Section 3.3

3.3 Biological Environment

The discussion and analysis of the biological environment is based on the environmental review and conclusions presented in the Natural Environment Study (NES) of April 2010 (RCTC 2010a), the NES Technical Report Addendum Memorandum of August 2010 (RCTC 2010b), and the Supplemental Natural Environment Study of August 2016 (RCTC 2016).

3.3.1 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Threatened and Endangered Species, Section 3.3.5. Wetlands and other waters are discussed in Section 3.3.2.

3.3.1.1 Regulatory Setting

Many laws and policies pertain to the protection of natural communities and wildlife movement. The following are a few examples.

National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) provides an overall framework for the environmental evaluation of federal actions. NEPA declares a continuing federal policy "to use all practicable means and measures to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations." NEPA directs "a systematic, interdisciplinary approach" to planning and decision making and requires environmental statements for "major Federal actions significantly affecting the quality of the human environment." Implementing regulations by the Council on Environmental Quality (CEQ) (40 CFR 1500-1508) requires federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts. Federal agencies are further directed to emphasize significant environmental issues in project planning and to integrate impact studies required by other environmental laws and Executive Orders into the NEPA process.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) establishes state policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by state lead agencies. Regulations for implementation are found in the CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects, which is similar to the process promulgated under NEPA. The guidelines make provisions for joint NEPA/CEQA documents.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act was established in 1991 in an effort to conserve natural communities at the ecosystem scale while accommodating compatible land use. Natural Community Conservation Planning (NCCP) is based on this law and is broader in its orientation and objectives than the California Endangered Species Act (CESA) and Federal Endangered Species Act (FESA). The NCCP seeks to anticipate and prevent controversies and gridlock caused by listing of species by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

An NCCP program is prepared pursuant to a planning agreement entered into in accordance with Section 2810 of the California Department of Fish and Wildlife[9] (CDFW) Code. The NCCP shall identify and provide for those measures necessary to conserve and manage natural biological diversity within the plan area while allowing compatible and appropriate economic development, growth, and other human uses (California Fish and Game Code, Section 2800-2835).

Local Tree Ordinances

In Riverside County, native oak trees with diameters greater than 2 inches at breast height are protected. The Riverside County Planning Department provides project design and impact avoidance guidelines to address the treatment of oak woodlands and help reduce project impacts on oak trees to a level of insignificance. This ordinance does not apply to the Project because no oak tree woodlands were mapped within the Study Area.

Western Riverside County Multiple Species Habitat Conservation Plan

The Project is located in southwestern Riverside County and is a covered activity, as outlined in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP contains policies on the preservation of natural communities and wildlife movement corridors within the study area (see Figure 3.3-1).

The MSHCP is a comprehensive, multijurisdictional Habitat Conservation Plan (HCP) focusing on the conservation of species and their associated habitats in western Riverside County. It is one of several large, multijurisdictional habitat-planning efforts in Southern California with the overall goal of maintaining biological and ecological diversity within a region undergoing rapid urban development. The MSHCP will allow Riverside County and its cities to better control local land use decisions and maintain a strong economic climate in the region while addressing the requirements of CESA and FESA. Further details about the MSHCP are presented in Section 3.3.1.3. An MSHCP Consistency and Determination of Biologically Equivalent or Superior Preservation (DBESP) for the Preferred Alternative was approved by RCA on September 30, 2015, and by the United States Fish and Wildlife Service (USFWS) on November 23, 2015. The DBESP can be found in Appendix L.

[9] In 2013 the California Department of Fish and Game (CDFG) changed its name to California Department of Fish and Wildlife (CDFW). When referring to specific citations or other Department guidelines prior to 2013, the Department is referred to as CDFG. Otherwise, the Department is herein referred to as CDFW.

Stephens' Kangaroo Rat Habitat Conservation Plan

The Southwestern Riverside County Multi-Species Reserve (SWRCMSR) implements the Stephens' Kangaroo Rat (SKR) Habitat Conservation Plan (HCP). The SWRCMSR is one of the reserves established under the SKR HCP. The purpose of the SWRCMSR is to protect biological habitat and its associated species. However, the SWRCMSR is not itself a wildlife refuge, nor is it part of a wildlife refuge. The Riverside County Habitat Conservation Agency (RCHCA) sits on the Reserve Management Committee (RMC) along with the Riverside County Regional Park and Open Space District, USFWS, CDFW, and Metropolitan Water District. The recreational facility inside the Reserve that is near the Project includes the North Hills Trail. This facility is operational. Coordination with the RCHCA confirmed that the North Hills Trail is outside the Project study area and that the Project will not result in any impacts (permanent or temporary) to recreational resources in the SWRCMSR (RCHCA 2010).

3.3.1.2 Affected Environment

Natural Communities and Wildlife Movement

The affected environment discussion for natural communities and wildlife movement is based on the findings in the Natural Environment Study of April 2010 (RCTC 2010a), the NES Technical Report Addendum Memorandum of August 2010 (RCTC 2010b), and the Final Rare Plant Survey Report of December 4, 2007.

Study Area

The study areas for natural communities and wildlife movement were chosen based on potential direct and indirect impacts to these resources. Therefore, the study areas contain both a direct impact area and an indirect impact area, as described below. Quantities presented in Table 3.3-1 are totals (direct and indirect) for each resource in the entire study area and should not be confused with what would actually be impacted, as shown in Table 3.3-3. The study areas for natural communities and wildlife movement contain a 100-ft and 500-ft area, respectively, adjacent to the direct impact area to account for indirect impacts. The 500-ft buffer was initially created based on guidelines presented by the California Burrowing Owl Consortium (CBOC) for analyzing indirect impacts to burrowing owls because the Project crossed burrowing owl survey areas identified in the MSHCP. According to CBOC's guidelines, the "buffer zone is included to account for adjacent burrows and foraging habitat outside the project area and impacts from factors such as noise and vibration due to heavy equipment which could impact resources outside the project area." For the same reasons, the Department and the appropriate resource agencies determined that the 500 ft buffer was also sufficient for analyzing impacts to all sensitive terrestrial animal species, including indirect impacts and wildlife movement. The overall study area for wildlife movement is referred to as the Terrestrial Wildlife Study Area (TWSA) (Figure 3.3-3).

Engineering refinements to Build Alternative 1b were made to create Build Alternative 1br which has been identified as the Preferred Alternative. The refinements have been incorporated in response to comments received during the public circulation of the Draft EIR/EIS. Refinements were also made to comply with California Department of Transportation (Caltrans) mandatory design standards and to minimize impacts to the Traditional Cultural Property (TCP) identified during Native American consultation in 2013 and 2014. Build Alternative 1br (herein referred to as the Preferred Alternative) is located within the environmental study areas discussed in this Biological Environment section and does not require new rights-of-way. Besides the design exceptions described in Chapter 2, the main difference between the Preferred Alternative and Build Alternative 1b and Design Option 1b1, is that the Preferred Alternative includes

Roadway Segment J instead of Roadway Segment K. Roadway Segment J is located slightly further to the west than Roadway Segment K. Another difference between Build Alternative 1b and the Preferred Alternative is that the Preferred Alternative has a smaller footprint through the West Hemet Hills, an area with sensitive biological resources such as rare plants, and in general, the Preferred Alternative would have less overall impacts to sensitive biological resources. A more detailed discussion of the Preferred Alternative can be found in Chapter 2, Project Description.

Natural Communities

The study area for natural communities contains the direct impact area, represented by the Project Impact Area (PIA), utility relocation areas, connections to Hemet Channel outside the Project right-of-way (ROW), and traffic detours, as well as a 100-ft buffer adjacent to the direct impact area and the two additional study areas.

The two additional study areas for natural communities were chosen because of the potential for indirect impacts as a result of changes in hydrology. The first additional study area is located on the west side of the San Diego Canal between the San Jacinto Branch Line and SR 74/Florida Avenue. This indirect impact area, referred to as Additional Indirect Impact Study Area 1, includes the Metropolitan Water District (MWD) Upper Salt Creek Reserve, the adjacent alkali grassland vernal pool complexes west of the San Diego Canal between Stetson Road and SR 74/Florida Avenue, and the vernal pools north of Stowe Road adjacent to California Avenue. The second additional study area is located predominantly on the east side of Warren Road, south of Esplanade Avenue and includes a portion of Cell 3291. This area is referred to as Additional Indirect Impact Study Area 2.

The direct impact area, the 100-ft buffer, and the two additional study areas are collectively referred to as the Rare Plant Aquatic Resource Study Area (RPARSA) because it also was used to evaluate wetlands and other waters, plant species, vernal pool branchiopods, and amphibians (Figure 3.3-2).

Wildlife Movement

The study area for wildlife movement contains the direct impact area, represented by the PIA, utility relocation areas, connections to Hemet Channel outside the Project ROW, and traffic detours, as well as the 500-ft area adjacent to the direct impact area.

Study Methods for Natural Communities

Vegetation types, including natural sensitive plant communities with special management or regulatory status in the study area, were mapped onto aerial photographs and verified in the field during the rare plant surveys. Field notes and photographs of the study area were also used to verify that vegetation was mapped correctly.

The MSHCP habitat type descriptions were used as a starting point for characterizing and describing the vegetation types observed in the study area. The MSHCP vegetation types were then modified as needed using Holland and other classifications (Ducks 1996, RCIP 2003, Holland 1986, CDFG 1998, Klein and Evans 2005, WRCHC 1995, White and Padley 1997) to describe the habitats at a finer scale. Detailed descriptions of vegetation in the Project area are provided in NES Appendix C (RCTC 2010a). Plant communities described as sensitive in the MSHCP or included in the CDFW List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database (CNDDB) were also considered sensitive (CDFG 2003) and are discussed in this section.

Study Methods for Wildlife Movement

The wildlife corridor analysis considered the following sources of information.

- Various requirements for private and public development, including transportation projects, that have been established by the MSHCP and state and federal agencies
- The nature and locations of existing and predicted wildlife movement corridors
- The nature and locations of existing barriers to wildlife movement
- The expected effects of the Project on identified corridors/zones
- General approaches to mitigate expected or potential degradation or loss of existing corridors/zones over time

The corridor analysis also took into consideration future (long-term) land uses proposed for the Project area in the San Jacinto and Riverside County General Plans (County 2003a and 2008a, County 2003b and 2008b, County 2003c and 2008c, San Jacinto 2006 and 2012) and the effect these developments would have on wildlife movement across the Project area.

All sections of the Project alternatives were visited during small mammal trapping studies in 2005 and 2006. Existing and potential wildlife crossings and general (broader) crossing zones, as well as locations exhibiting complete or partial barriers to wildlife movement, were checked for signs of wildlife activity during subsequent field visits to the study area. The types and conditions of habitats, and the presence of diagnostic sign such as tracks, scat, and road kills, in the different sections of the Project study area formed the basis for the corridor assessment in relation to the defined wildlife-movement categories. A field review of the proposed culverts and bridge features was conducted with a Project engineer, and potential areas of opportunity for and constraints to wildlife movement also were mapped.

Wildlife movement was analyzed using five wildlife movement categories. These categories were based on wildlife crossing guidelines found in MSHCP Section 7.5.2, Guidelines for Construction of Wildlife Crossings, and consist of Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers.

Avian Wildlife includes species such as the white-faced ibis, ground-dwelling species such as burrowing owls, and species with limited flight capabilities such as roadrunners and California quail. Avian Wildlife also includes non-avian flying species such as bats. Large Mammalian Wildlife includes species ranging from mountain lions and mule deer to medium-sized wildlife with the ability to travel long distances, such as coyotes and bobcats. Small Mammalian, Reptile, and Amphibian Wildlife includes species that are vole (or rodent) sized and smaller, such as Los Angeles pocket mice, snakes, toads, and frogs. Insects includes winged invertebrates, such as bees, butterflies, and flies. Passive Dispersers includes species, such as plants and vernal pool fairy shrimp, that are not able to actively disperse and rely on contiguous habitats.

Natural Communities within the RPARSA

Eighteen vegetation types, including four agricultural and two ornamental subtypes, and nine sensitive natural plant communities, are present in the study area (CDFG 2003, CDFG 2007). The amount of vegetation in each of the Build alternatives and design options, including the number of sensitive natural plant communities, is provided in Table 3.3-1. Detailed plant community descriptions, including a list of the dominant plant species observed in each vegetation type, are provided in NES Appendix C (RCTC 2010a).

The Western Riverside County MSHCP (RCIP 2003) does not provide any specific sensitivity rankings for plant communities; however, the sensitivity of natural community types has been inferred using several conservation goals in the MSHCP. Nine habitats are native to the region and are considered sensitive natural communities (CDFG 2003, CDFG 2007). These sensitive plant communities include:

- Alkali grassland
- Alkali playa
- Cottonwood willow riparian forest
- Emergent wetland
- Mulefat scrub
- Riversidian sage scrub
- Seasonal wetland
- Vernal pool
- Willow riparian scrub and forest

The most extensive habitats in the study area are agricultural (dryland farming), annual grassland, and ruderal (vegetation growing where the natural cover has been disturbed by humans). These plant communities are present on the valley floor throughout the entire study area. Pasture lands (agricultural) are present in a few areas, particularly north of Devonshire Avenue, and the agricultural-developed (e.g., poultry farms) category was identified in the northern part of the study area.

Additional Indirect Impact Study Areas 1 and 2 contain six sensitive natural plant communities (alkali grassland, alkali playa, seasonal wetlands, vernal pools, emergent wetland, and Riversidian sage scrub). Extensive stands of alkali grassland are present east of California Avenue, between the San Jacinto Branch Line and Florida Avenue, in Additional Indirect Impact Study Area 1. Patches of seasonal wetlands (including vernal pools) and alkali playa habitats are distributed throughout the alkali grasslands in this area. These sensitive natural plant communities are also present in Additional Indirect Impact Study Area 2 in Cell 3291, south of Esplanade Avenue. Combined, these areas support several hundred populations of special status plants, as described in Section 3.3.3.

Calculations for vernal pool vegetation, vernal pool features, and vernal pool branchiopods in Table 3.3-1 may differ due to resource-specific requirements and definitions. Vernal pool branchiopod habitat is based on the extent of surface ponding, whereas wetland features include areas of wetland vegetation and saturated surface soils, which may not support prolonged surface ponding that is sufficient to support branchiopods. Although the distribution of vernal pool vegetation is associated with vernal pool branchiopod habitat and wetland features, it may also occur in other seasonally moist areas that are not sufficiently ponded to qualify as branchiopod habitat or as a wetland feature.

Table 3.3-1 Summary of Biological Affected Environment for the Project Alternative and Design Option Study Areas

Affected Environment	Project Alternative					
	No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
		Roadway Segments A, E, G, I, J, L, N Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, K, M, N Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments A, F, H, I, K, L, N Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2	Roadway Segments B, D, H, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2
Natural Communities						
Grasslands and Ruderal						
Alkali Grassland (Akg)[a]	NA	47.1 ac	35.7 ac	27.8 ac	198.5 ac	185.4 ac
Annual Grassland (Angr)	NA	204.8 ac	244.8 ac	248.3 ac	313.7 ac	365.3 ac
Ruderal (Ru)	NA	182.5 ac	184.8 ac	181.1 ac	162.7 ac	169.7 ac
Scrub Habitats						
Mesic and Xeric Riversidian Sage Scrub (Rss)[a]	NA	147.4 ac	141.1 ac	83.0 ac	181.9 ac	175.6 ac
Annual Grassland/Riversidian Sage Scrub (Sage Scrub) – Ecotone (Ag/Rss)	NA	25.1 ac	26.4 ac	28.2 ac	32.8 ac	34.1 ac
Riparian Vegetation						
Cottonwood-Willow Riparian Forest (Cwrf)[a]	NA	1.9 ac	1.9 ac	1.9 ac	1.9 ac	1.9 ac
Mulefat Scrub (Ms)[a]	NA	0.01 ac	0.01 ac	0.01 ac	0.01 ac	0.01 ac
Riparian Herb (Rh)	NA	2.5 ac	2.6 ac	2.6 ac	2.5 ac	3.1 ac
Tamarisk Scrub (Tms)	NA	1.2 ac	1.3 ac	0.8 ac	(1.3 ac	1.2 ac
Willow Riparian Scrub and Forest (Wr)[a]	NA	3.8 ac	4.6 ac	4.6 ac	3.8 ac	4.6 ac
Mesic or Seasonal Wetland Vegetation						
Alkali Playa (Ap)[a]	NA	2.4 ac	2.5 ac	2.5 ac	40.9 ac	40.9 ac
Seasonal Wetland (Sw)[a, b]	NA	12.4 ac	13.0 ac	13.3 ac	17.0 ac	18.0 ac
Ruderal Alkali Flat (Raf)	NA	0.2 ac	1.6 ac	1.6 ac	0.2 ac	2.0 ac
Vernal Pool (Vp)[a, g]	NA	5.9 ac	6.0 ac	6.0 ac	22.0 ac	21.9 ac
Emergent Wetland						
Emergent Wetland (EmW)[a, b]	NA	0.5 ac	0.2 ac	0.2 ac	0.9 ac	0.7 ac
Agricultural Subtypes						
Agricultural – Developed (AgDev)	NA	39.2 ac	39.1 ac	39.5 ac	39.2 ac	39.1 ac
Agricultural – Dryland Farming (Ag df)	NA	400.3 ac	402.3 ac	396.8 ac	428.8 ac	404.1 ac
Agricultural – Irrigated Crops (Ag Ic)	NA	173.4 ac	54.8 ac	49.6 ac	167.6 ac	56.2 ac
Agricultural – Pasture (Ag Pas)	NA	45.2 ac	54.3 ac	55.4 ac	44.0 ac	55.4 ac
Ornamental Vegetation Subtypes						
Ornamental Vegetation (Orn)	NA	7.8 ac	7.8 ac	8.0 ac	8.4 ac	8.6 ac
Eucalyptus Woodland (EuW)	NA	5.3 ac	11.6 ac	9.6 ac	5.4 ac	10.7 ac

Table 3.3-1 Summary of Biological Affected Environment for the Project Alternative and Design Option Study Areas

Affected Environment				No Build Alternative	Build Alternative 1a Roadway Segments A, E, G, I, J, L, N Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Build Alternative 1b and Design Option 1b1 Roadway Segments B, C, G, I, K, M, N Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Preferred Alternative (Build Alternative 1b with Refinements) Roadway Segments B, C, G, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Build Alternative 2a Roadway Segments A, F, H, I, K, L, N Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2	Build Alternative 2b and Design Option 2b1 Roadway Segments B, D, H, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2
				Project Alternative					
Developed									
Developed (Dev)				NA	196.5 ac	172.3 ac	162.9 ac	178.7 ac	170.2 ac
Disturbed									
Disturbed (Dis)				NA	35.7 ac	35.3 ac	35.2 ac	34.0 ac	31.9 ac
Unvegetated Habitats									
Open Water (Ow)				NA	12.8 ac	20.9 ac	20.9 ac	12.8 ac	20.9 ac
Watercourse (Wc)				NA	3.2 ac	1.2 ac	1.1 ac	4.3 ac	2.2 ac
Wetlands and Other Waters									
Salt Creek Channel				NA	4.3 ac	4.0 ac	4.0 ac	4.3 ac	4.5 ac
Hemet Channel				NA	2.5 ac	1.3 ac	1.3 ac	3.6 ac	2.3 ac
Vernal Pools[g]				NA	4.5 ac	4.5 ac	4.5 ac	19.9 ac	19.9 ac
Seasonal Wetlands				NA	1.3 ac	1.3 ac	1.3 ac	6.3 ac	6.3 ac
Agricultural Seasonal Wetlands				NA	9.8 ac	9.9 ac	9.9 ac	10.2 ac	10.2 ac
Drainage Ditches				NA	5.8 ac	6.1 ac	6.1 ac	8.2 ac	8.6 ac
Riparian Seasonal Wetlands				NA	2.9 ac	3.1 ac	3.1 ac	2.9 ac	3.3 ac
Constructed Ponds				NA	2.6 ac	6.4 ac	6.4 ac	2.7 ac	6.4 ac
Open Water				NA	0.1 ac	0.1 ac	0.1 ac	0.1 ac	0.1 ac
Erosional Channels				NA	0.4 ac	0.4 ac	0.4 ac	0.2 ac	0.2 ac
MSHCP Habitats									
Riparian/Riverine Habitat				NA	11.2 ac	11.8 ac	14.6 ac	11.2 ac	12.3 ac
Vernal Pool Habitat				NA	4.8 ac	4.8 ac	2.0 ac	20.3 ac	20.3 ac
Rare Plant Populations/Individuals[d]									
Scientific Name	**Common Name**	**Federal/ State/CNPS Status Codes**[e]	**MSHCP Status and Special Conditions**[f]						
Atriplex parishii	Parish's Brittlescale	-/-/1B.1	CA, PS	NA	NA	NA	NA	13/1,320	13/1,320
Atriplex serenana var. *davidsonii*	Davidson's Saltscale	-/-/1B.2	CA, PS	NA	1/6	1/6	1/6	60/12,142	60/12,142
Calochortus plummerae	Plummer's Mariposa Lily	-/-/1B.2	CO	NA	1/2	1/2	NA	NA	NA

Table 3.3-1 Summary of Biological Affected Environment for the Project Alternative and Design Option Study Areas

Affected Environment				Project Alternative					
				No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
					Roadway Segments A, E, G, I, J, L, N Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, K, M, N Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments A, F, H, I, K, L, N Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2	Roadway Segments B, D, H, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2
Centromadia pungens ssp. *Laevis*	Smooth Tarplant	-/-/1B.1	CA, PS, RRVP	NA	270/110,101	269/424,895	231/535,703	354/288,288	346/613,336
Chorizanthe parryi var. *parryi*	Parry's Spineflower	-/-/3.2	CO	NA	27/112,536	26/111,996	17/9,806	37/16,971	36/16,431
Chorizanthe polygonoides var. *longispina*	Long-Spined Spineflower	-/-/1B.2	Covered	NA	4/4,465	4/4,465	5/13,917	27/15,564	27/15,564
Deinandra paniculata	Paniculate Tarplant	-/-/4.2	Not Included in MSHCP	NA	29/21,012	27/7,827	26/9,793	41/46,758	39/33,495
Harpagonella palmeri	Palmer's Grapplinghook	-/-/4.2	Covered	NA	NA	NA	NA	1/500	1/500
Hordeum intercedens	Vernal Barley	-/-/3.2	PS, RRVP	NA	16/1,249,380	20/1,248,680	19/1,244,448	29/10,840,492	32/10,839,292
Lasthenia glabrata ssp. *Coulteri*	Coulter's Goldfields	-/-/1B.1	CA, PS	NA	22/5,380	3/29,331	3/2,504	42/568,725	23/592,676
Lepidium virginicum var. *robinsonii*	Robinson's Peppergrass	-/-/1B.2	Not Included in MSHCP	NA	16/79,124	16/79,124	8/9,056	19/7,872	19/7,872
Microseris douglasii ssp. *Platycarpha*	Small-Flowered Microseris	-/-/4.2	CO	NA	NA	NA	NA	1/15	1/15
Myosurus minimus ssp. *apus*	Little Mousetail	-/-/3.1	CA, PS	NA	31/64,001	31/64,001	31/63,999	122/446,887	122/445,590
TOTAL NUMBER SPECIES OBSERVED				**0**	**10**	**10**	**9**	**12**	**12**
TOTAL NUMBER OF POPULATIONS OBSERVED				**0**	**417**	**398**	**341**	**746**	**719**
TOTAL NUMBER OF INDIVIDUALS OBSERVED				**0**	**1,646,007**	**1,970,327**	**1,889,231**	**12,245,409**	**12,578,108**
Animal Species									
Burrowing Owl				NA	5 pairs and a single male RIV-BUO-005 RIV-BUO-006 RIV-BUO-023 RIV-BUO-024 RIV-BUO-052 RIV-BUO-053 (single male)	7 pairs RIV-BUO-005 RIV-BUO-006 RIV-BUO-023 RIV-BUO-024 RIV-BUO-041 RIV-BUO-042 RIV-BUO-052	5 pairs RIV-BUO-005 RIV-BUO-006 RIV-BUO-023 RIV-BUO-024 RIV-BUO-052	7 pairs and a single male RIV-BUO-004 RIV-BUO-005 RIV-BUO-023 RIV-BUO-031 RIV-BUO-041 RIV-BUO-052 RIV-BUO-053 (single male)	8 pairs RIV-BUO-004 RIV-BUO-005 RIV-BUO-023 RIV-BUO-031 RIV-BUO-041 RIV-BUO-042 RIV-BUO-052

Table 3.3-1 Summary of Biological Affected Environment for the Project Alternative and Design Option Study Areas

Affected Environment	No Build Alternative	Project Alternative: Build Alternative 1a Roadway Segments A, E, G, I, J, L, N Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Build Alternative 1b and Design Option 1b1 Roadway Segments B, C, G, I, K, M, N Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Preferred Alternative (Build Alternative 1b with Refinements) Roadway Segments B, C, G, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Build Alternative 2a Roadway Segments A, F, H, I, K, L, N Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2	Build Alternative 2b and Design Option 2b1 Roadway Segments B, D, H, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2
					RIV-BUO-056	RIV-BUO-056
Excellent Quality Burrowing Owl Habitat	NA	805.04 ac	752.30 ac	765.9 ac	824.32 ac	771.79 ac
Suitable Quality Burrowing Owl Habitat	NA	1,791.54 ac	1,731.62 ac	1673.0 ac	1,727.39 ac	1,608.13 ac
Excluded Burrowing Owl Habitat	NA	555.19 ac	538.54 ac	470.3 ac	574.42 ac	577.01 ac
Non-MSHCP Nesting Raptors	NA	9 pairs red-tailed hawks	12 pairs 2 pairs barn owls 10 pairs red-tailed hawks	9 pairs 2 pairs barn owls 7 pairs red-tailed hawks	13 pairs 4 pairs barn owls 9 pairs red-tailed hawks	12 pairs 2 pairs barn owls 10 pairs red-tailed hawks
MSHCP Nesting Raptors	NA	3 pairs white-tailed kites	2 pairs white-tailed kites	2 pairs white-tailed kites	6 pairs 1 pair Cooper's hawks 5 pairs white-tailed kites	3 pairs 1 pair Cooper's hawks 2 pairs white-tailed kites
Raptor Foraging Habitat	NA	2,443.84 ac	2,343.05 ac OR 2,343.10 ac	2,317.27 ac	2,423.76 ac	2,264.36 ac OR 2,264.41 ac
Los Angeles Pocket Mouse	NA	Present	Present	Present	Present	Present
Los Angeles Pocket Mouse Habitat	NA	6.7 ac	6.7 ac	6.7 ac	6.7 ac	6.7 ac
Threatened and Endangered Species						
San Jacinto Valley Crownscale (*Atriplex coronata* var. *notatior*)	NA	13/6,749	13/6,749	1/22	237/64,065	237/64,065
Spreading Navarretia (*Navarretia fossalis*)	NA	NA	NA	NA	32/30,826	32/30,826
California Orcutt Grass (*Orcuttia californica*)	NA	NA	NA	NA	2/4,266	2/4,266
Thread-Leaved Brodiaea (*Brodiaea filifolia*)	NA	NA	NA	NA	9/231	9/231
Quino Checkerspot Butterfly Suitable Habitat	NA	1369.3 ac	1444.1 ac	578.50 ac	1294.8 ac	1399.7 ac
Coastal California Gnatcatcher Suitable Habitat	NA	334.3 ac	316.1 ac	111.19 ac	327.5 ac	309.4 ac
Vernal Pool Branchiopods[g]	NA	NA	NA	NA	1.79 ac	1.79 ac
Stephens' Kangaroo Rat Habitat	NA	581.0 ac	573.9 ac	491.1 ac	572.9 ac	562.6 ac
Least Bell's Vireo and Southwestern Willow Flycatcher	NA	NA	NA	NA	NA	NA
Least Bell's Vireo and Southwestern Willow Flycatcher Habitat	NA	27.16 ac	41.84 ac	41.58 ac	27.16 ac	41.84 ac
Critical Habitat						
Spreading Navarretia Critical Habitat	NA	4.8 ac	4.8 ac	7.44 ac	333.7 ac	333.7 ac
Wildlife Movement						
MSHCP Cores and Linkages						
Existing Constrained Linkage B (Salt Creek)	NA	5 Categories of Wildlife Movement Avian Large Mammal	5 Categories of Wildlife Movement Avian Large Mammal	5 Categories of Wildlife Movement Avian	5 Categories of Wildlife Movement Avian	5 Categories of Wildlife Movement Avian

Table 3.3-1 Summary of Biological Affected Environment for the Project Alternative and Design Option Study Areas

Affected Environment	Project Alternative					
	No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
		Roadway Segments A, E, G, I, J, L, N Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, K, M, N Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments A, F, H, I, K, L, N Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2	Roadway Segments B, D, H, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2
		Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	Large Mammal Small Mammal, Reptile, and Amphibian Insects; Passive Dispersers	Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers
Existing Constrained Linkage C (San Jacinto River)	NA	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers
Local Corridors						
Newport Road Hills to Patton Road Corridor	NA	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects
Hemet Channel Corridor	NA	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers

Table 3.3-1 Summary of Biological Affected Environment for the Project Alternative and Design Option Study Areas

Affected Environment	Project Alternative					
	No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
		Roadway Segments A, E, G, I, J, L, N Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, K, M, N Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments A, F, H, I, K, L, N Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2	Roadway Segments B, D, H, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2
San Jacinto Branch Line Corridor	NA	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian
Double Butte to West Hemet Hills Corridor	NA	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian
West Hemet Hills to Hemet-Ryan Airport Corridor	NA	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects
West Hemet Hills to Lakeview Mountains Corridor	NA	2 Categories of Wildlife Movement Avian Large Mammal	2 Categories of Wildlife Movement Avian Large Mammal	2 Categories of Wildlife Movement Avian Large Mammal	2 Categories of Wildlife Movement Avian Large Mammal	2 Categories of Wildlife Movement Avian Large Mammal
Lakeview Mountains to Tres Cerritos Hills Corridor	NA	2 Categories of Wildlife Movement Avian Large Mammal	2 Categories of Wildlife Movement Avian Large Mammal	2 Categories of Wildlife Movement Avian Large Mammal	2 Categories of Wildlife Movement Avian Large Mammal	2 Categories of Wildlife Movement Avian Large Mammal
Colorado River Aqueduct Corridor	NA	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement Avian Large Mammal Small Mammal, Reptile, and Amphibian

Table 3.3-1 Summary of Biological Affected Environment for the Project Alternative and Design Option Study Areas

Affected Environment	Project Alternative					
	No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
		Roadway Segments A, E, G, I, J, L, N Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, K, M, N Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments A, F, H, I, K, L, N Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2	Roadway Segments B, D, H, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2
Wildlife Movement Summary						
MSHCP Cores and Linkages	NA	2 Linkages Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C	2 Linkages Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C	2 Linkages Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C	2 Linkages Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C	2 Linkages Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C
Local Corridors	NA	8 Corridors Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Hemet-Ryan Airport West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct Corridor	8 Corridors Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Hemet-Ryan Airport West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct Corridor	8 Corridors Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Hemet-Ryan Airport West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct Corridor	8 Corridors Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Hemet-Ryan Airport West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct Corridor	8 Corridors Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Hemet-Ryan Airport West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct Corridor

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

Note: NA – Not Applicable. Biological resource was not observed.

Vegetation map codes correspond to those shown on the vegetation maps (Figures 3.3-5 through 3.3-10).

Five special-status plant species were only observed within Additional Indirect Impact Areas 1 or 2, and they were not identified within the Project Design Features. These are: Parish's brittlescale (*Atriplex parishii*), thread-leaved brodiaea (*Brodiaea filifolia*), Palmer's grapplinghook (*Harpagonella palmeri*), spreading navarretia (*Navarretia fossalis*), and California Orcutt grass (*Orcuttia californica*).

Developed areas, including roads and residences, are included in this tabular summary and are shown on vegetation maps, but they are not considered plant communities.

Build Alternatives 1a and 1b and the Preferred Alternative include Additional Indirect Impact Area 2; Build Alternatives 2a and 2b include Additional Indirect Impact Study Areas 1 and 2.

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

ac = acre(s)

[a] Vegetation types are considered sensitive if they are denoted as sensitive in the CDFW List of Natural Communities (CDFG 2003; CNPS 2005) or they are considered sensitive in the MSHCP (RCIP 2003).

[b] Community present only in the indirect impact study area.

[c] The MSHCP defines riparian areas as "lands which contain habitat dominated trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source." Therefore, for the purpose of this evaluation, natural riparian areas as well as seasonal wetlands, construed ponds, and drainage ditches that support trees, shrubs or persistent emergent vegetation such as cattails and bulrushes were included as riparian habitat.

[d] All numbers are presented by the number of plant populations/number of individuals for each Build alternative.

[e] Status Codes:

Federal Status

FE – Federally listed as endangered

FT – Federally listed as threatened

State Status

Table 3.3-1 Summary of Biological Affected Environment for the Project Alternative and Design Option Study Areas

Affected Environment	Project Alternative					
	No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
		Roadway Segments A, E, G, I, J, L, N Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, K, M, N Utility Relocations Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments B, C, G, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Area 2	Roadway Segments A, F, H, I, K, L, N Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside Project ROW Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2	Roadway Segments B, D, H, I, J, M, N Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours Additional Indirect Impact Study Areas 1 and 2

SE – State listed as endangered
ST – State listed as threatened
California Native Plant Society (CNPS) Status (CNPS 2005-2007)
1A – Plants Presumed Extinct in California
1B – Plants Rare, Threatened, or Endangered in California and Elsewhere
2 – Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3 – Plants About Which We Need More Information – A Review List
4 – Plants of Limited Distribution – A Watch List
CNPS Threat Rank (Suffixes to CNPS List Status Codes):
.1 – Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)
[f] Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) Definitions (RCIP 2003)
Special Conditions of MSHCP Covered Species:
CA – Surveys may be required for these species within locations shown on survey maps as described in Section 6.3.2 of the MSHCP. This includes the list of additional survey needs and procedures species and the Criteria Area Species (see MSHCP pages 6-63 to page 6-65) and the MSHCP Errata Letter, dated August 9, 2004.
CO – These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met. Species-specific conservation objectives for these species are presented in Section 9.0 of the MSHCP. Refer to Table 9-3 of the MSHCP for specific conservation objectives that must be met for these species prior to including them on the list of Covered Species Adequately Conserved.
Covered – Species addressed in the MSHCP and included in the 10(a)(1)(B) permit. Also includes species that will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met.
NE – Surveys may be required for these species in Narrow Endemic plant species survey areas, as described in Section 6.1.3 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.
PS – Planning Species – Subsets of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans per Volume I, Section 3, of the MSHCP (RCIP 2003) and the MSHCP Errata Letter, dated August 9, 2004.
RRVP – These species should be protected as they are associated with riparian/riverine areas and vernal pools as described in Section 6.1.2 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.
[g] Calculations for vernal pool vegetation, vernal pool features, and vernal pool branchiopods may be different due to resource-specific requirements and definitions.

Patches of small, seasonal wetlands are distributed throughout the study area, with most of them in the northern part. In the southern part of the study area, seasonal wetlands are mainly associated with Salt Creek Channel and Hemet Channel.

Riparian habitats are limited in the study area. A few small patches of cottonwood willow riparian forest, willow riparian scrub and forest, and mulefat scrub are present in the northern part of the study area, between North Ramona Boulevard and the San Jacinto River. Some small wetlands are interspersed with these riparian habitats, particularly in the area near North Ramona Boulevard.

Non-native habitats such as ornamental landscaping (including eucalyptus woodland) and disturbed habitats are common (but not extensive) near roads and residences throughout the study area. Extensive areas of Riversidian sage scrub habitat are present in the hills south of Domenigoni Parkway, the West Hemet Hills, and the Tres Cerritos Hills. A transitional habitat composed of sage scrub and annual grassland is present along the lower hill slopes.

Wildlife Corridors in the Terrestrial Wildlife Study Area

This section includes an overview of wildlife movement, followed by discussions of wildlife movement for each Build alternative and design option. Although impacts to wildlife movement were evaluated only in the TWSA, the habitat regions, barriers, linkages, and local corridors that provide wildlife connectivity in the region are shown in Figure 3.3-4.

Existing Habitat Regions

The Project study area contains numerous types of developed areas that restrict wildlife movement. These areas include cultivated fields, uncultivated fields, feedlots, sod farms, and various types and sizes of urban and residential parcels. The Project would also pass between or through undeveloped (that is, less disturbed, more remote, or both) areas that have been identified as habitat regions. The habitat regions pertaining to wildlife movement in the study area are illustrated in Figure 3.3-4.

The habitat regions consist of well-developed stands of sage scrub habitat intermixed with grasslands, as well as varying levels of topographic relief that provide secluded locations for resting and denning for the various wildlife species that frequent them. Although various lands that are scattered across the Project area outside the habitat regions contain a variety of avian, amphibian, reptile, and mammal species that are able to survive in more disturbed conditions, the habitat regions would be the only locations in which larger mammal species would find sufficient shelter for denning and breeding.

Movement between such natural habitat areas is critical to the survival of a wide range of terrestrial mammal species, for both regular home-range movement and longer periods of dispersal. Movement among natural habitat areas is also important to all animal groups because it allows for periodic exchange of genetic material (gene flow), which is necessary for the long-term survival of animal populations (Soule 1987).

Existing Barriers to Wildlife Movement

Wildlife movement in the Project area is constrained primarily by existing residential developments, but also by intensive agricultural practices (cultivation) in the more rural areas.

In addition to the constraints from residential development and agriculture, the ability for wildlife to move across the remaining suitable landscape is severely limited (with or without the proposed Project) due to a network of roads, canals, and associated chain-link fences. Impassable linear barriers in and near the study area include the San Diego Canal and associated fencing (four sets of fences along the canal), the Casa Loma Canal and associated fencing (four sets of fences along the canal), the Diamond Valley Reservoir fencing, Domenigoni Parkway and associated fencing, and SR 74/Florida Avenue traffic and associated fencing. Barriers to wildlife movement are illustrated in Figure 3.3-4.

Existing Wildlife Corridors and Connective Features in the Study Area

A number of existing wildlife corridors and connective features traverse the study area. These include existing constrained linkages identified by the MSHCP and local corridor/connectors identified for the Project.

MSHCP Cores and Linkages

The MSHCP Conservation Area is composed of a variety of cores and linkages. Those identified in the Project study area are described below and are shown in Figure 3.3-1 and Figure 3.3-4.

Linkages

A linkage is a connection between core areas that has adequate size, configuration, and vegetation characteristics to provide "live-in" habitat or genetic flow for identified planning species. Live-in habitat refers to areas with suitable living conditions. Areas identified as linkages in the MSHCP may provide movement habitat but not live-in habitat for some species, thereby functioning more as movement corridors. It is expected that every linkage could provide live-in habitat for at least one species.

A constrained linkage is a constricted connection that is expected to provide for movement of identified planning species between core areas where options for the connection are limited due to existing patterns of use.

Existing Constrained Linkage B (Salt Creek)

Existing Constrained Linkage B is coterminous with Salt Creek. This linkage provides for movement of species between the Hemet area in the east, the central region of the MSHCP Plan Area, and Canyon Lake in the west. It is constrained to the north and south by existing urban and agricultural land uses. This route, which is wide and adequately bridged by the major roads, provides access to water, food, cover, foraging areas, and breeding habitats for many species. However, the lack of cover in the channel (except for low grasses) and small amount of surface water make this linkage of limited use to most wildlife.

