proposed as a three-level interchange that will not preclude possible future connections to the west. At the highest point, the MCP/I-215 interchange would be approximately 75 to 100 ft above ground level.
- The MCP/SR-79 interchange is proposed as a three-level interchange at an approximate height of 75 ft. The MCP connection to SR-79 will be made at the proposed realignment of SR-79, south of Ramona Expressway. The MCP provides direct connectors to northbound and southbound SR-79, as well as a six-lane easterly extension that terminates at a proposed signalized intersection at Ramona Expressway.

Service interchanges (interchanges that connect a freeway to local arterials) for Alternative 4 Modified are proposed at Perris Boulevard, Evans Road, Ramona Expressway/Antelope Road, Bernasconi Road, Reservoir Road, Town Center Boulevard (proposed new arterial associated with future proposed development), Park Center Boulevard (proposed new arterial associated with future proposed development), and Warren Road.

All of the modified MCP Build Alternatives, including Alternative 4 Modified, include improvements to I-215. These improvements are as follows: (1) the addition of one auxiliary lane between the MCP/I-215 systems interchange and the adjacent service interchange to the north and south to facilitate movement between the MCP and I-215; (2) the addition of an operational/mixed flow lane from MCP

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1 SR-79 is proposed to be realigned as a four-lane limited access expressway on a new alignment from south of Domenigoni Parkway to north of Gilman Springs Road and is currently undergoing separate environmental review.
to the Van Buren Boulevard interchange to accommodate additional traffic on I-215 as a result of the MCP; (3) the addition of an operational/mixed-flow lane from Nuevo Road to Cajalco-Ramona Expressway or Harley Knox Boulevard to facilitate weaving on I-215; (4) the addition of a new interchange at Placentia Avenue; and (5) modification of the existing interchange at Cajalco Road/Ramona Expressway.

Alternative 4 Modified includes two design variations: SJRB DV and SJN DV.

6.2 ALTERNATIVE 5 MODIFIED: SOUTH PERRIS (AT RIDER STREET)

Alternative 5 Modified is a six-lane controlled-access freeway. Alternative 5 Modified follows a central alignment through the City of Perris along Rider Street (as shown in Figure 2).

System interchanges proposed for Alternative 5 Modified are the same as for Alternative 4 Modified, with connections at I-215 and SR-79. However, the I-215 system interchange differs from that in Alternative 4 Modified as it connects the MCP to I-215 near Rider Street. As with Alternative 4 Modified, the system interchange at I-215 is proposed as a three-level interchange that will not preclude possible future connections to the west. The interchange will be approximately 75 to 100 ft above ground level.

Locations of the service interchanges proposed for Alternative 5 Modified are the same as those in Alternative 4 Modified: Perris Boulevard, Evans Road, Ramona Expressway/Antelope Road, Bernasconi Road, Reservoir Road, Town Center Boulevard (proposed new arterial associated with future proposed development), Park Center Boulevard (proposed new arterial associated with future proposed development), and Warren Road.

Alternative 5 Modified also includes the same improvements to I-215 as described above for Alternative 4 Modified. Alternative 5 Modified also includes the same design variations as Alternative 4 Modified: SJRB DV and SJN DV.

6.3 ALTERNATIVE 9 MODIFIED: PLACENTIA AVENUE

Similar to Alternatives 4 Modified and 5 Modified, Alternative 9 Modified is a six-lane controlled-access freeway. Alternative 9 Modified follows a southerly alignment through the City of Perris along Placentia Avenue (as shown in Figure 2).

System interchanges are proposed for all MCP Build Alternatives, including Alternative 9 Modified, at I-215 and SR-79. The system interchange at SR-79 is the same as those proposed for Alternative 4 Modified and Alternative 5 Modified. However, the I-215 system interchange differs from those in Alternatives 4 Modified and 5 Modified as it connects the MCP to I-215 near Placentia Avenue. As with Alternatives 4 Modified and 5 Modified, the system interchange at I-215 is proposed as a three-level interchange that will not preclude possible future connections to the west. The interchange will be approximately 75 to 100 ft above ground level.

Service interchanges are also proposed for Alternative 9 Modified at the following locations: Redlands Avenue, Evans Road, Ramona Expressway/Antelope Road, Bernasconi Road, Reservoir Road.
Road, Town Center Boulevard (proposed new arterial associated with future proposed development), Park Center Boulevard (proposed new arterial associated with future proposed development), and Warren Road.

Alternative 9 Modified also includes the same improvements to I-215 as described above for Alternatives 4 Modified and 5 Modified. In addition, Alternative 9 Modified has been designed to avoid Paragon Park and Fire Station No. 90 in the City of Perris.

Alternative 9 Modified includes the same design variations as Alternatives 4 Modified and 5 Modified: SJRB DV and SJN DV.

6.4 ALTERNATIVE 1A: NO PROJECT/NO ACTION—EXISTING GROUND CONDITIONS

Alternative 1A represents 2040 traffic on the planned street network without future improvements to Ramona Expressway, which would remain as it exists 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 the existing Ramona Expressway between I-215 and SR-79. This alternative assumes 2040 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.

6.5 ALTERNATIVE 1B: NO PROJECT/NO ACTION—GENERAL PLAN CIRCULATION ELEMENT CONDITIONS

Alternative 1B represents 2040 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 Ramona Expressway consistent with the Riverside County General Plan Circulation Element.

Under Alternative 1B, Ramona Expressway would be widened to a six-lane arterial street as needed to meet expected traffic demand. These improvements would result in the construction of a six-lane roadway along Ramona Expressway between El Sobrante Road and SR-79.

6.6 SECTION 404 NO ACTION ALTERNATIVE (AVOIDANCE ALTERNATIVE)

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 USACE regulations (33 CFR 325). 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 U.S. That is, the Section 404 No Action Alternative will represent an alternative that results in no construction requiring a USACE permit. It may result from the applicant electing to modify the proposal to eliminate work under the jurisdiction of the USACE or by the denial of the permit.
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 Modified, 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 Modified was chosen as the base for the Section 404 No Action Alternative because it is the MCP Build Alternative with the fewest permanent effects 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 Modified. Implementation of the Section 404 No Action Alternative would necessitate revisions to 9 planned bridge structures that would require longer spans and the placement of 34 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 create an additional cost of $365 million (approximately 20% more than Alternative 9 Modified) and has thus been determined to be unreasonably expensive.

6.7 DESIGN VARIATIONS

6.7.1 San Jacinto River Bridge Design Variation

Under the SJRB DV, the MCP project would construct two bridges in the Lakeview Nuevo area, a 531 ft bridge spanning Martin Street and a 1,941 ft bridge spanning the San Jacinto River, for a total of 2,472 ft of bridge. The base case in all three MCP Build Alternatives proposes one 4,321 ft bridge to span the floodplain and Martin Street. The SJRB DV applies to all three MCP Build Alternatives (Alternatives 4 Modified, 5 Modified, and 9 Modified; see Figure 2). The SJRB DV would also include a total of 1,849 ft of fill on either end of the bridges within the same limits as the base case bridge. Similar to the base case, the bridges under this design variation would be located to the south of the existing Ramona Expressway Bridge, which is 255 ft in length and would remain in place.

6.7.2 San Jacinto North Design Variation

Under the SJN DV, the MCP route diverges from the proposed MCP alignment from west of Warren Road and follows an alignment easterly that is approximately 1,140 ft north of the existing Ramona Expressway. The SJN DV will also provide a connection to existing Ramona Expressway from Warren Road, similar to the base case for Alternatives 4 Modified, 5 Modified, and 9 Modified (see Figure 2).

6.8 BRIDGES FOR WATER AND NATURAL RESOURCE CROSSINGS

The MCP Build Alternatives include a number of bridge structures crossing water and natural resource features in the MCP study area. Bridges will be constructed to Caltrans design standards and are proposed for all major river/stream crossings, including Perris Valley Storm Drain and the San Jacinto River, among others. The major river/stream crossings are described below.

- **Perris Valley Storm Drain (Perris Drain).** All MCP Build Alternatives cross the Perris Drain. Alternative 4 Modified includes a section that is adjacent to the west side of the Perris Valley Storm Drain (Perris Drain) that crosses the Perris Drain north of Placentia Avenue. For
Alternative 4 Modified, a 9,700 ft bridge is proposed to avoid impacts to the floodplain. Approximately 1,200 ft of the bridge crosses over the Perris Drain. The bridge is also aligned to minimize impacts to the local community and to ensure the interchange at Evans Road meets Caltrans standards.

Alternatives 5 Modified and 9 Modified also cross the Perris Drain north of Placentia; however, these crossings are at near-perpendicular angles to reduce length and minimize waters/wetlands impacts. Bridges are also aligned to minimize impacts to the local community and to ensure the interchange at Evans Road meets Caltrans standards. Alternative 5 Modified crosses the Perris Drain with a 698 ft bridge and Alternative 9 Modified crosses the Perris Drain with an 800 ft bridge. The bridge height ranges from 17 to 41 ft. The bridge crossing of the Perris Drain would accommodate all proposed future improvements to the Perris Drain with minimal effect on the channel. All abutments are located outside the channel and jurisdictional federal and state areas of the Perris Valley Drain; however, bridge piers/bents cannot entirely avoid these areas.

- **San Jacinto River at Lakeview**. All the MCP Build Alternatives cross the San Jacinto River Floodplain in the Lakeview area. The San Jacinto River is a natural curving watercourse, with an approximate 3,936 ft wide floodplain. The existing two-lane bridge for Ramona Expressway is expected to overtop with the 100-year flow. The project would construct two parallel three-lane bridges. The width of the bridges would be 154 ft, including a gap separating the bridges of approximately 38 ft. The existing Ramona Expressway Bridge would become part of a frontage road. This bridge is within the 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 where it crosses the river floodplain. All bridge abutments and piers/bents are located outside all waters of the U.S. and CDFG jurisdictional areas.

  The base case design and SJN DVs for all MCP Build Alternatives would construct an approximately 4,320 ft bridge downstream of the existing Ramona Expressway crossing of the San Jacinto River. This design completely avoids waters/wetlands impacts while also ensuring that flows downstream are not retained and that flows upstream do not back up. This design would minimize floodplain encroachment and reduce hydraulic impacts.

  The bridge crossing of the San Jacinto River for the SJRB DV is 1,941 ft long, which also completely avoids waters/wetlands direct impacts. The bridge under the SJRB DV also provides wildlife crossing opportunities for the MSHCP linkage to the San Jacinto Wildlife Area (SJWA).

- **San Jacinto River at SR-79 (City of San Jacinto)**. All the MCP Build Alternatives cross the San Jacinto River at the currently existing Sanderson Avenue/SR-79 crossing in the City of San Jacinto.

  The SR-79 bridge/viaduct crossing the San Jacinto River for the base case design and SJRB DV will include widening the existing bridge/viaduct to the west. Widening is required to allow transition from MCP connectors to the SR-79 alignment. The bridge/viaduct design will minimize impacts to waters/wetlands within the San Jacinto River by placing piers/bents in line where they are currently located within the San Jacinto River. Wetlands south of the river will be affected by bridge piers/bents and scour protection.

  The bridge/viaduct design for the SJN DV will minimize impacts to waters/wetlands within the San Jacinto River mainline. New bridges extend to west, as with base case design. SJN DV has a wider bridge over wetlands in order to accommodate the more northerly transition from MCP connectors to SR-79. Connectors from SJN DV also span wetlands (which will first be affected
by SR-79 project). As with the bridge design for base case and SJRB DVs, piers/bents will be placed in line where they are currently located within the San Jacinto River. Wetlands south of the river will be affected by bridge piers/bents and scour protection.

More detailed information on the siting of bridge locations over water resources and determination of lengths of bridges over water resources can be found in Appendix A: Bridge Location Planning Process, and Appendix B: Bridge, Waters, and Wetlands Considerations.
7.0 ALTERNATIVE SELECTION CRITERIA AND COMPARISON OF ALTERNATIVES

The MCP Alternatives have been evaluated using the selection criteria agreed to by the SWG in January 2011, for use in selecting the Least Environmentally Damaging Practicable Alternative (LEDPA). These criteria included three broad categories with specific criteria under each. These broad categories included Purpose and Need, Reasonable and Practicable, and Environmental. Using findings from the MCP technical studies, a matrix, entitled, Alternative Evaluation Detail (provided in Appendix C), has been prepared to present information to allow for comparison of the alternatives based on the predetermined criteria. The matrix is taken directly from the evaluation criteria agreed to by the SWG in January 2011 and includes information for all of the criteria for each alternative and excludes Habitat Conservation Plans that are no longer within the study area. This matrix describes the “value” or “metric” for each criterion (some are quantitative while others are “yes/no”). The information presented in the Alternative Evaluation Detail matrix (Appendix C) is described below. In addition, the results of an analysis of the impacts of the various alignments on riparian ecosystem integrity by the United States Army Engineer and Research Development Center (ERDC; Smith, 2011) are used as appropriate; this analysis is included as Appendix G of the Supplemental Natural Environment Study (October 2011). For some environmental criteria (e.g., effects on riparian ecosystems as measured in acres of direct and indirect effects), the ERDC analysis is not as precise as the data in Appendix C because the ERDC analysis is based on a landscape-level database, whereas the data in Appendix C are derived from project-specific habitat mapping and impact analysis that are included in the Supplemental Natural Environment Study.