Planning species for Existing Constrained Linkage B (Salt Creek) can be divided into two categories of wildlife movement—Small Mammalian, Reptile, and Amphibian Wildlife (e.g., Los Angeles pocket mouse) and Passive Dispersers (e.g., vernal pool fairy shrimp, smooth tarplant, vernal barley, and Coulter's goldfields). In addition to the planning species identified in the MSHCP, this linkage is likely used for Avian Wildlife (e.g., burrowing owl), Large Mammalian Wildlife (e.g., coyote), and Insect movement.

Existing Constrained Linkage C (San Jacinto River)

Existing Constrained Linkage C consists of the middle segment of the San Jacinto River, which is located in the northeastern region of the MSHCP Plan Area. This public/quasi-public linkage connects MSHCP Proposed Core 5 in the east (upper San Jacinto River area) with MSHCP Proposed Constrained Linkage 20 to the west. It is also connected to MSHCP Proposed Core 3 (Badlands/Potrero area) via MSHCP Proposed Constrained Linkage 21. Like Existing Constrained Linkage B (Salt Creek), Existing Constrained Linkage C is constrained on all sides by existing development. However, unlike Salt Creek, this constrained linkage is largely surrounded by open space and conservation land use. Existing Constrained Linkage C provides both a seasonal water source and a good regional linkage between the San Bernardino Mountains and the Potrero area. The San Jacinto River serves as a local and regional wildlife movement corridor for species that use upland alluvial and riverine habitats on a regional scale. These species include small rodents to large and meso predators such as coyotes, bobcats, and foxes. Resident small mammals such as the Los Angeles pocket mouse use the alluvial fan scrub along the terraces and levee walls in this area.

Planning species for Existing Constrained Linkage C can be divided into three categories of wildlife movement—Avian Wildlife (e.g., white-faced ibis), Small Mammalian, Reptile, and Amphibian Wildlife (e.g., Los Angeles pocket mouse), and Passive Dispersers (e.g., San Jacinto Valley crownscale). In addition to the planning species identified in the MSHCP, this linkage is likely used for Large Mammalian Wildlife (e.g., mountain lion, coyote, bobcat, fox) and Insect movement.

Local Corridors

In addition to the major regional MSHCP cores and linkages, eight smaller local connective features with potential wildlife movement are present in the Project study area. These local corridors were identified based on existing habitat regions and barriers to wildlife movement and are listed below:

- Newport Road Hills to Patton Road Corridor (1)
- Hemet Channel Corridor (2)
- San Jacinto Branch Line Corridor (3)
- Double Butte to West Hemet Hills Corridor (4)
- West Hemet Hills to Hemet-Ryan Airport Corridor (5)
- West Hemet Hills to Lakeview Mountains Corridor (6)
- Lakeview Mountains to Tres Cerritos Hills Corridor (7)
- Colorado River Aqueduct Corridor (8)

The local corridors are illustrated in Figure 3.3-4.

Newport Road Hills to Patton Road Corridor (1)

The formerly contiguous area of upland sage scrub and rock outcrop habitats north of Newport Road and south of Patton Road is bisected by existing SR 79, which has created a partial barrier to the east-west movement of animals between these features. The movement of wildlife between the Diamond Valley Reservoir hills and SR 79 is ultimately blocked

by the San Diego Canal and associated double fencing. Nonetheless, some animals probably move across existing SR 79 in this area to access local undeveloped habitats on either side of the road.

Four categories of wildlife movement are likely to use the Newport Road Hills to Patton Road Corridor—Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects. Because this corridor is intersected by the existing SR 79 roadway and does not contain contiguous habitat, Passive Dispersers are not expected to use the corridor without assistance from the other categories.

Hemet Channel Corridor (2)

Although this irrigation channel is short and consists mostly of unvegetated sandy alluvium, it is important locally because it connects the longer San Jacinto Branch Line Corridor to the even larger and regionally more important Existing Constrained Linkage B (Salt Creek). The channel may also be appealing to wildlife such as bobcats and foxes, which are accustomed to traveling out of human view. The seasonal presence of water in the channel is another likely attraction for species such as coyotes.

Five categories of wildlife movement are likely to use the Hemet Channel Corridor—Avian Wildlife, Large Mammalian Wildlife (e.g., coyotes, bobcats, foxes), Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers.

San Jacinto Branch Line Corridor (3)

The San Jacinto Branch Line Corridor, which is located alongside railroad tracks, is largely unvegetated due to compacted soils and gravel cover, but it provides a continuous east-west connection from the city of Hemet airport area to the Double Butte area near Winchester. This corridor is probably used only by wide-ranging species such as coyotes and foxes, but it could also be used by small mammals from time to time. The wildlife and habitat in the airport area (e.g., burrowing owls, vernal pools, wildlife foraging habitat) are connected to the larger upland habitats to the west via this corridor.

Three categories of wildlife movement are likely to use the San Jacinto Branch Line Corridor—Avian Wildlife (e.g., burrowing owl), Large Mammalian Wildlife (e.g., coyotes and foxes), and Small Mammalian, Reptile, and Amphibian Wildlife (e.g., spadefoot toad). Because this corridor is largely unvegetated and does not contain contiguous habitat, Insects and Passive Dispersers are not expected to use it. In any event, Passive Dispersers are not expected to use the corridor without assistance from the other categories.

Double Butte to West Hemet Hills Corridor (4)

This corridor is a wide area of agricultural land that connects the upland sage scrub habitat in the West Hemet Hills north of Stowe Road and west of California Avenue and the 1,700-ac Double Butte region to the west. This area, located between Stowe Road and Stetson Road, currently has no residential housing, and the only substantial obstacle to wildlife movement is Patterson Avenue, which is two lanes. Although the agricultural fields may not provide adequate cover for many species, nocturnal movement may be prevalent in this area because of the lack of artificial light, residences, and other human influences.

Three categories of wildlife movement are likely to use the Double Butte to West Hemet Hills Corridor—Avian Wildlife (e.g., burrowing owl), Large Mammalian Wildlife (e.g., coyotes and foxes), and Small Mammalian, Reptile, and Amphibian Wildlife. Insects and Passive Dispersers are not expected to use this corridor because it is largely active agriculture and is intersected by Patterson Avenue. In any event, Passive Dispersers are not expected to use the corridor without assistance from the other categories.

West Hemet Hills to Hemet-Ryan Airport Corridor (5)

Currently, the West Hemet Hills north of Stowe Road and west of California Avenue (discussed previously) are directly connected to a system of lowland vernal pools east of California Avenue and west of the San Diego Canal. Access to the Hemet airport area and the lowland/vernal pool complexes east of the San Diego canal is currently blocked by the canal and its four parallel fences. The only east-west access across the canal and fences is a narrow area where Stetson Road crosses over the canal. This crossing is probably used primarily by coyotes, although smaller mammals may also cross the canal there. The West Hemet Hills to Hemet-Ryan Airport Corridor is significant because it connects upland sage scrub habitats with lowland grasslands, which are often important for foraging carnivores and raptors. This corridor also connects to the MSHCP Proposed Noncontiguous Habitat Block 7.

Four categories of wildlife movement are likely to use the West Hemet Hills to Hemet-Ryan Airport Corridor—Avian Wildlife (e.g., burrowing owl), Large Mammalian Wildlife (e.g., coyotes), Small Mammalian, Reptile, and Amphibian Wildlife, and Insects. Because this corridor requires wildlife to move along Stetson Road to cross the San Diego Canal and does not contain contiguous habitat, Passive Dispersers are not expected to use it without assistance from the other categories.

West Hemet Hills to Lakeview Mountains Corridor (6)

The area north of Stowe Road, south of Florida Avenue, and west of California Avenue is a relatively large, intact, and minimally disturbed tract of land that consists mostly of hills with high-quality sage scrub habitat. Much of this area is privately owned, so it is not included as a conservation area in the MSHCP. Although larger mammals, such as coyotes, are most likely to use this corridor, it has become increasingly isolated from the Lakeview Mountains to the northwest because SR 74/Florida Avenue has been widened and chain-link fencing has been installed in some locations. Many of the semirural lands north of SR 74/Florida Avenue have been recently developed into residential housing, which has created a severe bottleneck for any species that might still successfully cross Florida Avenue.

Two categories of wildlife movement are likely to use the West Hemet Hills to Lakeview Mountains Corridor—Avian Wildlife and Large Mammalian Wildlife (e.g., coyotes). The other categories are not expected to use this corridor because it has no contiguous habitat and many obstacles are present in the corridor (e.g., SR 74/Florida Avenue and residential development). In any event, Passive Dispersers are not expected to use the corridor without assistance from other categories.

Lakeview Mountains to Tres Cerritos Hills Corridor (7)

The Tres Cerritos Hills constitute a relatively small patch (less than 500 ac) of sage scrub/rocky outcrop habitat. This habitat is surrounded by housing developments, local schools, the San Diego Canal, and Warren Road. The San Diego

Canal and an associated set of four fences severely constrict any east-west movement, and passage is only possible in a few areas. The only connection from Tres Cerritos Hills to the larger habitat area in the Lakeview Mountains to the west is across Warren Road and over the San Diego Canal via a small gated bridge near Hidden Springs Road. Although this is an improbable pathway for most species except the coyote and possibly an occasional bobcat or other medium-sized mammal, it remains the sole connection available to Tres Cerritos Hills.

Two categories of wildlife movement are likely to use the Lakeview Mountains to Tres Cerritos Hills Corridor—Avian Wildlife and Large Mammalian Wildlife. Because this corridor requires species to move along roads and bridges to cross the San Diego Canal, is constrained by existing dispersal barriers, and does not contain contiguous habitat, categories are not expected to use it. In any event, Passive Dispersers are not expected to use the corridor without assistance from other categories.

Colorado River Aqueduct Corridor (8)

Although the corridor created by the Colorado River Aqueduct has little in the way of live-in wildlife habitat for many species, it provides a rare east-west passage between the upland habitats in the Lakeview Mountains and the lowland agricultural fields toward the San Jacinto River farther east. This is an important corridor for such wide-ranging species as coyotes and bobcats, as well as for dispersal movements of smaller mammals.

Three categories of wildlife movement are likely to use the Colorado River Aqueduct Corridor—Avian Wildlife, Large Mammalian Wildlife (e.g., coyotes and bobcats), and Small Mammalian, Reptile, and Amphibian Wildlife. Because this corridor is largely unvegetated and does not contain contiguous habitat, Insects and Passive Dispersers are not expected to use it. In any event, Passive Dispersers are not expected to use the corridor without assistance from the other categories.

Natural Communities in the Project Build Alternative and Design Option Study Areas

Eighteen vegetation types (including the four agricultural subtypes and both ornamental vegetation subtypes) are present in the study area. Nine of the vegetation types are sensitive natural communities (Table 3.3-1). The distribution of vegetation types is shown in Figures 3.3-5 through 3.3-10.

No Build Alternative

The affected environment under the No Build Alternative would maintain existing conditions, and the roadway would be unchanged.

Build Alternative 1a

Non-Native Habitats

The predominant non-native vegetation types in the study area for this Build alternative are agricultural (dryland farming and irrigated crops), annual grassland, and ruderal. Other disturbed habitats such as pasture and agricultural (developed) are also very common. Ornamental vegetation, including eucalyptus woodland, is scattered throughout the study area. Riparian herb and ruderal alkali-flat vegetation types are located in the Salt Creek Channel, south of Domenigoni Parkway. Tamarisk scrub was identified east of the San Diego Canal, north of Esplanade Avenue, and in a large

disturbed area south of North Ramona Boulevard, where several mesic plant communities are interspersed in a complex mosaic.

Sensitive Natural Communities

Alkali grassland, alkali playa, and vernal pool habitats are present in Additional Indirect Impact Study Area 2 in Cell 3291, which is part of the study area for Build Alternative 1a. The distribution of wetland communities is more limited elsewhere in the study area. Vegetation that is characteristic of mesic areas, including seasonal wetland, vernal pool, and alkali playas, was identified south of East Newport Road near Florida Avenue, west of the San Diego Canal and south of Tres Cerritos Avenue, north and south of Esplanade Avenue, and south of North Ramona Boulevard, adjacent to Sanderson Avenue near the northern tip of the study area. Alkali grasslands are located west of the Tres Cerritos Hills adjacent to the east side of the San Diego Canal, near Esplanade Avenue, west of Odell Avenue, and near North Ramona Boulevard in the northern part of the study area. A small area with emergent wetland vegetation is present just west of the Eastern Municipal Water District (EMWD) Regional Water Reclamation Facility. Several riparian and wetland habitats are present in a complex mosaic in a disturbed area south of North Ramona Boulevard and the Colorado River Aqueduct and include alkali grassland, riparian (mulefat scrub, willow riparian scrub and forest, and cottonwood-willow riparian forest), and seasonal wetlands. Willow riparian scrub and forest and cottonwood willow riparian forest habitat are present at the very northern tip of the study area.

The hills south of Domenigoni Parkway, the West Hemet Hills, and the base of the Tres Cerritos Hills adjacent to the San Diego Canal are dominated by Riversidian sage scrub.

Build Alternative 1b

Non-Native Habitats

The dominant non-native plant communities in the study area for Build Alternative 1b include agricultural (dryland farming), annual grassland, ruderal, and disturbed habitats. Irrigated crops, pasture, and agricultural (developed) habitats are also prevalent. Ornamental landscaping, including eucalyptus woodland, was identified in a few locations scattered throughout the study area.

Small patches of riparian herb and ruderal alkali-flat vegetation were identified on the slopes of the Salt Creek Channel south of Domenigoni Parkway. Tamarisk scrub was observed in the northern part of the study area, east of the San Diego Canal and in a disturbed area south of North Ramona Boulevard and the Colorado River Aqueduct.

Sensitive Natural Communities

Like Build Alternative 1a, this study area includes Additional Indirect Impact Study Area 2 the majority of which falls in Cell 3291. Three natural plant communities, alkali grassland, alkali playa, and vernal pool, are present in Cell 3291. These plant communities support several wetland-dependent special-status plants, as described in Section 3.3.3.

The distribution of sensitive natural wetland plant communities elsewhere in the Build Alternative 1b study area is more limited. A few small areas of seasonal wetland vegetation were identified south of East Newport Road, at the base of the northern slopes of the West Hemet Hills, north of Florida Avenue, northwest of Esplanade Avenue, and in a few

locations east of Sanderson Road between Cottonwood Avenue and the northern end of the study area. Small areas that support emergent wetland vegetation are located east of Sanderson Avenue and north and south of Scott Street. Vernal pool vegetation is very limited in the study area for this Build alternative, occurring only near Patton Avenue.

Small patches of alkali grassland habitat are located adjacent to the San Diego Canal, near Additional Indirect Impact Study Area 2 and Tres Cerritos Hills, and northwest of Esplanade Avenue. Riparian plant communities (willow riparian scrub and forest, cottonwood-willow riparian forest, and mulefat scrub) are limited to the very northern extent of the study area, near North Ramona Boulevard and south of the San Jacinto River. The hills south of Domenigoni Parkway, West Hemet Hills, and the slopes at the base of Tres Cerritos Hills support dense stands of Riversidian sage scrub habitat.

Design Option 1b1

The study areas for Build Alternative 1b and Design Option 1b1 are the same. Thus the discussion presented for Build Alternative 1b also applies to Design Option 1b1.

Preferred Alternative (Build Alternative 1b with Refinements)

Non-Native Habitats

The study areas of and therefore discussions for Build Alternative 1b, Design Option 1b1, and the Preferred Alternative are very similar. Similar to Build Alternative 1b and Design Option 1b1, the dominant non-native plant communities in the study area for the Preferred Alternative include agricultural (dryland farming), annual grassland, and ruderal habitats. Pasture, irrigated crops, and agricultural (developed) and disturbed habitats are also prevalent. Ornamental landscaping, including eucalyptus woodland, was identified in a few locations scattered throughout the study area.

Small patches of riparian herb and ruderal alkali-flat vegetation were identified on the slopes of the Salt Creek Channel south of Domenigoni Parkway. Tamarisk scrub was observed in the northern part of the study area, east of the San Diego Canal and in a disturbed area south of North Ramona Boulevard and the Colorado River Aqueduct.

Sensitive Natural Communities

Like Build Alternative 1a, Build Alternative 1b, and Design Option 1b1, the study area for the Preferred Alternative includes Additional Indirect Impact Study Area 2. Three natural plant communities, alkali grassland, alkali playa, and vernal pool, are present in Additional Indirect Impact Study Area 2. These plant communities support several wetland-dependent special-status plants, as described in Section 3.3.3.

The distribution of sensitive natural wetland plant communities elsewhere in the Preferred Alternative study area is more limited. A few small areas of seasonal wetland vegetation were identified south of East Newport Road, south of Domenigoni Parkway, at the base of the northern slopes of the West Hemet Hills, north of Florida Avenue, northwest of Esplanade Avenue, and in a few locations east of Sanderson Road between Cottonwood Avenue and the northern end of the study area. A small area that supports emergent wetland vegetation is located east of Sanderson Avenue near the EMWD facility. Vernal pool vegetation is very limited in the study area for the Preferred Alternative, occurring only northwest and southeast of Esplanade Avenue and Warren Road near Additional Indirect Impact Study Area 2.

Small patches of alkali grassland habitat are located south of North Ramona Boulevard, adjacent to the San Diego Canal near Additional Indirect Impact Study Area 2 and Tres Cerritos Hills, and northwest of Esplanade Avenue. Riparian plant communities (willow riparian scrub and forest, cottonwood-willow riparian forest, and mulefat scrub) are limited to the northern extent of the study area, near the San Jacinto River, west of Sanderson Avenue near the Colorado Aqueduct, and east of Sanderson Avenue near the EMWD facility. The hills south of Domenigoni Parkway and West Hemet Hills support dense stands of Riversidian sage scrub habitat.

Build Alternative 2a

Non-Native Habitats

Two agricultural subtypes (dryland farming and irrigated crops) are the predominant vegetation types in the study area for Build Alternative 2a; however, the other two (developed and pasture) are also common. Large patches of annual grassland and ruderal vegetation are scattered throughout the study area. Ornamental landscaping, including eucalyptus woodland, was identified in several locations.

Riparian herb and ruderal alkali-flat vegetation are present in one location, adjacent to the Salt Creek Channel in the southern part of the study area. A small patch of tamarisk scrub habitat was identified on the east side of the San Diego Canal, north of Esplanade Avenue and east of Warren Road. Tamarisk scrub was also found south of North Ramona Boulevard and the Colorado River Aqueduct, along with cottonwood-willow riparian forest and other riparian habitats.

Sensitive Natural Communities

The study area for Build Alternative 2a includes Additional Indirect Impact Study Areas 1 and 2, which encompass the Stowe Road Vernal Pool Complex and a portion of Cell 3291. These contain large areas with sensitive alkali grassland, seasonal wetland, vernal pool, and alkali playa habitats. Alkali grassland was also found adjacent to the San Diego Canal near the Tres Cerritos Hills, in the vicinity of Esplanade Avenue near Additional Indirect Impact Study Area 2, east of Warren Road and south of Ramona Expressway, and near North Ramona Boulevard.

Small patches of mesic vegetation (seasonal wetlands) are scattered throughout the study area for Build Alternative 2a. The most extensive wetland areas are in the northern part of the study area. Vernal pool and alkali playa vegetation were found near Esplanade Avenue and adjacent to Additional Indirect Impact Study Area 2. These sensitive wetland plant communities provide habitat for several hundred populations of wetland-dependent special-status plants, as described in Section 3.3.3.

Riparian habitats (including mulefat scrub, willow riparian scrub and forest, and cottonwood-willow riparian forest) were observed in the northern part of the study area for this Build alternative, near North Ramona Boulevard and north of Ramona Expressway. A small area with emergent wetland vegetation is present just west of the EMWD Regional Water Reclamation Facility.

Extensive stands of Riversidian sage scrub habitat are present in the hills south of Domenigoni Parkway, in the West Hemet Hills, and along the base of the Tres Cerritos Hills. Large expanses of Riversidian sage scrub habitat are also present on the lower hill slopes north of Stowe Road in the West Hemet Hills in Additional Indirect Impact Study Area 1.

Build Alternative 2b

Non-Native Habitats

The dominant non-native plant communities in the study area for Build Alternative 2b include agricultural lands (dryland farming), annual grassland, and ruderal habitats. The three other agricultural subtypes (irrigated crops, pasture, and agricultural developed) are also common, as is the disturbed vegetation category. Small areas of ornamental landscaping vegetation, including eucalyptus woodland, were seen in several locations throughout the study area. A small patch of tamarisk scrub habitat was found on the east side of the San Diego Canal, north of Esplanade Avenue and east of Warren Road. Tamarisk scrub was also found in a disturbed area south of North Ramona Boulevard and the Colorado River Aqueduct. Riparian herb was found east of Sanderson Avenue and north and south of Scott Street, and both riparian herb and ruderal alkali flat vegetation were found adjacent to Salt Creek Channel.

Sensitive Natural Communities

Similar to Build Alternative 2a, the study area for Build Alternative 2b includes Additional Indirect Impact Study Areas 1 and 2. The dominant vegetation type in these areas is alkali grassland habitat, with large expanses of alkali playa interspersed with seasonal wetlands and vernal pools. These natural community types compose large areas of very important wetland-dependent special-status plant species habitat, as described in Section 3.3.3.

Alkali grassland habitat was also found adjacent to the San Diego Canal near the Tres Cerritos Hills, in the vicinity of Esplanade Avenue near Additional Indirect Impact Study Area 2, and near North Ramona Boulevard.

A few small seasonal wetland areas were found south of East Newport Road. Seasonal wetland vegetation was also found at the base of the northern slopes of the West Hemet Hills, north of Devonshire and adjacent to the San Diego Canal, northwest of Esplanade Avenue and adjacent to a portion of Cell 3291, and in a few locations between Cottonwood Avenue and the northern end of the study area. Small areas that support emergent wetland vegetation are located east of Sanderson Avenue and north and south of Scott Street.

Aside from Additional Indirect Impact Study Areas 1 and 2, vernal pool vegetation is limited in the study area for this Build alternative, occurring in just two locations. The first is near Patton Avenue, and the second is northwest of Esplanade Avenue, in an area of alkali playa and alkali grassland habitat.

Riparian plant communities (willow riparian scrub, forest and cottonwood willow riparian forest, and mulefat scrub) are limited to the northern part of the study area, near North Ramona Boulevard and south of the San Jacinto River.

Extensive stands of Riversidian sage scrub habitat are present in the hills south of Domenigoni Parkway, in the West Hemet Hills, and along the base of the Tres Cerritos Hills. Riversidian sage scrub habitat was also found on the lower slopes north of Stowe Road in the West Hemet Hills, in Additional Indirect Impact Study Area 1.

Design Option 2b1

The study areas for Build Alternative 2b and Design Option 2b1 are the same. Thus the discussion presented for Build Alternative 2b also applies to Design Option 2b1.

Wildlife Corridors in the Project Alternatives and Design Options

No Build Alternative

The affected environment under the No Build Alternative would maintain existing conditions, and the roadway would be unchanged.

All Build Alternatives and Design Options

The study area for the Build alternatives and design options contains two MSHCP Existing Constrained Linkages and eight local corridors. As stated earlier, the species most likely to use MSHCP Existing Constrained Linkages B and C include Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers.

The eight local corridors identified in the study area for all of the Build alternatives and design options and the wildlife movement categories most likely to use them are:

- Newport Road Hills to Patton Road
  Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects
- Hemet Channel
  Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers
- San Jacinto Branch Line
  Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife
- Double Butte to West Hemet Hills
  Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife
- West Hemet Hills to Hemet-Ryan Airport
  Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects
- West Hemet Hills to Lakeview Mountains
  Avian Wildlife and Large Mammalian Wildlife
- Lakeview Mountains to Tres Cerritos Hills
  Avian Wildlife and Large Mammalian Wildlife
- Colorado River Aqueduct
  Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife

3.3.1.3 Environmental Consequences

Impacts to natural communities and wildlife movement were based on field data and information presented in the MSHCP. The MSHCP and reference documents can be found online at: http://www.rctlma.org/mshcp/index.html. The following describes the MSHCP and applicable policies.

MSHCP

The MSHCP Plan Area encompasses about 1,258,800 ac in western Riverside County, from which about 500,000 ac will contribute toward assembly of the overall MSHCP Conservation Area. About 347,000 ac of conservation are expected on public lands, with another 153,000 ac of new conservation obtained from applying MSHCP Criteria. MSHCP Conservation criteria have been developed for individual 160-ac U.S. Geological Survey (USGS) map quarter-section Cells (i.e., areas legally defined by section, township, and range) or Cell Groupings. These Criteria Cells provide a basis for determining impacts to and avoidance, minimization, and mitigation for MSCHP Conservation Area resources.

The MSHCP serves as an HCP pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act of 1973 (FESA), as well as an NCCP under the Natural Communities Conservation Plan Act of 2001. The MSHCP allows federal and state agencies to authorize "take" of plant and wildlife species identified within the plan area. USFWS and CDFW have authority to regulate the take of threatened, endangered, and rare species. Under the MSHCP, the wildlife agencies will grant "Take Authorization" for otherwise lawful actions—such as public and private development that may incidentally take or harm individual species or their habitat outside the MSHCP Conservation Area—in exchange for the assembly and management of a coordinated MSHCP Conservation Area. The MSHCP Conservation Area is expected to be assembled over time based on the criteria and assurances incorporated into the MSHCP (RCIP 2003). The MSHCP and its policies were adopted on June 17, 2004.

All of the Build alternatives and design options are consistent with the description of the Project in Section 7.3.5, Planned Roads, of the MSHCP. By being included in the MSHCP, it was evaluated with respect to the conservation of biological resources throughout the MSHCP planning process. As a result, the proposed Project is considered a Covered Activity within the Criteria Area. Covered Activities are certain activities within the MSHCP Plan Area that will receive Take Authorization under the Section 10(a) Permit and the NCCP Permit, provided these activities are otherwise lawful (RCIP 2003). By being a Covered Activity, the process of obtaining Take Authorization for threatened or endangered species is streamlined. The MSHCP is divided into individual area plans, which are further divided into subunits. The subunits contain various wildlife corridors, habitat blocks, and planning species. The Project would be located in the Harvest Valley/Winchester Area Plan (HVWAP) and the San Jacinto Valley Area Plan (SJVAP), specifically, in Subunit 2 of the HVWAP and Subunits 1 and 4 of the SJVAP. In Subunit 2 of the HVWAP, the Project would cross a portion of Noncontiguous Habitat Block 7 and Existing Constrained Linkage B (Salt Creek). In Subunits 1 and 4 of the SJVAP, the Project would cross a portion of Noncontiguous Habitat Blocks 6 and 7 and Existing Constrained Linkage C (Figure 3.3-1).

The Planning Species and Biological Issues and Considerations for these subunits are presented below, along with Planning Species only for Noncontiguous Habitat Blocks 6 and 7 and Existing Constrained Linkages B and C.

Subunit 2 of HVWAP

A list of Planning Species for this subunit (Subset of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans) is provided below.

- Burrowing owl
- Mountain plover
- Riverside fairy shrimp
- Vernal pool fairy shrimp
- California Orcutt grass
- Davidson's saltscale
- Little mousetail
- Spreading navarretia
- Thread-leaved brodiaea
- Vernal barley

A list of Biological Issues and Considerations for this subunit (biological factors to be used in assembly of the MSHCP Conservation Area) is provided below.

- Conserve alkali soils supporting California Orcutt grass, Davidson's saltscale, little mousetail, thread-leaved brodiaea, vernal barley, and spreading navarretia
- Conserve existing vernal pool complexes
- Maintain vernal pool hydrology
- Maintain Core Area[10] for vernal pool fairy shrimp and Riverside fairy shrimp
- Conserve grassland habitat for wintering mountain plover and burrowing owl

Subunit 1 of SJVAP

A list of Planning Species for this subunit is provided below.

- Arroyo toad
- Bell's sage sparrow
- Burrowing owl
- Cactus wren
- Loggerhead shrike
- Mountain plover
- Southern California rufous-crowned sparrow
- White-faced ibis
- Bobcat

[10]An MSHCP "Core Area" is a block of habitat of appropriate size, configuration, and vegetation characteristics to generally support the life history requirements of one or more Covered Species.

- Los Angeles pocket mouse
- Mountain lion
- San Bernardino kangaroo rat
- Stephens' kangaroo rat
- Coulter's goldfields
- Davidson's saltscale
- San Jacinto Valley crownscale
- Spreading navarretia
- Vernal barley
- Wright's trichocoronis

A list of Biological Issues and Considerations for this subunit is provided below.

- Conserve Willow-Domino-Travers soils supporting sensitive plants such as spreading navarretia, San Jacinto Valley crownscale, Coulter's goldfields, Davidson's saltscale, vernal barley, and Wright's trichocoronis
- Conserve intact upland Habitat in the southern Badlands for the benefit of burrowing owl, Bell's sage sparrow, raptors, and other species
- Conserve open grasslands and sparse shrublands that support populations of Stephens' kangaroo rat, with a focus on suitable Habitat in the southern Badlands
- Maintain Core Area for bobcat
- Maintain Core and Linkage Habitat for mountain lion
- Maintain Core Area for the San Bernardino kangaroo rat
- Determine presence of potential Core Area for the Los Angeles pocket mouse along the San Jacinto River and its tributaries

Subunit 4 of SJVAP

A list of Planning Species for this subunit is provided below.

- Burrowing owl
- Mountain plover
- Vernal pool fairy shrimp
- California Orcutt grass
- Davidson's saltscale
- Little mousetail
- Spreading navarretia
- Thread-leaved brodiaea
- Vernal barley

- San Jacinto Valley crownscale

A list of Biological Issues and Considerations for this subunit is provided below.

- Conserve alkali soils supporting California Orcutt grass, Davidson's saltscale, little mousetail, thread-leaved brodiaea, vernal barley, San Jacinto Valley crownscale, and spreading navarretia
- Conserve existing vernal pool complexes
- Maintain vernal pool hydrology
- Maintain Core Area for vernal pool fairy shrimp and Riverside fairy shrimp
- Conserve grassland habitat for wintering mountain plover and burrowing owl

Existing Constrained Linkage B (Salt Creek)

A list of Planning Species for this linkage is provided below.

- Vernal pool fairy shrimp
- Riverside fairy shrimp
- Los Angeles pocket mouse
- San Jacinto Valley crownscale
- Parish's brittlescale
- Davidson's saltscale
- Thread-leaved brodiaea
- Smooth tarplant
- Vernal barley
- Coulter's goldfields
- Little mousetail
- Spreading navarretia
- California Orcutt grass
- Wright's trichocoronis

Existing Constrained Linkage C (San Jacinto River)

A list of Planning Species for this linkage is provided below.

- Arroyo toad
- Los Angeles pocket mouse
- Mountain plover
- White-faced ibis
- San Jacinto Valley crownscale
- Parish's brittlescale

- Davidson's saltscale
- Thread-leaved brodiaea
- Coulter's goldfields
- Spreading navarretia

Noncontiguous Habitat Block 6

A list of Planning Species for this block is provided below.

- Vernal pool fairy shrimp
- Burrowing owl
- Mountain plover
- Loggerhead shrike
- Davidson's saltscale
- Thread-leaved brodiaea
- Vernal barley
- Little mousetail
- Spreading navarretia
- California Orcutt grass

Noncontiguous Habitat Block 7

A list of Planning Species for this block is provided below.

- Vernal pool fairy shrimp
- Burrowing owl
- Mountain plover
- Loggerhead shrike
- Munz's onion
- Spreading navarretia
- California Orcutt grass
- San Jacinto Valley crownscale

Criteria Area Cells

Criteria Area Cells provide a means to guide assembly of the Additional Reserve Lands. Additional Reserve Lands are defined in the MSHCP as, "conserved habitat totaling approximately 153, 000 acres that are needed to meet the goals and objectives of the MSHCP and comprised of approximately 56,000 acres of State and federal acquisition and mitigation for State Permittees, and approximately 97,000 acres contributed by Local Permittees." The Project study area includes 14 Criteria Area Cells: 2364, 2461, 2666, 2774, 2775, 2878, 3291, 3584, 3683, 3684, 3791, 3887, 3891, and 4007. The conservation goals for these Cells are summarized in Table 3.3-2. The locations of the cells are shown in Figure 3.3-1. The Project is a Covered Activity in the MSHCP Criteria Area and is documented and subject to the terms listed in Section 7.3.5 of the MSHCP. While impacts from Covered Activities were anticipated within Criteria Area

Cells, it is important that actual Project impacts are consistent with the conservation that was estimated and that the connectivity between different Cell Groups is maintained. Based on the requirements stated in Section 7.3.5 of the MSCHP, a qualitative assessment was prepared for one Criteria Area Cell (3887) and is included in NES Appendix A (RCTC 2010a), Stowe Road Mitigation Impact Assessment.

Table 3.3-2 Criteria Cells and Proposed Conservation Goals

Cell ID	Subunit	Cell Group	USGS Section	Quarter Section	Cell Criteria
2364	1	M	08	SE	Conservation within this Cell Group will contribute to assembly of Proposed Core 3. Conservation within this Cell Group will focus on chaparral and coastal sage scrub habitat. Areas conserved within this Cell Group will be connected to chaparral and coastal sage scrub habitat proposed for conservation in Cell Groups L to the west, F to the north, O to the east, and B in the Pass Area Plan, also to the east. Conservation within this Cell Group will range from 35 to 45 percent of the Cell Group focusing in the northern portion of the Cell Group.
2461	1	N/A	16	NW	Conservation within this Cell will contribute to assembly of Existing Constrained Linkage C. Conservation within this Cell will focus on Riversidian alluvial fan sage scrub habitat along the San Jacinto River. Areas conserved within this Cell will be connected to Riversidian alluvial fan sage scrub habitat proposed for conservation in Cell 2462 to the east and to Riversidian alluvial fan sage scrub, riparian scrub, woodland, and forest habitat proposed for conservation in Cell 2365 to the north. Conservation within this Cell will range from 5 to 15 percent of the Cell focusing in the northeastern portion of the Cell.
2666	4	V	19	NW	Conservation within this Cell Group will contribute to assembly of Proposed Noncontiguous Habitat Block 6. Conservation within this Cell Group will focus on grassland habitat and agricultural land. Conservation within this Cell Group will range from 70 to 80 percent of the Cell Group focusing in the northern portion of the Cell Group.
2774	4	V	19	SW	Conservation within this Cell Group will contribute to assembly of Proposed Noncontiguous Habitat Block 6. Conservation within this Cell Group will focus on grassland habitat and agricultural land. Conservation within this Cell Group will range from 70 to 80 percent of the Cell Group focusing in the northern portion of the Cell Group.
2775	4	N/A	19	SE	Conservation within this Cell will contribute to assembly of Proposed Noncontiguous Habitat Block 6. Conservation within this Cell will focus on water and riparian scrub, woodland, and forest habitat. Areas conserved within this Cell will be connected to water habitat proposed for conservation in Cell 2878 to the south. Conservation within this Cell will range from 30 to 40 percent of the Cell focusing in the southern portion of the Cell.
2878	4	N/A	30	NE	Conservation within this Cell will contribute to assembly of Proposed Noncontiguous Habitat Block 6. Conservation within this Cell will focus on water habitat. Areas conserved within this Cell will be connected to water habitat proposed for conservation in Cell 2775 to the north. Conservation within this Cell will range from 10 to 20 percent of the Cell focusing in the northern portion of the Cell.

Table 3.3-2 Criteria Cells and Proposed Conservation Goals

Cell ID	Subunit	Cell Group	USGS Section	Quarter Section	Cell Criteria
3291	4	N/A	06	NW	. Conservation within this Cell Group will contribute to assembly of Proposed Noncontiguous Habitat Block 7. Conservation within this Cell Group will focus on grassland habitat. Conservation within this Cell Group will be approximately 5 percent of the Cell Group focusing in the western portion of the Cell Group.
3584	4	D	12	SE	Conservation within this Cell Group will contribute to assembly of Proposed Noncontiguous Habitat Block 7. Conservation within this Cell Group will focus on playas/vernal pool habitat and agricultural land. Areas conserved within this Cell Group will be connected to playas/vernal pool habitat proposed for conservation in Cell 3793 to the east, in Cells 3891 and 3892 to the south, and in Cells 3684 and 3791, both in the Harvest Valley/Winchester Area Plan to the west. Conservation within this Cell Group will range from 70 to 80 percent of the Cell Group focusing in the central portion of the Cell Group.
3683	2	N/A	13	NW	Conservation within this Cell will focus on assembly of Proposed Noncontiguous Habitat Block 7. Conservation within this Cell will focus on playas, vernal pools, and a variety of upland habitat. Areas conserved within this Cell will be connected to wetlands proposed for conservation in Cell 3684 to the east and to uplands and wetlands proposed for conservation in Cell 3791 to the south. Conservation within this Cell will range from 65 to 75 percent focusing on the eastern portion of the Cell.
3684	4	D	13	NE	Conservation within this Cell Group will contribute to assembly of Proposed Noncontiguous Habitat Block 7. Conservation within this Cell Group will focus on playas/vernal pool habitat and agricultural land. Areas conserved within this Cell Group will be connected to playas/vernal pool habitat proposed for conservation in Cell 3793 to the east, in Cells 3891 and 3892 to the south, and in Cells 3684 and 3791 both in the Harvest Valley/Winchester Area Plan to the west. Conservation within this Cell Group will range from 70 to 80 percent of the Cell Group focusing in the central portion of the Cell Group.
3791	4	D	13	SW	Conservation within this Cell Group will contribute to assembly of Proposed Noncontiguous Habitat Block 7. Conservation within this Cell Group will focus on playas/vernal pool habitat and agricultural land. Areas conserved within this Cell Group will be connected to playas/vernal pool habitat proposed for conservation in Cell 3793 to the east, in Cells 3891 and 3892 to the south, and in Cells 3684 and 3791, both in the Harvest Valley/Winchester Area Plan to the west. Conservation within this Cell Group will range from 70 to 80 percent of the Cell Group focusing in the central portion of the Cell Group.

Table 3.3-2 Criteria Cells and Proposed Conservation Goals

Cell ID	Subunit	Cell Group	USGS Section	Quarter Section	Cell Criteria
3887	2	N/A	23	NE	The Stowe Road Vernal Pool Complex is located within this Cell. Conservation within this Cell will focus on assembly of Proposed Noncontiguous Habitat Block 7. Conservation within this Cell will focus on playas and vernal pools, coastal sage scrub, grassland, and chaparral. Areas conserved within this Cell will be connected to wetlands proposed for conservation to the east, northeast, and southeast in Cells 3891, 3791, and 4007. Conservation within this Cell will range from 45 to 55 percent focusing on the eastern portion of the Cell.
3891	4	N/A	24	NW	Conservation within this Cell will contribute to assembly of Proposed Noncontiguous Habitat Block 7. Conservation within this Cell will focus on playas/vernal pool habitat. Areas conserved within this Cell will be connected to playas/vernal pool habitat proposed for conservation in Cell Group D to the north, in Cell 3892 to the east, in Cell 4007 to the south, and in Cell 3891 in the Harvest Valley/Winchester Area Plan to the west. Conservation within this Cell will range from 45 to 55 percent of the Cell focusing in the eastern portion of the Cell.
4007	4	N/A	24	SW	Conservation within this Cell will contribute to assembly of Proposed Noncontiguous Habitat Block 7. Conservation within this Cell will focus on playas/vernal pool habitat. Areas conserved within this Cell will be connected to playas/vernal pool habitat proposed for conservation in Cell 3891 to the north and in Cell 4007 in the Harvest Valley/Winchester Area Plan to the west. Conservation within this Cell will be approximately 5 percent of the Cell focusing in the northern portion of the Cell.

Source: Western Riverside County Multiple Species Habitat Conservation Plan, RCIP 2003; Natural Environment Study, April 2010

Note: ID = Identification

N/A = Not Applicable; these are individual cells.

NE = Northeast

NW = Northwest

SE = Southwest

SW = Southwest

USGS = U.S. Geological Survey

MSHCP Guidelines for Construction of Wildlife Crossings

All of the Build alternatives and design options would cross Existing Constrained Linkage B (Salt Creek) and, therefore, must consider the construction of wildlife crossings. Section 7.5.2 of the MSHCP provides guidelines on the construction of wildlife crossings for roads that could present an impediment to wildlife movement. Guidelines are to be applied where wildlife movement is known to exist or in portions of the Criteria Area that have been assembled to provide wildlife movement.

Specific Crossing Design

Wildlife crossing designs may be developed in support of avian, large mammalian, small mammalian, reptile, and amphibian, or insect crossings. Crossing designs and considerations include the following.

- **Underpass/Undercrossing** – Any bridge structure under a roadway that may be used by wildlife; large structures would be required to enable crossing by large mammals; smaller undercrossings could be used by medium-sized wildlife.
- **Culvert** – Enclosed concrete or metal structures can enable crossing by medium-sized to small wildlife, including amphibians, reptiles, and some avian species (roadrunners or quail); the length of a culvert can be critical to whether or how much it will be used; for smaller wildlife, barriers could be necessary to direct them to culvert openings, and placement of crossings within the habitat is important.
- **Overpass/Overcrossing** – Any bridge structure over a road or freeway that is intended only for wildlife crossing; overcrossings would usually be naturally vegetated structures so that they look like seamless extensions of habitat to wildlife.

The locations and designs of crossing facilities must take key movement routes, natural topography and features, adjacent habitat, and species objectives and constraints into account.

General Considerations

Guidelines for wildlife crossings are provided in the MSHCP. A summary of these general considerations is included below.

- Overall assessment of crossing needs on an entire-road basis
- Spacing and mixture of crossing types
- Walls and features to direct small wildlife toward crossings
- Regular small culvert installation for small wildlife
- Placement at known travel routes or natural pinch points
- Large mammal crossings approximately every mile or small to medium-sized mammal crossings approximately every 1,000 ft
- Measures to minimize human disturbance near crossings
- Vegetative or fence windrows to direct insects to crossings
- Size dimensions for large mammal crossings
- Wildlife overpass dimensions
- Wire fencing to guide large wildlife to crossings
- Measures to allow trapped wildlife to escape

Urban/Wildlands Interface Policy

Section 6.1.4 of the MSHCP contains the urban/wildlands interface policy and provides guidelines intended to address indirect effects associated with development near the MSHCP Conservation Area (RCIP 2003). These guidelines are reproduced below.

Drainage

Proposed Developments in proximity to the MSHCP Conservation Area shall incorporate measures, including measures required through the National Pollutant Discharge Elimination System (NPDES) requirements, to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. In particular, measures shall be put in place to avoid discharge of untreated surface runoff from developed and paved areas into the MSHCP Conservation Area. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the MSHCP Conservation Area. This can be accomplished using a variety of methods including natural detention basins, grass swales or mechanical trapping devices. Regular maintenance shall occur to ensure effective operations of runoff control systems.

Toxics

Land uses proposed in proximity to the MSHCP Conservation Area that use chemicals or generate bioproducts such as manure that are potentially toxic or may adversely affect wildlife species, Habitat or water quality shall incorporate measures to ensure that application of such chemicals does not result in discharge to the MSHCP Conservation Area. Measures such as those employed to address drainage issues shall be implemented.

Lighting

Night lighting shall be directed away from the MSHCP Conservation Area to protect species within the MSHCP Conservation Area from direct night lighting. Shielding shall be incorporated in project designs to ensure ambient lighting in the MSHCP Conservation Area is not increased.

Noise

Proposed noise generating land uses affecting the MSHCP Conservation Area shall incorporate setbacks, berms or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed residential noise standards.

Invasives

When approving landscape plans for Development that is proposed adjacent to the MSHCP Conservation Area, Permittees shall consider the invasive, non-native plant species listed in Table 6-2 [MSHCP Section 6.1.4] *and shall require revisions to landscape plans (subject to the limitations of their jurisdiction) to avoid the use of invasive species for the portions of Development that are adjacent to the MSHCP Conservation Area. Considerations in reviewing the applicability of this list shall include proximity of planting areas to the MSHCP Conservation Areas, species considered in the planting plans, resources being protected within the MSHCP Conservation Area and their relative sensitivity to invasion, and barriers to plant and seed dispersal, such as walls, topography and other features.*

Barriers

Proposed land uses adjacent to the MSHCP Conservation Area shall incorporate barriers, where appropriate in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass or dumping in the MSHCP Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls, signage and/or other appropriate mechanisms.

Grading/Land Development

Manufactured slopes associated with proposed site development shall not extend into the MSHCP Conservation Area.

Guidelines for the Siting and Design of Planned Roads within the Criteria Area and Public/Quasipublic Lands:

Section 7.5.1 of the MSHCP provides guidelines for planned roadways to minimize impacts to sensitive species and habitats known to occur in the vicinity of the planned roadway. These guidelines include the following.

- *Planned roads will be located in the least environmentally sensitive location Feasible, including disturbed and developed areas or areas that have been previously altered. Alignments will follow existing roads, easements, right-of-ways, and disturbed areas, as appropriate to minimize habitat fragmentation.*
- *Planned roads will avoid, to the greatest extent Feasible, impacts to Covered Species and wetlands. If wetlands avoidance is not possible, then any impacts to wetlands will require issuance of and mitigation in accordance with a federal 404 and/or state 1600 permit.*
- *Design of planned roads will consider wildlife movement requirements, as further outlined below under Guidelines for Construction of Wildlife Corridors.*
- *Narrow Endemic Plant Species*[11] *will be avoided; if avoidance is not Feasible, then mitigation as described in the Narrow Endemics Plant Policy will be implemented.*
- *Any construction, maintenance and operation activities that involves clearing of natural vegetation will be conducted outside the active breeding season (March 1 through June 30).*
- *Prior to design and construction of transportation facilities, biological surveys will be conducted within the study area for the facility including vegetation mapping and species surveys and/or wetland delineations. The appropriate biological surveys to be conducted will be based on field conditions and recommendations of the project manager in consultation with a qualified biologist. The results of the biological resources investigations will be mapped and documented. The documentation will include preliminary conclusions and recommendations regarding potential effects of facility construction on MSHCP Conservation Area resources and methods to avoid and minimize impacts to MSHCP Conservation Area resources in conjunction with project siting, design,*

[11] A Narrow Endemic Plant Species is a species that is confined to a specific geographic region, soil type, and/or habitat.

construction and operation. The project biologist will work with facility designers during the design and construction phase to ensure implementation of Feasible recommendations.

Biological surveys and vegetation mapping were conducted prior to preliminary design of the Project to provide recommendations on Project siting, design, construction, and operation of the roadway. Additionally, avoidance, minimization, and mitigation measures were included as feasible for potential impacts to MSHCP Conservation Area resources.

Impacts

The following sections describe the potential permanent (direct and indirect) and temporary impacts to natural communities from each of the Project alternatives and design options.

Permanent Impacts

For this analysis, all areas that support natural communities inside the PIA were considered to be permanently lost as a result of building and operating the roadway. Direct impacts to natural communities, such as permanent loss of habitat, are those impacts that can be expected from the removal and disturbance of the land that are associated with construction and operation. Indirect impacts would result from the Project, be reasonably foreseeable, and could occur later or would be farther away from the Project than direct impacts. For this analysis, permanent indirect impacts could include alteration of wetland hydrology or the establishment or encroachment of invasive plants that eventually outcompete native species or degrade habitat quality. Permanent indirect impacts could occur within the 100-ft indirect impact area adjacent to the PIA or within Additional Indirect Impact Study Areas 1 and 2.

As stated in Section 3.3.1.2, 18 vegetation types (including four agricultural subtypes and two types of ornamental vegetation) are present in the study area. Nine of these are considered sensitive natural communities. The locations of vegetation types in the study area are shown in Figures 3.3-5 through 3.3-10.

Only impacts to the following nine sensitive natural communities are described in further detail in this analysis:

- Alkali grassland
- Alkali playa
- Cottonwood-willow riparian forest
- Emergent wetland
- Mulefat scrub
- Riversidian sage scrub
- Seasonal wetland
- Vernal pool
- Willow riparian scrub and forest

These sensitive natural plant communities support a diverse assemblage of plant and wildlife species, many of which are unique to the Project study area or have special status. A summary of impacts to vegetation in the Project alternatives and design options is provided in Table 3.3-3.

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Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts				Project Alternative					
				No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
					Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours	Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours
Permanent, Direct									
Vegetation									
Alkali Grassland (Akg)				NI	24.3 ac	16.1 ac	13.3 ac	24.7 ac	15.8 ac
Alkali Playa (Ap)				NI	0.01 ac	0.01 ac	0.002 ac	0.01 ac	0.01 ac
Cottonwood-Willow Riparian Forest (Cwrf)				NI	1.3 ac	1.2 ac	1.2 ac	1.3 ac	1.2 ac
Emergent Wetland (EmW)				NI	NI	NI	NI	NI	NI
Mulefat Scrub (Ms)				NI	0.01 ac	NI	NI	0.01 ac	NI
Riversidian Sage Scrub (Rss)				NI	124.8 ac	118.3 ac	52.4 ac	101.0 ac	94.5 ac
Seasonal Wetland (Sw)				NI	7.2 ac	8.2 ac	8.6 ac	7.3 ac	8.4 ac
Vernal Pool (Vp)[a]				NI	2.0 ac	0.01 ac	2.0 ac	0.01 ac	2.0 ac
Willow Riparian (Scrub and Forest) (Wr)				NI	2.4 ac	2.4 ac	2.4 ac	2.4 ac	2.4 ac
Wetlands and Other Waters									
Vernal Pools[a]				NI	1.99 ac	0.01 ac	1.99 ac	0.01 ac	1.99 ac
Seasonal Wetlands				NI	0.93 ac	0.93 ac	0.93 ac	1.06 ac	1.06 ac
Agricultural Seasonal Wetlands				NI	9.05 ac	9.05ac	9.42ac	9.05 ac	9.05 ac
Drainage Ditches				NI	5.09 ac	4.43 ac	4.43 ac	4.96 ac	4.62 ac
Riparian Seasonal Wetlands				NI	1.58 ac	1.58 ac	1.58 ac	1.59 ac	1.59 ac
Constructed Ponds				NI	2.63 ac	6.33 ac	1.35 ac	2.63 ac	6.35 ac
Erosional Drainages				NI	0.31 ac	0.31 ac	0.09 ac	0.08 ac	0.08 ac
MSHCP Habitats									
Riparian/Riverine Habitat				NI	4.18 ac	4.14 ac	5.27 ac	4.18 ac	4.13 ac
Vernal Pool Habitat[a]				NI	2.28 ac	0.33 ac	2.0 ac	0.30 ac	2.31 ac
Rare Plant Populations/Individuals[b]									
Scientific Name	**Common Name**	**Federal/State/ CNPS Status Codes[c]**	**MSHCP Status and Special Conditions[d]**						
Atriplex parishii	Parish's Brittlescale	-/-/1B.1	CA, PS	NI	NI	NI	NI	NI	NI

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts				Project Alternative					
				No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
					Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours	Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours
Atriplex serenana var. *davidsonii*	Davidson's Saltscale	-/-/1B.2	CA, PS	NI	1/6	1/6	1/6	1/6	1/6
Calochortus plummerae	Plummer's Mariposa Lily	-/-/1B.2	CO	NI	1/2	1/2	NI	NI	NI
Centromadia pungens ssp. *laevis*	Smooth Tarplant	-/-/1B.1	CA, PS, RRVP	NI	168/73,072	149/373,322	149/382,751	163/71,715	155/374,837
Chorizanthe parryi var. *parryi*	Parry's Spineflower	-/-/3.2	CO	NI	24/110,966	23/110,426	9/7,550	32/13,629	31/13,089
Chorizanthe polygonoides var. *longispina*	Long-Spined Spineflower	-/-/1B.2	Covered	NI	2/815	2/815	4/3,584	24/14,651	24/14,651
Deinandra paniculata	Paniculate Tarplant	-/-/4.2	Not Included in MSHCP	NI	20/8,729	14/1,288	17/2,090	20/29,629	14/22,188
Harpagonella palmeri	Palmer's Grapplinghook	-/-/4.2	Covered	NI	NI	NI	NI	NI	NI
Hordeum intercedens	Vernal Barley	-/-/3.2	PS, RRVP	NI	6/8,425	5/5,425	8/9,289	3/3,925	6/8,425
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	-/-/1B.1	CA, PS	NI	20/4,785	2/28,079	2/1,718	20/4,785	3/28,081
Lepidium virginicum var. *robinsonii*	Robinson's Peppergrass	-/-/1B.2	Not Included in MSHCP	NI	14/79,074	14/79,074	6/5,753	16/7,700	16/7,700
Microseris douglasii ssp. *platycarpha*	Small-Flowered Microseris	-/-/4.2	CO	NI	NI	NI	NI	1/15	1/15
Myosurus minimus ssp. *apus*	Little Mousetail	-/-/3.1	CA, PS	NI	1/10,000	1/10,000	1/10,000	1/10,000	1/10,000
Animal Species									
Burrowing Owl				NI	1 pair: RIV-BUO-023 (2006 nest)	1 pair: RIV-BUO-023 (2006 nest)	1 pair: RIV-BUO-023 (2006 nest)	2 pairs: RIV-BUO-031 RIV-BUO-056	2 pairs: RIV-BUO-031 RIV-BUO-056

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts	Project Alternative					
	No Build Alternative	**Build Alternative 1a**	**Build Alternative 1b and Design Option 1b1**	**Preferred Alternative (Build Alternative 1b with Refinements)**	**Build Alternative 2a**	**Build Alternative 2b and Design Option 2b1**
		Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	**Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**
Excellent Quality Burrowing Owl Habitat	NI	9.95 ac	23.54 ac	23.54 ac	76.92 ac	81.72 ac
Suitable Quality Burrowing Owl Habitat	NI	122.02 ac	143.96 ac	143.96 ac	130.84 ac	150.77 ac
Non-MSHCP Nesting Raptors	NI	5 pairs: 1 pair barn owls 4 pairs red-tailed hawks	5 pairs: 1 pair barn owls 4 pairs red-tailed hawks	5 pairs: 1 pair barn owls 4 pairs red-tailed hawks	5 pairs: 1 pair barn owls 4 pairs red-tailed hawks	5 pairs: 1 pair barn owls 4 pairs red-tailed hawks
MSHCP Nesting Raptors	NI	0 pairs	0 pairs	0 pairs	0 pairs	0 pairs
Raptor Foraging Habitat	NI	351.70 ac	264.42 ac OR 265.25 ac[e]	299.75 ac)	351.70 ac	264.42 ac OR 265.25 ac[e]
Los Angeles Pocket Mouse	NI	Present	Present	Present	Present	Present
Los Angeles Pocket Mouse Habitat	NI	2.6 ac	2.6 ac	2.6 ac	2.6 ac	2.6 ac
Bats	NI	Removal of roosting habitat	Removal of roosting habitat	Removal of roosting habitat	Removal of roosting habitat	Removal of roosting habitat
Threatened and Endangered Species						
Vernal Pool Branchiopods[a]	NI	NI	NI	NI	NI	NI
Stephens' Kangaroo Rat Habitat	NI	250.4 ac	247.1 ac	182.3 ac	216.1 ac	212.5 ac
Quino Checkerspot Butterfly Suitable Habitat	NI	419.5 ac	432.7 ac OR 433.2 ac[e]	375.36 ac	371.0 ac	401.9 ac OR 402.4 ac[e]
Coastal California Gnatcatcher Suitable Habitat	NI	144.7 ac	138.9 ac	72.68 ac	114.0 ac	108.3 ac
San Jacinto Valley Crownscale	NI	4/589	4/589	NI	4/589	4/589
Spreading Navarretia	NI	NI	NI	NI	NI	NI
California Orcutt Grass	NI	NI	NI	NI	NI	NI
Critical Habitat						
Spreading Navarretia Critical Habitat	NI	2.3 ac	2.3 ac	2.97 ac	2.4 ac	2.4 ac
Wildlife Movement						
MSHCP Cores and Linkages						
Existing Constrained Linkage B (Salt Creek)	NI	NI	NI	NI	NI	NI
Existing Constrained Linkage C (San Jacinto River)	NI	NI	NI	NI	NI	NI
Local Corridors						
Newport Road Hills to Patton Road Corridor	NI	2 Categories of Wildlife Movement: Small Mammal, Reptile, and Amphibian; Insects	NI	NI	2 Categories of Wildlife Movement: Small Mammal, Reptile, and Amphibian; Insects	NI

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

	Project Alternative					
		Build Alternative 1a	**Build Alternative 1b and Design Option 1b1**	**Preferred Alternative (Build Alternative 1b with Refinements)**	**Build Alternative 2a**	**Build Alternative 2b and Design Option 2b1**
Impacts	**No Build Alternative**	**Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**
Hemet Channel Corridor	NI	NI	NI	NI	NI	NI
San Jacinto Branch Line Corridor	NI	NI	NI OR 2 Categories of Wildlife Movement: Large Mammal; Small Mammal, Reptile, and Amphibian[e]	NI	NI	NI OR 2 Categories of Wildlife Movement: Large Mammal; Small Mammal, Reptile, and Amphibian[e]
Double Butte to West Hemet Hills Corridor	NI	2 Categories of Wildlife Movement: Large Mammal; Small Mammal, Reptile, and Amphibian	2 Categories of Wildlife Movement: Large Mammal; Small Mammal, Reptile, and Amphibian	NI	NI	NI
West Hemet Hills to Hemet-Ryan Airport Corridor	NI	NI	NI	NI	1 Category of Wildlife Movement: Large Mammal	1 Category of Wildlife Movement: Large Mammal
West Hemet Hills to Lakeview Mountains Corridor	NI	1 Category of Wildlife Movement: Large Mammal	1 Category of Wildlife Movement: Large Mammal	1 Category of Wildlife Movement: Large Mammal	NI	NI
Lakeview Mountains to Tres Cerritos Hills Corridor	NI	1 Category of Wildlife Movement: Large Mammal	1 Category of Wildlife Movement: Large Mammal	1 Category of Wildlife Movement: Large Mammal	1 Category of Wildlife Movement: Large Mammal	1 Category of Wildlife Movement: Large Mammal
Colorado River Aqueduct Corridor	NI	NI	NI	NI	NI	NI

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts	Project Alternative					
	No Build Alternative	**Build Alternative 1a**	**Build Alternative 1b and Design Option 1b1**	**Preferred Alternative (Build Alternative 1b with Refinements)**	**Build Alternative 2a**	**Build Alternative 2b and Design Option 2b1**
		Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	**Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**
Wildlife Movement Summary						
MSHCP Cores and Linkages	NI	NI	NI	NI	NI	NI
Local Corridors	NI	4 Corridors: Newport Road Hills to Patton Road Hills Double Butte to West Hemet Hills West Hemet Hills to Lakeview Mountains Area Lakeview Mountains to Tres Cerritos Hills	3 Corridors: Double Butte to West Hemet Hills West Hemet Hills to Lakeview Mountains Area Lakeview Mountains to Tres Cerritos Hills OR 4 Corridors: San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Lakeview Mountains Area Lakeview Mountains to Tres Cerritos Hills[e]	2 Corridors: West Hemet Hills to Lakeview Mountains Area Lakeview Mountains to Tres Cerritos Hills	3 Corridors: Newport Road Hills to Patton Road Hills West Hemet Hills to Hemet-Ryan Airport Lakeview Mountains to Tres Cerritos Hills	2 Corridors: West Hemet Hills to Hemet-Ryan Airport Lakeview Mountains to Tres Cerritos Hills OR 4 Corridors: Hemet Channel San Jacinto Branch Line West Hemet Hills to Hemet-Ryan Airport Lakeview Mountains to Tres Cerritos Hills[e]
Permanent, Indirect						
Vegetation						
Alkali Grassland (Akg)	NI	12.0 ac	8.8 ac	3.9 ac	31.8 ac	27.6 ac
Alkali Playa (Ap)	NI	0.07 ac	0.2 ac	0.2 ac	0.2 ac	0.07 ac
Cottonwood-Willow Riparian Forest (Cwrf)	NI	0.6 ac	0.7 ac	0.7 ac	0.6 ac	0.7 ac
Emergent Wetland (EmW)	NI	0.5 ac	0.2 ac	0.2 ac	0.5 ac	0.2 ac
Mulefat Scrub (Ms)	NI	0.0	0.01 ac	0.01 ac	0.0	0.01 ac
Riversidian Sage Scrub (Rss)	NI	22.7 ac	22.9 ac	30.6 ac	62.7 ac	62.9 ac
Seasonal Wetland (Sw)	NI	5.2 ac	4.8 ac	4.7 ac	5.0 ac	5.0 ac
Vernal Pool (Vp)[a]	NI	0.6 ac	0.8 ac	0.8 ac	3.3 ac	3.2 ac
Willow Riparian (Scrub and Forest) (Wr)	NI	1.4 ac	2.2 ac	2.2 ac	1.4 ac	2.2 ac
Wetlands and Other Waters						
Vernal Pools[a]	NI	NI	NI	NI	2.43 ac	2.43 ac
MSHCP Habitats						
Vernal Pool Habitat[a]	NI	NI	NI	NI	2.43 ac	2.43 ac

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts				Project Alternative					
				No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
					Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours	Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours
Rare Plant Populations/Individuals[b]									
Scientific Name	**Common Name**	**Federal/State/ CNPS Status Codes** [c]	**MSHCP Status and Special Conditions**[d]						
Atriplex parishii	Parish's Brittlescale	-/-/1B.1	CA, PS	NI	NI	NI	NI	NI	NI
Atriplex serenana var. *davidsonii*	Davidson's Saltscale	-/-/1B.2	CA, PS	NI	NI	NI	NI	NI	NI
Calochortus plummerae	Plummer's Mariposa Lily	-/-/1B.2	CO	NI	NI	NI	NI	NI	NI
Centromadia pungens ssp. *laevis*	Smooth Tarplant	-/-/1B.1	CA, PS, RRVP	NI	80/26,512	102/156,666	79/148,730	94/31,841	97/152,589
Chorizanthe parryi var. *parryi*	Parry's Spineflower	-/-/3.2	CO	NI	3/1,570	3/1,570	8/2,256	4/264	4/264
Chorizanthe polygonoides var. *longispina*	Long-Spined Spineflower	-/-/1B.2	Covered	NI	2/3,801	2/3,801	2/10,333	3/913	3/913
Deinandra paniculata	Paniculate Tarplant	-/-/4.2	Not Included in MSHCP	NI	17/12,645	15/5,706	14/7,703	19/12,795	17/5,856
Harpagonella palmeri	Palmer's Grapplinghook	-/-/4.2	Covered	NI	NI	NI	NI	1/500	1/500
Hordeum intercedens	Vernal Barley	-/-/3.2	PS, RRVP	NI	6/10,496	11/12,796	7/4,559	11/5,022,997	11/5,017,297
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	-/-/1B.1	CA, PS	NI	3/650	2/1,046	2/786	3/650	1/1,044

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts				Project Alternative					
				No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
					Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours	Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours
Lepidium virginicum var. *robinsonii*	Robinson's Peppergrass	-/-/1B.2	Not Included in MSHCP	NI	2/50	2/50	3/3,303	3/172	3/172
Microseris douglasii ssp. *platycarpha*	Small-Flowered Microseris	-/-/4.2	CO	NI	NI	NI	NI	NI	NI
Myosurus minimus ssp. *apus*	Little Mousetail	-/-/3.1	CA, PS	NI	1/8,589	1/9,886	2/9,403	14/12,750	14/11,395
Animal Species[f]									
Burrowing Owl				NI	5 pairs and a single male: RIV-BUO-005 RIV-BUO-006 RIV-BUO-023 (2005 nest) RIV-BUO-024 RIV-BUO-052 RIV-BUO-053 (single male)	6 pairs: RIV-BUO-005 RIV-BUO-006 RIV-BUO-023 (2005 nest) RIV-BUO-024 RIV-BUO-042 RIV-BUO-052	4 pairs[g] RIV-BUO-005 RIV-BUO-006 RIV-BUO-024 RIV-BUO-052	4 pairs and a single male: RIV-BUO-004 RIV-BUO-005 RIV-BUO-023 RIV-BUO-052 RIV-BUO-053 (single male)	5 pairs: RIV-BUO-004 RIV-BUO-005 RIV-BUO-023 RIV-BUO-042 RIV-BUO-052
Non-MSHCP Nesting Raptors				NI	7 pairs: 2 pairs barn owls 5 pairs red-tailed hawks	7 pairs: 1 pair barn owls 6 pairs red-tailed hawks	4 pairs: 1 pair barn owls 3 pairs red-tailed hawks	7 pairs: 2 pairs barn owls 5 pairs red-tailed hawks	7 pairs: 1 pair barn owls 6 pairs red-tailed hawks
MSHCP Nesting Raptors				NI	2 pairs white-tailed kites	2 pairs white-tailed kites	2 pairs white-tailed kites	5 pairs: 1 pair Cooper's hawks 4 pairs white-tailed kites	3 pairs: 1 pair Cooper's hawks 2 pairs white-tailed kites
Los Angeles Pocket Mouse				NI	Present	Present	Present	Present	Present
Los Angeles Pocket Mouse Habitat				NI	2.2 ac	2.2 ac	2.2 ac	2.2 ac	2.2 ac
Threatened and Endangered Species[f]									
Vernal Pool Branchiopods[a]				NI	NI	NI	NI	1.79 ac	1.79 ac
Stephens' Kangaroo Rat Habitat				NI	330.6 ac	326.8 ac	308.8 ac	356.8 ac	350.1 ac
Quino Checkerspot Butterfly Suitable Habitat				NI	196.02 ac	210.25 ac OR 210.37 ac[e]	186.91 ac	581.69 ac	592.91 ac OR 593.03 ac[e]
Coastal California Gnatcatcher Suitable Habitat				NI	27.90 ac	28.62 ac	38.51 ac	100.68 ac	101.41 ac
San Jacinto Valley Crownscale				NI	11/6,138	11/6,138	NI	32/6,548	32/6,548
Spreading Navarretia				NI	NI	NI	NI	15/28,533	15/28,533
California Orcutt Grass				NI	NI	NI	NI	2/4,266	2/4,266

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts	Project Alternative					
	No Build Alternative	**Build Alternative 1a** **Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Build Alternative 1b and Design Option 1b1** **Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Preferred Alternative (Build Alternative 1b with Refinements)** **Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Build Alternative 2a** **Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Build Alternative 2b and Design Option 2b1** **Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**
Critical Habitat						
Spreading Navarretia Critical Habitat	NI	2.4 ac	2.4 ac	4.47 ac	331.3 ac	331.3 ac
Wildlife Movement						
MSHCP Cores and Linkages						
Existing Constrained Linkage B (Salt Creek)	NI	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects
Existing Constrained Linkage C (San Jacinto River)	NI	NI	NI	NI	NI	NI
Local Corridors						
Newport Road Hills to Patton Road Corridor	NI	2 Categories of Wildlife Movement: Avian Large Mammal	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	2 Categories of Wildlife Movement: Avian Large Mammal	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects
Hemet Channel Corridor	NI	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects
San Jacinto Branch Line Corridor	NI	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian OR 1 Category of Wildlife Movement: Avian[e]	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian OR 1 Category of Wildlife Movement: Avian[e]

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

	Project Alternative					
		Build Alternative 1a	**Build Alternative 1b and Design Option 1b1**	**Preferred Alternative (Build Alternative 1b with Refinements)**	**Build Alternative 2a**	**Build Alternative 2b and Design Option 2b1**
Impacts	**No Build Alternative**	**Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**
Double Butte to West Hemet Hills Corridor	NI	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	NI	NI
West Hemet Hills to Hemet-Ryan Airport Corridor	NI	NI	NI	NI	2 Categories of Wildlife Movement: Avian Small Mammal, Reptile, and Amphibian	2 Categories of Wildlife Movement: Avian Small Mammal, Reptile, and Amphibian
West Hemet Hills to Lakeview Mountains Corridor	NI	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	NI	NI
Lakeview Mountains to Tres Cerritos Hills Corridor	NI	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian
Colorado River Aqueduct Corridor	NI	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts	Project Alternative					
	No Build Alternative	**Build Alternative 1a**	**Build Alternative 1b and Design Option 1b1**	**Preferred Alternative (Build Alternative 1b with Refinements)**	**Build Alternative 2a**	**Build Alternative 2b and Design Option 2b1**
		Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	**Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**
Wildlife Movement Summary						
MSHCP Cores and Linkages	NI	1 Linkage: Existing Constrained Linkage B	1 Linkage: Existing Constrained Linkage B	1 Linkage: Existing Constrained Linkage B	1 Linkage: Existing Constrained Linkage B	1 Linkage: Existing Constrained Linkage B
Local Corridors	NI	7 Corridors: Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct	7 Corridors: Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct	7 Corridors: Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct	6 Corridors: Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line West Hemet Hills to Hemet-Ryan Airport Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct	6 Corridors: Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line West Hemet Hills to Hemet-Ryan Airport Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct
Temporary						
Wetlands and Other Waters						
Salt Creek Channel[a]	NI	2.85 ac	2.77 ac	2.77 ac	2.85 ac	3.15 ac
Hemet Channel[a]	NI	NI	0.72 ac	0.72 ac	1.85 ac	1.32 ac
MSHCP Habitats						
Riparian/Riverine Habitat[a]	NI	2.85 ac	2.77 ac	3.48 ac	2.85 ac	3.15 ac
Animal Species[f]						
Burrowing Owl	NI	5 pairs and a single male: RIV-BUO-005 RIV-BUO-006 RIV-BUO-023 RIV-BUO-024 RIV-BUO-052 RIV-BUO-053 (single male)	6 pairs: RIV-BUO-005 RIV-BUO-006 RIV-BUO-023 RIV-BUO-024 RIV-BUO-042 RIV-BUO-052	4 pairs: RIV-BUO-005 RIV-BUO-006 RIV-BUO-024 RIV-BUO-052	4 pairs and a single male: RIV-BUO-004 RIV-BUO-005 RIV-BUO-023 RIV-BUO-052 RIV-BUO-053 (single male)	5 pairs: RIV-BUO-004 RIV-BUO-005 RIV-BUO-023 RIV-BUO-042 RIV-BUO-052
Non-MSHCP Nesting Raptors	NI	7 pairs: 2 pairs barn owls 5 pairs red-tailed hawks	7 pairs: 1 pair barn owls 6 pairs red-tailed hawks	4 pairs: 1 pair barn owls 3 pairs red-tailed hawks	7 pairs: 2 pairs barn owls 5 pairs red-tailed hawks	7 pairs: 1 pair barn owls 6 pairs red-tailed hawks
MSHCP Nesting Raptors	NI	2 pairs white-tailed kites	2 pairs white-tailed kites	2 pairs white-tailed kites	5 pairs: 1 pair Cooper's hawks 4 pairs white-tailed kites	3 pairs: 1 pair Cooper's hawks 2 pairs white-tailed kites
Bats	NI	Roost sites and foraging areas	Roost sites and foraging areas	Roost sites and foraging areas	Roost sites and foraging areas	Roost sites and foraging areas

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts	Project Alternative					
	No Build Alternative	**Build Alternative 1a** **Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Build Alternative 1b and Design Option 1b1** **Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Preferred Alternative (Build Alternative 1b with Refinements)** **Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Build Alternative 2a** **Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Build Alternative 2b and Design Option 2b1** **Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**
Los Angeles Pocket Mouse	NI	Present	Present	Present	Present	Present
Los Angeles Pocket Mouse Habitat	NI	2.2 ac	2.2 ac	2.2 ac	2.2 ac	2.2 ac
Threatened and Endangered Species[f]						
Stephens' Kangaroo Rat Habitat	NI	330.6 ac	326.8 ac	308.8 ac	356.8 ac	350.1 ac
Quino Checkerspot Butterfly Suitable Habitat	NI	196.02 ac	210.25 ac OR 210.37 ac[e]	186.91 ac	581.69 ac	592.91 ac OR 593.03 ac[e]
Coastal California Gnatcatcher Suitable Habitat	NI	27.90 ac	28.62 ac	38.51 ac	100.68 ac	101.41 ac
Wildlife Movement						
MSHCP Cores and Linkages						
Existing Constrained Linkage B (Salt Creek)	NI	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers
Existing Constrained Linkage C (San Jacinto River)	NI	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	5 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers
Local Corridors						
Newport Road Hills to Patton Road Corridor	NI	2 Categories of Wildlife Movement: Avian Large Mammal	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects	2 Categories of Wildlife Movement: Avian Large Mammal	4 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian Insects
Hemet Channel Corridor	NI	5 Categories of Wildlife Movement: Avian Large Mammal	5 Categories of Wildlife Movement: Avian Large Mammal	5 Categories of Wildlife Movement: Avian	5 Categories of Wildlife Movement: Avian Large Mammal	5 Categories of Wildlife Movement: Avian Large Mammal

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts	Project Alternative					
	No Build Alternative	**Build Alternative 1a** **Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Build Alternative 1b and Design Option 1b1** **Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Preferred Alternative (Build Alternative 1b with Refinements)** **Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Build Alternative 2a** **Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Build Alternative 2b and Design Option 2b1** **Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**
		Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	Large Mammal Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	Small Mammal, Reptile, and Amphibian Insects Passive Dispersers	Small Mammal, Reptile, and Amphibian Insects Passive Dispersers
San Jacinto Branch Line Corridor	NI	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian
Double Butte to West Hemet Hills Corridor	NI	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	NI	NI
West Hemet Hills to Hemet-Ryan Airport Corridor	NI	NI	NI	NI	3 Categories of Wildlife Movement: Avian Small Mammal, Reptile, and Amphibian Insects	3 Categories of Wildlife Movement: Avian Small Mammal, Reptile, and Amphibian Insects
West Hemet Hills to Lakeview Mountains Corridor	NI	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	NI	NI
Lakeview Mountains to Tres Cerritos Hills Corridor	NI	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian	1 Category of Wildlife Movement: Avian
Colorado River Aqueduct Corridor	NI	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian	3 Categories of Wildlife Movement: Avian Large Mammal Small Mammal, Reptile, and Amphibian
Wildlife Movement Summary						
MSHCP Cores and Linkages	NI	2 Linkages: Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C	2 Linkages: Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C	2 Linkages: Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C	2 Linkages: Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C	2 Linkages: Existing Constrained Linkage B (Salt Creek) Existing Constrained Linkage C
Local Corridors	NI	7 Corridors:	7 Corridors:	7 Corridors:	6 Corridors:	6 Corridors:

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

Impacts	Project Alternative					
	No Build Alternative	**Build Alternative 1a**	**Build Alternative 1b and Design Option 1b1**	**Preferred Alternative (Build Alternative 1b with Refinements)**	**Build Alternative 2a**	**Build Alternative 2b and Design Option 2b1**
		Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	**Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**
		Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct	Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct	Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line Double Butte to West Hemet Hills West Hemet Hills to Lakeview Mountains Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct	Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line West Hemet Hills to Hemet-Ryan Airport Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct	Newport Road Hills to Patton Road Hemet Channel San Jacinto Branch Line West Hemet Hills to Hemet-Ryan Airport Lakeview Mountains to Tres Cerritos Hills Colorado River Aqueduct

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

Note: NI – No Impact. Biological resource was not observed and impacts are not anticipated.

The vegetation included in this table includes resources present in the PIA, utility relocation areas, and connections to Hemet Channel outside the Project ROW. Resources within the 100-ft indirect impact area adjacent to the PIA, unique design features, and Additional Indirect Impact Study Areas 1 and 2 are not included in this tabular summary for temporary impacts.

Vegetation map codes correspond to those shown on the vegetation maps (Figures 3.3-5 through 3.3-10).

Developed areas, including roads and residences, are included in this tabular summary and are shown on vegetation maps, but they are not considered a plant community.

Annual grassland is not considered sensitive, but a goal of the MSHCP is to conserve annual grassland because ecologically it provides foraging habitat for a variety of wildlife species and it is habitat for some sensitive plant species.

Open water and watercourse areas are shown on the vegetation maps but these types are not vegetated and they are, therefore, not considered plant communities.

This impact analysis assumes that rare plants would be permanently impacted and temporary impacts would not occur.

Some populations are also included in the direct impact calculations because some populations span the PIA and the Roadway Segments indirect impact area.

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

[a] Calculations for vernal pool vegetation, vernal pool features, and vernal pool branchiopods may be different due to resource-specific requirements and definitions.

[b] All numbers are presented by the number of plant populations/number of individuals for each Build alternative.

[c] Status Codes:

Federal Status

FE – Federally listed as endangered

FT – Federally listed as threatened

State Status

SE – State listed as endangered

ST – State listed as threatened

California Native Plant Society (CNPS) Status (CNPS 2005-2007)

1A – Plants presumed extinct in California

1B – Plants rare, threatened, or endangered in California; but more common elsewhere

2 – Plants rare, threatened, or endangered in California; but more common elsewhere

3 – Plants about which we need more information – a review list

4 – Plants of limited distribution – a watch list

CNPS Threat Rank (Suffixes to CNPS List Status Codes):

.1 – Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

Table 3.3-3 Summary of Potential Permanent and Temporary Impacts to the Biological Environment for Project Alternatives and Design Options

	Project Alternative					
		Build Alternative 1a	**Build Alternative 1b and Design Option 1b1**	**Preferred Alternative (Build Alternative 1b with Refinements)**	**Build Alternative 2a**	**Build Alternative 2b and Design Option 2b1**
Impacts	**No Build Alternative**	**Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours**	**Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**	**Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours**	**Roadway Segments B, D, H, I, J, M, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours**

.2 – Fairly endangered in California (20-80% occurrences threatened)

.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

[d] Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) Definitions (RCIP 2003)

Special Conditions of MSHCP Covered Species:

CA – Surveys may be required for these species within locations shown on survey maps as described in Section 6.3.2 of the MSHCP. This includes the list of additional survey needs and procedures species and the Criteria Area Species (see MSHCP pages 6-63 to 6-65) and the MSHCP Errata Letter, dated August 9, 2004.

CO – These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met. Species-specific conservation objectives for these species are presented in Section 9.0 of the MSHCP. Refer to Table 9-3 of the MSHCP for specific conservation objectives that must be met for these species prior to including them on the list of Covered Species Adequately Conserved.

Covered – Species addressed in the MSHCP and included in the 10(a)(1)(B) permit. Also includes species that will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met.

NE – Surveys may be required for these species within Narrow Endemic Plant Species survey areas as described in Section 6.1.3 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

PS – Planning Species - Subsets of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans per Volume I, Section 3, of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

RRVP – These species should be protected as they are associated with riparian/riverine areas and vernal pools as described in Section 6.1.2 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

[e] Project study area measurements are presented first for the base condition of the roadway segments, followed by design option changes. Information is only presented once if there is no variation between the base condition and design options.

[f] The same species under these categories are shown as both a permanent, indirect impact and a temporary impact due to impacts associated with construction as well as operation of the proposed Project.

[g] RIV-BUO-023 (2005 nest) as listed in Build Alternatives 1a and 1b also falls within the Preferred Alternative. However, impacts to this territory are already accounted for in the direct impacts [RIV-BUO-023 (2006 nest)]. Therefore, the 2005 nest location is not considered an indirect impact.