The evaluation compares each of the MCP Build Alternatives, including both the base case design and the two design variations (SJN and SJRB) described in Section 6.7.

7.1 PURPOSE AND NEED

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

- Provide increased capacity to support the forecast travel demand for the 2040 design year;
- Provide a limited access facility;
- Provide roadway geometrics to meet state highway design standards;
- Accommodate the STAA\(^1\) National Network for trucks; and
- Provide a facility that is compatible with a future multimodal transportation system.

\(^1\) 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.
All MCP Build Alternatives have been designed to effectively and efficiently provide a connection between and through the Cities of Perris and San Jacinto. Based on the traffic studies conducted, all MCP Build Alternatives provide the capacity sufficient to meet the 2040 traffic demand in the MCP study area. All MCP Build Alternatives have been designed to be limited access facilities with interchange spacing of at least 1 mi. All MCP Build Alternatives have eight interchanges. Based on the design for each alternative, all MCP Build Alternatives will meet or exceed the STAA truck requirements. All MCP Build Alternatives will accommodate future multimodal opportunities. Therefore all of the MCP Build Alternatives meet the project purpose; however, Alternative 4 Modified would be ranked less than Alternatives 5 Modified and 9 Modified because of its circuitous route. Alternative 4 Modified would construct three mi of freeway for a travel distance of 1.5 mi, which would be constructed for Alternatives 5 Modified and 9 Modified.

7.2 REASONABLE AND PRACTICABLE

The evaluation of alternatives considered a reasonable range of options that could fulfill the project purpose and need. Reasonable alternatives are those that “are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant” (Council on Environmental Quality [CEQ], 1981). The NEPA/Section 404 Guidance Paper notes that an alternative is practicable if it: (1) meets the purpose and need; (2) is available and capable of being done (i.e., it can be accomplished within the financial resources that could reasonably be made available, and it is feasible from the standpoint of technology and logistics); and (3) will not create other unacceptable impacts such as severe operation or safety problems, or serious socioeconomic or environmental impacts.

Similarly, the evaluation of alternatives for purposes of the Section 404(b)(1) Guidelines must consider a reasonable range of practicable alternatives. Practicable is defined in regulation as “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes” (40 CFR 230). Accordingly, the criteria listed below address whether an alternative is “reasonable” (NEPA) and “practicable” (Section 404 of the CWA).

- **Cost.** This criterion addresses the total cost of each alternative including the costs of construction, right of way acquisition, environmental mitigation, and engineering/design. The most costly MCP Build Alternatives are Alternative 4 Modified base case design and Alternative 4 Modified SJN DV at $2.53 billion, and $2.50 billion, respectively, followed by Section 404 No Action Alternative and Alternative 4 SJRB DV, both at $2.48 billion. The least expensive MCP Build Alternatives are Alternative 9 Modified and Alternative 9 SJRB DV at $1.98 and $1.99 billion, respectively.

- **Technological Constraints.** All MCP Build Alternatives were deemed to have no technological constraints, including that of safety and/or engineering issues.

- **Logistical Constraints.** All MCP Build Alternatives were deemed to have no logistical constraints.

- **Other NEPA/404 Criteria.** No MCP Build Alternatives pose any unacceptable adverse social, economic, or environmental impacts or result in any serious community disruption that would be so severe as to render these alternatives unreasonable or impracticable.
7.3 ENVIRONMENTAL IMPACTS

This category addresses a variety of environmental criteria that are fundamental to the determination of the LEDPA. Foremost, the Section 404(b)(1) Guidelines require that the practicable alternative that results in the least adverse impact to aquatic resources be selected unless this alternative would result in other significant adverse environmental impacts (40 CFR 230.10[a]). In making this determination, deference is given to aquatic resources in that it is presumed that practicable alternatives exist that have less adverse impacts on special aquatic sites, and that all practicable alternatives that do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise. Figure 3 shows the MCP Build Alternatives and their impact on USACE jurisdictional aquatic resources at a large scale. More detailed figures of USACE jurisdictional areas along the MCP right of way on an aerial background are provided in Appendix D. The figures in Appendix D also identify the Drainage System numbers, as described in the 2008 Jurisdictional Delineation Assessment Report. Matrices summarizing temporary and permanent impacts to MCP drainage systems are provided in Appendix E.

7.3.1 Water Resources/Aquatic Ecosystem

Jurisdictional Waters/Wetlands Impacts (including vernal pools). These criteria assess the permanent acreage of federal jurisdictional waters of the U.S. and state jurisdictional waters directly affected by each alternative.

For Federal jurisdictional waters of the U.S. (wetland and nonwetland), the difference between the greatest and least amount of permanent impacts to waters for the different MCP Build Alternatives is 0.7 acre (ac). Alternative 9 Modified SJN DV and Alternative 4 Modified SJN DV have the fewest impacts at 6.59 ac, closely followed by Alternative 5 Modified SJN DV, at 6.70 ac. Alternative 5 Modified and Alternative 5 Modified SJRB DV have the greatest impacts, at 7.29 ac. All other MCP Build Alternatives have 7.17 to 7.19 ac of permanent impacts. None of the MCP Build Alternatives will result in impacts to vernal pools.

For state jurisdictional waters, the difference between the greatest and least amount of permanent impacts to waters for the different MCP Build Alternatives is 0.57 ac. Alternative 9 Modified SJN DV has the fewest impacts at 8.66 ac, closely followed by the other SNJ DVs (Alternative 5 Modified SNJ DV and Alternative 4 Modified SNJ DV, at 8.85 and 8.90 ac, respectively). Alternative 9 Modified and Alternative 9 Modified SJRB DV consist of the next fewest impacts at 9.00 ac. Alternative 5 Modified base case design, Alternative 5 Modified SJRB DV, Alternative 4 Modified, and Alternative 4 Modified SJRB DV have the greatest impacts at 9.19 and 9.23 ac.

Habitat Integrity. Impacts to habitat integrity were compared for each MCP Build Alternative in the Conditional Functional Assessment prepared by ERDC. A lower sum normalized rank score equates to lower comparative impact. Based on this assessment, Alternative 9 Modified (base case design and both the SJN and SJRB DVs) and Alternative 5 base case and SJRB DV all have the lowest normalized rank scores for loss of habitat integrity in riparian ecosystems. The next lowest scores are 0.5 and 0.6 for Alternative 5 Modified SJN DV and Alternative 4 SJN DV, respectively. The highest score is 1.0 for Alternative 4 Modified and Alternative 4 Modified SJRB DV.
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Hydrologic Integrity. Based on the Conditional Functional Assessment prepared by the ERDC, all MCP Build Alternatives are similar in the loss of hydrologic integrity in riparian ecosystems. Alternative 4 Modified and Alternative 4 Modified SJRB DV have the highest normalized rank score (at 1.0). All other MCP Build Alternatives have a normalized rank score of 0.09. A lower sum normalized rank score equates to lower comparative impact. The loss of hydrologic integrity units to riparian ecosystems is based on direct and indirect impacts.

Floodplain Impacts. There are three locations of existing 100-year floodplains in the MCP study area: Perris Valley Storm Drain (Zone A, Zone AE, shaded Zone X, and floodway), the San Jacinto River at Lakeview (Zone A, Zone AE, shaded Zone X, and floodway), and the San Jacinto River at SR-79 (Zone A). All MCP Build Alternatives will have the same number of encroachments at the Perris Valley Storm Drain and San Jacinto River. All MCP Build Alternatives will also have a longitudinal encroachment at the San Jacinto River. However, Alternative 4 Modified is the only MCP Build Alternative with a longitudinal encroachment of the Perris Valley Storm Drain.

Beneficial Uses Affected. There are a number of beneficial uses present in the MCP study area. Municipal and domestic water supply, agricultural water supply, industrial service supplies, groundwater recharge, water contact recreation, noncontact water recreation, warm freshwater habitat, and wildlife habitat are the primary beneficial uses present in the MCP study area. With proper implementation of the best management practices (BMPs) proposed, no adverse effects to beneficial uses will result from construction or operation of any of the MCP Build Alternatives.

Water Quality Impacts. Impacts resulting from soil disturbance from construction activities are anticipated to be the least under Alternative 9 Modified SJN DV, followed by Alternative 9 Modified base case design and Alternative 9 Modified SJRB DV. All MCP Build Alternatives will be constructed through areas containing the same number of steep slopes and would have similar impacts in soil erosion resulting from construction activities.

Alternative 5 Modified SJN DV will be constructed over the fewest number of streams (10 stream crossings) and, therefore, would have the lowest potential for pollutants to enter the waters from bridge construction. Alternative 5 Modified base case design and Alternative 5 Modified SJRB DV, followed by Alternative 4 Modified SJN DV, have the next fewest stream crossings, at 11 and 12 stream crossings, respectively. The remaining alternatives each have 13 stream crossings. Alternative 9 introduces the least amount of new pavement and, therefore, will result in the lowest increase in the volume of storm water runoff, followed by Alternative 9 Modified base case.

With the proposed treatment BMPs implemented (biofiltration swales and infiltration basins), roadway runoff of the target pollutants of concern for all MCP Build Alternatives would not contribute to existing impairment to downstream water bodies.

Based on the Conditional Functional Assessment prepared by ERDC, normalized rank scores for criteria were assessed to compare impacts based on several criteria. Lower normalized rank scores equate to lower comparative impacts. Alternative 5 Modified SJN DV has the lowest normalized rank score of the alternative corridor alignments for direct and indirect loss of water quality integrity in
riparian ecosystems at 0.19. Alternative 4 Modified base case design and Alternative 4 Modified SJRB DV have the highest score at 1.0. The remaining MCP Build Alternatives have normalized rank scores ranging from 0.20 to 0.23.

7.3.2 Threatened and Endangered Species

This criterion assesses the acreage of impacts to habitat of federally listed threatened and endangered wildlife and plant species. Impacts to designated critical habitat with primary constituent elements are based on the following: San Bernardino kangaroo rat reinstated critical habitat (April 2002) and final spreading navarretia (October 2010). The matrix also lists impacts to occupied habitat for least Bell’s vireo and San Bernardino kangaroo rat based on the focused surveys conducted for these species.

Impacts to all of the above-listed species will be the same for each of the MCP Build Alternatives, with the exception that the SJN DV for all MCP Build Alternatives, which will result in 0.06 ac fewer impacts to potentially occupied least Bell’s vireo habitat and 0.07 ac greater impacts to occupied San Bernardino kangaroo rat habitat than the base case and SJRB DVs for all MCP Build Alternatives.

All MCP Build Alternatives (base case design, SJRB DV, and SJN DV) will affect:
- 2.9 ac of reinstated San Bernardino kangaroo rat critical habitat;
- 1.09 ac of final spreading navarretia critical habitat with primary constituent elements;
- 1.09 ac of occupied spreading navarretia habitat; and
- 0.36 ac of occupied San Jacinto valley crownscale habitat.

The base case design and SJRB DV for all MCP Build Alternatives will affect:
- 3.66 ac of least Bell’s vireo occupied habitat; and
- 4.25 ac of occupied San Bernardino kangaroo rat habitat.

The SJN DV for all MCP Build Alternatives will affect:
- 3.59 ac of least Bell’s vireo occupied habitat; and
- 4.32 ac of occupied San Bernardino kangaroo rat habitat.

There is a potential for the California gnatcatcher to occur within the MCP Build Alternatives in the Riversidean upland sage scrub within the footprints of all the MCP Build Alternatives. Although focused surveys for this species were not conducted because impacts and mitigation for this species are covered by compliance with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), potential impacts to this species are identified by the impacts to potential suitable habitat within the MCP footprint. Alternative 4 Modified and all design variations will affect 93.6 ac of Riversidean upland sage scrub that may be suitable for the coastal California gnatcatcher, Alternative 5 Modified and all design variations will affect 90.5 ac of Riversidean upland sage scrub that may be suitable for the coastal California gnatcatcher, and Alternative 9 Modified and all design variations will affect 88.1 ac of Riversidean upland sage scrub that may be suitable for the coastal California gnatcatcher.
7.3.3  Plant Communities

This criterion assesses permanent and temporary impacts on sensitive plant communities within the study area, including San Jacinto River alkali communities, Riversidean upland sage scrub, and Riparian/Riverine areas. The impacts to San Jacinto River alkali communities range from 28.9 to 31.0 ac, with the base case and SJN DV for all MCP Build Alternatives affecting the least and the SJRB DV for all MCP Build Alternatives affecting the most. The impacts to Riversidean upland sage scrub for all MCP Build Alternative ranges from 88.1 to 93.6 ac, with Alternative 9 Modified base case design and Alternative 9 Modified SJN DV and Alternative 9 Modified SRJB DV being the lowest and Alternative 4 Modified base case design and Alternative 4 Modified SJN DV and Alternative 4 Modified SRJB DV being the greatest. Impacts to Riparian/Riverine areas (as defined by the MSHCP) range from 13.90 to 17.41 acres, with the SJN DV for all MCP Build Alternatives consisting of the fewest impacts. Alternative 4 Modified base case and Alternative 4 Modified SJRB DV result in the greatest impacts.

7.3.4  Effects on Existing Habitat Conservation Plans (HCPs)

All MCP Build Alternatives are within the Plan Area for both the MSHCP and Habitat Conservation Plan for the Stephens’ Kangaroo Rat (SKR HCP). No MCP Build Alternatives will affect the Reserve lands of the SKR HCP, and all will have the same amount of indirect impact to the Reserve lands of the SKR HCP. All MCP Build Alternatives will fully comply with both Plans. The following sections describe details of impacts to the MSHCP, including impacts to reserve lands and proposed conservation areas.

7.3.5  Western Riverside County Multiple Species Habitat Conservation Plan

This criterion assesses acreage of impacts to MSHCP Conservation Area for each MCP Build Alternative. MSHCP Conservation Area consists of existing Core reserve lands (public/quasi-public lands) and Criteria Area (land from which future conservation areas will be acquired). All MCP Build Alternatives would have similar amounts of impact to the MSHCP Reserve system, with the exception that the SJRB DV (for all Alternatives 4 Modified, 5 Modified, and 9 Modified) would all have up to 2 acres of additional impacts. All MCP Build Alternatives would require concurrence and approval of an MSHCP Consistency Determination and Determination of Biologically Equivalent or Superior Preservation (DBESP).

For existing public/quasi-public lands, Alternative 9 Modified (base case design, SJN DV, and SJRB DV) would all have the fewest impacts, followed by Alternative 5 Modified (base case design, SJN DV, and SJRB DV). Alternative 4 Modified (base case design, SJN DV, and SJRB DV) would have the greatest impacts to existing public/quasi-public lands.

7.3.6  Section 4(f) Properties

This criterion identifies the Section 4(f) properties affected by direct use impacts under each alternative (none of the alternatives was determined to have constructive use impacts). All MCP Build Alternatives and all design variations will affect the same amount of 4(f) properties.
All MCP Build Alternatives will affect 3.4 acres of the SJWA and 5.18 acres of a multiuse prehistoric/cultural site (Site 33-16598; CA-RIV-8712).

7.3.7 **Section 6(f)**

None of the MCP Build Alternatives will result in impacts to Section 6(f) lands.

7.3.8 **Cultural Resources**

This criterion quantifies the total number of previously recorded prehistoric, historic, and sacred resources affected by each alternative listed on or eligible for listing in the National Register of Historic Resources (National Register). All of the MCP Build Alternatives have a total of six archaeological sites. Of the six archaeological resources, five were determined not eligible for listing in the National Register and are, therefore, not historic properties as defined by Section 106; nor do they qualify as historical resources pursuant to CEQA. One site (Site 33-16598) is eligible for the National Register under Criteria C and D, and it is also recommended eligible under Criterion A. Site 33-16598 would be impacted by all the MCP Build Alternatives. All of the MCP Build Alternatives will also affect one historic archaeological/architectural resource site.

7.3.9 **Land Use Impacts**

This criterion assesses key factors addressing land use impacts from implementation of the MCP project, including business and residential access, consistency with local plans, and acreage of affected farmland. As listed in the matrix, all alternatives affect business and residential access, both temporary and permanent. Alternative 4 Modified base case, Alternative 4 SJN DV, and Alternative 4 SJRB DV were all determined to have the fewest property acquisitions where Alternative 9 Modified results in the fewest employee displacements out of all MCP Build Alternatives.

With regard to overall General Plan Consistency, adoption of any of the MCP Build Alternatives will require the County of Riverside and the Cities of Perris and San Jacinto to amend their General Plan Land Use and Circulation Elements to reflect the final MCP alignment, interchange locations, and elimination or modification of any land uses that may need to be acquired for the project.

Farmland directly affected by each alternative was also assessed. Alternative 9 Modified base case design, Alternative 9 Modified SJN DV, and Alternative 9 Modified SJRB DV will affect the fewest total acres, followed by Alternative 5 Modified, Alternative 5 Modified SJN DV, and Alternative 5 Modified SJRB DV. The greatest effects to total farmland result from Alternative 4 Modified, Alternative 4 Modified SJN DV, and Alternative 4 Modified SJRB DV.

7.3.10 **Socioeconomic/Community Impacts**

This criterion assesses socioeconomic and community impacts that each alternative will have on the study area. It is important to note that even though each alternative can adversely affect communities in the MCP study area as a result of residential and business displacements, implementation of the
proposed MCP project can also provide beneficial effects to the affected communities by improving mobility. Support of an alternative by the affected local jurisdictions, community groups, and the general public will be noted for each alternative after the Recirculated Draft EIR/Supplemental Draft EIS has been circulated for public review.

Impacts to travel patterns were assessed during the evaluation. Implementation of all MCP Build Alternatives will disrupt travel patterns to some degree by limiting mobility of residents of the communities along each Build Alternative, adding temporary detours, and blocking pedestrian travel. For comparative purposes, a ranking of 1 through 3 was assigned to each MCP Build Alternative with 1 representing the least impact and 3 the greatest. The Alternative 4 Modified base case design, Alternative 4 Modified SJN DV, and Alternative 4 Modified SJRB DV were deemed to have the least impact to existing travel patterns of the MCP Build Alternatives since they disrupt the least amount of existing roadways.

While all MCP Build Alternatives will require property acquisitions and disrupt the community, each alternative affects businesses, schools, and residences differently. The adverse impacts of Alternative 4 Modified would not be appreciably more severe or greater in magnitude than the adverse impacts to non-minority and/or non-low-income population groups after mitigation measures and offsetting project benefits are considered. Therefore, Alternative 4 Modified is not considered to have disproportionate impacts to environmental justice populations. The large intermodal warehouses displaced by Alternative 5 Modified may not be able to be relocated within the Perris area due to the need for large parcels of land to be available for relocation. Should this occur, important sources of employment would be relocated out of census tracts (CTs) with high percentages of low-income and/or minority populations in the MCP study area. Because of this potential loss of major employers within these CTs, Alternative 5 Modified is considered to have disproportionate impacts to environmental justice populations. Alternative 9 Modified would result in the highest impacts to residential relocations in areas with minority and low-income populations; however, there is ample supply of existing housing stock in the immediate area that will facilitate the ability to relocate residents within their existing communities. Therefore, Alternative 9 Modified is not considered to have disproportionate impacts to environmental justice populations.

7.3.11 Air Quality Impacts
This criterion measures differences in emissions between alternatives and notes which alternatives would result in emissions standards being exceeded, if any. None of the MCP Build Alternatives was determined to exceed National Ambient Air Quality Standard emission standards, and the criteria pollutant emissions in the MCP region were roughly the same for each MCP Build Alternative.

7.3.12 Noise Impacts
Noise criteria were assessed based on the Noise Study Report (November 2011). A total of 337–358 noise receptor locations were set up across the study area to measure the existing noise level and models were used to assess future worst-case scenarios. Alternative 4 Modified (base case design and both design variations) resulted in the fewest modeled receptors that would experience adverse noise impacts, followed by Alternative 9 Modified (base case design and both design variations), and Alternative 5 Modified (base case design and both design variations) have the highest number of
receptors that either approach or exceed the 67 equivalent continuous sound level measured in A-weighted decibels (dBA $L_{eq}$) Noise Abatement Criterion (NAC), or would experience a substantial increase in noise of 12 dB. Alternative 4 Modified (base case design and both design variations) has the least impact related to noise, followed by Alternative 9 Modified (base case design and both design variations). Alternative 5 Modified (base case design and both design variations) has the greatest impact related to noise.

7.4 FACTUAL DETERMINATIONS

MCP Build Alternatives were further screened for impacts under the Section 404(b)(1) guidelines contained in 40 CFR 230 Subparts C through H in order to ascertain the LEDPA. Where applicable, mitigation for unavoidable impacts is also discussed.

Under 40 CFR 230.10, the direct and indirect impacts of each practicable alternative are to be examined with respect to physical, chemical, and biological components of the aquatic ecosystem. The LEDPA must be the alternative shown to have the least adverse impact to the aquatic ecosystem (considering both direct and indirect impacts), while not causing other significant adverse environmental consequences. Furthermore, the Section 404(b)(1) guidelines allow the USACE to issue a permit for the LEDPA only if the LEDPA would not cause significant adverse impacts to the aquatic ecosystem, per Subparts C through F of the Section 404(b)(1) guidelines. If the project has the potential to cause such adverse impacts, and such impacts are unavoidable, then the project must be shown to adequately mitigate the impacts in compliance with Subpart H of the Section 404(b)(1) guidelines.

Consistent with USACE and EPA Guidelines (see USACE/EPA Memorandum of Agreement Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines, February 6, 1990), this section analyzes the impacts of the MCP Build Alternatives on existing aquatic resources and the biological function and values that they currently provide within and in the vicinity of the project site. Per the Guidelines, the applicant must demonstrate that the LEDPA will avoid, minimize, and compensate for adverse impacts to the current ecological functions provided by the site’s aquatic resources.

7.4.1 Potential Impacts on Physical and Chemical Biological Characteristics of Aquatic Ecosystem (Subpart C of the 404(b)(1) Guidelines)

**Direct Impacts.** A discussion of direct impacts to aquatic resources is presented in Section 7.3.1, Waters Resources/Aquatic Ecosystem, including short-term (temporary) impacts and long-term (permanent) impacts to jurisdictional waters and wetlands, floodplains, and water quality. These impacts are also summarized in Section 1-Environmental of the MCP Build Alternative Evaluation Detail Matrix, found in Appendix C.

**Indirect Impacts.** The potential for indirect impacts to jurisdictional areas was evaluated for all practicable alternatives. Although a wetland or stream may not be located within the development footprint of a practicable alternative, and thus would be protected from direct impacts, an alternative could indirectly degrade wetland functionality. Indirect impacts could include water quality.
degradation by inflows of polluted storm water runoff, flow changes for increased sedimentation, and floodplain impacts.

**Water Quality Degradation.** All MCP Build Alternatives have the potential to result in water quality degradation if appropriate BMPs are not followed. Pollutants of concern during operation of a transportation facility include sediment, trash, petroleum products, metals, and chemicals. An increase in impervious area would increase the volume of runoff during a storm, which would more effectively transport pollutants to receiving waters and may lead to downstream erosion. There would be an increase in impervious area with implementation of each MCP Build Alternative; therefore, there would be an increase in the volume of runoff during a storm or a subsequent increase of pollutant loading of receiving waters. Alternatives 4 Modified, 5 Modified, and 9 Modified would add 525.0, 516.9, and 479.5 ac, respectively, of new pavement. The SJN DV would decrease the amount of impervious surface by 19.2 ac for all the modified Build Alternatives. The SJRB DV would result in the same amount of impervious surface as the modified Build Alternatives.

Design Pollution Prevention and Treatment BMPs would be incorporated into the MCP project to minimize impacts to water quality during operation of the MCP freeway. The following Design Pollution Prevention BMPs would be implemented as part of the MCP project:

- **Downstream Effects.** The MCP project would increase the total impervious surface area in the study area, which would increase runoff volume and flow velocity. Potential increased erosion from increased runoff flows would be minimized using erosion control measures such as rock slope protection.

- **Slope Surface Protection.** The creation of new cut-and-fill slopes would potentially increase erosion. Retaining walls would be incorporated to reduce steepness of slopes or to shorten slopes. Slopes would be rounded and shaped to reduce concentrated flow. New slopes would be sprayed with a Landscape Architect-approved erosion-control mix, which may include native plant species seed material. Slopes steeper than 4:1 will require an erosion control plan approved by the Caltrans District Landscape Architect.

- **Concentration Flow Conveyance Systems.** Existing crossing-culverts to be retained would be extended to the new-cut fill line. Where cross-culverts convey on-site and off-site runoff under the MCP alignment, the inlet/outlet would have flared end sections. Rock slope protection would be provided at the culvert outlets to minimize scour and erosion at the cross-culvert transitions.

- **Preservation of Existing Vegetation.** The project would require removal of existing vegetation; however, the existing vegetation and landscaping on existing slopes would be preserved to the greatest extent possible.