As shown in Table 3.3-3, sensitive natural plant communities would be limited in the PIA and other Project design features. They also would be encountered only occasionally in the 100-ft indirect impact area adjacent to the PIA. However, sensitive natural communities are present in Additional Indirect Impact Study Area 1, which includes the MWD Upper Salt Creek Reserve and the Stowe Road Vernal Pool Complex, and Additional Indirect Impact Study Area 2, which includes a portion of Cell 3291.

In general, the number of sensitive natural communities impacted by Build Alternatives 2a and 2b would be larger than the same types of impacts associated with Build Alternatives 1a and 1b and the Preferred Alternative because Build Alternatives 2a and 2b would include Additional Indirect Impact Study Area 1, which encompasses the Stowe Road Vernal Pool Complex.

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

Build Alternative 1a would cause permanent impacts, both direct and indirect, to nine types of sensitive natural communities. Permanent direct impacts to alkali grassland from Build Alternative 1a would total 24.3 ac. Another 12.0 ac of alkali grassland in the 100-ft indirect impact area adjacent to the PIA could also be affected.

Permanent direct impacts to natural communities that are typically found in mesic areas (areas characterized by a moderate amount of moisture) would include 0.01 ac of alkali playa, 7.2 ac of seasonal wetland, and 2.0 ac of vernal pool. Another 0.07 ac of alkali playa, 5.2 ac of seasonal wetlands, and 0.6 ac of vernal pool in the 100-ft indirect impact area could be permanently affected. Permanent indirect impacts could also occur to 0.5 ac of emergent wetland vegetation just west of the EMWD Regional Water Reclamation Facility.

Riparian plant communities (willow riparian scrub and forest, cottonwood-willow riparian forest, and mulefat scrub) would be limited to the northern extent of the Build alternative, near North Ramona Boulevard and south of the San Jacinto River. In this area, permanent direct impacts could occur to 1.3 ac of cottonwood-willow riparian forest, 0.01 ac of mulefat scrub, and 2.4 ac of willow riparian habitat. Another 0.6 ac of cottonwood-willow riparian forest and 1.4 ac of willow riparian habitat could be permanently, indirectly impacted by Build Alternative 1a. A total of 124.8 ac of Riversidian sage scrub in the hills south of Domenigoni Parkway, the West Hemet Hills, and along the base of the Tres Cerritos Hills could be permanently and directly impacted. Another 22.7 ac of Riversidian sage scrub in these areas could be permanently, indirectly impacted as well.

Build Alternative 1b and Design Option 1b1

Build Alternative 1b (and Design Option 1b1) would have permanent direct impacts to seven sensitive natural community types and permanent indirect impacts to nine sensitive natural community types. Permanent direct impacts to the alkali grassland natural community would total 16.1 ac. Permanent indirect impacts could occur to another 8.8 ac

of alkali grassland in the 100-ft indirect impact area. Because the design option would differ only in impacts to nonsensitive communities (annual grassland, developed, and ruderal), those impacts are presented in Table 3.3-3.

A total of 0.01 ac of alkali playa, 8.2 ac of seasonal wetland, and 0.01 ac of vernal pool could be permanently and directly impacted by this Build alternative. Permanent indirect impacts could occur to another 0.2 ac of alkali playa, 4.8 ac of seasonal wetlands, and 0.8 ac of vernal pool in the 100-ft indirect impact area. Permanent indirect impacts to 0.2 ac of emergent wetland vegetation could occur in the 100-ft indirect impact area east of Sanderson Avenue and north and south of Scott Street.

Riparian habitats would be present in the northern part of this Build alternative. Permanent direct impacts to 1.2 ac of cottonwood willow riparian forest and 2.4 ac of willow riparian habitat would occur from construction. Another 0.7 ac of cottonwood willow riparian forest, 0.01 ac of mulefat scrub, and 2.2 ac of willow riparian habitat could be permanently and indirectly impacted.

Large stands of Riversidian sage scrub are present in the hills south of Domenigoni Parkway, West Hemet Hills, and along the base of Tres Cerritos Hills. Permanent direct impacts to 118.3 ac of Riversidian sage scrub and permanent indirect impacts to 22.9 ac could occur in these areas.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative (Build Alternative1br) would have permanent direct impacts to seven sensitive natural community types and permanent indirect impacts to nine sensitive natural community types. Permanent direct impacts to the alkali grassland natural community would total 13.3 ac. Permanent indirect impacts could occur to an additional 3.9 ac of alkali grassland in the 100-ft indirect impact area.

A total of 0.002 ac of alkali playa, 8.6 ac of seasonal wetland, and 2.0 ac of vernal pool could be permanently and directly impacted by this Build alternative. Permanent indirect impacts could occur to an additional 0.2 ac of alkali playa, 4.7 ac of seasonal wetlands, and 0.8 ac of vernal pool in the 100-ft indirect impact area. Permanent indirect impacts to 0.2 ac of emergent wetland vegetation could occur in the 100-ft indirect impact area east of Sanderson Avenue and north and south of Scott Street.

Riparian habitats would be present in the northern part of the Preferred Alternative. Permanent direct and indirect impacts to riparian habitats (cottonwood willow riparian forest, mulefat scrub, and willow riparian) from construction of the Preferred Alternative would be the same as described above for Build Alternative 1b (and Design Option 1b1).

Large stands of Riversidian sage scrub are present in the hills south of Domenigoni Parkway and in the West Hemet Hills. Permanent direct impacts to 52.4 ac of Riversidian sage scrub and permanent indirect impacts to 30.6 ac could occur in these areas.

Build Alternative 2a

Build Alternative 2a would have direct impacts to eight types of sensitive natural communities and indirect impacts to nine types of sensitive natural communities. Permanent direct impacts to alkali grassland from Build Alternative 2a would total 24.7 ac. Another 31.8 ac of alkali grassland in the 100-ft indirect impact area and in Additional Indirect Impact Study Area 1 could be permanently and indirectly impacted as well.

A total of 0.01 ac of alkali playa, 7.3 ac of seasonal wetland, and 0.01 ac of vernal pool could be permanently and directly impacted by construction. Permanent indirect impacts to another 0.2 ac of alkali playa, 5.0 ac of seasonal wetlands, and 3.3 ac of vernal pool in the 100-ft indirect impact area and in Additional Indirect Impact Study Area 1 could occur if supporting wetland hydrology is altered from existing conditions. Permanent indirect impacts to 0.5 ac of emergent wetland vegetation could also occur in the 100-ft indirect impact area, just west of the EMWD Regional Water Reclamation Facility.

Riparian plant communities that would be permanently, directly impacted include 1.3 ac of cottonwood-willow riparian forest, 0.01 ac of mulefat scrub, and 2.4 ac of willow riparian habitat. Another 0.6 ac of cottonwood-willow riparian forest habitat and 1.4 ac of willow riparian vegetation could be permanently, indirectly impacted.

Riversidian sage scrub is present in the hills south of Domenigoni Parkway, West Hemet Hills, and along the base of Tres Cerritos Hills. A total of 101.0 ac of Riversidian sage scrub in these areas would be permanently and directly impacted, and 62.7 ac could be permanently and indirectly impacted.

Build Alternative 2b and Design Option 2b1

Build Alternative 2b (and Design Option 2b1) would have direct impacts to seven types of sensitive natural communities and indirect impacts to nine types of sensitive natural communities. Build Alternative 2b would result in slightly fewer impacts to alkali grassland habitat than Build Alternative 2a. Aside from that difference, the amount of sensitive natural habitat permanently directly and indirectly impacted by Build Alternative 2b would be similar to Build Alternative 2a. A total of 15.8 ac of alkali grassland would be permanently and directly impacted, and another 27.6 ac of alkali grassland could be permanently and indirectly impacted by this Build alternative. Because the design option would differ only in impacts to nonsensitive communities (annual grassland, developed, and ruderal), those impacts are presented in Table 3.3-3.

A total of 0.01 ac of alkali playa, 8.4 ac of seasonal wetland, and 2.0 ac of vernal pool could be permanently and directly impacted by construction. Another 0.07 ac of alkali playa, 5.0 ac of seasonal wetlands, and 3.2 ac of vernal pool in the 100-ft indirect impact area and in Additional Indirect Impact Study Area 1 could be permanently and indirectly impacted if the supporting wetland hydrology is altered from the existing condition. Permanent indirect impacts to a small amount (0.2 ac) of emergent wetland vegetation could also occur.

Riversidian sage scrub is present in the hills south of Domenigoni Parkway, north of Stowe Road on the lower and upper slopes of the West Hemet Hills, and along the base of the Tres Cerritos Hills. A total of 94.5 ac of Riversidian sage

scrub in these areas would be permanently and directly impacted, and 62.9 ac could be permanently and indirectly impacted.

Riparian plant communities that would be permanently, directly impacted include 1.2 ac of cottonwood-willow riparian forest and 2.4 ac of willow riparian habitat. Another 0.7 ac of cottonwood-willow riparian forest, 0.01 ac of mulefat scrub habitat, and 2.2 ac of willow riparian vegetation could be permanently, indirectly impacted as well.

Temporary Impacts

Temporary impacts to sensitive natural communities are discussed qualitatively because impacts in the PIA and indirect impact area are considered permanent as a result of operation of the roadway and would be the same for all Build alternatives and design options. These temporary impacts could result from activities such as grading and excavation and would include hydrologic alterations in drainage areas, erosion, or sedimentation. Invasive plant species could also establish in the construction area and spread into sensitive areas outside the PIA. Best management practices (BMPs) would be implemented during construction to minimize potential impacts to offsite natural plant communities. BMPs would include monitoring by qualified biologists during construction, as described in Section 3.3.1.4.

Wildlife Movement

The following sections describe the potential permanent (direct and indirect) and temporary impacts to wildlife movement from each of the Project alternatives and design options. A summary of the impacts to wildlife movement is in Table 3.3-3.

Permanent Impacts

Permanent direct impacts to wildlife movement would include blocking the existing wildlife linkages or corridors, making these connective features unsuitable for use by one or more wildlife movement categories. The lack of suitable crossings, such as culverts and bridges, could force wildlife to seek other, potentially more dangerous crossings over the roadway or could restrict home ranges or dispersal movements. This kind of restriction could increase the potential for extirpation, or local extinction, over time. Blocking an existing linkage or corridor would be a permanent direct impact and could affect Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers. No permanent direct impacts to Avian Wildlife movement are expected because local species in this category have the ability to fly over the roadway if culvert and bridge crossings are not present or are not suitable.

Permanent indirect impacts to wildlife movement would include alterations to the existing wildlife linkages or corridors that decrease their effectiveness. For example, traffic noise and artificial light could discourage wildlife from using the linkages or corridors, but would not prohibit their use. Therefore, traffic noise and artificial light would be indirect impacts. Likewise, in some areas, roadway operations could restrict wildlife crossings to only a few culverts and bridges, which could constrain the existing linkage or corridor, but would not prohibit its use. Such constraints because of roadway operations would also be considered indirect impacts.

No Build Alternative

No impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

All Build Alternatives and Design Options

Except for Existing Constrained Linkage C (San Jacinto River), the wildlife movement linkages and corridors described earlier would be permanently impacted by the Build alternatives and design options that cross them. The wildlife corridors trend east and west, and the Build alternatives and design options would be aligned north and south, thus would need to cross the corridors. These crossings would alter the corridors by placing man-made structures over them or through them. The kind of structure used at each crossing would depend on the topography, the requirements of the roadway, and environmental considerations such as drainage or historic preservation. Some crossings would be bridges, others would be on embankment with culverts, and others would block the corridor entirely. Structures that would enable wildlife to cross the roadway safely would be included throughout the Project. The following figures show the locations of linkages, corridors, and proposed bridges and culverts by Build alternative or design option.

- Figure 3.3-11, Build Alternative 1a
- Figure 3.3-12, Build Alternative 1b
- Figure 3.3-13, Design Option 1b1
- Figure 3.3-14, Build Alternative 1br
- Figure 3.3-15, Build Alternative 2a
- Figure 3.3-16, Build Alternative 2b
- Figure 3.3-17, Design Option 2b1

All of the build alternatives and design options would have permanent impacts on the wildlife corridors they cross. These impacts would be direct or indirect, depending on the configuration of the build alternative or design option and nature of the crossing. Direct impacts, if any, would depend on the build alternative or design option. Those impacts are discussed separately later in this section.

Permanent indirect impacts from all build alternatives and design options would include:

- Roadway structures that intrude into existing wildlife corridors and make them less desirable to certain species of wildlife
- The shadow effect from bridges, which would reduce the amount of natural light in a crossing during the day and could make the corridor less desirable for diurnal species (animals that are active in the daytime)
- Increased traffic noise and artificial light, which could decrease the effectiveness of a wildlife corridor

Some of these impacts would vary according to the dimensions of the structure causing the impact. For instance, a higher bridge would have a smaller shadow impact on a wildlife corridor than a lower one, and a short culvert would be

less imposing than a longer one. These differences in the degree of some impacts and variations in affected wildlife are discussed by Build alternative later in this section.

Although the locations of crossings might vary, some wildlife corridors would be impacted in various ways by all of the Build alternatives and design options. These corridors are:

- MSHCP Existing Constrained Linkage B (Salt Creek)
- Newport Road Hills to Patton Road (1)
- Hemet Channel (2)
- San Jacinto Branch Line (3)
- Lakeview Mountains to Tres Cerritos Hills (7)
- Colorado River Aqueduct (8)

Corridors that would be impacted only by Build Alternatives 1a, 1b and Design Option 1b1, and the Preferred Alternative are:

- Double Butte to West Hemet Hills (4)
- West Hemet Hills to Lakeview Mountains (6)

One corridor would be impacted only by Build Alternatives 2a and 2b and Design Option 2b1—West Hemet Hills to Hemet-Ryan Airport (5).

Existing Constrained Linkage C (San Jacinto River) would not be crossed by any of the Build alternatives or design options. The only Project-related impacts to this constrained linkage would be temporary.

Permanent impacts to the MSHCP linkage and local wildlife corridors are discussed below by Build alternative and design option.

Existing Constrained Linkage B (Salt Creek)

All Build alternatives and design options would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use MSHCP Existing Constrained Linkage B by making this corridor less desirable for species in these wildlife movement categories. Permanent impacts to Passive Dispersers (e.g., fairy shrimp and plants) are not expected because the habitat and hydrology would remain unchanged in the linkage.

Build Alternative 1a

Build Alternative 1a would maintain the existing constrained linkage by building an SR 79 bridge over Olive Avenue, Winchester Road, and Salt Creek Channel. The bridge would have a minimum vertical clearance of 19 ft and would be about 938 ft long. It would consist of two separate structures about 72 ft apart, one about 41 to 47 ft wide and the other about 52 to 78 ft wide. Although Winchester Road already crosses Salt Creek Channel in this location, the shadows cast by the proposed bridge would reduce the amount of natural light in the crossing during the day even further.

Build Alternative 1b

Build Alternative 1b would maintain the existing constrained linkage by building an SR 79 bridge over Olive Avenue and Salt Creek Channel. The bridge would have a minimum vertical clearance of about 18 ft and would be about 758 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 41 to 98 ft and 58 to 85 ft wide and would reduce the amount of natural light in the corridor.

Design Option 1b1

Design Option 1b1 would maintain the existing constrained linkage by building an SR 79 bridge over Salt Creek Channel. This bridge would be lower and shorter than the one designed for Build Alternative 1b, with a minimum vertical clearance of about 6 ft and a length of about 673 ft. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 46 ft to 98 ft and 62 to 85 ft wide. Like the Build alternative, the shadows cast by these structures would reduce the amount of natural light in the crossing. Indirect impacts from traffic noise and artificial light could be more severe with the design option than the base condition because the roadway would be closer to the linkage.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would maintain the existing constrained linkage by building an SR 79 bridge over Olive Avenue and Salt Creek Channel. The bridge would have a minimum vertical clearance of about 19 ft and would be about 889 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be approximately 39 to 75 ft and 49 to 82 ft wide and would reduce the amount of natural light in the corridor.

Build Alternative 2a

Build Alternative 2a would have the same impacts to Existing Constrained Linkage B (Salt Creek) as Build Alternative 1a. The configuration of the bridge would be the same, so the impacts would be the same.

Build Alternative 2b

Build Alternative 2b would maintain the existing constrained linkage by building an SR 79 bridge over Olive Avenue and Salt Creek Channel. The bridge would have a minimum vertical clearance of about 21.5 ft and would be about 889 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be about 41 to 74 ft and 50 to 78 ft wide. The shadows cast by the structures would reduce the amount of natural light in the crossing during the day.

Design Option 2b1

Design Option 2b1 would maintain the existing constrained linkage by building an SR 79 bridge over Salt Creek Channel. This bridge would be lower and shorter than the one designed for Build Alternative 2b, with a minimum vertical clearance of about 10 ft and a length of about 755 ft. Although the bridge would consist of two separate structures that are about 72 ft apart, the structures would be 41 ft to 74 ft and 53 ft to 78 ft wide. Like the Build alternative, the shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Indirect impacts from traffic noise and artificial light could be more severe with the design option than the base condition because the roadway would be closer to the linkage.

Newport Road Hills to Patton Road Corridor (1)

Build Alternative 1a

Build Alternative 1a would permanently and directly impact Small Mammalian, Reptile, and Amphibian Wildlife and Insects that use the existing Newport Road Hills to Patton Road Corridor by making it unsuitable for species in these categories.

Build Alternative 1a would permanently and indirectly impact Avian Wildlife and Large Mammalian Wildlife that use the existing corridor by making it less desirable and more dangerous for species in these categories. To continue to use this already constrained corridor, wildlife would need to travel along Newport Road and cross Build Alternative 1a on the proposed Newport Road bridge or by using Culvert A-1 or Culvert A-2 when possible (some species might not be able to use these culvert crossings year round due to periodic inundation).

The proposed Newport Road bridge over SR 79 would not have any vegetation, and the elevated crossing could deter many species; however, the bridge would present fewer hazards from traffic than crossing SR 79 directly. Culverts A-1 and A-2 would run east and west on either side of the proposed Newport Road bridge. Each culvert opening would be about 3 ft by 7 ft. Culvert A-1 would be about 1,050 ft long, and Culvert A-2 would be about 1,210 ft long. The culvert openings would be adequate for many species, but the lengths might be undesirable.

Although Build Alternative 1a would not prohibit the movement of Avian Wildlife and Large Mammalian Wildlife, the altered routes required by this Build alternative would present new hazards from traffic and would not be as desirable or as direct as the existing corridor.

Build Alternative 1b and Design Option 1b1

Build Alternative 1b and Design Option 1b1 would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing Newport Road Hills to Patton Road Corridor by making it less desirable and more dangerous for species in these categories. To continue to use this already constrained corridor, wildlife would need to travel under or over proposed bridges or through proposed culverts.

Wildlife could travel under the proposed SR 79 bridges over Patterson Avenue or Patton Avenue, which would pose fewer hazards from traffic than crossing SR 79 directly. These routes would not be as direct as the existing corridor and would require wildlife to travel along existing roads, which could decrease the effectiveness of this already constrained corridor. Although unlikely, wildlife could also travel along Newport Road and cross over SR 79 on the proposed Newport Road bridge or use Culvert B-1 or B-2 when seasonally possible. The proposed Newport Road bridge over SR 79 would not have any vegetation, and the elevated crossing could deter many species, but the bridge would present fewer traffic hazards than crossing SR 79 directly.

Culverts B-1 and B-2 would run east and west on either side of the proposed Newport Road bridge over SR 79. Each culvert opening would be about 3 ft by 7 ft. Culvert B-1 would be about 890 ft long, and Culvert B-2 would be about 790 ft long. The culvert openings would be adequate for many species, but the lengths could be undesirable.

Although Build Alternative 1b and Design Option 1b1 would not prohibit the movement of most wildlife, the altered routes associated with them would present new hazards from traffic and would not be as desirable or as direct as the existing corridor.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing Newport Road Hills to Patton Road Corridor by making it less desirable and more dangerous for species in these categories. To continue to use this already constrained corridor, wildlife would need to travel under proposed bridges or through proposed culverts.

Wildlife could travel under the proposed SR 79 bridges over Patterson Avenue or Patton Avenue, which would pose fewer hazards from traffic than crossing SR 79 directly. These routes would not be as direct as the existing corridor and would require wildlife to travel along existing roads and through the undercrossings, which could decrease the effectiveness of this already constrained corridor. Although unlikely, wildlife could also travel along Newport Road and use Culvert B-1 or B-2 when seasonally possible.

Culverts B-1 and B-2 would run east to west and southeast to northwest respectively, north Newport Road. Culvert B-1 would have an opening approximately 7 ft by 4 ft and would be about 658 ft long. Culvert B-2 would have an opening approximately 7 ft by 3 ft and would be about 411 ft long. The culvert openings would be adequate for many species, but the lengths could be undesirable.

Although the Preferred Alternative would not prohibit the movement of most wildlife, the altered routes associated with them would present new hazards from traffic and would not be as desirable or as direct as the existing corridor.

Build Alternative 2a

Build Alternative 2a would have the same impacts to the existing Newport Road Hills to Patton Road Corridor as Build Alternative 1a.

Build Alternative 2b and Design Option 2b1

Build Alternative 2b and Design Option 2b1 would have the same impacts to the existing Newport Road Hills to Patton Road Corridor as Build Alternative 1b.

Hemet Channel Corridor (2)

Build Alternative 1a

Build Alternative 1a would not cross the Hemet Channel Corridor, so no permanent direct impacts are expected. However, it would be close enough to permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife,

Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing corridor by making it less desirable for species in these categories. Permanent impacts to Passive Dispersers (e.g., plants) are not expected because the habitat and hydrology would remain unchanged in the corridor.

Build Alternative 1b

Build Alternative 1b would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use the existing Hemet Channel Corridor by making it less desirable for species in these categories.

Build Alternative 1b would maintain the existing corridor by creating an SR 79 bridge over Hemet Channel and the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of 25.5 ft and would be about 869 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 41 to 57 ft and 41 to 60 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Design Option 1b1

Design Option 1b1 would impact the same wildlife movement categories in the Hemet Channel Corridor as those discussed under Build Alternative 1b. Any difference in impacts would be related to changes in the dimensions of the bridge over Hemet Channel. Design Option 1b1 would not bridge over the San Jacinto Branch Line.

Like Build Alternative 1b, Design Option 1b1 would maintain the existing wildlife corridor by building an SR 79 bridge over Hemet Channel. This bridge would be lower and shorter than the one for the Build alternative, with a minimum vertical clearance of about 7 ft and a length of about 509 ft. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 41 to 49 ft and 41 ft wide. Like the Build alternative, the shadows cast by these structures would reduce the amount of natural light in the crossing during the day. Indirect impacts from traffic noise and artificial light could be more severe with the design option than the base condition because the roadway would be closer to the corridor.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use the existing Hemet Channel Corridor by making it less desirable for species in these categories.

The Preferred Alternative would maintain the existing corridor by creating an SR 79 bridge over Hemet Channel and the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of 25 ft and would be approximately 1,102 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would each be approximately 43 to 52 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Build Alternative 2a

Build Alternative 2a would impact the same wildlife movement categories in the Hemet Channel Corridor as Build Alternative 1b.

Build Alternative 2a would maintain the existing corridor by creating Culvert F-3 and an SR 79 bridge over the San Jacinto Branch Line and Hemet Channel. Culvert F-3 would cross under Build Alternative 2a. It would be about 200 ft long and would consist of four openings about 14 ft by 10 ft each. The culvert openings would be adequate for many species, but the lengths might be undesirable. Some species may be unable to use this culvert crossing year round due to periodic inundation.

The bridge over the San Jacinto Branch Line and Hemet Channel would have a minimum vertical clearance of about 27 ft and would be about 745 ft long. The bridge would consist of two separate structures about 72 ft apart, with widths of about 41 ft and 50 to 65 ft. In addition to the bridge, a Future Street "A" southbound off-ramp would be built over the San Jacinto Branch Line and Hemet Channel at this location, about 11 to 98 ft west of the bridge. This off-ramp would have a minimum vertical clearance of about 23.5 ft and would be about 873 ft long and 26 to 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce the amount of natural light in the crossing during the day.

Build Alternative 2b

Build Alternative 2b would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing Hemet Channel Corridor by making this corridor less desirable for species in these categories. Permanent impacts to Passive Dispersers (e.g., plants) are not expected because the habitat and hydrology would remain unchanged in the corridor.

Build Alternative 2b would maintain the existing corridor by creating an SR 79 bridge over the San Jacinto Branch Line and Hemet Channel. The bridge would have a minimum vertical clearance of about 28 ft and would be about 745 ft long. This bridge would consist of two separate structures about 72 ft apart, with widths of about 41 ft and 50 to 65 ft. A Future Street "A" southbound off-ramp would also be built over the San Jacinto Branch Line and Hemet Channel at this location, about 11 to 98 ft west of the bridge. This off-ramp would have a minimum vertical clearance of about 23.5 ft and would be about 873 ft long and 26 to 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce the amount of natural light in the crossing during the day, which could make the corridor less desirable for diurnal species.

Design Option 2b1

Design Option 2b1 would impact the same wildlife movement categories in the Hemet Channel Corridor as those discussed under Build Alternative 2b. Any difference in impacts would be related to changes in the dimensions of the structures over Hemet Channel. Design Option 2b1 would not bridge over the San Jacinto Branch Line.

Design Option 2b1 would maintain the existing wildlife corridor by building an SR 79 bridge over Hemet Channel. This bridge would be lower and shorter than the one for the Build alternative, with a minimum vertical clearance of

about 7 ft and a length of about 236 ft. The bridge would consist of two separate structures, about 72 ft apart, with widths of about 41 ft and 55 to 60 ft. A Future Street "A" southbound off-ramp would also be built over Hemet Channel in this location, about 39 to 102 ft west of the bridge. The off-ramp would have a minimum vertical clearance of about 10 ft and would be about 466 ft long and 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce amount of natural light in the crossing during the day. Indirect impacts from traffic noise and artificial light could be more severe with the design option than the base condition because the roadway would be closer to the corridor.

San Jacinto Branch Line Corridor (3)

Build Alternative 1a

Build Alternative 1a would have permanent and indirect impacts to Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing San Jacinto Branch Line Corridor by making it less desirable for species in these categories.

Build Alternative 1a would maintain the existing wildlife corridor by building an SR 79 bridge over the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of 25 ft and would be about 295 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 53 to 59 ft and 48 to 75 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Build Alternative 1b

Build Alternative 1b would have the same impacts to the same wildlife movement categories as Build Alternative 1a.

Build Alternative 1b would maintain the existing corridor by building an SR 79 bridge over Hemet Channel and the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of about 25.5 ft and would be about 869 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 41 to 57 ft and 41 to 60 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Design Option 1b1

Design Option 1b1 would impact the same wildlife movement categories in the San Jacinto Branch Line Corridor as those discussed under Build Alternative 1a. Because it would involve laying a section of roadway directly over the tracks, this design option would create a physical barrier to terrestrial wildlife movement in the existing San Jacinto Branch Line Corridor. It would not provide culverts or bridges to facilitate wildlife movement, making this corridor unsuitable for all categories of wildlife movement except Avian Wildlife.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Hemet Channel Corridor by making it less desirable for species in these categories.

The Preferred Alternative would maintain the existing corridor by creating an SR 79 bridge over Hemet Channel and the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of 25 ft and would be approximately 1,102 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would each be approximately 43 to 52 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Build Alternative 2a

Build Alternative 2a would have the same types of impacts to the same wildlife movement categories as Build Alternative 1a, but it would include an off-ramp over Hemet Channel and the San Jacinto Branch Line, and the bridge configuration would be somewhat different.

Build Alternative 2a would maintain the existing corridor by building an SR 79 bridge over the San Jacinto Branch Line and Hemet Channel. The bridge would have a minimum vertical clearance of about 27 ft and would be about 745 ft long. This bridge would consist of two separate structures about 72 ft apart, with widths of about 41 ft and 50 to 65 ft. In addition to the bridge, a Future Street "A" southbound off-ramp would be built over the San Jacinto Branch Line and Hemet Channel in this same location, about 11 to 98 ft west of the bridge. This off-ramp would have a minimum vertical clearance of about 23.5 ft and would be about 873 ft long and 26 to 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce amount of natural light in the crossing during the day.

Build Alternative 2b

Build Alternative 2b would have the same types of impacts to the same wildlife movement categories as Build Alternative 1a.

Build Alternative 2b would maintain the existing corridor by creating an SR 79 bridge over the San Jacinto Branch Line and Hemet Channel. The bridge would have a minimum vertical clearance of about 28 ft and would be about 745 ft long. This bridge would consist of two separate structures about 72 ft apart, with widths of about 41 ft and 50 to 65 ft. A Future Street "A" southbound off-ramp would also be built over the San Jacinto Branch Line and Hemet Channel at this location, about 11 to 98 ft west of the bridge. This off-ramp would have a minimum vertical clearance of about 23.5 ft and would be about 873 ft long and 26 to 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce the amount of natural light in the crossing during the day.

Design Option 2b1

Design Option 2b1 would have the same configuration and impacts as Design Option 1b1.

Double Butte to West Hemet Hills Corridor (4)

Build Alternative 1a

Build Alternative 1a would permanently and directly impact Large Mammalian Wildlife and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Double Butte to West Hemet Hills Corridor by making it unsuitable for species in these categories. This Build alternative would fragment existing habitat in the West Hemet Hills by creating a

physical barrier to terrestrial wildlife movement in the corridor. Build Alternative 1a would not include culverts or bridges to facilitate wildlife movement in this corridor, making it unsuitable for all categories of wildlife movement except Avian Wildlife.

Build Alternative 1b and Design Option 1b1

Build Alternative 1b and Design Option 1b1 would have the same impacts to the same wildlife movement categories as Build Alternative 1a.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Double Butte to West Hemet Hills Corridor by making it less desirable and more dangerous for species in these categories. To continue to use this already constrained corridor, wildlife would need to travel under proposed bridges or through a proposed culvert.

Wildlife could travel under the proposed SR 79 bridges over Stowe Road or Stetson Avenue, which would pose fewer hazards from traffic than crossing SR 79 directly. These routes would not be as direct as the existing corridor and would require wildlife to travel along existing roads and through the undercrossings, which could decrease the effectiveness of this already constrained corridor. Although unlikely, wildlife could also travel between Stowe Road and Stetson Avenue through Culvert G-1 when seasonally possible.

Culvert G-1 would run east to west, north of the proposed Stowe Road undercrossing and south of the proposed Stetson Avenue undercrossing. The culvert opening would be about 3.5 ft in diameter and the length would be about 288 ft long. The culvert opening would be adequate for some species, but the length could be undesirable.

Although the Preferred Alternative would not prohibit the movement of most wildlife, the altered routes associated with them would present new hazards from traffic and would not be as desirable or as direct as the existing corridor.

Build Alternatives 2a and 2b and Design Option 2b1

Build Alternatives 2a and 2b and Design Option 2b1 would not cross the existing Double Butte to West Hemet Hills Corridor and would have no impact on it.

West Hemet Hills to Hemet-Ryan Airport Corridor (5)

Build Alternatives 1a, 1b and Design Option 1b1, and Preferred Alternative

Build Alternatives 1a, 1b and Design Option 1b1, and 1br would not cross the existing West Hemet Hills to Hemet-Ryan Airport Corridor and would have no impact on it.

Build Alternative 2a

Build Alternative 2a would permanently and directly impact Large Mammalian Wildlife that use the existing West Hemet Hills to Hemet-Ryan Airport Corridor by making this corridor unsuitable for species in this category. This Build alternative would fragment the habitat region in the West Hemet Hills by creating a physical barrier to Large

Mammalian Wildlife movement in the existing corridor. Build Alternative 2a would not provide culverts or bridges that would be adequate for Large Mammalian Wildlife movement, making this corridor unsuitable for species in this category.

Build Alternative 2a would permanently and indirectly impact Avian Wildlife and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing West Hemet Hills to Hemet-Ryan Airport Corridor by making it less desirable for species in these categories. To continue to use this corridor, terrestrial wildlife would need to travel through proposed Culverts H-1, H-1a, H-1b, or H-2 when seasonally possible. Some species might not be able to use these culvert crossings year round due to periodic inundation. These culverts would cross under Build Alternative 2a. Culvert H-1 would be about 2.5 ft in diameter and about 245 ft long. Culverts H-1a and H-1b would be about 2.0 ft in diameter. Culvert H-1a would be about 475 ft long, and Culvert H-1b would be about 525 ft long. Culvert H-2 would be about 3.5 ft in diameter and about 320 ft long. These culvert openings would be adequate for many species, but the lengths might be undesirable.

Although Build Alternative 2a would not prohibit the movement of Avian Wildlife and Small Mammalian, Reptile, and Amphibian Wildlife, the routes the wildlife would have to use would not be as desirable or as direct as the existing West Hemet Hills to Hemet-Ryan Airport Corridor.

Build Alternative 2b

Impacts to this corridor from Build Alternative 2b would be the same as Build Alternative 2a.

Design Option 2b1

Design Option 2b1 would impact the same wildlife movement categories in the West Hemet Hills to Hemet-Ryan Airport Corridor as those discussed under Build Alternative 2a. Any difference in impacts would be related to changes in the dimensions of the culverts included with this design option.

Like Build Alternatives 2a and 2b, Design Option 2b1 would fragment the habitat region in the West Hemet Hills by creating a physical barrier to Large Mammalian Wildlife. To continue to use the West Hemet Hills to Hemet-Ryan Airport Corridor, smaller terrestrial wildlife would need to travel through proposed Culverts H-1, H-1a, H-1b, or H-2 when seasonally possible. These culverts would cross under the Design Option 2b1 roadway. Some species might not be able to use them year round due to periodic inundation.

With Design Option 2b1, Culvert H-1 would have an opening that would be the same size as with the base condition, but it would be longer, about 292 ft. Culverts H-1a and H-1b would not change from the base condition. Like the base condition, Culvert H-2 would be about 3.5 ft in diameter, but it would be longer, at about 364 ft. These culvert openings would be adequate for many species, but the longer lengths in two of the culverts could make them even more undesirable than those in the base condition.

West Hemet Hills to Lakeview Mountains Corridor (6)

Build Alternative 1a

Build Alternative 1a would permanently and directly impact Large Mammalian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it unsuitable for species in this category. This Build alternative would fragment existing habitat in the West Hemet Hills by creating a physical barrier to wildlife movement in the existing corridor. Build Alternative 1a would not provide culverts or bridges to facilitate wildlife movement in the corridor, making it unsuitable for Large Mammalian Wildlife.

The noise, artificial light, and traffic on Build Alternative 1a would permanently and indirectly impact Avian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it less desirable for species in this category.

Build Alternative 1b and Design Option 1b1

Impacts to this corridor from Build Alternative 1b and Design Option 1b1 would be the same as Build Alternative 1a.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and directly impact Large Mammalian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it unsuitable for species in this category. This build alternative would fragment existing habitat in the West Hemet Hills by creating a physical barrier to wildlife movement in the existing corridor. The Preferred Alternative would provide one culvert, Culvert G-2, which would be considered unsuitable for Large Mammalian Wildlife. Culvert G-2 runs southeast to northwest. The culvert opening would be about 3.0 ft in diameter and the length would be about 411 ft long. The culvert opening may be adequate for some species, but the length would likely be undesirable.

The noise, artificial light, and traffic on the Preferred Alternative would permanently and indirectly impact Avian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it less desirable for species in this category.

Build Alternatives 2a and 2b and Design Option 2b1

Build Alternatives 2a and 2b and Design Option 2b1 would not cross the existing West Hemet Hills to Lakeview Mountains Corridor and would have no impact on it.

Lakeview Mountains to Tres Cerritos Hills Corridor (7)

All Build Alternatives and Design Options

All of the Build alternatives and design options would permanently and directly impact Large Mammalian Wildlife that use the existing Lakeview Mountains to Tres Cerritos Hills Corridor by making it unsuitable for species in this category. They would block the existing connection (a bridge over the San Diego Canal) and create a physical barrier to wildlife movement along the corridor. None of the Build alternatives or design options would provide culverts or bridges to facilitate wildlife movement in this corridor, making it unsuitable for Large Mammalian Wildlife.

Increased noise, artificial light, and traffic on any of the Build alternatives or design options would permanently and indirectly impact Avian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it less desirable for species in this category.

Colorado River Aqueduct Corridor (8)

Build Alternative 1a

Build Alternative 1a would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Colorado River Aqueduct Corridor by making it less desirable for species in these categories.

To continue to use this corridor, terrestrial wildlife would need to travel through two proposed culverts, Culvert L-15 or Culvert L-16. Culvert L-15 would be about 250 ft long and would consist of four openings, each about 4 ft by 7 ft. Culvert L-16 would be about 131 ft long and would consist of eight openings, each about 5 ft by 10 ft. The heights and widths of the culverts would be adequate for many species, but the lengths might be undesirable. Some species might not be able to use these culvert crossings year round due to periodic inundation.

Build Alternative 1b and Design Option 1b1

The impacts from Build Alternative 1b and Design Option 1b1 would generally be the same as Build Alternative 1a. Any differences would be the result of variance in culvert design.

Build Alternative 1b and Design Option 1b1 would include two proposed culverts, Culvert M-11 and Culvert M-12. Culvert M-11 would be 280 ft long and would consist of four openings, each 4 ft tall and 7 ft wide. Culvert M-12 would be 130 ft long and would consist of eight openings, each 5 ft tall and 10 ft wide.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Colorado River Aqueduct Corridor by making it less desirable for species in these categories.

To continue to use this corridor, terrestrial wildlife would need to travel through two proposed culverts, Culvert M-11 or Culvert M-12. Culvert M-11 would be about 300 ft long and would consist of four openings, each about 4 ft by 7 ft. Culvert M-12 would be about 275 ft long and would consist of eight openings, each about 5 ft by 10 ft. The heights and widths of the culverts would be adequate for many species, but the lengths might be undesirable. Some species might not be able to use these culvert crossings year-round due to periodic inundation.

Build Alternative 2a

The impacts from Build Alternative 2a would be the same as Build Alternative 1a. Culvert designs would also be the same.

Build Alternative 2b and Design Option 2b1

The impacts from Build Alternative 2b and Design Option 1b1 would be the same as Build Alternative 1b. Culvert designs would also be the same.

Temporary Impacts

Temporary impacts to wildlife movement would be related to construction and could include increased collision mortality because of construction vehicles and restricted movement due to temporary fencing, construction noise, night lighting, and increased human presence. Dust, noise, night lighting, or increased human presence also could deter wildlife movement. Construction activities could also cause wildlife to find more dangerous roadway crossings or restrict home ranges or disrupt dispersal movements.

No Build Alternative

No temporary impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

All Build Alternatives and Design Options

All Build alternatives and design options would have temporary impacts on the following wildlife corridors:

- MSHCP Existing Constrained Linkage B (Salt Creek)
- Existing Constrained Linkage C
- Newport Road Hills to Patton Road
- Hemet Channel
- San Jacinto Branch Line
- Lakeview Mountains to Tres Cerritos Hills
- Colorado River Aqueduct

Existing Constrained Linkage B (Salt Creek)

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use Existing Constrained Linkage B (Salt Creek).

Existing Constrained Linkage C

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use Existing Constrained Linkage C.

Newport Road Hills to Patton Road Corridor

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing Newport Road Hills to Patton Road Corridor.

Hemet Channel Corridor

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use the existing Hemet Channel Corridor.