Permanent Treatment BMPs would also be incorporated into the MCP project. Treatment BMPs are measures designed to remove pollutants from storm water runoff prior to discharge to receiving waters. Biofiltration swales and infiltration basins are proposed as part of the project. The proposed BMPs would treat 105.3, 107.5, and 114.8 percentages of the net new impervious surface area for Alternatives 4 Modified, 5 Modified, and 9 Modified, respectively. With the SJN DV, Alternatives 4 Modified, 5 Modified, and 9 Modified BMPs would treat 100.5, 101.6, and
110.5 percentages of the net new impervious surface area, respectively. The SJRB DV would treat the same percentage as the modified Build Alternatives. The proposed treatment BMPs are discussed in detail below.

- **Biofiltration Swales.** Biofiltration swales (bioswales) are vegetated channels that convey storm water and remove pollutants by filtration through the grass, sedimentation, adsorption to soil particles, and infiltration through the soil. Bioswales are effective at removing debris and solid particles, although some removal of dissolved constituents is also achieved. Two biofiltration swales are proposed as part of the project. For Alternatives 4 Modified, 5 Modified, and 9 Modified (with or without the design variations), the biofiltration swales would treat runoff from 5.6 ac, 5.6 ac, and 5.4 ac of paved areas, respectively. Native plant species will be considered for vegetation of the biofiltration swales.

- **Infiltration Devices.** Infiltration basins are designed to remove pollutants by capturing storm water runoff and infiltrating it directly to the soil, instead of it being discharged into receiving waters. Infiltration basins remove a wider range of pollutants than detention basins. Pollutants removed by infiltration basins include total suspended solids, nutrients, pesticides, particulate metals, dissolved metals, pathogens, litter, biochemical oxygen demand, and total dissolved solids. Infiltration basins would be implemented wherever soil is appropriate (infiltration greater than 20 percent). A total of 37, 41, and 36 infiltration basins are proposed for Alternatives 4 Modified, 5 Modified, and 9 Modified (with or without design variations), respectively. For Alternatives 4 Modified, 5 Modified, and 9 Modified, these basins would treat runoff from 507.3, 505.0, and 508.2 ac of paved area, respectively. There would be 4.8 fewer ac of paved area treated under the SJN DV for all the modified Build Alternatives. The SJRB DV would treat the same acreage as the modified Build Alternatives.

- **Detention Devices.** Detention basins are 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. Detention devices usually retain water for 24 to 72 hours. During final design, if the infiltration testing results indicate that the infiltration rate at a location proposed for an infiltration basin is less than 0.5 inch per hour, thereby indicating that infiltration basins are not appropriate, the infiltration basin would be substituted with a detention basin.

The proposed infiltration basins and bioswales would target constituents of concern from transportation facilities. Because runoff in the project area is currently untreated and implementation of the proposed BMPs would treat the net new impervious surface area, no adverse impacts to water quality are anticipated to result from implementation of the proposed project.

The MCP Build Alternatives would implement the above-described water quality and sediment management measures as applicable. Therefore, no significant differences in water quality changes would be expected among the MCP Build Alternatives.

**Flow Changes and Potential for Increased Sedimentation.** Construction of all the MCP Build Alternatives would require new drainage facilities, which would be sized at least according to the sizes in the Master Plan for the San Jacinto River Basin. In addition, infiltration basins and
bioswales would be constructed to ensure that storm water runoff does not result in scouring and increased sediment content. No significant differences in flow changes and sedimentation would be expected among the MCP Build Alternatives.

**Floodplain Impacts.** The MCP project involves the construction of bridges and roadways that will encroach into the National Flood Insurance Program established floodplains of the Perris Valley Storm Drain and the San Jacinto River.

The Perris Valley Storm Drain, in the City of Perris between I-215 and Lake Perris, is within a mapped floodplain (Zone A, Zone AE, shaded Zone X, and floodway). All Build Alternatives would cross this floodplain.

The San Jacinto River is within mapped floodplains at the two locations crossed by the MCP project. All Build Alternatives would cross these floodplains; the San Jacinto River at Lakeview (Zone A, Zone AE, shaded Zone X, and floodway) and the San Jacinto River at SR-79 (Zone A).

All Build Alternatives will have the same number of encroachments at the Perris Valley Storm Drain and San Jacinto River. All Build Alternatives will also have a longitudinal encroachment at the San Jacinto River. However, Alternative 4 Modified is the only Build Alternative with a longitudinal encroachment of the Perris Valley Storm Drain.

The bridge over the San Jacinto River would span the entire San Jacinto floodplain in the base case design and SJN DV. However, the SJRB DV would place 1,849 ft of fill material on either end of the split bridge structure within the San Jacinto River. Although the fill would be located within the mapped 100-year floodplain/floodway of the San Jacinto River, this would not substantially modify the hydrology or hydraulics of the river. The existing Ramona Expressway Bridge currently constrains the 10- and 25-year flows of the San Jacinto River, and during the 100-year events, the river flows over the top of the existing bridge.

Under all MCP Build Alternatives, the existing Ramona Expressway bridge over the San Jacinto River will remain in place, still providing the control to the movement of water upstream from it. The 1,849 ft of fill associated with the SJRB DV results in negligible changes to the water surface elevation associated with the 100-year events. Moreover, there will be no changes to the floodplain limits downstream and very limited changes upstream, such that the total floodplain area is not substantially modified. The improvements would not result in substantial changes to the existing conditions relative to flow characteristics, including the velocity of flow. As such, no changes in the existing floodplain processes or function of the San Jacinto River relative to sensitive species or habitats is anticipated. Therefore, implementation of the SJRB DV would not result in substantial impacts to natural and beneficial floodplain values.

All the MCP Build Alternatives would cause a minimal increase in flood heights and flood limits. This minimal increase would not result in any significant adverse impacts on the natural and beneficial floodplain values and would not result in any significant change in flood risks or damage.
7.4.2 Potential Impacts on Biological Characteristics of Aquatic Ecosystem (Subpart D of the 404(B)(1) Guidelines)

Impacts to Potential Endangered Species (40 CFR §§ 230.31; 230.32).

**Direct Impacts.** As previously discussed in Section 7.3.2, Threatened and Endangered Species, the following listed species would be affected by the MCP Build Alternatives: San Jacinto Valley crownscale, spreading navarretia, California gnatcatcher, least Bell’s vireo, San Bernardino kangaroo rat, and Stephens’ kangaroo rat. These impacts are also summarized in Section 2, Threatened and Endangered Species, and Section 3, Sensitive Plant Communities Affected, of the MCP Build Alternative Evaluation Detail Matrix, found in Appendix C. Because all impacts within the project footprint are considered permanent, as described in the Recirculated Draft EIR/Supplemental Draft EIS, short-term (temporary) and long-term (permanent) impacts are calculated together.

Alternative 9 Modified will affect approximately 5 percent fewer acres of potential California gnatcatcher potential habitat than Alternative 4 Modified and 3 percent fewer acres than Alternative 5 Modified. All MCP Build Alternatives would have the same impacts to other threatened and endangered species, with the exception that the SJN DV would have 0.07 acre fewer impacts to occupied San Bernardino kangaroo rat habitat and occupied least Bell’s vireo habitat. This small reduced area of impact is an area that is within the footprint of the interchange for the MCP/SR-79 Realignment Project. Because the SR-79 Realignment Project will be approved and constructed prior to the MCP project, impacts to areas within the MCP/SR-79 interchange will be mitigated by that project and are not discussed as part of the MCP Build Alternatives.

Impacts to coastal California gnatcatcher would be minimized for all Build Alternatives by clearing of potential nesting habitat outside of nesting season. Mitigation for the other listed species will be mitigated for thorough compliance with the MSHCP, which includes preparation of a DBESP. Mitigation provided in the DBESP will demonstrate that equivalent or superior conservation for the species will be achieved through preservation of populations that are not already proposed for conservation in the MSHCP and/or restoration/enhancement of existing populations within the proposed conservation area. RCTC will ensure that all mitigation will be conserved in perpetuity, either through fee title transfer or a conservation easement to the Regional Conservation Authority (RCA).

No significant differences in direct impacts to threatened/endangered species would be expected among the MCP Build Alternatives.

**Indirect Impacts.** No significant differences in indirect impacts to threatened/endangered species would be expected among the MCP Build Alternatives.

**Potential Impacts to Significant Wildlife Habitat.** As previously discussed in Section 7.3.3, Plant Communities, the following natural communities would be affected by the MCP Build Alternatives: Riversidean upland sage scrub, riparian/riverine areas, and San Jacinto River alkali communities. These impacts are also summarized in Section 3, Sensitive Plant Communities Affected, of the MCP.
Build Alternative Evaluation Detail Matrix, found in Appendix C. Because all impacts to these natural communities within the project footprint are considered permanent, as described in the Recirculated Draft EIR/Supplemental Draft EIS, short-term (temporary) and long-term (permanent) impacts are calculated together.

Impacts to Riversidean upland sage scrub are addressed in the discussion of impacts to California gnatcatcher in Section 7.4.2.1, Impacts to Potential Endangered Species. Impacts to Riversidean upland sage scrub that may support wildlife habitat are minimal when comparing the MCP Build Alternatives. Alternative 9 Modified has 5% fewer impacts to Riversidean Upland Sage Scrub than Alternative 4 Modified.

Impacts to riparian/riverine areas (as identified by the MSHCP) are summarized in Section 7.3.3. Impacts to riparian/riverine areas will be mitigated by participation in the MSHCP by preparing a Determination of Biologically Equivalent or Superior Preservation for riparian areas and species associated with riparian areas.

All MCP Build Alternatives would have the same impacts to San Jacinto River alkali communities. As addressed above, impacts to plant communities are calculated entirely as permanent within the MCP project footprint for each Build Alternative; therefore, the base case design and the SJRB design variation both are evaluated as affecting the same amount of the San Jacinto River alkali communities. Additionally, as discussed above in 7.4.1, Habitat Degradation Due to Hydrological Changes, impacts to hydrology for these areas will not be significantly different per MCP Build Alternative.

This small reduced area of impact is an area that is within the footprint of the interchange for the MCP/SR-79 Realignment Project. Because this other project will occur before the MCP project, impacts to areas within the MCP/SR-79 interchange will be discussed and mitigated by that project.

**Direct Impacts.** No significant differences in direct impacts to Significant Wildlife Habitat would be expected among the MCP Build Alternatives.

**Indirect Impacts.** No significant differences in indirect impacts to Significant Wildlife Habitat would be expected among the MCP Build Alternatives.

### 7.4.3 Potential Impacts on Special Aquatic Sites (Subpart E of the 404(b)(1) Guidelines)

Special aquatic sites are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. The following sites are considered “special aquatic sites,” as identified in Subpart E (40 CFR § 230.40-45):

- Sanctuaries and refuges;
- Wetlands;
- Mud flats;
- Vegetated shallows;
- Coral reefs; and
- Riffle and pool complexes.

The only special aquatic sites within the MCP Build Alternatives are wetlands. A discussion of direct impacts to special aquatic sites is presented in Section 7.3.1, Waters Resources/Aquatic Ecosystem, including short-term (temporary) impacts and long-term (permanent) impacts to jurisdictional wetlands. These impacts are also summarized in Section 1, Environmental, of the MCP Build Alternative Evaluation Detail Matrix, found in Appendix C.

As described in the Recirculated Draft EIR/Supplemental Draft EIS, impacts to wetlands within the entire project footprint are considered long-term (permanent) impacts, with the exception of bridged areas. Short-term (temporary) impacts were calculated separately at areas spanned by bridges in order to quantify the extent of impacts to wetlands and other jurisdictional areas that will be avoided and minimized based on preliminary designs.

### 7.4.4 Potential Impacts on Human Use Characteristics Subpart F of the 404(b)(1) Guidelines

Many of the human use characteristics cited in 40 CFR § 230.50-54 (i.e., recreational and commercial fisheries; water-related recreation; national seashores; and research sites) are not relevant to the MCP project area or to the MCP Build Alternatives. However, the following human use characteristics are relevant: parks, wilderness areas and similar preserves, municipal and private water supplies, and aesthetics. The MCP Build Alternatives are mostly within the existing right of way of Ramona Expressway, which does not provide any authorized recreation or commercial fishing opportunities for the public. In addition, the footprint of the MCP Build Alternatives will not affect national and historical monuments, national seashores, or research sites.

The MCP Build Alternatives will have minor impacts to parks and wilderness areas, and similar preserves, as mentioned in Section 7.3.4, Effects on Existing Habitat Conservation Plans; Section 7.3.5, Western Riverside County Multiple Species Habitat Conservation Plan; and Section 7.3.6, Section 4(f) Properties; and as summarized in Sections 4, 5, 8, and 9 of the MCP Build Alternative Evaluation Detail Matrix, found in Appendix C. One park, Basin Park, one Wilderness Area (San Jacinto Wilderness Area), and various conserved lands under the MSHCP will be affected by the MCP Build Alternatives.

During construction, Alternatives 5 Modified and 9 Modified would result in the temporary use of land in Basin Park for a temporary construction easement (TCE). The TCE would be approximately 0.01 ac for Alternative 5 Modified and 0.10 ac for Alternative 9 Modified. This use would be temporary, would not result in any change in the ownership of the land, and would cease on completion of the project. Alternative 4 Modified would not result in the use of any land in Basin Park for a TCE. No other parks or recreation areas would be temporarily affected by TCEs or other temporary occupancies during construction of the MCP Build Alternatives.
All the MCP Build Alternatives would result in the permanent use of 3.4 acres of land in the approximately 20,000 ac SJWA. Because the SJWA is in the MSHCP area, the acquisition of land from the SJWA would be achieved through compliance with the MSHCP.

All MCP Build Alternatives will affect the same amount of existing MSHCP Conservation Area. There is only a 1 percent difference among the MCP Build Alternatives in the amount of impacts to MSHCP Criteria Area (comprising portions of future MSHCP Conservation Area). No MCP Build Alternatives will affect the Reserves for the Stephens’ kangaroo rat.

Impacts to municipal and private water supplies are also expected to be beneficial for all Build Alternatives due to water quality treatment. Other impacts related to human use are described in Section 7.3.9, Land Use Impacts, and Section 7.3.10, Socioeconomic/Community Impacts.

**Aesthetic Impacts.** All the MCP Build Alternatives and their design variations would result in short-term adverse aesthetic/visual impacts during construction as a result of views of construction areas, staging areas, grading, and construction activities. These impacts would be temporary and would cease upon the completion of construction. These impacts would be substantially mitigated by requiring the Construction Contractor to place construction and staging areas within the disturbance footprint and properly locate and direct lighting within the construction area to minimize light shining off site during those nighttime construction activities.

All the MCP Build Alternatives and their design variations would result in long-term adverse aesthetics/visual impacts as a result of the permanent alteration of the visual environment by the new highway and associated bridges, interchange structures, retaining walls, and sound walls. The aesthetics/visual impacts of the MCP Build Alternatives will include changing the visual character of many areas, particularly areas with rural residential, agricultural, and recreation uses, and blocking views of existing viewer groups in other locations. The MCP Build Alternatives would result in adverse impacts on scenic vistas, would substantially damage scenic resources, would substantially degrade the existing visual character and quality in the MCP study area, and would create substantial new sources of substantial light and glare. As a result, the MCP Build Alternatives and their design variations would result in significant adverse aesthetic/visual impacts.

Table 2 summarizes the differences in the effects that MCP Build Alternatives will have to aesthetics/visual impacts. Alternative 4 Modified has the highest impacts to aesthetics due to a 1.8 mi long bridge structure along Perris Valley Storm Drain. Alternative 9 Modified has the fewest impacts related to aesthetics because the majority of the MCP project through the city of Perris is located below ground level. Note that all MCP Build Alternatives have similar impacts to aesthetics with the exception of those summarized in Table 2.

**7.5 CONCLUSION: LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE**

Alternatives 1A and 1B do not meet the project purpose and need and thus, cannot be considered practicable. The Section 404 No Action Alternative and Alternative 4 Modified (base case and both design variations) also cannot be considered practicable because they would create an additional cost
Table 2: Aesthetic Impacts to MCP Build Alternative

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Aesthetic Impacts at I-215</th>
<th>Aesthetic Impacts at Perris</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 4</td>
<td>The MCP/I-215 systems interchange would introduce a major multi-level structure at existing Ramona Expressway. The MCP would traverse existing agricultural lands, as well as encroach upon some residential and commercial land uses in the north Perris area. The MCP will add a major transportation facility in an area that is rapidly developing; therefore, the visual character would not change that much for affected viewer groups (motorists and some residents).</td>
<td>The MCP would be constructed on an elevated structure almost 1.8 mi long that would be visible to park users at Morgan Street Park and existing and future residents of this developing residential area in the city of Perris. High level of adverse visual impact along the Perris Valley Storm Drain where there is adjacent residential land use based on a reduction in all of the visual rating criteria, as identified in the Visual Impacts Assessment.</td>
</tr>
<tr>
<td>Alternative 5</td>
<td>The MCP/I-215 systems interchange would introduce a major multi-level structure at Rider Street. Because the land uses in the area near the interchange are primarily commercial/industrial, there are a limited number of sensitive viewers in this area.</td>
<td>The MCP would affect the visual environment by introducing a major transportation facility into the landscape where none was previously planned along Rider Street. Through the City of Perris, the proposed service interchange at Perris Boulevard introduces a structure that may affect the views of some residents in the immediate vicinity of the interchange. Sensitive viewers in this area include existing and future residents, particularly in the eastern portion of this city.</td>
</tr>
<tr>
<td>Alternative 9</td>
<td>The MCP/I-215 systems interchange would introduce a major multi-level structure at Placentia Avenue. Alternative 9 Modified would affect the visual environment by introducing a major transportation facility along Placentia Avenue where none was previously planned.</td>
<td>Much of the MCP between Evans Road and I-215 would be constructed below existing ground level and, therefore, would not be visible or have a visual impact. However, the MCP service interchange at Redlands Avenue introduces a structure that may affect the views of some residents in the immediate vicinity of that interchange.</td>
</tr>
</tbody>
</table>

I-215 = Interstate 215  
MCP = Mid County Parkway  
mi = mile/miles

of $365 million to $410 million (approximately 20 percent to 27 percent more than Alternative 9 Modified base case design) and thus, have been determined to be unreasonably expensive.

Based on the key evaluation criteria for the MCP Build Alternatives, the impacts to natural resources, generally, are not significantly different along the majority of the alignment, particularly east of the city of Perris. Based on the key evaluation criteria, Alternative 9 Modified is recommended as the LEDPA. Alternative 9 Modified is not considered to have disproportionate impacts to environmental
justice populations. Alternative 9 Modified is the least damaging to water resources, aquatic ecosystems, and sensitive plant communities; Alternative 9 Modified results in the least amount of impact to existing public/quasi-public lands, MSHCP conservation areas, farmland, and is the only MCP Build Alternative that does not affect schools. Alternative 9 Modified requires the least number of displacements of business and employee displacements and is only slightly higher (10 percent) than the lowest number of nonresidential property acquisitions. Finally, Alternative 9 Modified is the most cost-effective Build Alternative, ranging from $220 million to $500 million in savings of public funding compared to the other MCP Build Alternatives. The City of Perris has also selected Alternative 9 Modified as its locally preferred alternative in 2011 and has expressed interest in selecting an alternative that is least impacting to businesses and employment in their community.

There are three designs for Alternative 9 Modified (the base case design, the SJRB DV, and the SJN DV) that must be considered in determining the LEDPA. While these three designs do not have substantial differences in environmental impacts in most criteria, the City of San Jacinto has previously selected the southern alignment (which, in the City of San Jacinto is the same for the base case design and SJRB DV) as its preferred alternative through the City of San Jacinto. Further, implementation of the SJRB DV (of the southern alignment through the City of San Jacinto) reduces costs by $40 million dollars (public funding) compared with the base case design. While the SJRB DV has impacts to San Jacinto River alkali plant communities, it does not result in additional impacts to waters of the U.S. or direct impacts to any other listed or special-status plant or animal species associated with this area. Therefore, the extra cost of $40 million for the longer bridge (of the base case design) is deemed unreasonably expensive and not practicable.

Therefore, the Alternative 9 Modified SJRB DV is recommended as the LEDPA.
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9.0 REFERENCES


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APPENDIX A

BRIDGE LOCATION PLANNING PROCESS
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APPENDIX A

BRIDGE LOCATION PLANNING PROCESS AVOIDANCE AND MINIMIZATION

1. **General:** To fully integrate environmental avoidance with engineering design, the consultant team went through a rigorous process to site wildlife crossings and bridges. This process ensured that engineering considerations did not drive the alignments and alignment features (i.e., bridge length and location). The end result is that the alternatives meet and in most cases exceed MSHCP criteria for accommodating wildlife movement and maintaining connectivity between habitat areas.

2. **Initial Alignments:** Initially the alignments for each of the alternatives were laid out to avoid existing reserves and known cultural sites as much as possible, while meeting Caltrans geometric design standards. Though these alignments provided some engineering challenges, this process allowed significant environmental avoidance. If avoidance was not possible, then the alignments were refined to minimize impacts. Following the initial layout, the engineering team and environmental teams held several joint workshops to further ensure that environmental issues and avoidance were adequately addressed. These workshops took place as the environmental surveys were being completed. A final workshop was held after the completion of the environmental surveys to provide final changes to the alignments as the survey information on specific resource locations was known. Additionally, in 2011, the team met with the federal and state resource agencies to discuss if there were any fatal flaws in proposing the SJRB DV.

3. **Wildlife Crossings:** The environmental and engineering teams worked together to initially site wildlife crossing locations for each of the alternatives. Layouts maximized the use of terrain to provide bridges for wildlife crossings. Bridge locations were identified based on the height and length required to span the terrain. During the environmental and engineering workshops, the bridge locations were discussed to determine if they would be beneficial as wildlife crossings. The environmental team provided input on key areas for crossings (i.e., linkages), as well as spacing between crossings based on MSHCP criteria. Wildlife crossings were sized to provide a minimum of a 1:1 aspect ratio (ratio between distance of undercrossing to the size of the opening in square feet) so that sufficient light is provided for wildlife to see from opening to end. Also a minimum height was established for the safe crossing of the large mammals such as deer. One culvert designed solely for the purpose of a wildlife undercrossing was also designed to facilitate wildlife movement along a proposed MSHCP linkage.

4. **Waters/Wetlands:** The initial layout also took into consideration avoidance of waters and wetlands. Initially, the USACE’s SAMP data was used which provided a useful landscape level view of the waters and wetlands in the area. SAMP data was available for all the alignments. The alignments were changed to avoid these potentially jurisdictional areas as much as possible. Data from the draft MCP Jurisdictional Delineation was compared to the SAMP data to make sure areas were avoided as much as possible. 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 B, Bridge Waters and Wetlands Considerations.

Conclusion. After a draft plan of bridge crossings was completed, the engineering and environmental team met with USFWS and CDFG in September 2006 and presented some typical crossings and locations of all proposed crossings for all alignments. The agencies contributed initial feedback and suggestions for additional locations for crossings in order to provide some smaller culverts to accommodate movement of smaller mammals. These bridge and wildlife crossings for the original alternatives were carried over to the MCP Build Alternatives for Alternatives 4 Modified, 5 Modified, and 9 Modified. As discussed above, the SJRB DV was included in 2011 after discussions with the federal and state resource agencies.
APPENDIX B