San Jacinto Branch Line Corridor

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing San Jacinto Branch Line Corridor.

Lakeview Mountains to Tres Cerritos Hills Corridor

Construction activity would temporarily impact Avian Wildlife that use the existing Lakeview Mountains to Tres Cerritos Hills Corridor.

Colorado River Aqueduct Corridor

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Colorado River Aqueduct Corridor.

Build Alternatives 1a, 1b and Design Option 1b1, and Preferred Alternative (Build Alternative 1b with Refinements)

The Double Butte to West Hemet Hills Corridor and the West Hemet Hills to Lakeview Mountains Corridor would be temporarily impacted only by Build Alternatives 1a, 1b and Design Option 1b1, and the Preferred Alternative.

Double Butte to West Hemet Hills Corridor

Build Alternatives 1a, 1b, and the Preferred Alternative would temporarily impact Avian Wildlife that use the existing Double Butte to West Hemet Hills Corridor. Additionally, the Preferred Alternative would temporarily impact Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Double Butte to West Hemet Hills Corridor.

West Hemet Hills to Lakeview Mountains Corridor

Build Alternatives 1a, 1b, and the Preferred Alternative would temporarily impact Avian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor.

Build Alternatives 2a and 2b and Design Option 2b1

The West Hemet Hills to Hemet-Ryan Airport Corridor would be impacted only by Build Alternatives 2a and 2b and Design Option 2b1.

West Hemet Hills to Hemet-Ryan Airport Corridor

Build Alternatives 2a and 2b would temporarily impact Avian Wildlife, Small Mammalian, Reptile and Amphibian Wildlife, and Insects that use the existing West Hemet Hills to Hemet-Ryan Airport Corridor.

3.3.1.4 Avoidance, Minimization, and/or Mitigation Measures

Natural Communities

Avoidance Measures

The Build alternatives and design options for the Project have been designed to avoid permanent direct and indirect impacts to sensitive natural communities as much as possible. During the initial scoping phase of the Project, input from resource agencies was solicited and incorporated into the Build alternatives siting process. Build alternatives were eliminated from further analysis if they were sited in prominent sensitive vernal pool, alkali playa, or alkali grassland habitats and would have resulted in considerable permanent direct and indirect impacts to natural plant communities and multiple species of special-status plants.

All construction activities, including hauling and storage, will take place within the ROW for all Build alternatives and design options; therefore, additional temporary, direct impacts to natural communities will be avoided.

Minimization Measures

All Build alternatives will incorporate the following measures to comply with MSHCP guidelines related to minimizing impacts to sensitive natural communities within or adjacent to the MSHCP Conservation Area.

BIO-1 **Landscaping Plans.** Landscaping plans will include native seed for erosion control in areas near the MSHCP Conservation Area.

BIO-2 **Avoid the Use of Invasive and Non-Native Plants.** The landscaping plans will avoid the use of invasive and non-native plants listed in MSHCP Table 6-2, Plants that Should be Avoided Adjacent to the MSHCP Conservation Area, where applicable.

BIO-3 **Barrier Fencing along ROW.** The Project will incorporate fencing along the ROW to serve as a barrier to preclude public access to the MSHCP Conservation Area.

BIO-4 **Slope Construction within ROW.** All slopes will be constructed within the proposed ROW and will not extend into the MSHCP Conservation Area.

BIO-5 **Equipment Storage, Fueling, and Staging Areas.** Equipment storage, fueling, and staging areas will be situated in nonsensitive upland habitats that offer minimal risk of direct discharge into riparian areas or other sensitive habitats.

BIO-6 **Training about Sensitive Biological Resources.** A contractor-supplied biologist who is familiar with the sensitive plant and animal species in the Project area will provide training about these sensitive biological resources to construction personnel.

BIO-7 **Fire Season Work.** During the fire season (as identified by the Riverside County Fire Department), especially when work is adjacent to coastal sage scrub or chaparral vegetation, appropriate firefighting equipment (e.g., extinguishers, shovels, water tankers) will be available onsite during all phases of

Project construction to minimize the chance of wildfires. Shields, protective mats, or other fire-prevention methods will be used during grinding, welding, and other activities that produce sparks. Personnel trained in fire hazards, preventive action, and responses to fires will advise contractors about the fire risk from all construction-related activities.

BIO-8 **Dust Minimization.** The Project will minimize dust by regularly watering active construction areas.

BIO-9 **Designated Areas for Equipment Maintenance and Staging.** All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances will occur only in designated areas within the grading limits of the Project. These designated areas will be clearly marked and located in such a manner as to contain runoff.

BIO-10 **Litter Control.** A litter-control program will be implemented during construction.

Mitigation Measures

The Conceptual Mitigation Plandescribed in detail in Section 3.3.2.4, Wetlands and Other Waters, Avoidance, Minimization and/or Mitigation Measures, would also mitigate for impacts to sensitive natural communities including alkali habitats, vernal pools, seasonal wetlands, riparian habitats, and Riversidian sage scrub. The mitigation areas are:

- Sites that contain relatively intact vernal pools, alkali grasslands, and alkali playas
- Sites that are part of a larger vernal pool landscape
- Sites adjacent to existing preserved areas to create contiguous sections of protected habitat
- Areas identified as MSHCP criteria cells and core linkage areas
- Areas designated as critical habitat for spreading navarretia
- Sites that provide habitat for large populations of threatened and endangered species
- Sites that are currently unprotected and threatened by urban development

The mitigation strategy for impacts from the Project is focused on the preservation of a large area of rare, high-value habitats that are currently threatened by urban developments which would offset impacts to fragmented habitats within the Project impact area.

Wildlife Movement

Avoidance Measures

The following avoidance measures are applicable to all Build alternatives and design options.

MSHCP Cores and Linkages

Existing Constrained Linkage B (Salt Creek)

BIO-11 **Bridge over Salt Creek Channel.** All Build alternatives and design options will include the construction of a bridge over MSHCP Existing Constrained Linkage B, which is also known as the Salt Creek Channel. Existing Constrained Linkage B is shown in MSHCP Section 3.2.3, Figure 3-2,

Schematic Cores and Linkages Map. The planning species for the linkage are identified in a table later in that section:

- Vernal pool fairy shrimp
- Riverside fairy shrimp
- Los Angeles pocket mouse
- San Jacinto Valley crownscale
- Parish's brittlescale
- Davidson's saltscale
- Thread-leaved brodiaea
- Smooth tarplant
- Vernal barley
- Coulter's goldfields
- Little mousetail
- Spreading navarretia
- California Orcutt grass
- Wright's trichocoronis

The proposed bridge over Existing Constrained Linkage B (Salt Creek) will avoid impacts to wildlife connectivity for these planning species.

Proposed Core 3

BIO-12 **Avoidance of San Jacinto River.** The Build alternatives and design options will avoid Proposed Core 3, which will be north of the Project (MSHCP Section 3.2.3, Figure 3-2, Schematic Cores and Linkages Map). All Build alternatives and design options will avoid the San Jacinto River and lands north of that area.

Constrained Linkage C

BIO-13 **Avoidance of Existing Constrained Linkage C.** All Build alternatives and design options will avoid Existing Constrained Linkage C. No construction activities will occur in this linkage.

Minimization Measures

All Build alternatives and design options will incorporate the following measure to comply with MSHCP guidelines related to minimizing impacts to wildlife movement within or adjacent to the MSHCP Conservation Area.

BIO-14 **Night Lighting.** Lighting used during nighttime construction activities will be directed away from the MSHCP Conservation Area. If it cannot be directed away, shielding will be used to ensure that ambient light in the MSHCP Conservation Area is not increased.

Wildlife Movement Design Considerations (Based on Specific Initial Guidelines in Section 7.5.2 of the MSHCP)

The following measures for wildlife movement are proposed to offset impacts to wildlife movement. The design of the wildlife crossings will be refined during final design of the Project, after a Preferred Alternative is identified.

BIO-15 **Crossing Structures and Spacing Intervals for a Variety of Species.** A mixture of large crossing structures and bridges spaced at regular intervals and smaller culverts spaced at more frequent intervals will be installed throughout the Project to accommodate a variety of species.

BIO-16 **Openings in K-Rails for Small Animals.** Openings in concrete "K-rail" barriers will be provided at regular intervals to allow small wildlife to cross or escape roadways.

BIO-17 **Wildlife Crossings Intended for Large Mammalian Wildlife.** The wildlife crossings intended for large mammalian wildlife will be designed to incorporate adequate openness ratios (opening width times height, divided by length of crossing) for the large mammalian wildlife intended to use each crossing.

BIO-18 **Use of Tree and Shrub Buffers around Crossing Entrances, No Artificial Lighting.** Wildlife crossings incorporated into the Project will not add artificial lighting to the center of the crossing structure. These devices have not been shown to be effective and could deter wildlife at night. Natural light from skylights or grating may be used in particularly long structures. Tree and shrub buffers around crossing entrances, skylights, and grating will be used for visual relief, protection, and sound attenuation.

BIO-19 **Wildlife Crossings Vegetated as Naturally as Possible.** Wildlife crossings will be vegetated as naturally as possible to blend with the area around the crossing. In accordance with BIO-1 and BIO-2, the use of invasive and non-native plants will be avoided. Use of plants that are poisonous to wildlife, such as oleander, will be also be avoided.

BIO-20 **Use of Biodegradable Material in Erosion and Sediment Control Devices.** Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.

BIO-21 **Use of Natural Objects in the Crossing Facility.** Natural objects, such as stumps, rocks, and other natural debris, will be placed in wildlife crossings to create cover for wildlife and to encourage use of the crossings.

BIO-22 **Installation of Vegetative Cover near the Entrances to Culverts.** Vegetative cover will be placed near the entrances to culverts to increase their effectiveness for carnivores and smaller wildlife.

BIO-23 **Installation of Dirt, Rock, or Concrete Benches on at Least One Side of Large Mammal Crossings.** Dirt, rock, or concrete benches will be installed on at least one side of large mammal crossings to allow wildlife to cross during storms.

BIO-24 **Wildlife Fencing.** To reduce end-runs around fences, the wildlife fencing will continue at least 0.5 mi beyond the wildlife crossing or to an appropriate location that is unsuitable for wildlife (e.g., structure, steep hillside, urban area).

Directional fencing will be installed along Salt Creek Channel and Hemet Channel/San Jacinto Branch Line to funnel wildlife away from the right-of-way and minimize impacts associated with hazards from traffic.

BIO-25 **Installation of Jump-Outs and Escape Ramps.** Wildlife fencing will include wildlife jump-outs and escape ramps to allow trapped wildlife to escape back into the MSHCP Conservation Area and to exit the road system safely. Wildlife fencing will include wildlife jump-outs and escape ramps on the roadway side of the fence, at approximately 0.62-mi intervals; specific spacing intervals will be determined during final design and in coordination with RCA.

Mitigation Measures

BIO-26 **Enhancements to Wildlife Corridors.** To mitigate Project impacts to wildlife corridors, as part of the refinement of the Selected Alternative, enhancements will be included during final design to facilitate wildlife movement under bridges and through proposed culverts. Enhancements will be consistent with the objectives of the MSHCP and will include directional fencing and structural features to provide all-weather crossings in culverts. The design of wildlife movement features and enhancements will be determined after the Preferred Alternative is identified.

3.3.2 Wetlands and Other Waters

3.3.2.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters

would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

USACE issues two types of 404 permits: Standard and General permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations [CFR] Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practical alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Department, the Federal Highway Administration, USACE, the U.S. EPA, and U.S. Fish and Wildlife Service (USFWS) entered into a memorandum of understanding (MOU) to integrate the National Environmental Policy Act (NEPA) and the Clean Water Act (CWA) for Environmental Impact Statement (EIS) projects that have five or more acres of permanent impact to waters of the United States (U.S.). Under this Memorandum of Understanding (MOU), the signatory agencies agree to coordinate at three checkpoints: 1) purpose and need, 2) identification of range of alternatives, and 3) preliminary determination of the LEDPA and conceptual mitigation plan. The goal of the MOU process is to allow the USACE to more efficiently adopt the Department's EIS for their Section 404 permit action. Pursuant to Checkpoint 3 of the 2006 *National Environmental Policy Act/Clean Water Act Section 404 Integration Process for Federal Aid Surface Transportation Projects in California Memorandum of Understanding* (NEPA/404 MOU), the Department requested concurrence on the preliminary LEDPA in May 2015. Concurrence on the LEDPA was received on May 14, 2015 by the U.S. EPA, on June 4, 2015 by USFWS, and on August 24, 2015 by USACE. The LEDPA, Conceptual Mitigation Plan, and LEDPA concurrence letters can be found in Appendix M.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as FHWA and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Wildlife (CDFW), the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the

natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the CWA. Please see the Water Quality section for additional details.

3.3.2.2 Affected Environment

The affected environment for wetlands and other waters is based on findings from a wetlands and other waters delineation report for the Project, which was submitted to USACE in September 2008 for review and verification of jurisdictional waters of the United States, including wetlands. USACE approved the jurisdictional determination (JD) on April 14, 2011. Since that approved JD expired in April 2016, the USACE provided an updated approved JD on (August 23, 2016) based on the results and findings of the wetland delineation and existing information included in the April 14, 2011 approved JD. This approval, as well as USACE's letter endorsement of the purpose and need, is included in Coordination with USACE at the end of Chapter 5.

Study Area

As described in Natural Communities, Section 3.3.1.2, the study area for wetlands and other waters was referred to as the Rare Plant Aquatic Resource Study Area (RPARSA) and included the PIA, utility relocation areas, connections to Hemet Channel outside the Project ROW, and a 100-ft indirect impact area adjacent to the PIA and unique design features. Additional Indirect Impact Study Areas 1 and 2 were also included as part of the wetlands and other waters study area.

Study Methods

Pedestrian surveys were conducted between February 2005 and May 2006 to delineate wetlands and other waters within the study area. The wetland delineation team included wetland ecologists, biologists, soil scientists, and local botanical experts.

Field methods to identify wetlands followed the procedures developed in the 1987 *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and procedures developed in consultation with USACE Los Angeles district staff. Field data (including sample point locations, wetland boundaries, and limits of other waters) were collected using Trimble® GEO-XT hand-held Global Positioning System (GPS) units. Routine wetland delineation data sheets were completed using Integrated Wetland Delineation System (IWDS) software. This software was developed to incorporate the routine wetland delineation data sheet (from the 1987 *Corps of Engineers Wetlands Delineation Manual*) into the GPS device. At each sample location, observations about the vegetation, hydrology, and soils were electronically entered into the IWDS data form, which was automatically linked to the mapped feature. Detailed information about

survey methodology is provided in the SR 79 Jurisdictional Wetlands and Other Waters Delineation Report of September 2008.

All wetlands and waters located in the direct impact area were considered permanently impacted as a result of construction and operation of the roadway. Potential indirect impacts to wetlands and other waters outside the direct impact area were evaluated for potential alterations to local hydrology, erosion hazards, and pollutants that could result from the proposed Project.

Riparian/riverine habitats, as described in MSHCP Section 6.1.2, encompass a broader range of habitats than those strictly defined by the USACE in the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and various supplements and guidance. Riparian/riverine habitats are described as "habitats dominated by trees, shrubs, persistent emergents, or emergent mosses or lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year" (RCIP 2003). Agricultural drainages that did not provide habitat functions and values for MSHCP Covered Species were not included in the calculation of riparian/riverine habitat.

Vernal pools are described in MSHCP Section 6.1.2 as seasonal wetlands that occur in depressions and contain all three USACE wetland parameters (soils, vegetation, and hydrology). The determination of vernal pool habitat in the proposed Project area was conducted on a case-by-case basis. Seasonal wetlands that did not exhibit vernal pool characteristics during the wet season or shortly thereafter, or that were artificially created, were not considered to be vernal pool habitat during this assessment.

The locations of MSHCP vernal pool and riparian/riverine habitats were determined in the field and subsequently verified using a combination of the wetland delineation and plant community data sets.

Wetlands and Other Waters in the RPARSA

Regionally, the study area is located mostly in the San Jacinto River watershed, which encompasses 765 mi^2 of western Riverside County. The watershed is bounded to the east by the San Jacinto and Santa Rosa Mountains, the San Luis Rey River drainage area to the south, the Santa Ana Mountains to the west, and the Badlands to the north. Surface water drains to Lake Elsinore via the San Jacinto River, the Salt Creek Channel, and their associated tributaries (USDA 2005). The southern portion of the study area is in the Santa Margarita watershed, which drains to the Santa Margarita River.

Most of the study area is located in the bottom of the San Jacinto Valley and has very little topographic relief. In this area, hydrologic processes are predominantly the result of winter rainfall and scattered summer storms. During storms of sufficient severity, much of the area is subject to temporary flooding. Flooding connects many of the wetlands hydrologically via a series of roadside and other drainage ditches or constructed storm water channels. These ultimately drain into the San Jacinto River or Salt Creek Channel. Drainage in the Project study area is divided into two general watershed areas. South of the Tres Cerritos Hills, water flows generally to the south and west into Hemet Channel and Salt Creek Channel. To the north of the Tres Cerritos Hills, water flows to the north and west toward the San Jacinto River.

Four general types of seasonal wetlands occur in the study area. These wetland types differ primarily in species composition and degree of disturbance. They include vernal pools, seasonal wetlands, agricultural wetlands, and riparian areas. In addition to seasonal wetlands, other waters present in the study area include constructed ponds, flood control and storm water channels, drainage ditches, and erosional channels. The general locations of these features are shown in Figures 3.3-18, 3.3-19, and 3.3-20. The locations of MSHCP Riverine/Riparian habitat and vernal pools identified in the study area are shown in Figure 3.3-21. The numbers of wetlands and other waters in the study area for each of the Build alternatives are provided in Table 3.3-1. A description of the wetlands and other waters is presented in the following sections.

Overview of Seasonal Wetland Types

Seasonal wetlands are characterized by the presence of saturated soils near the surface or a shallow water table for extended periods during the wet season (generally November through March), but that are completely dry throughout the remainder of the year. For this evaluation, seasonal wetlands have been classified into four categories based on land use, characteristic vegetation, and disturbance history. These categories include vernal pools, seasonal wetlands, agricultural seasonal wetlands, and riparian areas. They are described in the following sections.

Vernal Pools

Vernal pools are a subtype of seasonal wetland, distinguished from other seasonal wetlands based on their unique flora. Vernal pool vegetation consists predominantly of native plant species, including a number of rare and endemic species that are specifically adapted for the cyclical patterns of inundation and drying (MWD 1994, USACE 1997, Zedler 1987). The vernal pools in the study area have been classified as San Jacinto Valley Vernal Pools (Sawyer and Keeler-Wolf 1995). Although this specific type of habitat is restricted to the Perris Basin of the Lower San Jacinto River Valley, it is ecologically similar to the claypan vernal pools of the San Joaquin and South Coast ranges (CDFG 1998). This definition differs from the broad one in the MSHCP, which defines vernal pools as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season" (RCIP 2003). MSHCP vernal pool habitat is shown in Figure 3.3-21. All of the vernal pools in the Project study area are jurisdictional wetlands subject to regulation by the USACE and RWQCB under the federal Clean Water Act. Vernal pools are not regulated by the CDFW under Section 1602 of the California Fish and Game Code.

Seasonal Wetlands

Seasonal wetlands in the study area are hydrologically similar to vernal pools, but they do not support unique vernal pool flora. The seasonal wetlands identified in the study area are associated with constructed features such as former stock ponds, abandoned excavation sites, or drainage features that are subject to seasonal inundation and support hydrophytic plant species. As with vernal pools, precipitation is the most critical contributing hydrologic factor, but overland surface water flow may also be important. Seasonal wetlands in the Project study area are jurisdictional wetlands regulated by the USACE or the RWQCB, or both, but are not regulated by the CDFW.

Agricultural Seasonal Wetlands

Agricultural seasonal wetlands are areas in actively disked or cultivated fields that are seasonally inundated for a prolonged period (more than 14 days) due to natural conditions. In addition to prolonged ponding, these areas typically exhibit significantly suppressed crop growth. In some locations, these wetlands support limited sparse hydrophytic plant species. Agricultural wetlands in the Project area are jurisdictional wetlands regulated by the USACE or the RWQCB, or both, but are not regulated by the CDFW.

Riparian Habitat

Riparian habitat in the study area is predominantly categorized as cottonwood-willow riparian forest and willow riparian scrub (Figures 3.3-5 through 3.3-10). The dominant and codominant plant species within these habitats include Fremont cottonwood, black willow, and narrow-leaved willow. A few small areas of tamarisk scrub have also been mapped as riparian habitat. The MSHCP definition of riparian/riverine areas incorporates habitats that are dominated by persistent emergent herbaceous plants, but excludes artificially created areas. Therefore, roadside ditches, constructed drainages, and wastewater treatment ponds that contain emergent wetlands were not considered riparian/riverine habitat. The location of MSHCP riparian/riverine habitat within the study area is shown in Figure 3.3-21. Riparian habitats in the Project study area are regulated as wetlands by the USACE and the RWQCB under the federal Clean Water Act. These habitats are also regulated under Section 1602 of the California Fish and Game Code and administered by the CDFW.

Other Waters

Other waters in the study area include the Salt Creek Channel, the Hemet Channel, constructed ponds, excavated roadside drainage ditches, and erosional drainages in the West Hemet Hills. The following sections describe the other water features identified in the study area.

Salt Creek Channel

The Salt Creek Channel is the primary drainage feature in the southern part of the study area and is characterized by broad, gently sloping banks with an intermittent network of defined, often braided, scour features throughout the lower part of the channel. The ordinary high water mark is about 230 to 265 ft from bank to bank, but flows of this magnitude typically occur only for brief periods in response to heavy storms and subsequent runoff. The Salt Creek Channel is dry most of the year, with occasional low-velocity flows restricted to the bottom of the channel.

The slopes of the channel are characterized by a mosaic of alkali scalds and grassland habitat. Characteristic vegetation in the grassland area includes salt grass (*Distichlis spicata*), foxtail barley (*Hordeum marinum* ssp. *leporinum*), white sweet clover (*Melilotus alba*), burclover (*Medicago polymorpha*), soft chess (*Bromus hordeaceus*), and summer mustard (*Brassica geniculata*). The alkali scalds are sparsely vegetated and are characterized by species such as saltbush (*Atriplex suberecta, A. argentea*), sand spurry (*Spergularia marina*), Mediterranean barley (*Hordeum murinum* ssp. *gussonianum*), ice plant (*Mesembryanthemum nodiflorum*), and alkali weed (*Cressa truxillensis*).

The Salt Creek Channel is a jurisdictional water of the United States subject to regulation by the USACE and the RWQCB under the federal Clean Water Act and also subject to regulation by the CDFW under Section 1602 of the California Fish and Game Code.

Hemet Channel

The Hemet Channel is a constructed storm water drainage located in the southern part of the study area. The channel is about 50 ft wide, with relatively steep, well-defined banks. This flood control channel is routinely maintained and devoid of vegetation. This channel is dry most of the year, with ephemeral, high flows typically occurring only in response to storm water runoff from areas south of the Tres Cerritos Hills. Water from the Hemet Channel is discharged into the Salt Creek Channel at the intersection of Patterson Road and Olive Avenue, in the southern part of the study area.

The Hemet Channel is a jurisdictional water of the United States and is subject to regulation by the USACE and the RWQCB under the federal Clean Water Act and is also subject to regulation by the CDFW under Section 1602 of the California Fish and Game Code.

Constructed Ponds

Constructed ponds are excavated basins that contain standing water for at least part of the year. These ponds include areas that have been excavated for storm water retention, agricultural irrigation, and landscaped/recreational ponds. Some of the ponds support wetland or riparian vegetation. With the exception of recently constructed and routinely maintained agricultural irrigation ponds, most of the constructed ponds in the Project study area provide wetland habitat values and are subject to regulation by the USACE or the RWQCB, or both, under the federal Clean Water Act. In addition, several ponds support riparian habitat, and these areas are subject to regulation by the CDFW under Section 1602 of the California Fish and Game Code.

Drainage Ditches

Numerous drainage ditches, including roadside ditches, storm water channels, and agricultural drainages, are present within the study area. Many of these features are dry most of the year and only contain flows for a short time after storms. Most of the drainages are routinely maintained and lack vegetation entirely or support a sparse cover of primarily ruderal plant species. A few of the drainages support hydrophytic vegetation and appear to be subject to more prolonged seasonal inundation. Most drainage ditches are not considered jurisdictional waters subject to regulation by the USACE. In some cases the RWQCB and/or the CDFW may assert jurisdiction over drainage ditches that affect water quality and where they provide habitat for fish and wildlife species. Remnant, or isolated, drainage ditches or drainages that do not flow into other waters and do not provide habitat value may be considered nonjurisdictional.

Erosional Channels

Several erosional scour channels are scattered throughout the West Hemet Hills, west of California Avenue, and north of Stowe Road. These drainages are formed as a result of storm water runoff and occur in the low saddle areas between the hilltops. The drainages are generally weakly expressed and lack well-defined bed and bank characteristics, but have some sections that have been deeply cut by erosion. Typical indicators of ordinary high water, such as drift lines, sediment deposits, and water marks, are not evident in any of the drainages. These drainages dissipate into sheet flow at the base of the hills and are not connected to other waters in the study area. Hydrology in these areas appears to be highly intermittent, and these drainages contain flows only in response to heavy rainfall that lasts for a short time. Vegetation throughout the drainages is characterized by Riversidian sage scrub species, including coastal sagebrush

(*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), brittlebush (*Encelia farinosa*), and black sage (*Salvia mellifera*). These features were not considered to be jurisdictional waters of the United States because they lack evidence of ordinary high water flows and dissipate into sheet flow at the base of the hill; however, the RWQCB or the CDFW, or both, may take jurisdiction over these features.

Nonjurisdictional Water Features

Several potentially nonjurisdictional features are present in the study area, including agricultural settling basins, wastewater treatment ponds and wetlands, storm water retention basins, and areas that are seasonally ponded in disturbed areas (e.g., dirt roadways and open gravel areas). Because these areas were not considered to be jurisdictional wetlands, other waters, or sensitive aquatic resources, they are not discussed further in this report.

Wetlands and Other Waters in the Build Alternative and Design Option Study Areas

Wetlands and other water features identified in the study area for the Build alternatives and design options include Salt Creek Channel, Hemet Channel, vernal pools, seasonal wetlands, agricultural seasonal wetlands, constructed ponds, drainage ditches, and erosional channels. The following sections provide a summary of the wetlands and other waters that were identified in the study areas for each of the proposed Build alternatives and design options. These wetlands and other waters are also shown in Table 3.3-1. The study areas for the design options are the same as their respective Build alternatives, so they are not discussed separately.

Build Alternative 1a

Build Alternative 1a would cross both the Salt Creek Channel and the Hemet Channel. Other wetlands and other waters present in the study area for this Build alternative include vernal pools, seasonal wetlands, riparian wetlands, agricultural wetlands, constructed ponds, and drainage ditches. A general summary of these features is provided below.

Three vernal pools were identified north of Esplanade Avenue and west of Warren Road. The largest of these vernal pools (VP0109) is characterized by popcorn flower, wooly marbles, and little mousetail. The two smaller vernal pools (VP0110 and VP0111) are weakly expressed topographic basins characterized by annual bluegrass, low barley, wooly marbles, and popcorn flower. This Build alternative would also include the 12 vernal pools located in Additional Indirect Impact Study Area 2, south of Esplanade Avenue and east of Warren Road.

A total of 12 seasonal wetlands associated with drainages, abandoned excavated sites, or other disturbed, depressional areas that support seasonal inundation were found in the study area for this Build alternative. Seasonal wetland SW0019 appears to be an abandoned excavation located on the slope of a hill south of Florida Avenue and west of California Avenue. Vegetation in this area includes toad rush, wooly marbles, curly dock, and rabbit's foot grass. Seasonal wetland SW0029 is in a disturbed, low depressional area characterized by five-hook bassia and scattered curly dock, north of Devonshire Avenue and east of Warren Road. Seasonal wetlands SW0030 and SW0031 are in a constructed drainage ditch along the west side of the San Diego Canal, south of Tres Cerritos Avenue. These wetlands, characterized by rabbit's foot grass, curly dock, and cattail, appear to have been inundated or saturated for a relatively long time as a result of irrigation runoff. Seasonal wetland SW0032 appears to be a former stock pond located in a horse pasture on the north side of Esplanade Avenue. This shallow basin is surrounded by dense tamarisk, with non-native

grasses such as sprangletop and barnyard grass dominant throughout the interior. Seasonal wetland SW0033 is characterized by Italian ryegrass and is associated with a drainage ditch along the San Diego Canal on the south side of Cottonwood Avenue. Seasonal wetland SW0034 is a shallow, sparsely vegetated basin in a disturbed area near Reflection Lake. This basin supports scattered Bermuda grass, little-seed canary grass, curly dock, and alkali sida. Seasonal wetland SW0035 is in an abandoned excavation in the former motocross park on the east side of Sanderson Avenue, south of North Ramona Boulevard. Scattered black willow trees with an understory of perennial pepperweed and curly dock are present around the edges of this basin. Two seasonal wetlands, SW0036 and SW0037, are associated with the roadside drainage on the south side of the Ramona Expressway. Vegetation in SW0036 is characterized exclusively by dense curly dock, whereas SW0037 is characterized by Bermuda grass and nutsedge with scattered cattail. At the northern end of the study area, seasonal wetlands SW0038 and SW0039 are adjacent to an agricultural field on the west side of SR 79, north of the Ramona Expressway. Seasonal wetland SW0038 is characterized by dense salt grass along the outer edges and Olney's bulrush in the deeper areas. Seasonal wetland SW0039 is in a riparian area consisting of black willow, sandbar willow, and cottonwood along a drainage area south of the San Jacinto River.

Four agricultural seasonal wetlands (AW0018, AW0019, AW0021, and AW0022) are located in the northern section of this Build alternative, near Ramona Expressway. All of these wetlands are in areas that are routinely disked or cultivated and are either devoid of vegetation or support scattered ruderal species such as little-seed canary grass, five-hook bassia, Bermuda grass, perennial pepperweed, toad rush, and swamp timothy.

Four constructed ponds, two of which support riparian habitat, are located in the study area for this Build alternative. A small portion of an agricultural irrigation pond (CP001) is located in the study area on the west side of Warren Road, south of Cottonwood Avenue. Scattered tamarisk is present along the berms surrounding this pond, and small patches of Olney's bulrush and cattail are present in the pond. Constructed ponds CP006 and CP008 are located in the former motocross area south of North Ramona Boulevard. Dense riparian vegetation consisting of large black willow and cottonwood trees with an understory of perennial pepperweed is present around CP006. CP007 is characterized by tamarisk scrub. Constructed pond CP0010 is a recently built agricultural irrigation pond adjacent to a sod farm north of the Ramona Expressway.

Three riparian areas were mapped in the study area for this Build alternative. Riparian area RP002 includes large black willow trees with a dense understory of perennial pepperweed and is located on the west side of Warren Road, immediately south of the Colorado River Aqueduct. Riparian areas RP003 and RP004 occur at the north end of the study area, just south of the San Jacinto River on both sides of SR 79. These areas are characterized by black willow, cottonwood, and sycamore trees, with scattered sandbar willow and mulefat in the understory.

Portions of 31 drainage ditches are present in the study area for this Build alternative. Most of the drainages support only short-duration flows in response to storms and are either routinely maintained or are characterized by predominantly upland ruderal plant species.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Three mapped riparian areas (RP0002, RP0003, and RP0004), three constructed ponds (CP001, CP006, and CP008), and five seasonal wetlands (SW0019, SW0029, SW0034, SW0035, and SW0038) support riparian vegetation consisting of black willow, cottonwood, sandbar willow, mulefat, and tamarisk. The only riverine habitat in the study area for this Build alternative is the Salt Creek Channel.

MSHCP vernal pool habitat includes three vernal pools (VP0109, VP0110, and VP0111) that may provide suitable habitat for special-status vernal pool species. Another 12 vernal pools are located in Additional Indirect Impact Study Area 2.

Build Alternative 1b and Design Option 1b1

Wetland resources in the Build Alternative 1b/Design Option 1b1 study area are similar to those described for Build Alternative 1a, with the following exceptions.

The study area for this Build alternative and design option includes another two agricultural wetlands (AW0001 and AW0016) and another three constructed ponds (CP003, CP004, and CP005). Agricultural wetland AW0001 is a small depression along the edge of a cultivated field in the southern part of the study area, north of East Newport Road. Agricultural wetland AW0016 is a shallow, weakly expressed depression that supports swamp timothy, cudweed, and knotweed and is located in a cultivated wheat field north of Cottonwood Avenue and west of Sanderson Avenue.

Constructed pond CP003 is a small excavated depression in an agricultural field on the west side of Sanderson Avenue. This pond supports sparse herbaceous species that include summer mustard, smooth tarplant, and saltbush. Constructed pond CP004 is a man-made lake on the east side of Sanderson Avenue. Constructed pond CP005 appears to be a seasonal pond created by the construction of low earthen berms around a relatively shallow depression, which is characterized by abundant perennial pepperweed throughout, with scattered black willow, mulefat, and giant reed around the edge of the pond.

Riparian seasonal wetland RP0001 is also included in the study area for this Build alternative and design option. This riparian area is located east of Sanderson Avenue, north of Cottonwood Avenue, and is characterized by black willow with scattered cottonwood, mulefat, and giant reed.

Thirty-one drainage ditches are located in the study area for Build Alternative 1b and Design Option 1b1. Of these, 27 are the same as in Build Alternative 1a.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Riverine/riparian and vernal pool habitat in the study area for this Build alternative and design option is similar to that in Build Alternative 1a, except for the additional riparian habitat associated with riparian area RP0001 and constructed pond CP005.

Preferred Alternative (Build Alternative 1b with Refinements)

Wetland resources in Build Alternative 1b with refinements are the same as Build Alternative 1b and Design Option 1b1 described above.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Riverine/riparian and vernal pool habitat in the study area for the Preferred Alternative includes 14.6 ac of MSHCP riparian/riverine habitat and 2.0 ac of MSHCP vernal pool habitat. The Preferred Alternative also includes Hemet Channel, which is also considered an MSHCP riverine resource.

Build Alternative 2a

The study area for Build Alternative 2a contains nearly the same amount of wetlands and other waters as the study area for Build Alternative 1a. The primary difference between these two study areas is the location and area of erosional drainages in the West Hemet Hills north of Stowe Road (Table 3.3-1). The study area for this Build alternative includes one other drainage ditch (DD0009) along the north side of Hemet Channel.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Riparian/riverine and vernal pool habitats in the study area for this Build alternative include the same areas as those described for Build Alternative 1a, as well as the additional 33 vernal pools and 7 seasonal wetlands in Additional Indirect Impact Study Area 1.

Build Alternative 2b and Design Option 2b1

The wetlands and other waters present in the study area for Build Alternative 2b are similar to those in Build Alternative 1b, with the primary difference being the location and area of erosional drainages in the West Hemet Hills north of Stowe Road and west of California Avenue (Table 3.3-1). The only other difference is a portion of drainage ditch DD0009 along the north side of the Hemet Channel.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Riparian/riverine and vernal pool habitats in the study area for this Build alternative include the same areas as those described for Build Alternative 1a, as well as the additional 33 vernal pools and 7 seasonal wetlands in Additional Indirect Impact Study Area 1.

3.3.2.3 Environmental Consequences

The permanent and temporary impacts to wetlands and other waters that are expected from the Project alternatives and design options are shown in Table 3.3-3. In this section, impacts are discussed separately for each Build alternative. If two Build alternatives would have the same impact on the same resource, the second discussion notes the impact, but does not repeat the first discussion. The impacts from Design Options 1b1 and 2b1 would not very from their respective Build alternatives, so they are not discussed separately.

Permanent Impacts

The following sections summarize the permanent impacts for each of the Build alternatives and design options. BMPs and project engineering would be implemented during construction and operation to avoid or minimize indirect impacts to wetlands and other waters outside the direct impact areas.

Direct Impacts

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

A total of 2.85 ac of the Salt Creek Channel would be present in the direct impact area of Build Alternative 1a. However, permanent direct impacts would be limited to pilings and other bridge support structures that would be located within the ordinary high water area of the channel.

This Build alternative would also result in permanent impacts to 1.99 ac of vernal pools, 0.93 ac of seasonal wetlands, 9.05 ac of agricultural seasonal wetlands, and 1.59 ac of riparian seasonal wetlands.

A total of 2.63 ac of constructed ponds and 5.09 ac of excavated drainage ditches would be permanently impacted by this Build alternative.

In addition, 0.31 ac of erosional drainage features in the West Hemet Hills would be permanently impacted.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

As stated previously, permanent direct impacts to Salt Creek Channel would be limited to the areas required for pilings and other bridge support structures in the ordinary high water area.

In addition to these areas, 4.18 ac of riparian/riverine habitat, including tamarisk scrub, cottonwood, and willow riparian vegetation, would be permanently impacted by this Build alternative.

Another 2.28 ac of MSHCP vernal pool habitat (including vernal pools and seasonal wetlands that provide comparable habitat) would be permanently impacted.

Build Alternative 1b and Design Option 1b1

Permanent direct impacts to wetland resources from Build Alternative 1b and Design Option 1b1 would be similar to those from Build Alternative 1a (Table 3.3-3). However, this Build alternative would have a smaller number of permanent direct impacts to vernal pool habitat. Build Alternative 1b would have only 0.01 ac of permanent direct impacts to vernal pools.

This Build alternative would have slightly less impact to excavated drainage ditches, 4.43 ac compared to 5.09 ac under Build Alternative 1a. It would, however, result in more permanent direct impacts to constructed ponds, 6.33 ac compared to 2.63 ac with Build Alternative 1a.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Permanent direct impacts to riparian/riverine habitat, including Salt Creek Channel, would be similar to the impacts associated with Build Alternative 1a. Permanent direct impacts to wooded riparian habitat (tamarisk, cottonwood, and willows) would total 4.14 ac and would be only 0.04 ac less with this Build alternative than with Build Alternative 1a.

Permanent direct impacts to MSHCP vernal pool habitat (including comparable seasonal wetlands) would be 0.33 ac with Build Alternative 1b or Design Option 1b1 compared to 2.28 ac with Build Alternative 1a.

Preferred Alternative (Build Alternative 1b with Refinements)

Permanent impacts for the Preferred Alternative 1b with refinements are the same as Build Alternative 1a with the exception of 9.42 ac of agricultural seasonal wetlands rather than 9.05 ac, 0.09 acres of erosional drainages rather than 0.31 ac,1.35 ac of constructed ponds rather than 2.63 ac, and 4.43 ac of drainage ditches rather than 5.09 ac.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Permanent impacts for Build Alternative 1b with refinements to MSHCP riparian/riverine habitat (tamarisk, cottonwood, willows) would equal 5.27 ac, while permanent impacts to vernal pool habitat, located near Esplanade Avenue and Warren Road (VP 0109, VP 0110, VP 0111), would equal 2.0 ac.

Build Alternative 2a

As described under Build Alternative 1a, permanent direct impacts to Salt Creek Channel from Build Alternative 2a would be limited to the areas needed for pilings and bridge support structures. This Build alternative would also result in permanent direct impacts to 0.01 ac of vernal pools, 1.06 ac of seasonal wetlands, 1.59 ac of riparian seasonal wetlands, and 9.05 ac of agricultural seasonal wetlands.