BRIDGE-WATERS-WETLANDS CONSIDERATIONS
### SUMMARY OF BRIDGE DESCRIPTIONS AND AVOIDANCE OF JURISDICIAL AREAS—MODIFIED MCP

<table>
<thead>
<tr>
<th>Bridge Name and Location</th>
<th>Alternative/s</th>
<th>Reach/Drainage System¹</th>
<th>Length (feet)</th>
<th>Height (feet)</th>
<th>Wetland Shading Impact**</th>
<th>Positioning Considerations</th>
<th>Impact to Federal and State Jurisdictional Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alts 4 Perris Valley Storm Drain</td>
<td>6/DS#60</td>
<td>Reach 9,700 feet</td>
<td>17–34 feet</td>
<td>100%</td>
<td>H/W Ratio = 0.22 (34/156 =0.22) High potential to impact underlying vegetation.</td>
<td>Bridge for Alternative 4 adjusts the section that is directly adjacent to the west side of the Perris Valley Storm Drain and crosses the Perris Drain north of Placentia Avenue. Bridge also aligned to minimize impacts to local community and to ensure the interchange at Evans meets Caltrans standards. For Alternative 4 a 9,700 ft long bridge is proposed in this area to avoid impacting the floodplain. Approximately 1,200 ft of the bridge is crossing over the Perris Drain.</td>
<td>Jurisdictional areas within entire bridge area/footprint considered to be 90% Temporary/10% Permanent because some piers will be located in jurisdictional areas.</td>
</tr>
<tr>
<td>Alts 5 Perris Valley Storm Drain</td>
<td>6/DS#60</td>
<td>Reach 699.96 feet</td>
<td>19.7–27.9 feet</td>
<td>100%</td>
<td>H/W Ratio = 0.16 (27.9/170' =0.16) High potential to impact underlying vegetation.</td>
<td>Bridge positioned to cross the Perris Valley Storm Drain north of Placentia at a near-perpendicular crossing to reduce length and minimize waters/wetlands impacts. Bridge also aligned to minimize impacts to local community and to ensure the interchange at Evans meets Caltrans standards.</td>
<td>Jurisdictional areas within entire bridge area/footprint considered to be 90% Temporary/10% Permanent because some piers will be located in jurisdictional areas.</td>
</tr>
<tr>
<td>Alts 9 Perris Valley Storm Drain</td>
<td>6/DS#60</td>
<td>Reach 800 feet</td>
<td>31.5–40.9 feet</td>
<td>100%</td>
<td>H/W Ratio = 0.22 (40.9/184'=0.22) High potential to impact underlying vegetation.</td>
<td>Bridge positioned to cross the Perris Valley Storm Drain north of Placentia at a near-perpendicular crossing to reduce length and minimize waters/wetlands impacts. Bridge also aligned to minimize impacts to local community and to ensure the interchange at Evans meets Caltrans standards.</td>
<td>Jurisdictional areas within entire bridge area/footprint considered to be 90% Temporary/10% Permanent because some piers will be located in jurisdictional areas.</td>
</tr>
<tr>
<td>Alts 4, 5, 9 Modified</td>
<td>7/ DS#61, DS#62, DS#63</td>
<td>Reach 4,326 feet</td>
<td>13.1–41.6 feet</td>
<td>100%</td>
<td>H/W Ratio = 0.22 (33.9/156' =0.22) High potential to impact underlying vegetation.</td>
<td>Bridge mainline crossing the San Jacinto River. Bridge is over 4,320 ft long to completely avoid waters/wetlands impacts while also ensuring that flows downstream are not retained and that flows upstream do not back up. The entire floodplain is crossed by the bridge. Bridge also provides excellent wildlife crossing opportunities for the MSHCP linkage to the San Jacinto Wildlife Area.</td>
<td>Minimal design change from 2008 DEIR/DEIS. Bridge completely avoids wetlands, waters, and CDFG areas while crossing the river. Pier bents will be placed outside all jurisdictional federal and state areas. All abutments and pier bents are located outside of the waters and wetlands. Realignment of existing Ramona Expressway will result in additional grading and is considered to be permanently impacted.</td>
</tr>
<tr>
<td>Alts 4, 5, 9 Modified</td>
<td>7/ DS#61, DS#62, DS#63</td>
<td>Reach 1,941 feet</td>
<td>17.0–35.0 feet</td>
<td>100%</td>
<td>H/W Ratio = 0.22 (33.9/156' =0.22) High potential to impact underlying vegetation.</td>
<td>Bridge mainline crossing the San Jacinto River. Bridge is 1,941 ft long to completely avoid waters/wetlands direct impacts. Bridge also provides excellent wildlife crossing opportunities for the MSHCP linkage to the San Jacinto Wildlife Area.</td>
<td>Design variation added in response to comment received on the 2008 DEIR/DEIS. Bridge completely avoids wetlands, waters, and CDFG areas. Pier bents will be placed outside all jurisdictional federal and state areas. All abutments and pier bents are located outside of the waters and wetlands. Realignment of existing Ramona Expressway will result in additional grading and is considered to be permanently impacted.</td>
</tr>
<tr>
<td>Alts 4, 5, 9 Modified</td>
<td>7/ DS#61, DS#62, DS#63</td>
<td>Reach 531 feet</td>
<td>28.0–34.0 feet</td>
<td>100%</td>
<td>H/W Ratio = 0.22 (33.9/156' =0.22) High potential to impact underlying vegetation.</td>
<td>Bridge mainline crossing over Martin Street. Bridge is 531 feet long. Bridge adjacent to bridge over San Jacinto River and the San Jacinto Wildlife Area.</td>
<td>None.</td>
</tr>
<tr>
<td>Alts 4, 5, 9 Modified</td>
<td>8/DS#64</td>
<td>Multiple Bridges</td>
<td>38.0–72.8 feet</td>
<td>Unknown</td>
<td>MCPF/SR-79 interchange crosses wetlands and waters on the south side of existing Ramona Expressway. Crossings are a combination of bridges and embankment for the connectors with SR-79. This interchange is sited to optimize Caltrans spacing requirements between the next SR-79 Interchanges at Gilman Springs and Sanderson. Aligning MCPF along the Colorado River Aqueduct reduces disruption to land use and local circulation.</td>
<td>Waters/wetlands cannot be completely avoided due to the density of ramps and connectors in the area. Connectors and ramps on the southwest quadrant of the interchange impact waters, wetlands, and CDFG areas. Areas within SR-79 Realignment Project footprint are excluded from MCPF impact calculations. Jurisdictional areas under bridge structures are considered 90% Temporary/10% Permanent due to unknown placement of piers within jurisdictional areas. Jurisdictional areas within MCP fill included as 100% Permanent impacts. All other jurisdictional areas within connector bridged area considered temporarily impacted.</td>
<td></td>
</tr>
</tbody>
</table>

¹Reach: 6/DS#60 – 6/DS#64

Most of water bodies within jurisdictional areas within the bridge area are considered to be permanently impacted. None in Base case.
<table>
<thead>
<tr>
<th>Bridge Name and Location</th>
<th>Alternative/s</th>
<th>Reach/Drainage System*</th>
<th>Length</th>
<th>Height</th>
<th>Wetland Shading Impact**</th>
<th>Positioning Considerations</th>
<th>Impact to Federal and State Jurisdictional Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCP/SR-79 Interchange, San Jacinto North</td>
<td>Alts 4, 5, 9 Modified</td>
<td>Reach 8/DS#64</td>
<td>Multiple Bridges</td>
<td>56.0–90.9 feet</td>
<td>Unknown</td>
<td>MCP/SR-79 interchange crosses wetlands and waters on the north side of the existing Ramona Expressway. Crossings are a combination of bridges and embankment for the connectors with SR-79. Design primarily overlaps with jurisdictional areas to be impacted by SR-79 at this interchange connector bridges. Ar eas within SR-79 footprint are excluded from MCP impact calculations. Outside SR-79 footprint, there is only a minor amount of fill material to be placed in wetlands for east to southbound (non-bridged) connector lane, which is considered to be permanent impacts. Permanent impacts also include all jurisdictional areas within footprint outside of bridged areas, even if they exceed the grading limits.</td>
<td></td>
</tr>
<tr>
<td>San Jacinto River Viaduct/City of San Jacinto</td>
<td>Alts 4, 5, 9 Modified</td>
<td>Reach 8/DS#66, DS#67</td>
<td>1,235.98 feet</td>
<td>11.2–27.8 feet</td>
<td>H/W ratio=0.24 (27.8'/118'=0.24) (includes existing portion of the bridge) High potential to impact underlying vegetation.</td>
<td>SR-79 bridge crossing the San Jacinto River. Current viaduct will be widened to the west. Widening is required to allow transition from MCP connectors to SR-79 alignment. Viaduct will minimize impacts to waters/wetlands within the San Jacinto River mainline by placing pier bents in line where they are currently located within the San Jacinto River. Wetlands south of the river will be impacted by bridge pier bents and scour protection. New bridge extended to west. Base case design minimizes impacts to wetlands since widening for connectors is away from these wetlands. Impacts to jurisdictional areas at new widened bridge considered to be 90% Temporary/10% Permanent because some piers will be located in jurisdictional areas. Impacts in all other areas within bridge footprint considered to be temporary.</td>
<td></td>
</tr>
<tr>
<td>San Jacinto North DV</td>
<td>All Modified</td>
<td>Reach 8/DS#66, DS#67</td>
<td>1,253.67 feet</td>
<td>11.2–27.8 feet</td>
<td>H/W Ratio = 0.21 (27.8'/135'=0.21) High potential to impact underlying vegetation.</td>
<td>SR-79 bridge crossing the San Jacinto River. Current viaduct will be widened to the west. Widening is required to allow transition from MCP connectors to SR-79 alignment. Viaduct will minimize impacts to waters/wetlands within the San Jacinto River mainline by placing pier bents in line where they are currently located within the San Jacinto River. Wetlands south of the river will be impacted by bridge pier bents and scour protection. New bridges extended to west, as with base case design. San Jacinto North design variation has wider bridge over wetlands in order to connect to SR-79. Connectors from San Jacinto North DV also span wetlands (which will first be affected by SR-79 project). Impacts to jurisdictional areas at new widened bridge considered to be 90% Temporary/10% Permanent because some piers will be located in jurisdictional areas. Jurisdictional areas outside bridge footprint considered to be temporarily impacted.</td>
<td></td>
</tr>
<tr>
<td>Unnamed Drainage east of Warren Avenue</td>
<td>Alts 4, 5, 9 Modified</td>
<td>Reach 8/DS#64</td>
<td>542 feet</td>
<td>20.4–22.1 feet</td>
<td>H/W Ratio: =0.10 (22.1'/219'=0.10) High potential to impact underlying vegetation.</td>
<td>Two bridges (MCP and realigned Ramona Expressway) to cross non-wetland waters. Abutments and piers placed outside of jurisdictional limits. Impacts to jurisdictional areas at beneath bridged connectors considered to be 90% Temporary/10% Permanent due to unknown placement of piers within jurisdictional areas; however, piers can potentially be designed to completely avoid jurisdictional areas in the future. Jurisdictional areas outside bridge footprint considered to be temporarily impacted.</td>
<td></td>
</tr>
<tr>
<td>Unnamed Drainage east of Warren Avenue</td>
<td>Alts 4, 5, 9 Modified</td>
<td>Reach 8/DS#64</td>
<td>338.64 feet</td>
<td>8.4–13.6 feet</td>
<td>H/W Ratio: 0.07 (13.6'/195'=0.07) High potential to impact underlying vegetation.</td>
<td>A single MCP bridge to cross non-wetland waters. No additional bridge crossing for realignment of Ramona Expressway or Warren Avenue (as with base case alternative). Abutments and piers placed outside of jurisdictional limits. Impacts to jurisdictional areas beneath bridged connectors considered to be 90% Temporary/10% Permanent due to unknown placement of piers within jurisdictional areas; however, piers can potentially be designed to completely avoid jurisdictional areas in the future.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Jacobs Civil Engineering 2011 and LSA 2011.

Note: Bridge numbers are the same numbers as described in the 2008 NES Appendix O.

* Reach/Drainage System = geographic portion of study area, as discussed in the 2008 MCP Jurisdictional Delineation. 

** H/W ratio = height to width ratio. The effect on vegetation from shading for MCP was conducted according to San Clements (2003). For H/W calculations, bridge widths assumed to be entire width of footprint and include the space between bridges (to give a worst-case scenario for shading) and height of bridge location directly above the jurisdictional feature.
APPENDIX C

MCP BUILD ALTERNATIVE EVALUATION DETAIL MATRIX
This page intentionally left blank
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Values (Metrics)</th>
<th>Alternative 4 Modified</th>
<th>Alternative 5 Modified</th>
<th>Alternative 9 Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base Case Design</td>
<td>SJN DV</td>
<td>SJRB DV</td>
<td>Base Case Design</td>
</tr>
<tr>
<td><strong>I. PURPOSE AND NEED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Provide capacity for 2040</td>
<td>Y/N</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>2. Serve regional movement of people and goods</td>
<td>Y/N</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>3. Provide roadway geometrics to meet State Highway design standards</td>
<td>Y/N</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>4. Provide limited access facility</td>
<td>Number of Access Points</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>5. Accommodate STAA trucks</td>
<td>Y/N</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>6. Provide a facility that is compatible with a future multimodal transportation system</td>
<td>Y/N</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>7. Provide an effective and efficient connection between and through San Jacinto, Perris, and Corona</td>
<td>Y/N</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>II. REASONABLE AND PRACTICABLE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Construction</td>
<td>U.S. dollars</td>
<td>$1.58 billion</td>
<td>$1.54 billion</td>
<td>$1.59 billion</td>
</tr>
<tr>
<td>1.2 Right of way Acquisition</td>
<td>U.S. dollars</td>
<td>$0.42 billion</td>
<td>$0.42 billion</td>
<td>$0.42 billion</td>
</tr>
<tr>
<td>1.3 Mitigation2</td>
<td>U.S. dollars</td>
<td>$0.11 billion</td>
<td>$0.11 billion</td>
<td>$0.066 billion</td>
</tr>
<tr>
<td>1.4 Total (Construction, ROW, Mitigation)</td>
<td>U.S. dollars</td>
<td>$2.11 billion</td>
<td>$2.07 billion</td>
<td>$2.08 billion</td>
</tr>
<tr>
<td>1.5 Engineering/Design</td>
<td>U.S. dollars</td>
<td>$0.42 billion</td>
<td>$0.41 billion</td>
<td>$0.42 billion</td>
</tr>
<tr>
<td>2. Technological Constraints</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Safety (Non-Highway)</td>
<td>Y/N</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>2.2 Engineering Issues</td>
<td>Y/N</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>3. Logistical Constraints</td>
<td>Y/N</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>4. Other NEPA/404 Criteria</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 Unacceptable Adverse Social, Economic, or Environmental Impacts</td>
<td>Y/N</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>4.2 Serious Community Disruption</td>
<td>Y/N</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td><strong>III. ENVIRONMENTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Water Resources/Aquatic Ecosystem</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 USACE Jurisdictional Waters/Wetlands (Impacts to Waters of the U.S.)</td>
<td>Acreage</td>
<td>7.19 ac of permanent impacts (2.18 ac of wetlands; 5.01 ac of nonwetland waters)</td>
<td>6.59 ac of permanent impacts (2.04 ac of wetlands; 4.55 ac of nonwetland waters)</td>
<td>7.19 ac of permanent impacts (2.18 ac of wetlands; 5.01 ac of nonwetland waters)</td>
</tr>
</tbody>
</table>
Table C.1: MCP Build Alternative Evaluation Detail Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Values (Metrics)</th>
<th>Alternative 4 Modified</th>
<th>Alternative 5 Modified</th>
<th>Alternative 9 Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Base Case Design</td>
<td>SJRB DV</td>
<td>Base Case Design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJRB DV</td>
<td>Base Case Design</td>
<td>SJRB DV</td>
</tr>
</tbody>
</table>

2.2 Functions/Values Affected

| Acreage | Sum of normalized rank scores for all criteria for alternatives corridor alignments from ERDC Conditions Assessment (lower number = fewer impacts) | 12.1 | 10.6 | 13.7 | 8.9 | 9 | 10.4 | 9 | 10.8 |

1.2 Floodplain Impacts

| Floodplain Affected | Sum of normalized rank scores for all criteria for alternatives corridor alignments from ERDC Conditions Assessment (lower number = fewer impacts) | 12.1 | 10.6 | 13.7 | 8.9 | 9 | 10.4 | 9 | 10.8 |

1.3 Water Quality Construction Impacts

| No. of Stream Crossings, Acres of soil | Sum of normalized rank scores for all criteria for alternatives corridor alignments from ERDC Conditions Assessment (lower number = fewer impacts) | 12.1 | 10.6 | 13.7 | 8.9 | 9 | 10.4 | 9 | 10.8 |

1.4 Water Quality Permanant Impacts

| No. of Stream Crossings, Acres of soil | Sum of normalized rank scores for all criteria for alternatives corridor alignments from ERDC Conditions Assessment (lower number = fewer impacts) | 12.1 | 10.6 | 13.7 | 8.9 | 9 | 10.4 | 9 | 10.8 |

2. Threatened and Endangered Species

| Species/Populations Affected (Wildlife) | Sum of normalized rank scores for all criteria for alternatives corridor alignments from ERDC Conditions Assessment (lower number = fewer impacts) | 12.1 | 10.6 | 13.7 | 8.9 | 9 | 10.4 | 9 | 10.8 |

C-2
### Table C.1: MCP Build Alternative Evaluation Detail Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Values (Metrics)</th>
<th>Alternative 4 Modified</th>
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<th>Alternative 9 Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Base Case Design</td>
<td>SJR DV</td>
<td>SRJB DV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJN DV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2 Species/Populations Affected (Plants)</td>
<td>• 2.9 ac of final SBKR critical habitat (2002)</td>
<td>• 2.9 ac of final SBKR critical habitat (2002)</td>
<td>• 2.9 ac of final SBKR critical habitat (2002)</td>
<td>• 2.9 ac of final SBKR critical habitat (2002)</td>
</tr>
<tr>
<td></td>
<td>• 0.36 ac of occupied San Jacinto valley crownscale habitat</td>
<td>• 0.36 ac of occupied San Jacinto valley crownscale habitat</td>
<td>• 0.36 ac of occupied San Jacinto valley crownscale habitat</td>
<td>• 0.36 ac of occupied San Jacinto valley crownscale habitat</td>
</tr>
<tr>
<td></td>
<td>• 1.09 ac of occupied spreading navarretia habitat and final critical habitat (2008) with primary constituent elements</td>
<td>• 1.09 ac of occupied spreading navarretia habitat and final critical habitat (2008) with primary constituent elements</td>
<td>• 1.09 ac of occupied spreading navarretia habitat and final critical habitat (2008) with primary constituent elements</td>
<td>• 1.09 ac of occupied spreading navarretia habitat and final critical habitat (2008) with primary constituent elements</td>
</tr>
<tr>
<td>3.1 Sensitive Plant Communities Affected</td>
<td>• 93.6 ac of Riversidean upland sage scrub</td>
<td>• 93.6 ac of Riversidean upland sage scrub</td>
<td>• 93.6 ac of Riversidean upland sage scrub</td>
<td>• 90.5 ac of Riversidean upland sage scrub</td>
</tr>
<tr>
<td></td>
<td>• 28.9 ac of San Jacinto River alkali communities</td>
<td>• 31.0 ac of San Jacinto River alkali communities</td>
<td>• 28.9 ac of San Jacinto River alkali communities</td>
<td>• 30.0 ac of San Jacinto River alkali communities</td>
</tr>
<tr>
<td></td>
<td>• 17.41 ac of riparian/riverine areas/habitat</td>
<td>• 17.41 ac of riparian/riverine areas/habitat</td>
<td>• 17.41 ac of riparian/riverine areas/habitat</td>
<td>• 15.94 ac of riparian/riverine areas/habitat</td>
</tr>
<tr>
<td>4. Effects on Western Riverside County MSHCP</td>
<td>• 3.1 Sensitive Plant Communities Affected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 MSHCP Consistency Determination</td>
<td>Consistency Determination Required</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Acreage Affected of MSHCP Criteria Area</td>
<td>• 196.1 ac affected of MSHCP Criteria Area</td>
<td>• 197.2 ac affected of MSHCP Criteria Area</td>
<td>• 196.2 ac affected of MSHCP Criteria Area</td>
</tr>
<tr>
<td></td>
<td>Acreage Affected of MSHCP Criteria Area, Public/Quasi-Public Lands, and MSHCP Conservation Area (Cores/Linkages) (temporary and permanent impacts)</td>
<td>• 8.1 ac affected of MSHCP Criteria Area</td>
<td>• 8.1 ac affected of MSHCP Criteria Area</td>
<td>• 8.1 ac affected of MSHCP Criteria Area</td>
</tr>
<tr>
<td>4.2 Conservation Goals</td>
<td>Acreage Affected of Conservation Area</td>
<td>• 64.2–67.2 ac affected of Conservation Area</td>
<td>• 66.2–69.2 ac affected of Conservation Area</td>
<td>• 66.2–69.2 ac affected of Conservation Area</td>
</tr>
<tr>
<td>4.4 Mitigation Acreage Required</td>
<td>Acreage</td>
<td>To be determined during consistency determination</td>
<td>To be determined during consistency determination</td>
<td>To be determined during consistency determination</td>
</tr>
</tbody>
</table>
| 4.5 Mitigation Acreage Available | YES/NO | YES | YES | YES | YES | YES | YES | YES | YES | YES
Table C.1: MCP Build Alternative Evaluation Detail Matrix

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<tr>
<th>Criteria</th>
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<tbody>
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<td></td>
<td></td>
<td>Base Case Design</td>
<td>SJN DV</td>
<td>SJRB DV</td>
</tr>
<tr>
<td>5. Section 4(f) Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 Section 4(f) Resources - direct use</td>
<td></td>
<td>Total Section 4 (f) resources, Acreage &amp; Cultural Sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.4 ac of the San Jacinto Wildlife Refuge</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.18 ac of Site P-33-16598 (CA RIV 8712) Multiuse Prehistoric Site Cultural Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.18 ac of Site P-33-16598 (CA RIV 8712) Multiuse Prehistoric Site Cultural Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2 Section 4(f) Resources - constructive use</td>
<td></td>
<td>Number of Section 4(f) resources</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>6. Section 6(f) Lands</td>
<td></td>
<td>Acreage</td>
<td>0.0 acre</td>
<td>0.0 acre</td>
</tr>
<tr>
<td>6.1 Section 6(f) Lands Affected</td>
<td></td>
<td>Number of Sites</td>
<td>5 sites</td>
<td>5 sites</td>
</tr>
<tr>
<td>7. Cultural Resources (includes sites not eligible for National Register)</td>
<td></td>
<td>Number of Sites</td>
<td>5 sites</td>
<td>5 sites</td>
</tr>
<tr>
<td>7.1 Prehistoric archaeological resources</td>
<td></td>
<td>Number of Sites</td>
<td>5 sites</td>
<td>5 sites</td>
</tr>
<tr>
<td>7.2 Historic archaeological/architectural resources</td>
<td></td>
<td>Number of Sites</td>
<td>2 sites</td>
<td>2 sites</td>
</tr>
<tr>
<td>8. Sacred Sites</td>
<td></td>
<td>Number of Sites</td>
<td>1 site</td>
<td>1 site</td>
</tr>
<tr>
<td>8. Land Use Impacts</td>
<td></td>
<td>Number of Sites</td>
<td>1 site</td>
<td>1 site</td>
</tr>
<tr>
<td>8.1 Access Impacts (Business)</td>
<td></td>
<td>Ranking 1-3 (1 Least Impact)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8.1b Access Impacts (Residential)</td>
<td></td>
<td>Ranking 1-3 (1 Least Impact)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8.2 Farmland Impacts</td>
<td></td>
<td>Acreage</td>
<td>Prime Farmland 212.71 ac, Farmland of State Importance 164.66 ac, Unique Farmland 47.49 ac, Farmland of Local Importance 661.04 ac, and Grazing Land 81.45 ac (Total: 1,107.34 ac)</td>
<td>Prime Farmland 212.71 ac, Farmland of State Importance 213.03 ac, Unique Farmland 49.34 ac, Farmland of Local Importance 541.34 ac, and Grazing Land 81.45 ac (Total: 1,109.46 ac)</td>
</tr>
<tr>
<td>8.3 Consistency with General Plan Land Use Element</td>
<td></td>
<td>Inconsistencies</td>
<td>Inconsistent with designated roadways and land uses for the City of Perris General Plan because it does not follow original CETAP alignment.</td>
<td>Inconsistent with designated roadways and land uses for the City of Perris General Plan because it does not follow original CETAP alignment.</td>
</tr>
<tr>
<td>8.3a Cities of San Jacinto and Perris</td>
<td></td>
<td>Inconsistencies</td>
<td>Inconsistent with designated roadways and land uses for the City of Perris General Plan because it does not follow original CETAP alignment.</td>
<td>Inconsistent with designated roadways and land uses for the City of Perris General Plan because it does not follow original CETAP alignment.</td>
</tr>
</tbody>
</table>
### Table C.1: MCP Build Alternative Evaluation Detail Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Values (Metrics)</th>
<th>Alternative 4 Modified</th>
<th>Alternative 5 Modified</th>
<th>Alternative 9 Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Base Case Design</td>
<td>SJN DV</td>
<td>SRJB DV</td>
</tr>
<tr>
<td>8.3b County of Riverside</td>
<td>Inconsistencies</td>
<td>Amendments to San Jacinto General Plan required to reflect either San Jacinto North or San Jacinto South alignment at east end of MCP.</td>
<td>Amendments to Land Use Policies LU 16.2 and 16.4, which protect agricultural lands.</td>
<td>Inconsistent with Land Use Policies LU 16.2 and 16.4, which protect agricultural lands.</td>
</tr>
<tr>
<td>9. Socioeconomic/Community Impacts</td>
<td>9.1 Business Displacements</td>
<td>Property acquisitions &amp; employees displaced</td>
<td>91 nonresidential property acquisitions</td>
<td>51 nonresidential property acquisitions</td>
</tr>
<tr>
<td>9.2 Residential Displacements</td>
<td>Property acquisitions &amp; occupants displaced</td>
<td>68 businesses</td>
<td>66 businesses displaced</td>
<td>68 businesses displaced</td>
</tr>
<tr>
<td>9.3 Travel Pattern Disruptions</td>
<td>Ranking 1-3 (1 Least Impact)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9.4 Environmental Justice Concerns</td>
<td>Impacts to minority/low-income populations</td>
<td>Does not result in disproportionate impact</td>
<td>Does not result in disproportionate impact</td>
<td>Disproportionate impact</td>
</tr>
<tr>
<td>9.5 Community Service Disruptions (EMS, fire, police)</td>
<td>Property acquisitions</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>9.6 Neighborhood/Community Impacts</td>
<td>YES/NO</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>
### Table C.1: MCP Build Alternative Evaluation Detail Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Values (Metrics)</th>
<th>Alternative 4 Modified</th>
<th>Alternative 5 Modified</th>
<th>Alternative 9 Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base Case Design</td>
<td>SJN DV</td>
<td>SJRB DV</td>
<td>Base Case Design</td>
</tr>
<tr>
<td><strong>9.8 Support by local jurisdictions, community groups, and public</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support/Opposition</td>
<td>To be determined</td>
<td>To be determined</td>
<td>To be determined</td>
<td>To be determined</td>
</tr>
<tr>
<td><strong>10. Air Quality Impacts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emissions in lbs/day</td>
<td>100.86 tons/day of CO</td>
<td>100.86 tons/day of CO</td>
<td>100.86 tons/day of CO</td>
<td>100.86 tons/day of CO</td>
</tr>
<tr>
<td>NOX</td>
<td>5.53 tons/day of NOX</td>
<td>5.53 tons/day of NOX</td>
<td>5.53 tons/day of NOX</td>
<td>5.53 tons/day of NOX</td>
</tr>
<tr>
<td>PM10</td>
<td>100.86 tons/day of PM10</td>
<td>100.86 tons/day of PM10</td>
<td>100.86 tons/day of PM10</td>
<td>100.86 tons/day of PM10</td>
</tr>
<tr>
<td><strong>10.2 Sensitive Receptors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Modeled Receptors Affected</td>
<td>73 receptors would experience a substantial increase in noise of 12 dB or more.</td>
<td>73 receptors would experience a substantial increase in noise of 12 dB or more.</td>
<td>73 receptors would experience a substantial increase in noise of 12 dB or more.</td>
<td>73 receptors would experience a substantial increase in noise of 12 dB or more.</td>
</tr>
<tr>
<td><strong>11.2 Amount of Mitigation Feasible</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Sound Barriers</td>
<td>4 sound barriers</td>
<td>4 sound barriers</td>
<td>6 sound barriers</td>
<td>6 sound barriers</td>
</tr>
<tr>
<td>PM10</td>
<td>particulate matter less than 10 microns in diameter</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acronyms:**
- ac: acre/acr
- BMPs: best management practices
- CETAP: Community and Environmental Transportation Acceptability Process
- CO: carbon monoxide
- dB: decibels
- dBA: A-weighted decibels
- EIR/EIS: Environmental Impact Report
- EMS: emergency medical services
- ERDC: Engineer and Research Development Center
- ft: foot/feet
- lbs: pounds per day
- L eq: equivalent continuous sound level
- MACP: Mid County Parkway
- MCP: Multiple Species Habitat Conservation Plan
- NAAQS: national ambient air quality standards
- NAC: Noise Abatement Criteria
- NRC: National Register of Historic Places
- NOX: nitrogen oxides
- PM10: particulate matter less than 10 microns in diameter
- POP: public/private
- ROG: reactive organic gas
- ROW: right of way
- SBKR: San Bernardino kangaroo rat
- SJN DV: San Jacinto North Design Variation
- SJRB DV: San Jacinto River Bridge Design Variation
- SOX: sulfur oxides
- tons/day: tons per day
- X: sulfur oxides
- ac = acre/acr
- dB = decibels
- ft = foot/feet
- lbs = pounds per day
- L eq = equivalent continuous sound level
- MACP = Mid County Parkway
- MSHP = Multiple Species Habitat Conservation Plan
- NAAQS = national ambient air quality standards
- NAC = Noise Abatement Criteria
- NRC = National Register of Historic Places
- NOX = nitrogen oxides
- PM10 = particulate matter less than 10 microns in diameter
APPENDIX D