Build Alternative 2a would also result in permanent direct impacts to 2.63 ac of constructed ponds, 4.96 ac of excavated drainage ditches, and 0.08 ac of erosional drainages.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

In addition to the impacts associated with the bridge crossing over Salt Creek Channel, 4.18 ac of riparian/riverine habitat, including tamarisk scrub, cottonwood, and willows, would be permanently and directly impacted by this Build alternative. A total of 0.30 ac of MSHCP vernal pool habitat (including comparable seasonal wetlands) would be directly, permanently impacted.

Build Alternative 2b and Design Option 2b1

Permanent direct and indirect impacts to wetlands and other waters from Build Alternative 2b or Design Option 2b1 would be similar to those described under Build Alternative 2a. Permanent direct impacts to Salt Creek Channel,

seasonal wetlands, riparian seasonal wetlands, agricultural seasonal wetlands, and erosional drainages would be the same as Build Alternative 2a.

Permanent direct impacts to vernal pool habitat, 1.99 ac, from this Build alternative would be the same as Build Alternative 1a, compared to 0.01 ac from Build Alternatives 1b and 2a.

The 6.35 ac total of permanent direct impacts to constructed ponds would be similar to Build Alternative 1b, compared to 2.63 ac of impacts from Build Alternatives 1a and 2a.

This Build alternative would also cause permanent direct impacts to 4.62 ac of excavated drainage ditches, which is slightly less than the 4.96 ac that would be impacted by Build Alternative 2a.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

In addition to the impacts to the Salt Creek Channel as a result of the bridge structure, 4.13 ac of riparian/riverine habitat consisting of tamarisk scrub, cottonwood, and willows would be permanently and directly impacted by Build Alternative 2b.

Permanent direct impacts to riparian habitats would be similar from all of the Build alternatives.

Build Alternative 2b would result in permanent, direct impacts to 2.31 ac of MSHCP vernal pool habitat (including seasonal wetlands with comparable habitat).

Indirect Impacts

Permanent indirect impacts are only presented for Additional Indirect Impact Study Areas 1 and 2, where changes in hydrological patterns could impact wetlands and other waters and MSHCP riparian/riverine and vernal pool habitat located within these areas.

Construction of Build Alternative 2a or 2b through the West Hemet Hills would result in permanent and direct impacts to about 7 percent of the watershed for the vernal pool complex located at the intersection of Stowe Road and California Avenue, which is in Additional Indirect Impact Study Area 1. The 7 percent reduction in the watershed area could have a permanent indirect impact on 2.43 ac of additional vernal pool habitat located in Additional Indirect Impact Study Area 1 because of interruptions in hydrological patterns. Measures to minimize this potential indirect impact are described in Section 3.3.2.4.

The vernal pool complex located on the east side of Warren Road, south of Esplanade Avenue was also evaluated for potential indirect impacts as this vernal pool complex is located immediately adjacent to the right-of-way. In this location, the topography slopes very gently from the south to the north and there is an existing drainage along the north end of the vernal pool complex that diverts water to the west, towards Warren Road. As the right-of-way is located downslope of the vernal pool complex and all work will be down-gradient, the proposed Project will not result in any alteration to the existing hydrology and no indirect impacts are expected to occur to the vernal pools at this location.

Temporary Impacts

Temporary impacts to wetlands, other waters, and MSHCP riparian/riverine and vernal pool habitats would include transitory impacts during construction of the Project, such as installation of cofferdams, temporary support structures, and construction access routes. These would be removed after a relatively short period and would not result in any permanent loss or impact to the aquatic resource. The following sections discuss the potential temporary impacts to wetlands and other waters, as well as MSHCP riparian/riverine and vernal pool habitats in the direct impact area.

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

Build Alternative 1a could temporarily impact up to 2.85 ac of Salt Creek Channel during construction of the bridge across the channel.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Temporary impacts to MSHCP riparian/riverine habitat could be as much as 2.85 ac in Salt Creek Channel during construction of the bridge associated with this Build alternative.

Build Alternative 1b and Design Option 1b1

A maximum of 2.77 ac of the Salt Creek Channel and up to 0.72 ac of the Hemet Channel could be temporarily impacted during construction of Build Alternative 1b. Temporary impacts from Design Option 1b1 would be the same.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Temporary impacts to MSHCP riparian/riverine habitat would include up to 2.77 ac in Salt Creek Channel during construction.

Preferred Alternative (Build Alternative 1b with Refinements)

Temporary impacts for the Preferred Alternative 1b with refinements are the same as Build Alternative 1b.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Temporary impacts for the Preferred Alternative 1b with refinements would occur to Salt Creek Channel and Hemet Channel, which are both riverine resources. The amount of riverine habitat that could be temporarily impacted during construction would equal 3.48 ac.

Build Alternative 2a

A total of 2.85 ac in Salt Creek Channel and up to 1.85 ac of Hemet Channel could be temporarily impacted during construction of this Build alternative.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Temporary impacts to MSHCP riparian/riverine habitat include up to 2.85 ac in Salt Creek Channel during construction of this Build alternative.

Build Alternative 2b and Design Option 2b1

A maximum of 3.15 ac in Salt Creek Channel and 1.32 ac in Hemet Channel could be temporarily impacted during construction of Build Alternative 2b. Temporary impacts from Design Option 2b1 would be the same.

Riparian/Riverine and Vernal Pool Habitat (MSHCP)

Temporary impacts to MSHCP riparian/riverine habitat would include up to 3.15 ac in Salt Creek Channel during construction.

3.3.2.4 3.3.2.4 Wetland Functions and Values

A "desktop" California Rapid Assessment Method (CRAM), based on information from the wetland delineation report (Caltrans 2008), was used to evaluate the functions and values of impacted wetlands. Wetland impacts occur in relatively isolated areas that are not part of a larger vernal pool landscape. Most of the impacted wetlands had low CRAM scores, and none of the impacted wetlands is located in MSHCP criteria cells, core linkage areas, designated critical habitat, or support threatened or endangered species. Additional information on wetland functions and values is provided in Appendix M, *DRAFT Preferred Alternative/Preliminary Identification of LEDPA (NEPA 404/Checkpoint C)* (Caltrans 2014).

3.3.2.5 Avoidance, Minimization, and/or Mitigation Measures

Measures to avoid, minimize, or mitigate impacts to wetlands and other waters are included by type in the following discussion. These measures are also included in their entirety in the ECR (Appendix E).

Avoidance Measures

As much as possible, the Project Build alternatives and design options and associated roadway segments have been selected to avoid permanent, direct, and indirect impacts to riparian/riverine and vernal pool habitats. Other Build alternatives that were considered (see Section 2.2.5 [Volume 1) would have routed a portion of the roadway parallel to Warren Road on the east side of the San Diego Canal and west of the Hemet-Ryan Airport. This segment was eliminated from further analysis because of the large number of potential impacts to the habitat in this area. However, completely avoiding all areas that could be impacted would not be practicable, so the following measures will be implemented for Build Alternatives 2a and 2b and Design Option 2b1.

- BIO-27 **Environmentally Sensitive Area Fencing.** An Environmentally Sensitive Area (ESA) fence will be installed as shown on the contractor's plans, and per Caltrans Standard Specifications, for Build Alternatives 2a and 2b and Design Option 2b1 along the edge of the ROW for Roadway Segments D and H (if identified for construction as part of the Preferred Alternative) to avoid direct impacts to sensitive resources in the Stowe Road Vernal Pool Complex located in Additional Indirect Impact Study Area 1. These sensitive resources include a vernal pool, the federally listed

vernal pool branchiopod, and federally and/or state-listed or sensitive plant populations consisting of Coulter's goldfields (Narrow Endemic), smooth tarplant (Narrow Endemic), San Jacinto Valley crownscale (Critical Area), little mousetail (Critical Area), spreading navarretia (Critical Area), and California Orcutt grass (Critical Area). A contractor-supplied biological monitor who has knowledge about wetland ecology and rare plants will demark the location of the ESA fence in the field and on construction drawings and plans and will supervise the ESA fence installation. The biological monitor will also inspect the ESA fencing regularly during construction and coordinate with the Resident Engineer if fence repairs should be required.

- **BIO-27a**. Additionally, the contractor will install temporary treatment BMPs, such as fiber rolls or straw wattles, around the vernal pool for protection from possible runoff created by construction activities.

Minimization Measures

All Build alternatives will incorporate the following measures to comply with all MSHCP guidelines related to minimizing impacts to sensitive biological resources within or adjacent to the MSHCP Conservation Area.

WQ-1 **Construction Best Management Practices in Compliance with Project Planning and Design Guide (PPDG), Storm Water Management Plan (SWMP), Storm Water Pollution Prevention Plan (SWPPP), and Standard Special Provisions (SSP).** The contractor will use a combination of BMPs that are acceptable and approved by the Department and that comply with the PPDG, SWMP, the Project-specific SWPPP, and any applicable Department SSPs to minimize impacts associated with runoff and polluted water. See the full text of this measure in Section 3.2.2.4.

WQ-4 **Treatment BMPs.** The Project will incorporate treatment BMPs that have been approved for statewide use per the guidelines of the PPDG. See the full text of this measure in Section 3.2.2.4.

WQ-5 **Dewatering Permit.** The Project will comply with the general de minimus permit that applies to general waste discharge requirements for discharges to surface waters within the Santa Ana region (NPDES CAG 998001). See the full text of this measure in Section 3.2.2.4.

BIO-28 **Onsite and Offsite Drainage Facilities in the Project ROW.** Onsite and offsite drainage facilities will be constructed within the Project ROW to ensure that the quantity and quality of runoff discharged into the MSHCP Conservation Area will not affect existing conditions.

BIO-29 **Maintenance of Constructed Storm Water Systems.** Regular maintenance of constructed storm water systems will take place to ensure effective operation of these systems.

BIO-30 **No Erodible Materials Deposited in Watercourses.** No erodible materials will be deposited into watercourses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks.

BIO-31 **Ongoing Monitoring and Reporting.** Ongoing monitoring and reporting will occur for the duration of the construction activity to ensure implementation of BMPs.

BIO-32 **Modification of the Project Design to Construct a Gravity-Based Surface Water Diversion System.** If Build Alternative 2a or Build Alternative 2b is identified as the Preferred Alternative for the Project, the design will include measures to avoid and reduce impacts to the vernal pool complex adjacent to Stowe Road.

- **BIO-32a. Engineering Design.** During the plans, specifications, and estimates (PS&E) phase of the Project, the proposed design modification will be implemented and refined to address the items listed below.

  An interceptor trench will be constructed below the modified cut slope adjacent to Roadway Segment H. The size and position of this trench will be optimized to capture runoff that could impact the Stowe Road Vernal Pool Complex watershed. The exact capture area will be refined based on the surface structure of the cut slope (vegetated or exposed granite bedrock).

  The drainage will be designed to convey water via gravity from the interceptor trench to a small storage basin, then through piping into an existing ephemeral drainage in the upper watershed of the Stowe Road Vernal Pool Complex. Depending on the final contour of the cut slope, either one or two pipe outlets will be required. The storage basin upstream of each pipe outlet may include flow regulators/dissipaters, depending on the rate of flow from the cut slope into the interceptor trench. Prior to construction, sedimentation levels will be measured and the drainage design will be optimized so that flow rates into the Stowe Road Vernal Pool Complex will not result in sedimentation levels that exceed the levels present before construction.

  A detailed Drainage Recapture Design Plan (DRDP) will be prepared prior to the completion of PS&E to describe the water-conveyance features to be constructed. This DRDP will also summarize the expected performance of the drainage system during periods of low, average, and peak precipitation. The anticipated cut slope treatment will be identified. A landscaping plan will be included if terraced or stabilized slopes can hold soil and support vegetation after construction. If applicable, the landscaping plan will include a list of the plant species to be seeded or planted, target seeding and/or planting densities, revegetation techniques to be employed, criteria used to gauge the success of revegetation, maintenance and monitoring methods to be implemented, a schedule of monitoring and reporting activities, and remedial measures. This DRDP will be submitted to the Regional Conservation Authority (RCA), the Wildlife Agencies, the RWQCB, and USACE for review to verify that the objectives of this measure have been achieved.

- **BIO-32b. Baseline Hydrology Monitoring Plan.** Prior to the completion of PS&E, a detailed Baseline Hydrology Monitoring Plan (BHMP) will be prepared, reviewed, and implemented to

facilitate drainage design modifications and provide a basis for later comparison to postconstruction conditions in the Stowe Road Vernal Pool Complex.

This BHMP will describe the data to be collected, instruments to be installed, duration of the sampling effort, and methods of data interpretation. Baseline data will be collected in average, below average, and higher than average water years prior to the completion of PS&E. Data are intended to determine the amount and frequency of surface water flows into the existing drainage in the upper watershed and the amount of sediment transported to the Stowe Road Vernal Pool Complex.

The extent and depth of pool ponding throughout the filling and drying period will be collected. A weather station will be installed to measure rainfall and provide data specific to the watershed. Surface water flow (e.g., Parshall flumes, pressure transducers) and sediment-sampling devices (Isco sediment samplers or other devices), combined with manual sampling, will be used to determine surface water flows and sediment loads. The sample locations and equipment to be used will be determined by a professional hydrologist who is experienced with surface water hydrology, sediment sampling, and data interpretation in the natural landscape. Photo documentation will also be used to note site changes throughout the monitoring period. The BHMP will be submitted to the RCA, the Wildlife Agencies, the RWQCB, and USACE for review to verify that the objectives of this measure have been achieved.

- **BIO-32c. Postconstruction Surface Water Monitoring.** A Postconstruction Monitoring Plan (PCMP) will be prepared, reviewed, and implemented to ensure that the gravity-based surface-water diversion system functions in average, below average, and higher than average water years and provides compensatory hydrology volume, based on the baseline conditions, with an acceptable flow rate into the upper watershed of the Stowe Road Vernal Pool Complex. The PCMP will be developed concurrently with PS&E and will be implemented after construction.

  The PCMP will detail the procedures to be used to calculate the water flows from the pipe outlet to the existing drainage and total sediment loads within the drainage. Sampling will occur at the instruments installed as part of the BHMP, as well as at new postconstruction locations. The total water flows that occur after construction of the Project, especially storm water discharges, will be evaluated to determine if any modifications are needed to regulate total flows and velocities to the existing drainage, as determined in the BHMP, into the lower watershed.

  An adaptive management process will be included for evaluating and implementing procedures and/or remedial measures for sediment control, such as deepening the receptor basins or other activities, to prevent scour and release of sediments in excess of the existing condition into the lower watershed.

The intent of the monitoring period is to evaluate average, below average, and higher than average water years. The ability to accomplish this will depend on the local precipitation. Monitoring will be required for each of these water years. Initially, monitoring will be conducted for 5 years, but more years could be required to obtain the necessary data.

Annual monitoring reports will be prepared and submitted to the RCA, the Wildlife Agencies, the RWQCB, and USACE for review to verify that the objectives of this measure have been achieved.

Potential remedial actions or modifications to the PCMP will be made based on results of annual monitoring. A final review will take place at the end of the 5-year monitoring period to determine if additional monitoring will be required.

Mitigation Measures

BIO-33 **Mitigation of Impacts to Water Features.** Appropriate mitigation for unavoidable impacts to wetlands and other waters will be determined through the permitting process. The mitigation will lessen the impact to a level below significance and will ensure no net loss of wetlands. Mitigation may include preservation, enhancement, restoration and/or creation of wetlands as well as the following two measures.

- **BIO-33a. Drainage Ditches.** For impacts to roadside ditches, onsite mitigation will consist of replacement through the reconstruction of these features along the new roadway alignment.
- **BIO-33b. Seasonal Wetlands.** For unavoidable permanent impacts to seasonal wetlands, including vernal pools and riparian wetlands, offsite mitigation will consist of wetland/riparian creation, enhancement, or restoration within the San Jacinto watershed and/or the purchase of wetland creation credits at a USACE-approved wetland mitigation bank.
  - **BIO-33c. Salt Creek and Hemet Channel.** For temporary impacts to Salt Creek and Hemet Channel, onsite mitigation will consist of re-contouring temporarily impacted areas to pre-project conditions once construction is complete. Restoration would include grading of disturbed areas to pre-project contours and reseeding with native plant species. Detailed restoration procedures, as well as, post construction monitoring of these areas will be included in the Habitat Mitigation and Monitoring Plan that will be included with the USACE Section 404 Clean Water Act Permit Application.

Conceptual Mitigation Plan

Currently there are no approved wetland mitigation banks or established in-lieu fee programs that cover the Project area. Therefore, the RCTC (the permittee) will be responsible for mitigation resulting from unavoidable impacts to wetlands.

A preliminary compensatory mitigation plan has been proposed to offset the loss of aquatic resource functions as a result of unavoidable impacts to wetlands. The plan was developed in accordance with the USACE and USEPA rules

regarding wetland mitigation issued in 2008 that stress the importance of providing the greatest benefit to the resources, on a landscape and watershed context, with the highest likelihood of success (mitigation rule) [40 CFR Part 230].

Mitigation Objectives

Regulatory and resource agencies have stressed the importance of large scale regional planning for the conservation of large ecosystems for the protection of important habitats such as vernal pools as well as threatened and endangered species (Leidy and White 1996; Goude 2007). In the Project area, the Western Riverside County MSHCP provides such a framework for large-scale regional planning. The MSHCP provides an important context for wetland mitigation because it was established by multiple federal, state, and local resource agencies, as well as public involvement, to devise a plan that would enhance and maintain biological diversity and ecosystem processes in the an area subject to rapid urban growth and development.

One of the primary objectives of the mitigation rule was to "maintain and improve the quantity and quality of wetlands and other aquatic resources in watersheds through strategic selection of compensatory mitigation sites" (40 CFR 230). The MSHCP provides an important context for mitigation planning because it was developed based on key principles of conservation biology including conservation of large habitat blocks, conservation of habitat diversity and contiguous connected preserves. Therefore the primary objective of the compensatory mitigation plan is to offset impacts to 15.3 wetlands through the acquisition of 234.3 acres of high value conservation lands identified in the MSHCP that will protect and maintain critical wetlands and aquatic resources in the project watershed.

Site Selection

Important considerations identified in the MSHCP for high priority conservation areas include biological diversity, population abundance, irreplaceability, representativeness, number of threatened and endangered species, naturalness, threats and management, among others. These factors were considered when identifying potential mitigation sites. In particular, key factors used in the identification of mitigation sites included the following criteria:

- Sites that contained relatively intact vernal pools, alkali grasslands, and alkali playas
- Sites that were part of a larger vernal pool landscape
- Sites adjacent to existing preserved areas to create contiguous sections of protected habitat
- Areas that had been identified as MSHCP criteria cells and core linkage areas
- Areas designated as critical habitat for spreading navarretia
- Sites that provided habitat for large populations of threatened and endangered species
- Sites that are currently unprotected and threatened by urban development

The mitigation strategy for unavoidable impacts is focused on the preservation of rare, high-value wetland resources that are currently threatened by urban developments. As described in the following sections, this mitigation approach is based on offsetting impacts to fragmented, generally low quality wetlands with the protection of a large area of high-value wetland landscape.

Site Protection Instruments

The proposed mitigation includes either the direct purchase of lands containing high value conservation resources or the establishment of conservation easements by RCTC. The purchased lands would become incorporated into the regional conservation areas in western Riverside County.

The Preferred Alternative (1br) would impact a total of 15.3 acres of jurisdictional waters of the United States, including vernal pools, seasonal wetlands, riparian wetlands, agricultural wetlands, and constructed ponds, as shown. The 2008 mitigation allows the USACE to consider the relative ecological value of aquatic resources when determining appropriate compensation ratios. Wetland impacts occur in relatively isolated areas that are not part of a larger vernal pool landscape. None of the impacted wetlands are located in MSHCP criteria cells, core linkage areas, designated critical habitat, or support threatened or endangered species.

Proposed Mitigation Sites

Proposed mitigation include five separate sites that were all included in the environmental surveys and wetland delineation for the Project, so detailed ecological information is available for comparison with the impacted sites. In addition to the significant wetland and other biological resources associated with each of these sites (including large populations of threatened and endangered species), these areas were selected because they have all been identified as MSHCP criteria cells and core linkage areas, are within designated critical habitat, and are adjacent to and would expand upon existing conserved lands. Additionally, the proposed mitigation sites are part of what is likely one of the best remaining examples of vernal pool habitat remaining in the region.

Mitigation Site 1

This 60-acre site includes a 2.5-acre vernal pool complex. This vernal pool complex supports the only documented location for the federally endangered vernal pool fairy shrimp in the vicinity of the Project, as well as, large populations of threatened and endangered plant species, such as spreading navarretia, California orcutt grass, and San Jacinto Valley crownscale.

Mitigation Site 2

This 95.3-acre site contains 1.16 acres of vernal pools and 1.85 acres of seasonal wetlands. This site also supports a very large population of San Jacinto Valley crownscale, and populations of spreading navarretia, which are both federally listed as threatened plant species.

Mitigation Site 3

This 31.9 acre site includes 4.64 acres of vernal pools. As with Sites 1 and 2, this site provides habitat for threatened plant species: San Jacinto Valley crownscale and spreading navarretia. This site is also significant as it is located immediately adjacent to the existing MWD Salt Creek Preserve, as well as, conservation lands recently acquired by the RCA. The acquisition of this parcel would result in a large contiguous block of preserved habitat.

Mitigation Site 4

This 13.6-acre site is located immediately adjacent to the MWD and RCA preserves. This site has 0.009 acres of vernal pool habitat. As with the other mitigation sites, this area supports San Jacinto Valley crownscale and spreading navarretia populations, which are both federally threatened plant species. This site is also contiguous with RCA conserved lands to the east along the west side of Warren Road.

Mitigation Site 5

This 33.5-acre site is also located immediately adjacent existing RCA conserved lands. This site includes 6.90 acres of vernal pool habitat. Of all of the proposed mitigation sites presented in this document, this wetland is the most disturbed as a result of regular disking. Despite this disturbance, this complex supports a number of vernal pool plants including a large population of the federally threatened San Jacinto Valley crownscale.

Focus on Preservation

The 2008 mitigation rule stresses the importance of mitigation site selection at a landscape and watershed scale and notes that certain types of aquatic resources, such as vernal pools, are difficult to replace. Where impacts are unavoidable, compensatory mitigation should be provided through in-kind preservation, rehabilitation or enhancement to the extent practicable. As described in the previous sections, the proposed mitigation sites include high-value wetland resources in areas that have been determined through a well-established regional conservation plan that are high priority areas for preservation. Quantification of remaining vernal pool habitat in southern California is difficult to assess, but it is clear that only a very small amount remains and much of what is left occurs in disturbed and fragmented landscapes (Bauder and McMillan 1996). The United States Fish and Wildlife Service (1998) estimates that 97 percent of the vernal pool habitat in southern California is now gone. Despite some existing fragmentation of the proposed mitigation sites, they represent some of the best remaining, large-scale vernal pool landscape habitat in the regional vicinity of the Project area and are therefore a high priority for conservation.

Despite the ecological value of these areas, they are threatened with further fragmentation and loss. The City of Hemet is one of the fastest growing cities in southern California. In 1990, the population was 36,094 and as of the 2010 census the population had more than doubled to over 78,053 (City of Hemet General Plan). Increased population growth also resulted in increased development with the number of housing units also doubling during the same period of time. The population continues to expand and is expected to reach over 100,000 in the foreseeable future (City of Hemet General Plan). While all of the proposed mitigation sites fall within MSHCP criteria cells (areas that have been identified as priority conservation areas), none of them have been designated as open space or conservation areas in the City of Hemet's General Plan. In contrast, all of the areas are currently designated for either residential or industrial development despite their known high conservation value. Given the past population and projected population growth, and associated increased demand for housing, jobs, and services, these areas will likely be developed if not protected.

The goal of wetland mitigation is to ensure no net loss of wetland values, functions and acreage. To achieve no net loss of wetland acreage, wetland restoration or creation are often used as mitigation; however in certain situations where the success of replacing lost functions and values has variable success, such as vernal pools, full replacement of wetland acreage and function may not be achieved. This is particularly true in the case of vernal pools where the success of vernal pool creation met with mixed results, in terms of long-term success of replacing functions and values (Sutter and

Francisco 1996). Leidy and White (1996) note that "preservation as an approach to vernal pool compensation will be most valuable when implemented as part of a larger ecosystem or watershed complex." The other issue with vernal pool creation is that it may replace wetland area, but it is very difficult to replace the ecological processes and functions associated with larger vernal pool landscapes including hydrologic process, metapopulation dynamics, plant – pollinator relationships and other ecosystem functions. In terms of compensation for vernal pools, one of the criteria should be prioritization and should be given to the identification and protection of the best remaining vernal pool ecosystems based on the diversity of vernal pools (including pool size, shape, and depth), proximity to other wetland and upland habitat types, and habitat integrity (Leidy and White 1996). Where preservation is used to the extent appropriate and practicable, it should be done in conjunction with restoration, enhancement and establishment; however, this requirement may be waived by the USACE and USEPA where preservation areas has been identified as a high priority within the watershed, but higher compensation ratios are required. In this case the proposed mitigation for impacts to 15.3 acres of low quality wetlands is the acquisition of 234.3 acres of high value conservation lands containing significant vernal pool resources; a mitigation ratio of approximately 16:1.

3.3.2.6 Wetlands Only Practicable Findings

Section 404(b)(1) of the federal CWA requires projects involving federal action to demonstrate that measures have been taken to avoid and minimize impacts to waters of the United States, including wetlands. Furthermore, EO 11990 (Protection of Wetlands) directs federal agencies to "…avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands…"

Section 2.2, Project Alternatives, of this EIR/EIS, describes how RCTC, FHWA, and Caltrans worked with USACE, USEPA, USFWS, and CDFW through the NEPA/404 Integration MOU process to develop alternatives to address the Project purpose, while avoiding or minimizing impacts to waters of the United States.

Once the initial range of alternatives was identified, preliminary engineering was conducted to avoid or minimize impacts to waters of the United States. As discussed in Section 2.3, Section 404 No Action Alternative, the No Build Alternative was developed that would completely avoid any dredge or fill within wetlands and other waters of the United States. However, the No Build Alternative was not considered practicable because it would not meet the Project's purpose and need. The No Build Alternative would entail no action by the Project proponent. Existing and projected capacity and operational benefits would not be realized. Existing SR 79 would not be realigned, ROW would not be acquired, and roadway construction would not occur. Build Alternatives 1a, 1b, Design Option 1b1, 1b with refinements, 2a, 2b, and Design Option 2b1 evaluated in this EIR/EIS, have been determined to be practicable as they relate to cost, existing technology, logistics, and purpose and need. A detailed Least Environmentally Damaging Practicable Alternatives analysis was completed for the project as required under section 404(B)(1) of the federal Clean Water Act and it was determined that Build Alternative 1b with Refinements resulted in the least amount of wetland impacts. The LEDPA concurrence letters can be found in Appendix M.

Additional practicable measures have been included to avoid and minimize harm to wetlands and other waters of the United States as a result of the construction and operation of the identified preferred alternative (Build Alternative 1b with Refinements). These measures are:

- Bridges would span over Salt Creek and Hemet Channels instead of fill material with culverts.
- The contractor will use a combination of BMPs that are acceptable and approved by the Santa Ana Regional Water Quality Control Board to minimize impacts associated with runoff and polluted water during construction.
- The contractor will install temporary treatment BMPs, such as fiber rolls or straw wattles, around vernal pools for protection from possible runoff created by construction activities.
- The Project will incorporate treatment BMPs in compliance with the Caltrans NPDES Permit Order No. 2012-0011-DWQ (NPDES No. CAS000003) and the Santa Ana River Watershed within Riverside County Order No. R8-2010-0033 (NPDES No. CAS618033). The treatment BMPs will reduce the pollutant load associated with stormwater runoff during the roadway operation.
- The Project may require localized dewatering in areas where groundwater is shallow. If dewatering is necessary, the Project will comply with the general de minimus permit that applies to general waste discharge requirements for discharges to surface waters in the Santa Ana region (NPDES CAG 998001).
- No erodible materials will be deposited into watercourses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks.
- Ongoing monitoring and reporting will occur for the duration of the construction activity to ensure implementation of BMPs.
- In addition to these avoidance and minimization measures, compensatory mitigation is also included for the Preferred Alternative 1b with Refinements, as described in Section 3.3.2.4, Avoidance, Minimization and/or Mitigation Measures.

Based on the above considerations, it was determined there is no practicable alternative to the proposed construction in wetlands under Build Alternative 1b with Refinements, and the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

3.3.3 Plant Species

3.3.3.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species Section in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC), Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), CA Public Resources Code, Sections 2100-21177.

3.3.3.2 Affected Environment

The affected environment discussion is based on the findings in the Final Rare Plant Survey Report of December 2007, the Natural Environment Study of April 2010 (RCTC 2010a), and the NES Technical Report Addendum Memorandum of August 2010 (RCTC 2010b).

In Natural Communities (Section 3.3.1.2), the study area for plant species was referred to as the Rare Plant Aquatic Resource Study Area (RPARSA) and included the PIA, utility relocation areas, connections to Hemet Channel outside the Project ROW, and a 100-ft indirect impact area adjacent to the PIA and unique design features.

Additional Indirect Impact Study Areas 1 and 2 were included as part of the plant species study area. Plant surveys were also conducted for those species outlined in NEPSSA 3 and Criteria Area Species Survey Area 3 of the MSHCP.

Study Methods[12]

Plant Species

Rare plant surveys were conducted in 2005 and 2006. Survey methods followed CNPS, CDFW, and USFWS protocols, as well as requirements of the MSHCP. The specific methods and procedures employed during the surveys are described in the following sections. Due to the age of the rare plant surveys, these may need to be conducted again before the Project goes to construction to verify that the conditions have not changed.

Database Queries

Prior to beginning field surveys, a target list of special-status plant species that were likely to be found in the study area was compiled. Sources included the CDFW California Natural Diversity "Rarefind" Database and Special Plants List (CDFG 2005 - 2007, 2006a, 2015a), the CNPS Inventory of Rare and Endangered Plants (CNPS 2001a; 2005 - 2007), and the MSHCP. Several reports from the Project region were part of the literature review. These special-status plants are listed in Table 3.3-4. Although they were identified in the database queries and literature reviews, federally and

[12] Although some of the methods described in this section may be outdated, focused surveys and field work for the Project were conducted in accordance with the latest guidance at that time. Likewise, some of the sources are outdated. However, the sources for the literature review, database queries, and data analyses remain the same for the Preferred Alternative in order to be consistent with analyses of the other Build Alternatives.

state-listed threatened or endangered plant species were listed separately. They are discussed in Section 3.3.5 and listed in Table 3.3-18.

MSHCP Plant Species Survey Protocols

Plant surveys conducted for the proposed Project were consistent with the MSHCP survey requirements. In accordance with the MSHCP, surveys for Narrow Endemic and Criteria Area plant species followed accepted protocols and were conducted during the appropriate time of year to detect characteristics necessary for positive identification of the plant. Planning Species, as described in Section 3 of the MSHCP (RCIP 2003) and as discussed in the MSHCP Errata letter (RCIP 2004), were also included in the surveys. The locations of the MSHCP-required study areas for Narrow Endemic plant species and Criteria Area Cells in the Project study area are shown in Figures 3.3-22 and 3.3-23, respectively.

When MSHCP Covered Species were identified in the surveys, each population was evaluated for its long-term conservation value (LTCV). LTCV populations for the Project are defined as populations that are Narrow Endemic and Criteria Area plants that are located in Criteria Area Cells or required survey areas and that can contribute toward MSHCP conservation objectives and reserve assembly.

Other Rare Plant Survey Protocols

The 2005 and 2006 rare plant surveys followed currently accepted resource agency protocols and guidelines from the CNPS (2001), CDFG (2000), and USFWS (1996) for conducting and reporting botanical inventories of special-status plant species. Following these protocols, rare plant surveys were carried out by botanists who had considerable experience with the local flora. All species observed during the surveys were identified to the degree necessary to determine if the plant had special status, including whether or not the species was threatened or endangered.

Seven federally or state-listed threatened or endangered plant species were identified by the database queries and literature review as likely to be present in the study area (Table 3.3-18). Four of the seven species were found during the surveys. These are discussed in Section 3.3.5. Results of the botanical surveys specific to other special-status plants are described later in this section (see Table 3.3-4).

Overview of MSHCP and Other Rare Plant Survey Methods

Field surveys in 2005 began on March 1. The teams generally conducted surveys every other week through August 25, 2005, on 60 different occasions. The 2005 rare plant survey team consisted of Illeene Anderson, Linda Anton, David Bramlet, Kerry Byrne, Sophie Chiang, Robert Hernandez, Amy Hiss, Rick Riefner, and Fred Roberts.

The 2006 surveys began on March 6 and continued roughly every other week through August 24, 2006. One additional survey was conducted on September 25 to review some areas. The 2006 rare plant survey team included Michelle Balk, David Bramlet, Kerry Byrne, Nichole Coulter, Judy Ferguson, Melissa Riedel Lehrke, Rick Riefner, Fred Roberts, and Scott White.

Suitable habitat for special-status plant species was identified in the study area prior to each survey. Some areas had suitable habitat for two or more target plants, and those areas were surveyed several times throughout the year as appropriate, following survey protocols. Reference sites were visited on an as-needed basis to determine the phenology

(or life cycle) of target special-status plants. This was especially important for species not previously documented in the study area or known to be highly localized in the region.

The location of any observed special-status populations was recorded using the polygon feature in the GPS units unless the population was extremely large or was determined unsafe to map on foot (some of the steep terrain in the West Hemet Hills, for example). In these instances, and in a few other cases, the location of the population was denoted by a point.

Table 3.3-4 Special-Status Plants for which Suitable Habitat Is Present in the Project Study Area

Scientific Name/ Common Name	CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys
Abronia villosa var. *aurita* Chaparral sand-verbena	1B.1	Not included in MSHCP	Fine sand, mostly alluvial fans and benches; San Jacinto Mountains, Inland Empire, Orange and San Diego counties. Elevation below 5,000 ft.	January – September	East side of Hemet (eastern end of Diamond Valley); Winchester; along the San Jacinto River near San Jacinto; and in the Bernasconi Hills area	Yes, but species observed outside the study area
Atriplex parishii Parish's brittlescale	1B.1	CA, PS	Alkali grasslands, alkali playas, sinks, and pools, generally in saltbush scrub; western Riverside County (extant), Palm Springs and Cushenbury (historical); Baja California, Mexico. Elevation sea level to 6,200 ft.	June – October	MWD Upper Salt Creek Reserve, historical occurrences along the San Jacinto River floodplain	Yes
Atriplex serenana var. *davidsonii* *[A. davidsonii]* Davidson's saltscale	1B.2	CA, PS	Alkali grasslands and alkali playas; often confused with other species; local reports of *A. coulteri* and *A. pacifica* are based on *A. serenana davidsonii.* Elevation sea level to 1,700 ft.	April – October	Alkaline playas and vernal pools of San Jacinto River floodplain and upper Salt Creek watershed area	Yes
Calochortus plummerae Plummer's mariposa lily	1B.2	CO	Shrublands, woodlands, lower pine forest, mountains, foothills, and valleys; Ventura to Orange counties, inland to Riverside and San Bernardino counties. Elevation 300 to 5,600 ft.	N/A	Reported from the Tucalota Hills, foothills of the San Jacinto Mountains, Laborde Canyon (Badlands), San Timoteo Canyon, Jurupa Hills, Beaumont area	Yes
Calochortus weedii var. *intermedius* Intermediate mariposa lily	1B.2	CO	Shrublands, grasslands, various soil; coastal southern and central California, inland to western Riverside County. Elevation 600 to 2,800 ft.	May – July	Shipley reserve (Crown Valley)	No
Centromadia pungens ssp. *laevis [Hemizonia laevis]* Smooth tarplant	1B.1	CA, PS, RRVP	Generally alkaline, seasonally wet, low-elevation grassland, scrub, and playas; also fallow fields, drainage ditches; primarily in southwestern Riverside County, but a few sites in interior valleys of Los Angeles, San Bernardino, San Diego counties. Elevation sea level to 1,575 ft.	April – September	Moist alkali soils in the Perris Basin. In the region, reported from the San Jacinto area, Upper Salt Creek, Winchester, Domenigoni-Diamond Valleys	Yes

Table 3.3-4 Special-Status Plants for which Suitable Habitat Is Present in the Project Study Area

Scientific Name/ Common Name	CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys
Chorizanthe parryi var. *parryi* Parry's spineflower	3.2	CO	San Bernardino, Riverside, Los Angeles counties; dry sandy or loamy alluvial or upland soils, open sites in coastal sage scrub or chaparral. Elevation sea level to 5,600 ft.	April – June	Lakeview Mountains, North Domenigoni Hills, Diamond Valley, Shipley Reserve, Badlands, Double Butte	Yes
Chorizanthe polygonoides var. *longispina* Long-spined spineflower	1B.2	Covered	Clay soils in chaparral, coastal sage scrub, and grasslands (clay); western Riverside County, San Diego County, and northern Baja California, Mexico. Elevation 100 to 4,800 ft.	April – June	Shipley Reserve-Lake Skinner Area	Yes
Convolvulus simulans Small-flowered morning-glory	4.2	Covered	Clay grasslands or open clay soil areas in shrublands; western central and southwestern California. Elevation 100 to 2,300 ft.	March – May	Bachelor Mountain	No
Deinandra paniculata [Hemizonia paniculata] Paniculate tarplant	4.2	Not Included in MSHCP	Grasslands, open shrublands, roadsides, etc.; often common in San Diego, Orange, and Riverside counties. Elevation sea level to 3,100 ft.	April – November	Common throughout much of southwestern Riverside county (e.g., around Murrieta and Menifee north and east to the Hemet area)	Yes
Harpagonella palmeri Palmer's grapplinghook	4.2	Covered	Clay grasslands, openings in shrublands. Dry slopes and mesas, generally on clay soils in grasslands, coastal sage scrub, and chaparral; southwestern California through Baja California, Mexico, Arizona, and Sonora. Elevation sea level to 2,800 ft.	March – May	Shipley Reserve/Lake Skinner area	Yes
Hordeum intercedens Vernal barley	3.2	PS, RRVP	Alkali grasslands, playas. In coastal areas this species is found in clay grasslands; central and southern California to Baja California, Mexico. Elevation sea level to 3,300 ft.	March – June	Alkali vernal plains west of Hemet and along the San Jacinto River	Yes

Table 3.3-4 Special-Status Plants for which Suitable Habitat Is Present in the Project Study Area

Scientific Name/ Common Name	CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	1B.1	CA, PS	Coastal salt marsh or inland alkali playas, vernal pools; coastal sites from San Luis Obispo to Baja California, Mexico; inland on valley floors in south Great Valley, Coast Ranges, Mojave Desert (historical) and western Riverside County. Elevation sea level to 4,000 ft.	February – June	Upper Salt Creek, west of Hemet, San Jacinto Wildlife Area (San Jacinto River)	Yes
Lepidium virginicum var. *robinsonii* Robinson's peppergrass	1B.2	Not included in MSHCP	Dry areas, chaparral, and coastal sage scrub; Los Angeles County, most Channel Islands, inland to Riverside and San Bernardino counties, south to Baja California, Mexico. Elevation sea level to 2,900 ft.	January – April	Near the Shipley Reserve/Lake Skinner area, North Domenigoni Hills, and east Diamond Valley	Yes
Microseris douglasii ssp. *platycarpha* Small-flowered microseris	4.2	CO	Clay soils on plains, hillsides, and foothill slopes, generally in clay grasslands and native grasslands; Los Angeles, Orange, western Riverside, and San Diego counties to Baja California, Mexico. Elevation sea level to 3,500 ft.	March – May	Bachelor Mountain-Lake Skinner area	Yes
Myosurus minimus ssp. *apus* Little mousetail	3.1	CA, PS	Vernal pools, alkali playas, alkaline grasslands; valley floors; Baja California, Mexico north through western Riverside County and southern Great Valley. Elevation sea level to 2,100 ft.	March – May	Upper Salt Creek area west of Hemet	Yes
Nama stenocarpum Mud nama	2.2	CA, RRVP	Saline or alkaline mud flats of lakes, playas, marshes, swamps, river banks, drying lakebeds, and intermittent wetlands; Los Angeles County to Texas and northern Mexico. Elevation below 1,500 ft.	May – June; September – November	Locally known only from Mystic Lake	No

Table 3.3-4 Special-Status Plants for which Suitable Habitat Is Present in the Project Study Area

Scientific Name/ Common Name	CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys
Pentachaeta aurea Golden-rayed pentachaeta	4.2	Not included in MSHCP	Open places, generally grassland but also shrublands, woodlands, lower montane forests; valleys and mountains, cismontane Southern California to Baja California, Mexico. Elevation 260 to 6,000 ft.	March – July	Only recent reports are from Temecula and Pechanga, about 16 mi southwest of the study area, but suitable habitat occurs throughout the study area; other records are from the San Jacinto Mountains	No
Pseudognaphalium leucocephalum [Gnaphalium l.] Sonora everlasting	2.2	Not included in MSHCP	Perennial herb; shrublands and woodlands, sea; open sand, usually on alluvium; San Luis Obispo through San Diego counties, inland to Riverside and San Bernardino counties; disjunct (and may be a different species) from occurrences in Arizona, Texas, Sonora. Elevation sea level to 7,000 ft.	July – September	San Timoteo Canyon, Santa Ana Mountains, suitable habitat occurs along the San Jacinto River within the study area	No
Sidalcea neomexicana Salt Spring checkerbloom	2.2	Not included in MSHCP	Alkaline playas, grasslands, brackish marshes within shrublands or forests; southwestern California, Baja California, Mexico, southwestern United States to mainland Mexico. Elevation below 5,000 ft.	March – June	Historical record from the 1960s for 3 mi west of San Jacinto	No
Trichocoronis wrightii var. *wrightii* Wright's trichocoronis	2.1	NE, PS	Seasonally inundated alkali playas, muddy alkaline meadows, marshes; San Joaquin Valley, San Jacinto Valley, disjunct to Texas. Elevation sea level to 1,600 ft.	May – September	San Jacinto River floodplain at San Jacinto Wildlife Area. Not known from the Salt Creek watershed.	No
Local Concern Species (No CNPS Status)[c]						
Amaranthus californicus California pigweed	Local Concern	Not included in MSHCP	Matting herb; drying mud flats of seasonal pools playas and lakes; most of California to southern Canada and Texas; regionally rare in Riverside County interior valleys, mountains, Coachella Valley. Elevation sea level to 9,200 ft.	July – October	Mystic Lake, California. 4 mi from the study area.	No

Table 3.3-4 Special-Status Plants for which Suitable Habitat Is Present in the Project Study Area

Scientific Name/ Common Name	CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys
Calycoseris parryi Yellow tack-stem	Local Concern	Not included in MSHCP	Annual; common on Sonoran and Mojave deserts, east to Utah and Arizona; locally rare west of the San Jacinto Mountains at a few western Riverside County locations in coastal sage scrub openings. Elevation 300 to 6,000 ft.	March – May	Known from the North Domenigoni Hills and the Sedco Hills	No
Camissonia graciliflora Slender-flowered primrose	Local Concern	Not included in MSHCP	Annual of upland clay soils; grasslands or grassy openings in woodlands or shrublands; Liebre Mountains (Los Angeles County) north to southern Oregon; local occurrences scarce and generally threatened by land uses. Elevation below 3,500 ft.	March – May	Recorded from the east end of Diamond Valley	No
Caulanthus heterophyllus var. *pseudosimulans* San Diego wild cabbage, Slender pod jewelflower	Local Concern	Not included in MSHCP	Coastal sage scrub and chaparral, on granitic substrates, often following fire or other disturbance. A Southern California endemic, *C. h. pseudosimulans* has not been properly published in botanical literature. Elevation below 3,500 ft.	March – May	Lakeview Mountains, Gibbel Flat (East Hemet), North Domenigoni Hills, East Diamond Valley, Bachelor Mountain, and the San Jacinto Mountains	No
Lepidium latipes var. *latipes* Dwarf peppergrass	Local Concern	Not included in MSHCP	Alkaline playas and vernal pools; northern Baja California, Mexico, through the Great Valley to northwestern California; scarce locally, limited to vernal pools. Elevation below 2,600 ft.	March – May	Upper Salt Creek area, west of Hemet, San Jacinto River	Yes
Petunia parviflora Small-flowered wild petunia	Local Concern	Not included in MSHCP	Open, wet, or moist sandy or silty areas, usually riverbanks, ephemeral lakes, and creeks; Southern California through much of southern United States to tropical America; regionally scarce and generally threatened by land uses. Elevation below 4,300 ft.	April – August	San Jacinto, Mystic Lake, San Jacinto River	Yes

Table 3.3-4 Special-Status Plants for which Suitable Habitat Is Present in the Project Study Area

Scientific Name/ Common Name	CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys
Pilularia americana American pillwort	Local Concern	Not included in MSHCP	Vernal pools and seasonal wetlands, coastal and interior Southern California to Oregon, Midwest, and southern United States; Chile. Elevation below 5,000 ft.	N/A	Upper Salt Creek, west of Hemet	Yes
Plantago elongata California alkali plantain	Local Concern	Not included in MSHCP	Coastal and interior saline or alkaline wetlands; Baja California, Mexico, to southern Canada; locally common in alkaline vernal pools, but strictly limited to these habitats. Elevation sea level to 1,600 ft.	April – June	Vernal pools near Hemet and along the San Jacinto River	Yes
Psilocarphus tenellus var. *globiferus* Round woolly marbles	Local Concern	Not included in MSHCP	Vernal pools and coastal dune systems; central California and disjunct to central Chile; locally scarce, strictly limited to vernal pools, usually on hardened substrates. Elevation sea level to 2,300 ft.	April – June	Known in Southern California only from the Domenigoni Valley	Yes
Sibara virginica Virginia rock-cress	Local Concern	Not included in MSHCP	Much of California and (disjunct) the eastern United States, where relatively common; regionally scarce and widely scattered through southwestern California, limited to vernal wetlands. Elevation below 1,200 ft.	March – May	Skunk Hollow vernal pool	Yes

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

Note: The following USGS 7.5-minute quadrangles were queried, and they include the study area and an 8-mi buffer adjacent to the study area: Bachelor Mountain, Beaumont, Cabazon, El Casco, Hemet, Lake Fulmor, Lakeview, Murrieta, Perris, Romoland, Sage, San Jacinto, Sunnymead, and Winchester.

[a] Status Codes:

California Native Plant Society (CNPS) Status (CNPS 2007)

1A – Plants Presumed Extinct in California

1B – Plants Rare, Threatened, or Endangered in California and Elsewhere

2 – Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere

3 – Plants About Which We Need More Information – A Review List

4 – Plants of Limited Distribution – A Watch List

CNPS Threat Rank (Suffixes to CNPS List Status Codes):

Table 3.3-4 Special-Status Plants for which Suitable Habitat Is Present in the Project Study Area

Scientific Name/ Common Name	CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys

1 –Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

2 – Fairly endangered in California (20-80% occurrences threatened)

3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

Other Designations:

[b] Western Riverside MSHCP Definitions (RCIP 2003).

Special Conditions of MSHCP Covered Species:

CA – Surveys may be required for these species in locations shown on survey maps, as described in Section 6.3.2 of the MSHCP. This includes the list of additional survey needs and procedures species and the Criteria Area Species (see MSHCP pp. 6-63 to 6-65) and the MSHCP Errata Letter, dated August 9, 2004.

CO – These species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met. Species-specific conservation objectives for these species are presented in Section 9.0 of the MSHCP. Refer to Table 9-3 of the MSHCP for specific conservation objectives that must be met for these species prior to including them on the list of Covered Species Adequately Conserved.

Covered – Species addressed in the MSHCP and included in the 10(a)(1)(B) permit. Also includes species that will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met.

NE – Surveys may be required for these species in Narrow Endemic Plant Species survey areas, as described in Section 6.1.3 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

PS – Planning Species – Subsets of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans per Volume I, Section 3, of the MSHCP (RCIP 2003) and the MSHCP Errata Letter, dated August 9, 2004.

RRVP – These species should be protected because they are associated with riparian/riverine areas and vernal pools, as described in Section 6.1.2 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

[c] Local Concern Species

Local concern species are described and discussed in the Final Rare Plant Survey Report. The locations of local concern species were not mapped during the rare plant surveys. These species do not have special status per the USFWS, CDFW, or CNPS; therefore, they were not addressed.

Population sizes were obtained by direct counts, estimations, or by sampling and extrapolation. Plants within very small populations were counted. The numbers of plants for medium, large, or very large populations were visually estimated and rounded to the nearest appropriate digit (tens, hundreds, thousands, tens of thousands, or more). Counts of vernal barley (which was found in populations consisting of several thousand plants or more) were obtained by counting the number of plants present in a representative number of 3.2-ft^2 plots, then averaging the results to determine the number of plants per square-foot area. This plant density was then extrapolated to arrive at the approximate number of plants in a larger area.

Field visits were timed to occur during the optimum blooming period for special-status plants that were likely to be present in each site. Some sites required early-, middle-, and late-season surveys, depending on the type of and quality of habitat. All areas that were not surveyed during the appropriate time of year in 2005 were resurveyed during the correct period in 2006.

All botanists documented every field visit in their field notes, by area, and took photographs of field conditions. The survey team also recorded all plant communities and all plant taxa observed during each field visit, on a per area basis. A list of the 506 plant species identified during the surveys is in Appendix F of the NES (RCTC 2010a). Photographs of the special-status plants found in the study area are in Appendix G of the NES (RCTC 2010a).

Plant Species in the Build Alternative and Design Option Study Areas

Build Alternative 1a

Ten special-status plant species were identified in the Build Alternative 1a study area (Table 3.3-1). Eight of these 10 species are MSHCP Covered Species. Three of the 8 Covered Species have populations with LTCV—smooth tarplant, Coulter's goldfields, and little mousetail. More information about these LTCV populations is in a separate subsection. Two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

Eight MSHCP species were identified in the Build Alternative 1a study area:

- Davidson's saltscale – 1 population (6 plants)
- Plummer's mariposa lily – 1 population (2 plants)
- Smooth tarplant – 270 populations (110,101 plants)
- Parry's spineflower – 27 populations (112,536 plants)
- Long-spined spineflower – 4 populations (4,465 plants)
- Vernal barley – 16 populations (1,249,380 plants)
- Coulter's goldfields – 22 populations (5,380 plants)
- Little mousetail – 31 populations (64,001 plants)

Davidson's Saltscale

One small population of Davidson's saltscale with six plants was found in the study area for Build Alternative 1a, west of the San Diego Canal and northwest of Cell 3291 (Figure 3.3-25). This location and this small population of Davidson's saltscale are common to all of the Build alternative study areas (in Roadway Segment K or J, depending on the Build alternative).

Plummer's Mariposa Lily

One very small population of Plummer's mariposa lily containing two plants was found in the West Hemet Hills (Figure 3.3-26). This was the only place this species was observed in the study area. However, it typically blooms following fires, so based on habitat suitability, it is possible that many more of these plants could be present in this area than were actually observed. Although not considered to have LTCV per the MSHCP, Plummer's mariposa lily is designated as a CNPS 1B species and is therefore considered rare in California. This population is important because its location adds to the known range of the species (Table 3.3-6).

Smooth Tarplant

A total of 270 populations of smooth tarplant, containing 110,101 individuals, is present in the study area for Build Alternative 1a (Figure 3.3-27). The study area for Utility Corridors 1 and 2 contains 14 smooth tarplant populations, but relatively few individual plants (3,250) (Table 3.3-1). A small number of populations was observed south of Domenigoni Parkway, but most were found in the middle to northern portions of the study area, roughly between Devonshire Avenue and Ramona Expressway.

Thirty smooth tarplant populations (with 4,995 plants) were identified in Additional Indirect Impact Study Area 2. Of these 30 populations, 20 (with 31,683 individuals) occur within Criteria Area cells and have LTCV (Tables 3.3-5 and 3.3-6). These LTCV populations are described in a separate section.

Parry's Spineflower

Twenty-seven Parry's spineflower populations comprising 112,536 plants were identified in the Build Alternative 1a study area. Except for one population observed in the Roadway Segment A portion of the study area, most of these populations were found in the West Hemet Hills (Figure 3.3-28). Although not considered to have LTCV per the MSHCP, the Parry's spineflower complex in the West Hemet Hills is important because of the large number of populations in areas of relatively undisturbed Riversidian sage scrub habitat (Table 3.3-6).

Long-Spined Spineflower

Four populations of long-spined spineflower containing 4,465 plants were identified in the study area for Build Alternative 1a. These populations were all found in the West Hemet Hills (Figure 3.3-29). Although they do not have LTCV per the MSHCP, these populations of long-spined spineflower are important because this is a new location for this species, and this population complex now represents the northernmost known occurrence.

Vernal Barley

Sixteen vernal barley populations with more than 1 million plants were identified in the study area for Build Alternative 1a. These populations were observed adjacent to the San Diego Canal in the vicinity of Esplanade

Avenue, east of the San Diego Canal, roughly between Devonshire Avenue and Tres Cerritos Avenue, west of the EMWD Regional Water Reclamation Facility, and in Additional Indirect Impact Area 2 (Figure 3.3-30). Most of the plants (1,230,600) were identified in Additional Indirect Impact Area 2. These populations of vernal barley, an MSHCP Planning Species, are in Criteria Area Cells 3683, 3584, 3291, and 2878. As described in Section 3.3.1.3 and Table 3.3-2, the goals in these Criteria Area Cells include conservation of alkali playa, vernal pool, and upland habitats, including agricultural habitats. Plant populations in the Criteria Area Cells are important to helping identify sensitive habitat and guiding reserve assembly.

Coulter's Goldfields

Twenty-two populations of Coulter's goldfields, comprising 5,380 plants, were found in the Build Alternative 1a study area (Table 3.3-1 and Figure 3.3-31). All of these populations were east of Warren Road and south of Byrd Street. They have LTCV. Information about LTCV populations is presented in a separate section.

Little Mousetail

Thirty-one little mousetail populations containing slightly more than 64,000 plants were identified in the study area for Build Alternative 1a (Table 3.3-1 and Figure 3.3-32). One population with about 10,000 plants was found inside the PIA in a vernal pool at the northwest corner of Warren Road and Esplanade Avenue.

Thirty populations of little mousetail (with 49,001 plants) were identified in Additional Indirect Impact Study Area 2. This population complex is present in the study areas for all of the Build alternatives (Roadway Segment J or K, depending on the Build alternative). A portion of it, about 5,000 plants, extends into the indirect impact area. The little mousetail populations in Additional Indirect Impact Study Area 2, including the population that extends into the study area, are in Criteria Area Cell 3291, Subunit 4: Vernal Pool Areas – East. These populations have LTCV and are described separately in the following section (see also Table 3.3-5).

Assessment of LTCV Populations in the Build Alternative 1a Study Area

MSHCP Criteria Area Cells 3683, 3584, 3291, 2774, 2775, and 2778 through 2878 are in the Build Alternative 1a study area (Figure 3.3-23).

A total of 114 populations of rare plants in the Build Alternative 1a study area are in Criteria Area Cells (Table 3.3-5). These populations have been identified and evaluated for LTCV consistent with the species-specific goals and objectives of the MSHCP. Three species with LTCV populations are present in the Build Alternative 1a study area—smooth tarplant, little mousetail, and Coulter's goldfields. The findings are presented in Tables 3.3-5 and 3.3-6 and are described in the following sections.

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Table 3.3-5 Assessment of Long-Term Conservation Value Populations in the Study Area

Scientific Name	Common Name	Criteria Area Cell(s)	Build Alternative[a]	Location of Population by Project Element	Population(s) Present in the PIA	Population(s) Present in 100-ft Indirect Impact Area	Population(s) Present in Additional Indirect Impact Study Area 1	Population(s) Present in Additional Indirect Impact Study Area 2	Do Populations Have Long-Term Conservation Value?	Rationale[b]
Centromadia pungens ssp. *Laveis*	smooth tarplant	3683	Study Area for Build Alternatives 1a, 1b (including Design Option 1b1), and the Preferred Alternative	Roadway Segment G	Yes	Yes	No	No	Yes	Conservation within this cell group will contribute to assembly of Proposed Noncontiguous Habitat Block 7 and will focus on playas, vernal pools, and a variety of upland habitats. Conservation will focus on the eastern portion of the cell and link with the adjacent cells to the east and south. A single smooth tarplant population with 1,000 plants is located in the northwest part of the cell. Although this population is located in disturbed habitat, this population has LTCV.
Centromadia pungens ssp. *laveis*	smooth tarplant	3683	Study Area for Build Alternatives 2a and 2b (including Design Option 2b1)	Roadway Segment H	Yes	Yes	No	No	No	Conservation within this cell group will contribute to assembly of Proposed Noncontiguous Habitat Block 7 and will focus on playas, vernal pools, and a variety of upland habitats. Conservation will focus on the eastern portion of the cell and link with the adjacent cells to the east and south. A single smooth tarplant population with 1,000 plants is located in the northwest part of the cell. This represents an isolated population located in a disturbed habitat. These populations do not have LTCV.
Centromadia pungens ssp. *laveis*	smooth tarplant	3584	Study Area for Build Alternatives 1a, 1b (including Design Option 1b1), the Preferred Alternative, 2a, and 2b (including Design Option 2b1)	Roadway Segment I	Yes	Yes	No	No	Yes	Conservation within this cell group will contribute to assembly of Proposed Noncontiguous Habitat Block 7 and will focus on playas/vernal pool habitat and agricultural land in the central part of the cell and areas to the south and east (RCIP 2003). Seven smooth tarplant populations with 1,794 plants are located in the very northern part of the cell. Localities are generally isolated localities in disturbed habitats or small fragments of larger polygons. However, some of these populations have LTCV.
Centromadia pungens ssp. *Laveis*	smooth tarplant	3291	Study Area for Build Alternatives 1a, the Preferred Alternative, and 2b (including Design Option 2b1)	Roadway Segment J	No	Yes	No	Yes	Yes	Conservation goals of this subunit are to conserve vernal pools and vernal pool hydrology. Conservation within this cell will contribute to assembly of Proposed Noncontiguous Habitat Block 7, and will focus on grassland habitat. Conservation will be about 5 percent of the cell focusing in the western portion of the cell. Two smooth tarplant populations with 223 plants occur in Criteria Area Cell 3291. A portion of one population also extends into Additional Indirect Impact Study Area 2. These populations have LTCV.
Myosurus minimus ssp. *apus*	little mousetail	3291	Study Area for Build Alternatives 1a, the Preferred Alternative, and 2b (including Design Option 2b1)	Roadway Segment J	No	Yes	No	Yes	Yes	Conservation goals of this subunit are to conserve vernal pools and vernal pool hydrology. Conservation of this cell is to focus on grassland habitat and is to occur in the western part of the cell. One large population complex with 30 populations occurs in Criteria Area Cell 3291 and has LTCV. Only a small portion of one of these populations with about 8,559 plants is within the 100-ft indirect impact area for Segment J. The remaining 49,001 plants are located within Additional Indirect Impact Study Area 2. Potentially occurring indirect impacts to vernal pool hydrology could adversely affect the attainment of conservation goals for this habitat block, subunit, or cell.
Centromadia pungens ssp. *laveis*	smooth tarplant	3291	Study Area for Build Alternatives 1b (including Design Option 1b1) and 2a	Roadway Segment K	No	Yes	No	Yes	Yes	Conservation goals of this subunit are to conserve vernal pools and vernal pool hydrology. Conservation within this cell will contribute to assembly of Proposed Noncontiguous Habitat Block 7 and will focus on grassland habitat. Conservation will be about 5 percent of the cell focusing in the western portion of the cell. Two smooth tarplant populations with 223 plants occur in Cell 3291. A portion of one population also extends into Additional Indirect Impact Study Area 2. These populations have LTCV.

Table 3.3-5 Assessment of Long-Term Conservation Value Populations in the Study Area

Scientific Name	Common Name	Criteria Area Cell(s)	Build Alternative[a]	Location of Population by Project Element	Population(s) Present in the PIA	Population(s) Present in 100-ft Indirect Impact Area	Population(s) Present in Additional Indirect Impact Study Area 1	Population(s) Present in Additional Indirect Impact Study Area 2	Do Populations Have Long-Term Conservation Value?	Rationale[b]
Myosurus minimus ssp. *apus*	little mousetail	3291	Study Area for Build Alternatives 1b (including Design Option 1b1) and 2a	Roadway Segment K	No	Yes	No	Yes	Yes	Conservation goals of this subunit are to conserve vernal pools and vernal pool hydrology. Conservation of this cell is to focus on grassland habitat and is to occur in the western part of the cell. One large population complex with 30 populations occurs in Cell 3291 and has LTCV. Only a small portion of one of these populations with about 5,000 plants is within the 100-ft indirect impact area for Segment K. The remaining 49,001 plants are located in Additional Indirect Impact Study Area 2. Potentially occurring indirect impacts to vernal pool hydrology could adversely affect the attainment of conservation goals for this habitat block, subunit, or cell.
Centromadia pungens ssp. *laveis*	smooth tarplant	2774, 2775, 2878	Study Area for Build Alternatives 1a and 2a	Roadway Segment L	Yes	Yes	No	No	Yes	Goals of the San Jacinto Plan, Subunit 4: Vernal Pool Areas – East, include conservation of vernal pools and vernal pool hydrology. Twenty smooth tarplant populations within Criteria Area Cells 2774, 2775, and 2878 with 31,863 plants occur in relatively intact alkali grassland/wetland habitat that could contribute toward reserve assembly. These populations have LTCV. Eighteen populations are located in the PIA, and one of these populations extends beyond the PIA into the 100-ft indirect impact area. A total of 26,221 plants occur within the PIA. Two additional populations only occur in the indirect impact area. A total of with 5,642 plants occur in the indirect impact area (including the plants within the large population that spans the PIA and indirect impact area). Displacement of these populations or indirect impacts could adversely affect the attainment of conservation goals for this subunit, habitat block, or cell.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	2774, 2775	Study Area for Build Alternatives 1a and 2a	Roadway Segment L	Yes	Yes	No	No	Yes	Goals of the San Jacinto Plan, Subunit 4: Vernal Pool Areas – East include conservation of vernal pools and vernal pool hydrology. Twenty-two populations within Criteria Area Cells 2774 and 2775 with 5,380 plants occur in relatively intact alkali grassland/wetland habitat that could contribute toward reserve assembly. These populations have LTCV. Twenty populations and 4,785 plants are located within the PIA. One large population extends beyond the PIA into the 100-ft indirect impact area. Three populations occur within the indirect impact area. A total of 650 plants occur within the indirect impact area (including within the large population that spans the PIA and the indirect impact area). Displacement of these populations or alterations to the supporting hydrology could adversely affect the attainment of conservation goals for this subunit, habitat block, or cell.
Centromadia pungens ssp. *laveis*	smooth tarplant	2364	Study Area for Build Alternatives 1a, 1b (including Design Option 1b1), the Preferred Alternative, 2a, and 2b (including Design Option 2b1)	Roadway Segment N	No	Yes (and Utility Relocation Area 2)	No	No	No	Conservation within this Cell Group will contribute to assembly of Proposed Core 3, and will focus on chaparral and coastal sage scrub habitat and connect to chaparral and coastal sage scrub habitat proposed for conservation in adjacent Cell Groups. Five small smooth tarplant populations with 199 plants occur within Cell 2364. Plants are located within the 100-ft indirect impact area and Utility Relocation Area 2. These five small populations would not provide substantial contributions toward reserve assembly and they do not have LTCV.

Table 3.3-5 Assessment of Long-Term Conservation Value Populations in the Study Area

Scientific Name	Common Name	Criteria Area Cell(s)	Build Alternative[a]	Location of Population by Project Element	Population(s) Present in the PIA	Population(s) Present in 100-ft Indirect Impact Area	Population(s) Present in Additional Indirect Impact Study Area 1	Population(s) Present in Additional Indirect Impact Study Area 2	Do Populations Have Long-Term Conservation Value?	Rationale[b]
Additional Indirect Impact Study Area 1										
Atriplex serenana var. *davidsonii*	Davidson's saltscale	3791, 3891, 4007	Build Alternatives 2a and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 1	No	No	Yes	No	Yes	A total of 59 populations of Davidson's saltscale with 12,136 plants were identified within Additional Indirect Impact Study Area 1. The majority of the populations were observed east of California Avenue, and south of Stetson Avenue, but a few populations were identified at the MWD Upper Salt Creek Reserve, north of Stetson Road. These populations represent the core for the population complex within the Study Area, and the viability of the populations in this area is essential for the survival of this species. The populations in this area have very high LTCV. Adverse impacts to the populations within this area (including the supporting vernal pool hydrology) could result in the loss of populations or individuals or degradation of the vernal pool habitat, could affect the long-term sustainability of these localities, and could make it more difficult to attain the MSHCP species conservation goals and objectives.
Atriplex parishii	Parish's brittlescale	3683, 3791	Build Alternatives 2a and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 1	No	No	Yes	No	Yes	A total of 1,320 Parish's brittlescale plants in 13 populations were observed within the MWD Upper Salt Creek Reserve. Only one other extant occurrence of this species has been confirmed, and it is located in San Diego County. All of the Parish's brittlescale populations have LTCV. Because these localities are within the MWD Upper Salt Creek Reserve, conservation has already been attained. However, indirect impacts to vernal pool hydrology could result in the loss of populations or individual plants or degradation of the vernal pool habitat, could affect the long-term sustainability of these localities, and could make it more difficult to attain the MSHCP species conservation goals and objectives.
Centromadia pungens ssp. *laveis*	smooth tarplant	3683, 3684, 3791, 3887, 4007	Build Alternatives 2a and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 1	No	No	Yes	No	Yes	A total of 80 smooth tarplant populations with more than 180,000 plants were identified within Additional Indirect Impact Study Area 1. Most localities occurred between Stetson Avenue and SR 74/Florida Avenue, but a few populations were located in the Stowe Road Vernal Pool Complex west of California Avenue. Within Additional Indirect Impact Study Area 1 moderate to large populations identified in relatively undisturbed natural habitats that are not isolated have LTCV. Small populations in this area do not have LTCV unless they are located directly adjacent to large populations, or they would geographically connect two or more moderate to large populations. Adverse impacts to the moderate to large populations within this area could affect the attainment of conservation goals for this species.

Table 3.3-5 Assessment of Long-Term Conservation Value Populations in the Study Area

Scientific Name	Common Name	Criteria Area Cell(s)	Build Alternative[a]	Location of Population by Project Element	Population(s) Present in the PIA	Population(s) Present in 100-ft Indirect Impact Area	Population(s) Present in Additional Indirect Impact Study Area 1	Population(s) Present in Additional Indirect Impact Study Area 2	Do Populations Have Long-Term Conservation Value?	Rationale[b]
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	3683, 3684	Build Alternatives 2a and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 1	No	No	Yes	No	Yes	Twenty populations of Coulter's goldfields with about 560,000 plants were identified roughly between the MWD Upper Salt Creek Reserve north to SR 74/Florida Avenue. The largest concentration of Coulter's goldfields within the study area with more than 500,000 plants was mapped within the alkali grasslands and seasonal wetlands south of Florida Avenue. The Coulter's goldfields in the study area are part of the last two major population complexes left in California and these localities have very high LTCV. Adverse impacts to these populations or to the supporting hydrology could result in the loss of this locality, a decrease in population size, or degradation of the habitat, could adversely affect the long term sustainability of these localities, and could make it more difficult to attain the MSHCP species conservation goals and objectives.
Myosurus minimus ssp. *Apus*	little mousetail	3683, 3684, 3791, 3887, 3891, 4007	Build Alternatives 2a and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 1	No	No	Yes	No	Yes	Ninety populations of little mousetail with more than 375,000 plants were identified in Additional Indirect Impact Study Area 1. The populations of little mousetail within the study area are the largest in Southern California and they form the only very large population complex within the western Riverside MSHCP area. The largest populations, such as those at the MWD Upper Salt Creek Reserve and the area east of the San Diego Canal (directly east of the Reserve), have LTCV. Small populations of little mousetail do not have LTCV unless they are located directly adjacent to moderately sized or large populations, or they geographically connect several populations in an area of currently or restorable suitable habitat. Adverse impacts to these populations or to the supporting hydrology could result in the loss of this locality, a decrease in population size, or degradation of the habitat, could adversely affect the long term sustainability of these localities, and could make it more difficult to attain the MSHCP species conservation goals and objectives.
Additional Indirect Impact Study Area 2										
Centromadia pungens ssp. *laveis*	smooth tarplant	3291	Build Alternatives 1a, 1b (including Design Option 1b1), the Preferred Alternative, 2a, and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 2	No	No	No	Yes	Yes	Thirty smooth tarplant populations with 4,995 plants were identified scattered within Additional Indirect Impact Study Area 2. Although they are small, these populations occur near each other within a relatively small intact area of alkali grassland and wetland habitat. These populations have LTCV. Because most of these populations are within Cell 3291, conservation has already been attained. However, potential indirect impacts to the supporting vernal pool hydrology could adversely affect the habitat quality and the long-term sustainability of these populations.
Myosurus minimus ssp. *apus*	little mousetail	3291	Build Alternatives 1a, 1b (including Design Option 1b1), the Preferred Alternative, 2a, and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 2	No	No	No	Yes	Yes	Thirty populations of little mousetail collectively totaling about 49,001 plants were identified scattered throughout the Additional Indirect Impact Study Area 2, and these populations have LTCV. Because these populations are located within Cell 3291, conservation has already been attained. However, potential indirect impacts to the supporting vernal pool hydrology could adversely affect the habitat quality and the long-term sustainability of these populations.

Table 3.3-5 Assessment of Long-Term Conservation Value Populations in the Study Area

Scientific Name	Common Name	Criteria Area Cell(s)	Build Alternative[a]	Location of Population by Project Element	Population(s) Present in the PIA	Population(s) Present in 100-ft Indirect Impact Area	Population(s) Present in Additional Indirect Impact Study Area 1	Population(s) Present in Additional Indirect Impact Study Area 2	Do Populations Have Long-Term Conservation Value?	Rationale[b]

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

[a]Additional Indirect Impact Study Areas 1 and 2, which are part of the Build alternatives, are addressed separately in this table.

[b]Information on the MSHCP Planning Species and Biological Issues and Considerations included for Subunits 2 and 4, along with the Planning Species for Noncontiguous Habitat Blocks 6 and 7 and Existing Constrained Linkage B (Salt Creek), and the overall goals for each of the Covered Species as noted in Appendix E of the MSHCP (Species Survey Requirements, Plants), and the habitat goals noted for each Criteria Area Cell in Table 3.3-2.

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Table 3.3-6 Distribution, Status, and Conservation Value of Special-Status Plants Observed in the Study Area

Scientific Name/ Common Name/ Conservation Status Code[a] and MSHCP Status and Special Conditions[b]	Species Distribution	Number of Regional Extant/Extirpated Occurrences	Species Distribution in Riverside County	Number of Riverside County Extant/Extirpated Occurrences	Species Distribution in the Study Area	Conservation Value of Populations in the Study Area
Atriplex parishii Parish's brittlescale -/-/1B.1 CA, PS	Parish's brittlescale is endemic to southwestern California. Its historic range includes the Los Angeles Basin of Los Angeles and Orange Counties, extending east to the north base of the San Bernardino Mountains, San Bernardino County, and south through Riverside County to Ramona, San Diego County.	It is reported from 12 occurrences in the CNDDB (two occurrences were combined because they are at the same location). Three additional sites have been reported based on herbarium collections (Consortium 2007). All but two of these occurrences are extirpated, or have not been observed in over 60 years (1940).	This species is historically known from the Vandeventer flats area in the San Jacinto Mountains (CNDDB 2007) and the alkali habitats on Domino-Traver-Willows soils in the San Jacinto River floodplain (including near Lakeview) and Upper Salt Creek area near the cities of Hemet and Winchester. This species was thought to be extinct by the 1990s, but it was rediscovered at the MWD Upper Salt Creek Reserve in 1993.	**Occurrence Information Prior to the 2005 and 2006 Surveys:** Parish's brittlescale is extremely rare. The location at the MWD Upper Salt Creek Reserve is the only known extant location in western Riverside County and is one of only two known occurrences within the entire historic range of this species. Another occurrence, just west of Winchester, was reported to have several thousand plants (Reiser 2001). Much of this area, however, currently appears to be disturbed by agricultural production; and this occurrence, if extant, likely exists only in the seed bank. **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** Results of the surveys confirmed that the previously known occurrence at the MWD Upper Salt Creek Reserve is extant.	A total of 1,320 Parish's brittlescale plants were observed in 2006 in the MWD Upper Salt Creek Reserve.	**Extremely High** The Parish's brittlescale occurrence known from the study area at the Upper Salt Creek Reserve is the only extant occurrence known from western Riverside County. There is only one other confirmed extant occurrence of this species, and it is located in San Diego County. This Parish's brittlescale occurrence has extremely high conservation value. Within the study area, this occurrence is located on the Upper Salt Creek Reserve; and it is protected. Preserving the site hydrology and alkali grassland and wetland habitats in which Parish's brittlescale occurs is critical to maintaining a viable population at this location and is essential for the continued existence of this species.
Atriplex serenana var. *davidsonii* Davidson's saltscale -/-/1B.2 CA, PS	Davidson's saltscale is endemic to southwestern California, and is found at scattered locations along the coast, the northern Channel Islands, and the interior valleys of Los Angeles and Riverside Counties (CNDDB 2007, Consortium 2007).	The total number of occurrences is estimated at 24. This total includes CNDDB occurrences (taking into account many are based on misidentified herbarium specimens or other identification errors), and five additional occurrences based on unpublished herbarium collections (Consortium 2007, Roberts et al. 2004). All but six occurrences are either extirpated or have not been observed for more than 30 years (three occurrences), and in some cases, over 60 years (15 occurrences).	In recent years, Davidson's saltscale has been reliably found only on the seasonally flooded vernal alkali plains in two large population complexes. The first is located along the San Jacinto River between Mystic Lake and Perris, and the second is at Upper Salt Creek, near Hemet. Populations within the study area are located within the Upper Salt Creek population complex.	**Occurrence Information Prior to the 2005 and 2006 Surveys:** Only one CNDDB occurrence is recorded from Riverside County, but four additional occurrences (one represented by four separate occurrences in the CNDDB) are misplaced under *Atriplex pacifica*) and one other locality have been documented by other sources (CNDDB 2007, Consortium 2007, RCFCWCD 2000). Taking these into account, there are six occurrences in Riverside County. **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** Previously, four separate occurrences (reported under *A. pacifica*) were reported for the Upper Salt Creek area. Results of the 2005 and 2006 surveys determined that all of these occurrences were part of a single expanded population complex. Twenty percent of all recently observed occurrences in Riverside County are found in the study area. Population size estimates are approximate, but it is estimated that the occurrences in the study area account for about 95 percent of all known or recently reported individuals in California.	More than 56,000 Davidson's saltscale plants were observed during the 2005 and 2006 surveys.	**Moderate to Very High** The most important localities are within the area north of the San Jacinto Branch Line, south of Florida Avenue, east of California Avenue, and west of Warren Road. This area contains 94 percent of the total number of populations observed and has the largest populations with the most individuals and almost all (or 99 percent) of the Davidson's saltscale individuals observed in the study area occur in this area. The populations of Davidson's saltscale in this area represent the core for the population complex within the study area, and the viability of the populations in this area is essential for the survival of this species. The conservation value for the localities within the core area of this population complex is very high. Smaller populations outside the population core, as described above, would likely be of moderate conservation value. Preserving the site hydrology and alkali grassland and wetland habitats in which this species occurs is critical to maintaining a viable population at this location and is essential for the continued existence of this species.

Table 3.3-6 Distribution, Status, and Conservation Value of Special-Status Plants Observed in the Study Area

Scientific Name/ Common Name/ Conservation Status Code[a] and MSHCP Status and Special Conditions[b]	Species Distribution	Number of Regional Extant/Extirpated Occurrences	Species Distribution in Riverside County	Number of Riverside County Extant/Extirpated Occurrences	Species Distribution in the Study Area	Conservation Value of Populations in the Study Area
Calochortus plummerae Plummer's mariposa lily -/-/1B.2 CO	Plummer's mariposa lily occurs from central Ventura County, extending east, especially along the southern foothills of the San Gabriel and San Bernardino Mountains of Los Angeles, San Bernardino County to the Banning Pass, and south to the Santa Ana Mountains of Orange County, and the foothills of the San Jacinto Mountains in Riverside County (CNDDB 2007).	The CNDDB (2007) includes 103 occurrences, of which at least 14 may be extirpated.	In western Riverside County, Plummer's mariposa lily is known from the northern Santa Ana Mountains, the Jurupa Hills, Reche Canyon, foothills of the San Bernardino Mountains, Box Springs Mountain, the Badlands, the San Jacinto Mountains, and the vicinity of Lake Skinner (CNDDB 2007, Consortium 2007, RCIP 2003).	**Occurrence Information Prior to the 2005 and 2006 Surveys:** A total of 16 known occurrences are recorded from western Riverside County. One of these localities may have been extirpated (CNDDB 2007). **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** This species was not previously known to occur in the Upper Salt Creek area.	Six plants in five localities were located in the west Hemet Hills. This species typically blooms following fires. Based on habitat suitability, it is likely that many more plants occur in this area compared to the number observed.	**Moderate** Plummer's mariposa lily was not previously known to occur in the West Hemet Hills. These new populations provide a geographic "bridge" between the known locality in the Tucalota Hills, the populations in the Badlands, and those to the east. Because this species is considered rare and endangered in California and elsewhere, and these populations add to the known range of the species, these localities have moderate conservation value.
Centromadia pungens ssp. *laevis* smooth tarplant -/-/1B.1 CA, PS, RRVP	Smooth tarplant occurs from southwestern San Bernardino County, south through western Riverside County and San Diego County, to Baja California, Mexico (CNDDB 2007, RCIP 2003).	The CNDDB (2007) includes 83 occurrences. At least 12 occurrences may be extirpated.	In western Riverside County, this species is found only in the Perris Basin and the Anza Bench. The distribution extends from the City of Riverside, south to Temecula, and east to Hemet and Anza. Some of the largest populations occur within the lower San Jacinto River watershed, including Salt Creek, near Hemet. Other important localities include the Lake Elsinore-Murrieta Hot Springs region and the French Valley area, although many populations have been extirpated in this area.	**Occurrence Information Prior to the 2005 and 2006 Surveys:** Seventy-seven occurrences (or about 90 percent of all occurrences) are in western Riverside County (CNDDB 2007). At least 12 of these may be extirpated. About 50 percent (or 39) of the occurrences in Riverside County are associated with alkali vernal plains habitat. Smooth tarplant, however, is tolerant of disturbance, and it is often associated with pasture and light agriculture. It can also occur in disturbed fields and within areas that are dryland farmed as long as the soils are alkaline. Reliable population estimates are not available, but the largest known concentrations are associated with the alkali vernal plains of the San Jacinto River and Upper Salt Creek areas. **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** Results of the surveys confirmed that the Upper Salt Creek area (within which the study area is located) supports some of the most extensive populations known to occur. All of the populations observed during the surveys were combined into one new occurrence.	More than one million plants were observed within 617 localities (or populations) within the study area.	**Low to High** The conservation value of the populations within the study area ranges from low to high, depending on the degree of disturbance, the habitat type in which the population occurs, and the size and density of the population. In general, large populations that were identified in relatively undisturbed natural habitats would be better suited for conservation compared to smaller populations that occurred adjacent to agricultural fields or ruderal areas. Some populations in disturbed fields, however, would be considered at least of moderate conservation value due to the large numbers of individuals present within them. Examples of high conservation value sites would be the Upper Salt Creek Reserve and portions of Cell 3291. Additionally, large populations in the northern and central parts of the study area, where hundreds of thousands of plants were observed, would also rank high.