USACE JURISDICTIONAL AREAS AND MCP RIGHT OF WAY FIGURES
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APPENDIX D

LEGEND

Survey Area

Right-of-Way

Wetland Soil Data Pits

Pipes/Culverts

USACE (Federal) Wetlands

Drainage System with #

USACE Non-wetland Waters

Miscellaneous Drainage with #

Isolated Waters

Reach Boundaries for Jurisdictional Delineation


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USACE Jurisdictional Areas and MCP Right-of-Way

08-RIV-MCP PM 0.0/16.3; 06-RIV-215 PM 28.0/34.3

EA 06-01200 (PN 0800000125)
LEGEND
- Survey Area
- Wetland Soil Data Pits
- Right-of-Way
- Pipes/Culverts
- Reach Boundaries for Jurisdictional Delineation
- USACE (Federal) Wetlands
- USACE Non-wetland Waters
- Drainage System with #
- Miscellaneous Drainage with #
- Isolated Waters


USACE Jurisdictional Areas and MCP Right-of-Way
06-RIV-MCP PM 0.0/16.3, 06-RIV-215 PM 28.0/34.3
EA 06-0F3200 (PN 0800000125)
LEGEND
- Survey Area
- Right-of-Way
- Reach Boundaries for Jurisdictional Delineation
- Wetland Soil Data Pits
- Pipes/Culverts
- USACE (Federal) Wetlands
- Drainage System with #
- USACE Non-wetland Waters
- Miscellaneous Drainage with #
- Isolated Waters


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USACE Jurisdictional Areas and MCP Right-of-Way
08-RIV-MCP PM 0.0/16.3; 08-RIV-215 PM 28.0/34.3
EA 08-0F1200 (PN 0800000125)
LEGEND

- Survey Area
- Right-of-Way
- Reach Boundaries for Jurisdictional Delineation
- Wetland Soil Data Pits
- Pipes/Culverts
- USACE (Federal) Wetlands
- USACE Non-wetland Waters
- Miscellaneous Drainage with #
- Drainage System with #
- Isolated Waters


APPENDIX D

USACE Jurisdictional Areas and MCP Right-of-Way
08-RIV-MCP PM 0.0/16.3, 08-RIV-215 PM 28.0/34.3
EA 08-012300 (PN 0800500125)
APPENDIX E

MCP BUILD ALTERNATIVE EVALUATION OF TEMPORARY AND PERMANENT IMPACTS TO DRAINAGE SYSTEMS MATRICES
### Table E.1: Temporary Impacts to USACE Jurisdictional Wetlands and Nonwetland Waters by Drainage System

<table>
<thead>
<tr>
<th>Reach</th>
<th>Drainage System Identifier</th>
<th>Condition (Habitat Integrity)</th>
<th>Alternative 4 Modified (Temporary Impacts, Acres)</th>
<th>Alternative 5 Modified (Temporary Impacts, Acres)</th>
<th>Alternative 9 Modified (Temporary Impacts, Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>USACE Nonwetland Waters</td>
<td>USACE Wetlands</td>
<td>SJRB DV</td>
</tr>
<tr>
<td>5</td>
<td>Miscellaneous</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>57</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>58</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>59</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>60</td>
<td>Low</td>
<td>1.38</td>
<td>0.81</td>
<td>1.38</td>
</tr>
<tr>
<td>6</td>
<td>Miscellaneous</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>61</td>
<td>Low</td>
<td>0.01</td>
<td>0.44</td>
<td>0.01</td>
</tr>
<tr>
<td>7</td>
<td>63</td>
<td>Low</td>
<td></td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Miscellaneous</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>64</td>
<td>Medium</td>
<td></td>
<td>0.05</td>
<td>0.73</td>
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<tr>
<td>8</td>
<td>65</td>
<td>Medium</td>
<td></td>
<td>0.16</td>
<td>0.66</td>
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<tr>
<td>8</td>
<td>66</td>
<td>Medium</td>
<td></td>
<td>0.68</td>
<td>0.65</td>
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<tr>
<td>8</td>
<td>Miscellaneous</td>
<td>Low</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>67</td>
<td>Medium</td>
<td>0.89</td>
<td>2.38</td>
<td>0.71</td>
</tr>
</tbody>
</table>

1 Condition of drainage system is based on ranking of Habitat Integrity Index as identified by Robert Smith in Assessment of Riparian Ecosystem Integrity: San Jacinto River Watershed, Riverside County, California, 2002. The habitat integrity of the drainage systems identified by Smith were used as a reference for other drainage systems in the study area. For purposes of this analysis, low habitat integrity is based on Smith’s integrity index <0.4; medium habitat integrity is 0.4-0.7; and high habitat integrity would be >0.7.

SJN DV = San Jacinto North Design Variation
SJRB DV = San Jacinto River Bridge Design Variation
SJS = San Jacinto South
USACE = United States Army Corps of Engineers
<table>
<thead>
<tr>
<th>Reach</th>
<th>Drainage System Identifier</th>
<th>Condition (Habitat Integrity(^1))</th>
<th>Alternative 4 Modified (Permanent Impacts, Acres)</th>
<th>Alternative 5 Modified (Permanent Impacts, Acres)</th>
<th>Alternative 9 Modified (Permanent Impacts, Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Base Case Design (SJ)</td>
<td>SJN DV</td>
<td>SJRB DV</td>
</tr>
<tr>
<td>5</td>
<td>Miscellaneous Low</td>
<td>0.05 — 0.05</td>
<td>0.05 — 0.05</td>
<td>0.05 — 0.05</td>
<td>0.05 — 0.05</td>
</tr>
<tr>
<td>5 Total</td>
<td></td>
<td>5.00</td>
<td>2.18</td>
<td>4.55</td>
<td>2.04</td>
</tr>
<tr>
<td>6</td>
<td>57 Low</td>
<td>0.00 — 0.00</td>
<td>0.00 — 0.00</td>
<td>0.00 — 0.00</td>
<td>0.00 — 0.00</td>
</tr>
<tr>
<td>6</td>
<td>58 Low</td>
<td>0.02 — 0.02</td>
<td>0.02 — 0.02</td>
<td>0.02 — 0.02</td>
<td>0.02 — 0.02</td>
</tr>
<tr>
<td>6</td>
<td>59 Low</td>
<td>0.28 — 0.28</td>
<td>0.28 — 0.28</td>
<td>0.28 — 0.28</td>
<td>0.28 — 0.28</td>
</tr>
<tr>
<td>6</td>
<td>60 Low</td>
<td>0.15 — 0.09</td>
<td>0.15 — 0.09</td>
<td>0.15 — 0.09</td>
<td>0.15 — 0.09</td>
</tr>
<tr>
<td>6</td>
<td>Miscellaneous Low</td>
<td>1.46 — 1.46</td>
<td>1.46 — 1.46</td>
<td>1.46 — 1.46</td>
<td>1.46 — 1.46</td>
</tr>
<tr>
<td>6 Total</td>
<td></td>
<td>1.89</td>
<td>0.11</td>
<td>1.88</td>
<td>0.11</td>
</tr>
<tr>
<td>7</td>
<td>61 Low</td>
<td>0.07 — 0.07</td>
<td>0.07 — 0.07</td>
<td>0.07 — 0.07</td>
<td>0.07 — 0.07</td>
</tr>
<tr>
<td>7</td>
<td>63 Medium</td>
<td>0.27 — 0.27</td>
<td>0.27 — 0.27</td>
<td>0.27 — 0.27</td>
<td>0.27 — 0.27</td>
</tr>
<tr>
<td>7 Total</td>
<td></td>
<td>1.20</td>
<td>0.27</td>
<td>1.20</td>
<td>0.27</td>
</tr>
<tr>
<td>8</td>
<td>64 Low</td>
<td>0.16 — 0.14</td>
<td>0.16 — 0.14</td>
<td>0.16 — 0.14</td>
<td>0.16 — 0.14</td>
</tr>
<tr>
<td>8</td>
<td>65 Low</td>
<td>0.26 — 0.26</td>
<td>0.26 — 0.26</td>
<td>0.26 — 0.26</td>
<td>0.26 — 0.26</td>
</tr>
<tr>
<td>8</td>
<td>66 Medium</td>
<td>0.17 — 0.17</td>
<td>0.17 — 0.17</td>
<td>0.17 — 0.17</td>
<td>0.17 — 0.17</td>
</tr>
<tr>
<td>8</td>
<td>67 Medium</td>
<td>0.26 — 0.26</td>
<td>0.26 — 0.26</td>
<td>0.26 — 0.26</td>
<td>0.26 — 0.26</td>
</tr>
<tr>
<td>8</td>
<td>Miscellaneous Low</td>
<td>0.59 — 0.59</td>
<td>0.59 — 0.59</td>
<td>0.59 — 0.59</td>
<td>0.59 — 0.59</td>
</tr>
<tr>
<td>8 Total</td>
<td></td>
<td>1.87</td>
<td>1.80</td>
<td>1.87</td>
<td>1.80</td>
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<tr>
<td>Total</td>
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<td>5.00</td>
<td>2.18</td>
<td>5.00</td>
<td>2.18</td>
</tr>
</tbody>
</table>

\(^1\) Condition of drainage system is based on ranking of Habitat Integrity Index as identified by Robert Smith in Assessment of Riparian Ecosystem Integrity: San Jacinto River Watershed, Riverside County, California, 2002. The habitat integrity of the drainage systems identified by Smith were used as a reference for other drainage systems in the study area. For purposes of this analysis, low habitat integrity is based on Smith’s integrity index <0.4; medium habitat integrity is 0.4-0.7; and high habitat integrity would be >0.7.

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SJS = San Jacinto South
USACE = United States Army Corps of Engineers

Table E.2: Permanent Impacts to USACE Jurisdictional Wetlands and Nonwetland Waters by Drainage System