Table 3.3-6 Distribution, Status, and Conservation Value of Special-Status Plants Observed in the Study Area

Scientific Name/ Common Name/ Conservation Status Code[a] and MSHCP Status and Special Conditions[b]	Species Distribution	Number of Regional Extant/Extirpated Occurrences	Species Distribution in Riverside County	Number of Riverside County Extant/Extirpated Occurrences	Species Distribution in the Study Area	Conservation Value of Populations in the Study Area
Chorizanthe parryi var. *parryi* Parry's spineflower -/-/3.2 CO	Parry's spineflower is found from western Los Angeles County east, primarily along the southern foothills of the San Gabriel and San Bernardino Mountains, east into the western Coachella Valley, and south to the Agua Tibia Mountains of Riverside County (CNDDB 2007, Consortium 2007).	The CNDDB (2007) includes 40 occurrences. At least four occurrences may be extirpated.	In western Riverside County, Parry's spineflower occurs scattered throughout the San Bernardino Mountain foothills, the Badlands, the Gavilan Hills, and the foothills of the San Jacinto and Agua Tibia Mountains. It also occurs from Lake Elsinore to Temecula and west to Menifee (RCIP 2003). Other sources have documented that this spineflower occurs from the Shipley Reserve, including the north Domenigoni Hills and the Lakeview Mountains (Consortium 2007).	**Occurrence Information Prior to Surveys:** There are 20 known occurrences in Western Riverside County (CNDDB 2007). At least three of these occurrences may have been extirpated. **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** Parry's spineflower was not previously known to occur in west Hemet Hills. Two new occurrences were identified within the study area.	Over 175,000 plants were observed within 118 populations, predominantly occurring in the West Hemet Hills.	**Moderate to High** Due to the large number of populations and the sizeable number of plants within them, these localities represent an important population center for this species. The West Hemet Hills also provides a potentially important geographic bridge in the distribution of this species, linking known localities in the north Domenigoni Hills and the Lakeview Mountains. In general, the large populations that occur in the northern part of the West Hemet Hills that are located within relatively undisturbed natural habitat would have high conservation value. Small populations in the West Hemet Hills or those located outside of the hills would likely rank as moderate in terms of conservation value.
Chorizanthe polygonoides var. *longispina* long-spined spineflower -/-/1B.2 Covered	Long-spined spineflower is found on rocky clay soils on slopes, ridges, and coastal mesas in coastal sage scrub, native grassland, clay soil grassland, and chaparral habitats from northern Orange and western Riverside Counties, south through San Diego County, to northern Baja California, Mexico (CNPS 2001a, Reiser 2001). One Santa Barbara occurrence has also been reported, but this has not been verified.	The CNDDB (2007) includes 61 occurrences. None appear to be extirpated.	In western Riverside County, long-spined spineflower is found in the southern Santa Ana Mountains, Santa Rosa Plateau, the Gavilan Hills, Alberhill, the Paloma Valley, Murrieta, Shipley Reserve, Temecula, the Vail Lake area, Menifee Valley, the foothills of the Agua Tibia Mountains, and the Garner Valley in the San Jacinto Mountains (CNDDB 2007).	**Occurrence Information Prior to the 2005 and 2006 Surveys:** Thirty-nine (or 70 percent) of all occurrences are in western Riverside County (CNDDB 2007). None are considered extirpated at this time. **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** One additional occurrence was identified within the study area.	About 64,000 plants were observed within 54 populations. The majority of the populations were observed in the West Hemet Hills.	**Low to High** The conservation value of populations within the study area ranges from low to high. The population complex found in the West Hemet Hills has high conservation value for the following reasons: (1) this area is a new locality for this species, and this population complex now represents the northernmost known occurrence; (2) substantial numbers of populations and individuals occur within the West Hemet Hills; and (3) the habitat quality is relatively high. Populations located outside the West Hemet Hills help bridge the distributional gap to populations in the south and west, but they are generally smaller, and the habitat is generally disturbed. These populations would likely rank low in terms of conservation value.

Table 3.3-6 Distribution, Status, and Conservation Value of Special-Status Plants Observed in the Study Area

Scientific Name/ Common Name/ Conservation Status Code[a] and MSHCP Status and Special Conditions[b]	Species Distribution	Number of Regional Extant/Extirpated Occurrences	Species Distribution in Riverside County	Number of Riverside County Extant/Extirpated Occurrences	Species Distribution in the Study Area	Conservation Value of Populations in the Study Area
Hordeum intercedens vernal barley -/-/3.2 PS, RRVP	Vernal barley is known from scattered locations bordering the Central Valley and Coast Ranges of California, south through coastal and interior southwestern California, to central Baja California, Mexico (CNPS 2001a, CNPS 2007, Consortium 2007, Reiser 2001).	Approximately 75 occurrences in the Southern California region that extends from Los Angeles to San Diego, excluding the Channel Islands (Consortium 2007).	In Riverside County, vernal barley occurs along the San Jacinto River, within the Upper Salt Creek area west of Hemet, French Valley, and the Nichols Road wetlands along Alberhill Creek north of Lake Elsinore.	**Occurrence Information Prior to the 2005 and 2006 Surveys:** Vernal barley is known from 12 sites in western Riverside County (Consortium 2007). Most of these (nine) are found along the San Jacinto River, in Cell 3291, and within the Upper Salt Creek area west of Hemet. Other occurrences (four) are known from the French Valley and the Nichols Road wetlands. **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** Results clarified the distribution of vernal barley and expanded this range of this species in the Upper Salt Creek area.	About 20 million vernal barley plants were observed within the central part of the study area in 2005 and 2006.	**Low to High** In general, vernal barley populations with thousands of individuals located in relatively undisturbed alkali grassland habitats would be better suited for conservation compared to smaller populations that occurred in more disturbed areas. The populations within the alkali grasslands between Florida Avenue and the San Jacinto Branch Line, and west of Warren Road, including the Stowe Road Vernal Pool Complex, form an important core locality for this species. Populations in this area generally have high conservation value. In the north, the vernal barley populations in Cell 3291also have high conservation value. Other vernal barley populations outside these areas have moderate to low conservation values, depending on the level of disturbance and the density of the grass species at any given locality.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields /-/1B.1 CA, PS	Coulter's goldfields are found primarily along the coast and in the arid interior valleys of southwestern California, from Morro Bay and the vicinity of the Carrizo Plains of San Luis Obispo County, to western Riverside County, and south into northwestern Baja California, Mexico (CNDDB 2007, Consortium 2007). A small number of populations have been reported in the Central Valley, southern Mojave Desert, and northern Channel Islands (CNDDB 2007, Consortium 2007).	The CNDDB (2007) includes 66 occurrences. The Consortium (2007) includes an additional 10 sites not reported in the CNDDB. Of the 76 total occurrences, 62 are presumed extant. Twenty-two of the remaining 62 presumed extant occurrences (30 percent), however, have not been observed in over 50 years.	This species is known only from western Riverside County, mostly from the Perris Basin in the Lower San Jacinto Valley between Mystic Lake and Perris, Upper Salt Creek area west of Hemet, the San Jacinto River (including the areas west of the City of San Jacinto), the San Jacinto Wildlife Area and floodplains south to Perris, Temecula, and Alberhill Creek at Nichols Road near Lake Elsinore. Also, there is an old record for this species at Cahuilla Valley near Anza.	**Occurrence Information Prior to the 2005 and 2006 Surveys:** Twenty-two occurrences are found within Riverside County (CNDDB 2007, Consortium 2007). The largest known occurrences are associated with the seasonally flooded alkali vernal plains habitat associated with Mystic Lake, the San Jacinto River, and upper Salt Creek west of Hemet. These sites account for about 30 percent of all occurrences (or 18 of the 62 total extant occurrences). Some of these extant occurrences have large populations with very high numbers of plants. These populations are extremely important because it is estimated that they cumulatively contain approximately 95 percent of all the known plants for this species. **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** Three new occurrences were identified, and the distribution of the only previously reported occurrence in the study area was expanded.	Coulter's goldfields occur in areas of suitable habitat primarily in the central and northern parts of the study area. More than 575,000 plants within 52 sites were recorded during the 2005 and 2006 surveys. This included a number of new localities. One very large population (totaling about 500,000 plants) within the study area accounted for about 85 percent of the total number plants observed.	**Moderate to Very High** The Coulter's goldfields in the study area are part of the last two major population complexes left in California. Population size data available in the CNDDB and other sources are approximate, but it is estimated that between 20 to 30 percent of all of the known individual Coulter's goldfield plants throughout its range occur within the study area. The conservation value of Coulter's goldfields populations ranges from moderate to very high, depending on the size of the population and the habitat quality of the site. For example, the large populations that occur south of Florida Avenue and west of the San Diego Canal, including the Upper Salt Creek Reserve, would have very high conservation value. Populations in the northern part of the study area between Warren Avenue and Odell Avenue are geographically important to the overall distribution of the species but have smaller population sizes and would rank moderate in terms of conservation value. Preserving the site hydrology and wetland habitats and minimizing disturbance in locations in which this species occurs is critical to maintaining viable populations and is essential for the continued existence of this species.

Table 3.3-6 Distribution, Status, and Conservation Value of Special-Status Plants Observed in the Study Area

Scientific Name/ Common Name/ Conservation Status Code[a] and MSHCP Status and Special Conditions[b]	Species Distribution	Number of Regional Extant/Extirpated Occurrences	Species Distribution in Riverside County	Number of Riverside County Extant/Extirpated Occurrences	Species Distribution in the Study Area	Conservation Value of Populations in the Study Area
Lepidium virginicum var. *robinsonii* Robinson's peppergrass -/-/1B.2 Not Included in MSHCP	Robinson's peppergrass is uncommon to locally common on dry soils and shrubland habitats in Southern California from Santa Barbara County to Baja California, Mexico, including the Channel Islands (Consortium 2007).	The CNDDB (2007) includes 53 occurrences. The Consortium (2007) includes an additional 44 locations. Of the 97 total occurrences, Robinson's pepper-grass is believed extant at about 75 (or 80 percent) of them.	In western Riverside County, Robinson's peppergrass occurs on rocky slopes or among shrubs, in the Santa Ana Mountains, Box Springs Mountains, Perris Basin, Sedco Hills, Gavilan Hills, Diamond Valley, Lake Skinner region, north Domenigoni Hills, the vicinity of Vail Lake, and the foothills of the Agua Tibia Mountains (Consortium 2007, Roberts et al. 2004).	**Occurrence Information Prior to the 2005 and 2006 Surveys:** Forty-nine occurrences occur in western Riverside County, and all of these are believed to be extant. There are currently no estimates of population size available for any of these localities. **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** Three new occurrences were identified and the known range of this species was expanded.	Almost 114,000 plants were recorded in 86 populations, mainly in the West Hemet Hills.	**Low to High** This is the largest population complex currently known from western Riverside County. Population sizes are not well documented, however, and it is possible that other documented localities could also have similarly large population sizes. The West Hemet Hills location currently represents the easternmost known population complex. This species is taxonomically difficult, and the geographic distribution of this species may be incomplete. It could also occur in the Lakeview Mountains and Badlands regions, to the east. The conservation value of Robinson's peppergrass populations ranges from low to high, depending on the location of the population, the population size, the habitat quality, and other variables. For example, small populations located in disturbed habitats would likely be considered to have low conservation value. Large populations in the West Hemet Hills would likely rank high.
Myosurus minimus ssp. *apus* little mousetail -/-/3.1 CA, PS	Little mousetail is found in vernal pools, mesic grasslands, and the margins of playas from Orange and western Riverside County, south through San Diego County to northwestern Baja California, Mexico (CNDDB 2007, CNPS 2001a, RCIP 2003, Reiser 2001). It presumably is found in the Central Coast and the Central Valley, possibly as far north as Riley, Oregon; however, the taxonomic status and distribution of the northern plants are uncertain (CNPS 2007, Hickman 1993, Whittemore 1993).	The CNDDB (2007) includes 31 occurrences in Southern California. The Consortium (2007) includes an additional eight occurrences. Most of the 31 Southern California occurrences are presumed extant, but the current condition of some of the vernal pools has not been recently documented. The distribution of this plant is widespread, but it is patchily distributed and most populations are relatively small.	In western Riverside County, little mousetail is known to occur primarily in Upper Salt Creek near Hemet, Santa Rosa Plateau, and on the Gavilan Plateau (RCIP 2003, Consortium 2007). Historic occurrence records from March Army Air Force Base (1922), Edgemont (1952), and Menifee Valley (1922) are old and are likely extirpated (Consortium 2007, RCIP 2003). The status of occurrences near Lake Elsinore and Wildomar are uncertain. In the Upper Salt Creek area, little mousetail is associated with seasonally flooded alkali vernal plains on the Domino-Traver-Willows soils series. One additional old collection (1922) of little mousetail was made at Kenworthy (San Jacinto Mountains), but the correct variety has yet to be taxonomically determined.	**Occurrence Information Prior to the 2005 and 2006 Surveys:** Thirteen of the Southern California occurrences (about 60 percent) are in western Riverside County. Although none are known to be extirpated, at least four (about 20 percent) have not been observed since 1952. The populations on the Santa Rosa Plateau are scattered and relatively small. Historically, the populations in the Upper Salt Creek area were more extensive prior to recent hydrologic changes and before some of the localities were disturbed. **Occurrence Information With Results of the 2005 and 2006 Surveys Included:** Two new occurrences were identified, and the range of the previously known occurrence was expanded.	Almost one million plants were observed in about 230 locations within the study area.	**Low to High** In general, little mousetail is believed to be declining in Southern California. The populations of little mousetail within the study area are the largest in Southern California. Additionally, the populations within the study area represent the only very large population within the western Riverside MSHCP area. The largest populations such as those on the Upper Salt Creek Reserve, areas in the vicinity of Esplanade Avenue, and the area east of the San Diego Canal (directly east of the Upper Salt Creek Reserve) would be expected to rank high in terms of conservation value. Other factors that would be considered in determining conservation value are proximity to other populations, the density of the population, and habitat quality. The smallest populations, consisting of a few individuals, would likely be considered to be of low conservation value. Preserving the site hydrology and wetland habitats in which this species occurs is critical to maintaining viable populations and is essential for the continued existence of this species.

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

CNDDB = California Natural Diversity Database

Table 3.3-6 Distribution, Status, and Conservation Value of Special-Status Plants Observed in the Study Area

Scientific Name/ Common Name/ Conservation Status Code[a] and MSHCP Status and Special Conditions[b]	Species Distribution	Number of Regional Extant/Extirpated Occurrences	Species Distribution in Riverside County	Number of Riverside County Extant/Extirpated Occurrences	Species Distribution in the Study Area	Conservation Value of Populations in the Study Area

[a] Status Codes:

California Native Plant Society (CNPS) Status (CNPS 2007)

1A – Plants Presumed Extinct in California

1B – Plants Rare, Threatened, or Endangered in California and Elsewhere

2 – Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

3 – Plants About Which We Need More Information – A Review List

4 – Plants of Limited Distribution – A Watch List

CNPS Threat Rank (Suffixes to CNPS List Status Codes):

.1 – Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2 – Fairly endangered in California (20-80% occurrences threatened)

.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

[b] Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) Definitions (RCIP 2003)

Special Conditions of MSHCP Covered Species:

CA – Surveys may be required for these species within locations shown on survey maps as described in Section 6.3.2 of the MSHCP. This includes the list of additional survey needs and procedures species and the Criteria Area Species (see MSHCP pages 6-63 to 6-65) and the MSHCP Errata Letter, dated August 9, 2004.

CO – These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met. Species-specific conservation objectives for these species are presented in Section 9.0 of the MSHCP. Refer to Table 9-3 of the MSHCP for specific conservation objectives that must be met for these species prior to including them on the list of Covered Species Adequately Conserved.

Covered – Species addressed in the MSHCP and included in the 10(a)(1)(B) permit. Also includes species that will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met.

NE – Surveys may be required for these species within Narrow Endemic Plant Species survey areas as described in Section 6.1.3 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

PS – Planning Species – Subsets of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans per Volume I, Section 3, of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

RRVP – These species should be protected as they are associated with riparian/riverine areas and vernal pools as described in Section 6.1.2 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

Smooth Tarplant

Sixty-two populations of smooth tarplant in the study area for Build Alternative 1a are in Criteria Area Cells (see Table 3.3-5), as follows:

- Criteria Area Cell 3683: 1 population, Roadway Segment G
- Criteria Area Cell 3584: 7 populations, Roadway Segment I
- Criteria Area Cell 3291: 2 populations, Roadway Segment J
- Criteria Area Cells 2774, 2775, and 2878: 20 populations, Roadway Segment L
- Criteria Area Cell 2364: 5 populations, Roadway Segment N
- Criteria Area Cell 3291: 30 populations, Additional Indirect Impact Study Area 2

Of the 62 smooth tarplant populations, only the 20 populations (31,863 plants) in Criteria Area Cells 2774, 2775, and 2878 (in the Roadway Segment L portion of the study area) and the 30 populations (4,995 plants) in Criteria Area Cell 3291 (in Additional Indirect Impact Study Area 2) were determined to have LTCV (Figure 3.3-27).

Of the 20 populations of smooth tarplant in the Roadway Segment L portion of the study area, 18 (with 26,221 plants) were found inside the PIA. One population extends beyond the PIA into the 100-ft indirect impact area. Two additional populations (with 5,642 plants) are in the Build Alternative 1a indirect impact area.

Conservation goals in Criteria Area Cells 2774, 2775, and 2878 are established in the San Jacinto Area Plan of the MSHCP and its Subunit 4: Hemet Vernal Pool Areas – East. In general, the conservation goals in the area plan are to conserve plant species that comprise grassland, agricultural lands, and water and riparian habitats and to contribute to Noncontiguous Habitat Block 6. The conservation goals of Subunit 4: Hemet Vernal Pool Areas – East are to conserve alkali soils, conserve existing vernal pool complexes, and maintain vernal pool hydrology.

An area of disturbed alkali grassland habitat was identified in these Criteria Area Cells that is a relatively isolated block of alkali soils surrounded by agricultural areas (e.g., poultry farms, wheat fields, sod farms, dairies). This alkali grassland area could be used for reserve assembly that would contribute to Noncontiguous Habitat Block 6.

Thirty smooth tarplant populations (with 4,995 individuals) were found scattered throughout Additional Indirect Impact Study Area 2 (Figure 3.3-27) in Criteria Area Cell 3291, which is also a part of Subunit 4: Hemet Vernal Pool Areas – East. Conservation of this Cell is to focus on grassland habitat and is to occur in the western part of the Cell. These smooth tarplant populations are near each other in a relatively contiguous area of alkali grassland and wetland habitat (Tables 3.3-5 and 3.3-6). Conservation of the 30 smooth tarplant populations in Additional Indirect Impact Study Area 2 is consistent with MSHCP reserve assembly goals, and these populations therefore have LTCV (Table 3.3-6).

Little Mousetail

Also in Criteria Area Cell 3291, 30 little mousetail populations (with 49,001 plants) are scattered throughout the alkali wetlands in Additional Indirect Impact Study Area 2. One of these populations (with about 5,000 plants) extends beyond the additional study area into the 100-ft indirect impact area (Table 3.3-5). Conservation of the little mousetail

populations in Cell 3291 is consistent with MSHCP reserve assembly goals, and these populations therefore have LTCV (Table 3.3-6).

Coulter's Goldfields

Twenty-two populations of Coulter's goldfields with 5,380 plants are located in relatively intact alkali grassland/wetland habitat in Criteria Area Cells 2774 and 2775, in the Roadway Segment L portion of the study area (Table 3.3-5). Twenty Coulter's goldfields populations (with 4,785 plants) are located inside the PIA. One large population extends beyond the PIA into the 100-ft indirect impact area. Two additional populations are in the indirect impact area. A total of 595 plants were found in the indirect impact area. The Coulter's goldfields in the study area are part of the last two major population complexes left in California, and the populations in the Roadway Segment L portion of the study area are geographically important to the overall distribution of the species (Table 3.3-6). These populations could contribute toward reserve assembly within this Criteria Area, and they therefore have LTCV (Figure 3.3-31).

Special-Status Plant Species Not Included in the MSHCP

Two special-status plants that are not included in the MSHCP were observed in the Build Alternative 1a study area.

- Paniculate tarplant – 29 populations (21,012 plants)
- Robinson's peppergrass – 16 populations (79,124 plants)

Paniculate Tarplant

Twenty-nine paniculate tarplant populations with 21,012 plants were observed in the central and southern parts of the study area for Build Alternative 1a (Table 3.3-1). The northernmost populations were in the vicinity of Tres Cerritos Avenue, but the largest concentrations were south of Florida Avenue (Figure 3.3-33). Paniculate tarplant is included on CNPS List 4 (watch list), but is not included in the MSHCP. Paniculate tarplant populations in the study area for Build Alternative 1a are important in a regional context (maintaining the species in the Perris Basin), but individual populations do not have high conservation value.

Robinson's Peppergrass

A large complex of Robinson's peppergrass, consisting of 16 populations (with 79,124 plants), was observed in the Build Alternative 1a study area. These populations are part of a larger complex that extends beyond the study area boundary (Figure 3.3-34). This larger complex has 114,000 plants in 86 populations and is the largest one currently known in western Riverside County (Table 3.3-6). Robinson's peppergrass is a CNPS List 1B species, but is not included in the MSHCP. Outside the context of the MSHCP, the moderate to large populations that were identified in the West Hemet Hills could be considered to have high conservation value.

Build Alternative 1b and Design Option 1b1

Adding Design Option 1b1 in 2009 did not change the study area, so the survey results for Build Alternative 1b apply to the design option as well. Ten special-status plant species were identified in the study area for Build Alternative 1b (Table 3.3-6). Eight of the ten species are MSHCP Covered Species. Two of the eight Covered Species, smooth tarplant and little mousetail, have LTCV populations. Information about these LTCV populations is presented in a

separate subsection. The two other special-status species, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

The following eight MSHCP species were identified in the Build Alternative 1b study area:

- Davidson's saltscale – 1 population (6 plants)
- Plummer's mariposa lily – 1 population (2 plants)
- Smooth tarplant – 269 populations (424,895 plants)
- Parry's spineflower – 26 populations (111,996 plants)
- Long-spined spineflower – 4 populations (4,465 plants)
- Vernal barley – 20 populations (1,248,680 plants)
- Coulter's goldfields – 3 populations (29,331 plants)
- Little mousetail – 31 populations (64,001 plants)

Davidson's Saltscale

One small population of Davidson's saltscale with six plants was identified northwest of Cell 3291 west of the San Diego Canal (Figure 3.3-25). This is the same population that was observed in the Build Alternative 1a study area.

Plummer's Mariposa Lily

One very small population of Plummer's mariposa lily with two plants was found in the West Hemet Hills (Figure 3.3-26). This is the same population that was identified in the study area for Build Alternative 1a.

Smooth Tarplant

Smooth tarplant was found in 269 populations (with 424,895 plants) throughout the study area for Build Alternative 1b, with the largest concentrations in Roadway Segments B and C (Figure 3.3-27). Utility Corridors 1 and 2 contained 14 additional smooth tarplant populations, with 3,250 plants (Table 3.3-1). Thirty smooth tarplant populations (with about 4,995 individuals) are present in Additional Indirect Impact Study Area 2, and 20 of these populations have LTCV. This is the same population that was identified in the study area for Build Alternative 1a. Information about LTCV populations in the Build Alternative 1b study area is presented in a separate subsection.

Parry's Spineflower

Twenty-six populations containing 111,996 plants were identified in the Build Alternative 1b study area (Table 3.3-1). Similar to the Build Alternative 1a study area, these populations were all located in the West Hemet Hills (Figure 3.3-28). This population complex is important because of its size, even though it does not have LTCV per the MSHCP.

Long-Spined Spineflower

Four populations of long-spined spineflower containing 4,465 plants were identified in the study area for Build Alternative 1b (Table 3.3-1). These are the same populations that were discussed for Build Alternative 1a. The two Build alternatives would be the same in this location.

Vernal Barley

Twenty vernal barley populations with more than 1 million plants were identified in the study area for Build Alternative 1b (Table 3.3-1), in Roadway Segments C, I, K, and M and Additional Indirect Impact Area 2 (Figure 3.3-30). These locations of vernal barley, an MSHCP Planning Species, are in Criteria Area Cells 3683, 3584, 3291, and 2878, much the same as the study area for Build Alternative 1a.

Coulter's Goldfields

Three populations of Coulter's goldfields, with 29,331 plants, were found in the Build Alternative 1b study area (Table 3.3-1 and Figure 3.3-31), in Roadway Segments C and M.

Little Mousetail

Thirty-one little mousetail populations containing 64,001 plants were identified in the study area for Build Alternative 1b (Table 3.3-1 and Figure 3.3-32). One population of little mousetail with about 15,000 plants was found in a vernal pool at the northwest corner of Warren Road and Esplanade Avenue.

Thirty populations of little mousetail (totaling 49,001 plants) were identified in Additional Indirect Impact Study Area 2. These are the same populations discussed for Build Alternative 1a.

Assessment of LTCV Populations in the Build Alternative 1b Study Area

MSHCP Criteria Area Cells 3683, 3584, 3291, and 2364 are in the Build Alternative 1b study area (Table 3.3-6 and Figure 3.3-23).

Seventy-two populations of rare plants in the Build Alternative 1b study area are in Criteria Area Cells (Table 3.3-5). These populations have been identified and evaluated for LTCV consistent with the species-specific goals and objectives of the MSHCP. Two species with LTCV are in the Build Alternative 1b study area, smooth tarplant and little mousetail. These findings are presented in Tables 3.3-5 and 3.3-6 and are described in the following sections.

Smooth Tarplant

Forty-two populations of smooth tarplant in Criteria Area Cells were found in the study area for Build Alternative 1b (see Table 3.3-5), as follows:

- Criteria Area Cell 3683: 1 population, Roadway Segment G
- Criteria Area Cell 3584: 7 populations, Roadway Segment I
- Criteria Area Cell 3291: 2 populations, Roadway Segment K
- Criteria Area Cell 2364: 5 populations, Roadway Segment N

- Criteria Area Cell 3291: 30 populations, Additional Indirect Impact Study Area 2

The 30 smooth tarplant populations (with 4,995 individuals) in Additional Indirect Impact Study Area 2 are the same as those evaluated for Build Alternative 1a.

Little Mousetail

The 30 little mousetail populations in Criteria Area Cell 3291 (Additional Indirect Impact Study Area 2) are the same as the ones found in the study area for Build Alternative 1a. As stated for Build Alternative 1a, conservation of these populations would contribute toward MSHCP reserve assembly goals, and these populations therefore have LTCV (Table 3.3-5).

Special-Status Plant Species Not Included in the MSHCP

Two special-status plants that are not included in the MSHCP were observed within the Build Alternative 1b study area.

- Paniculate tarplant – 27 populations (7,827 plants)
- Robinson's peppergrass – 16 populations (79,124 plants)

Paniculate Tarplant

Twenty-seven paniculate tarplant populations with 7,827 plants were found in the study area for Build Alternative 1b (Table 3.3-1), mostly south of Florida Avenue. This species is on CNPS List 4 (a relatively low rarity status). The paniculate tarplant populations in the study area for Build Alternative 1b are important in a regional context (maintaining the species within the Perris Basin), but individual populations are not considered to have high value.

Robinson's Peppergrass

A large complex of Robinson's peppergrass, consisting of 16 populations and a total of 79,124 plants, was observed in the Build Alternative 1b study area (Table 3.3-1). This is the same complex that was found in the Build Alternative 1a study area. The two Build alternatives have the same study area in this location.

Preferred Alternative (Build Alternative 1b with Refinements)

Nine special-status plant species were identified in the study area for the Preferred Alternative (Table 3.3-6). Seven of the nine species are MSHCP Covered Species. Two of the seven Covered Species, smooth tarplant and little mousetail, have LTCV populations. Information about these LTCV populations is presented in a separate subsection. The two other special-status species, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

The following seven MSHCP species were identified in the Preferred Alternative study area:

- Davidson's saltscale – 1 population (6 plants)
- Smooth tarplant – 231 populations (535,703 plants)

- Parry's spineflower – 17 populations (9,806 plants)
- Long-spined spineflower – 5 populations (13,917 plants)
- Vernal barley – 19 populations (1,244,448 plants)
- Coulter's goldfields – 3 populations (2,504 plants)
- Little mousetail – 31 populations (63,999 plants)

Davidson's Saltscale

One small population of Davidson's saltscale with six plants was identified northwest of Cell 3291, west of the San Diego Canal (Figure 3.3-25). This is the same population that was observed in Build Alternative 1a and 1b study areas.

Smooth Tarplant

Smooth tarplant was found in 231 populations (with 535,703 plants) throughout the study area for the Preferred Alternative, with the largest concentrations in Roadway Segments B and C (Figure 3.3-27). Utility Corridors 1 and 2 contained 15 smooth tarplant populations, with 3,252 plants (Table 3.3-1). Thirty smooth tarplant populations (with about 4,995 individuals) are present in Additional Indirect Impact Study Area 2, in Cell 3291, and 20 of these populations have LTCV. These are the same populations that were identified in the study area for all Build Alternatives, including the Preferred Alternative. Information about LTCV populations in the Preferred Alternative study area is presented in a separate subsection.

Parry's Spineflower

Seventeen populations containing 9,806 plants were identified in the Preferred Alternative study area (Table 3.3-1). With the exception of one population with 540 plants located north of Newport Road in Roadway Segment B, these populations were all located in the West Hemet Hills (Figure 3.3-28). Even though these populations do not have LTCV per the MSHCP, the West Hemet Hills populations in the Preferred Alternative study area are important because of their proximity to the larger population complex discussed in Build Alternatives 1a and 1b.

Long-Spined Spineflower

Five populations of long-spined spineflower containing 13,917 plants were identified in the study area for the Preferred Alternative and are all located within the West Hemet Hills (Table 3.3-1).

Vernal Barley

Nineteen vernal barley populations with more than 1 million plants were identified in the study area for the Preferred Alternative (Table 3.3-1), in Roadway Segments C, G, I, K, and M and Additional Indirect Impact Area 2 (Figure 3.3-30). These locations of vernal barley, an MSHCP Planning Species, are in Criteria Area Cells 3683, 3584, and 3291 and are the same Criteria Cells where vernal barley is located within Build Alternative 1b.

Coulter's Goldfields

Three populations of Coulter's goldfields, with 2,504 plants, were found in the Preferred Alternative (Table 3.3-1 and Figure 3.3-31), in Roadway Segments C and M.

Little Mousetail

Thirty-one little mousetail populations containing 63,999 plants were identified in the study area for the Preferred Alternative (Table 3.3-1 and Figure 3.3-32). One population of little mousetail with 10,000 plants was associated with a vernal pool at the northwest corner of Warren Road and Esplanade Avenue.

Thirty populations of little mousetail (totaling 53,999 plants) were identified in Cell 3291, in Additional Indirect Impact Study Area 2. With the exception of two plants that fall outside the linework of the Preferred Alternative, these are the same populations discussed for all Build Alternatives.

Assessment of LTCV Populations in the Preferred Alternative

MSHCP Criteria Area Cells 3683, 3584, 3291, and 2364 are located in the Preferred Alternative and are the same Criteria Cells discussed in the Build Alternative 1b study area (Table 3.3-6 and Figure 3.3-23).

Seventy-two populations of rare plants in the Preferred Alternative study area are in Criteria Area Cells (Table 3.3-5). These populations have been identified and evaluated for LTCV consistent with the species-specific goals and objectives of the MSHCP. Two species with LTCV are in the Preferred Alternative study area, smooth tarplant and little mousetail. These findings are presented in Tables 3.3-5 and 3.3-6 and are described in the following sections.

Smooth Tarplant

Forty-two populations of smooth tarplant in Criteria Area Cells were found in the study area for the Preferred Alternative (see Table 3.3-5), as follows:

- Criteria Area Cell 3683: 1 population, Roadway Segment G
- Criteria Area Cell 3584: 7 populations, Roadway Segment I
- Criteria Area Cell 3291: 2 populations, Roadway Segment J
- Criteria Area Cell 2364: 5 populations, Roadway Segment N
- Criteria Area Cell 3291: 30 populations, Additional Indirect Impact Study Area 2

The 30 smooth tarplant populations (with 4,995 individuals) in Additional Indirect Impact Study Area 2 are the same as those evaluated for all Build Alternatives, including the Preferred Alternative.

Little Mousetail

The 30 little mousetail populations in Criteria Area Cell 3291 (Additional Indirect Impact Study Area 2 in Cell 3291) are the same as the ones found in the study area for all Build Alternatives, including the Preferred Alternative. As stated for Build Alternative 1a, conservation of these populations would contribute toward MSHCP reserve assembly goals, and these populations therefore have LTCV (Table 3.3-5).

Special-Status Plant Species Not Included in the MSHCP

Two special-status plants that are not included in the MSHCP were observed within the Preferred Alternative study area.

- Paniculate tarplant – 26 populations (9,793 plants)
- Robinson's peppergrass – 8 populations (9,056 plants)

Paniculate Tarplant

Twenty-six paniculate tarplant populations with 9,793 plants were found in the study area for the Preferred Alternative (Table 3.3-1), mostly south of Florida Avenue. This species is on CNPS List 4 (a relatively low rarity status). The paniculate tarplant populations in the study area for the Preferred Alternative are important in a regional context (maintaining the species within the Perris Basin), but individual populations are not considered to have high value.

Robinson's Peppergrass

Eight populations of Robinson's peppergrass consisting of 9,056 plants were observed in the study area for the Preferred Alternative (Table 3.3-1) and were part of the larger complex found in the study areas for Build Alternative 1a and 1b. The larger complex located in Build Alternatives 1a and 1b have regional significance. However, the study area for the Preferred Alternative through the West Hemet Hills, is located farther west and is more narrow than the study areas for Build Alternatives 1a and 1b. Therefore, there are fewer occurrences of Robinson's peppergrass within the Preferred Alternative.

Build Alternative 2a

Twelve special-status plant species were identified in the Build Alternative 2a study area (Table 3.3-1). Ten of the 12 species are MSHCP Covered Species. Five of those 10 Covered Species—Parish's brittlescale, Davidson's saltscale, smooth tarplant, little mousetail, and Coulter's goldfields—have LTCV populations in the Build Alternative 2a study area. Information about these LTCV populations is presented in a separate subsection. The other two special-status plants, Parish's brittlescale and Palmer's grapplinghook, are not included in the MSHCP. They are present only in Additional Indirect Impact Study Area 1, which contains extensive stands of alkali grassland, seasonal wetlands (including vernal pools), and alkali playa habitats.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

Ten MSHCP species, some of which are endemic species that occur only within a very limited range or habitat, were identified in the Build Alternative 2a study area (Table 3.3-1). Parish's brittlescale was identified in the MWD Upper Salt Creek Reserve, in Additional Indirect Impact Area 1. Parish's brittlescale is not defined in the MSHCP as a Narrow Endemic plant, but it is very limited in distribution and is known to occur in only one other location, in San Diego County (Table 3.3-5). The 10 MSHCP Covered Species found in the study area for this Build alternative are listed below and described in the following sections.

- Parish's brittlescale – 13 populations (1,320 plants)
- Davidson's saltscale – 60 populations (12,142 plants)
- Smooth tarplant – 354 populations (288,288 plants)
- Parry's spineflower – 37 populations (16,971 plants)
- Long-spined spineflower – 27 populations (15,564 plants)

- Palmer's grapplinghook – 1 population (500 plants)
- Vernal barley – 29 populations (10,840,492 plants)
- Coulter's goldfields – 42 populations (568,725 plants)
- Small-flowered microseris – 1 population (15 plants)
- Little mousetail – 122 populations (446,887 plants)

Parish's Brittlescale

Thirteen Parish's brittlescale populations (with 1,320 plants) were identified in the MWD Upper Salt Creek Reserve, in Additional Indirect Impact Study Area 1 (Figure 3.3-35). As stated earlier in this section, this species is extremely rare. These are the only known populations in western Riverside County.

Davidson's Saltscale

Sixty Davidson's saltscale populations (with 12,142 plants) were identified in the Build Alternative 2a study area. One small population was observed west of the San Diego Canal, Additional Indirect Impact Study Area 2. This same population is present in all four Build alternatives. All 59 of the other populations (and 12,136 plants) were found in Additional Indirect Impact Study Area 1 (Figure 3.3-25).

Smooth Tarplant

More than 280,000 plants in 354 smooth tarplant populations were identified in the study area for Build Alternative 2a (Figure 3.3-27). A few populations were found in the southern part of the study area, near Domenigoni Parkway, but most of the populations were in the northern part, roughly between the Tres Cerritos Hills and south of Ramona Expressway and in Additional Indirect Impact Study Areas 1 and 2 (Table 3.3-1).

Parry's Spineflower

Thirty-seven Parry's spineflower populations (with 16,971 plants) were identified in the study area for Build Alternative 2a. They were found in the West Hemet Hills (Roadway Segments A and H) and on the lower hill slopes in Additional Indirect Impact Study Area 1 (Figure 3.3-28). Although more populations were observed in the study area for Build Alternative 2a, these populations contained considerably fewer individual plants than the populations found in the study areas of Build Alternatives 1a and 1b (Table 3.3-1).

Long-Spined Spineflower

Twenty-seven long-spined spineflower populations with 15,564 plants were found in a large complex in the West Hemet Hills (Table 3.3-1). These populations were all identified in the Roadway Segment H part of the Build Alternative 2a study area (Figure 3.3-29).

Palmer's Grapplinghook

One population of Palmer's grapplinghook with 500 plants was identified just north of Stowe Road, on the lower slopes of the West Hemet Hills (Figure 3.3-37). This was the only population that was found in the study area for Build Alternative 2a.

Vernal Barley

Extensive stands of alkali grasslands dominated by vernal barley were observed in Additional Indirect Impact Study Area 1 and Additional Indirect Impact Study Area 2, at the Stoney Mountain Preserve (Figure 3.3-30). Small populations of vernal barley were also found in the northern part of the Build Alternative 2a study area. As stated more fully in the discussion for Build Alternative 1a, vernal barley is an MSHCP Planning Species. The populations in the alkali grasslands of Additional Indirect Impact Study Areas 1 and 2 are important because they form important core localities for this species (Table 3.3-6).

Coulter's Goldfields

Forty-two Coulter's goldfields populations (with 568,725 plants) were identified in the Build Alternative 2a study area (Figure 3.3-31). The largest concentration, with about 560,000 plants, was found in the alkali grasslands and seasonal wetlands south of Florida Avenue in Additional Indirect Impact Study Area 1. Twenty-two additional populations of Coulter's goldfields were found in northern portion of the study area. These are the same populations that were discussed earlier in the survey results for Build Alternative 1a. The two Build alternatives have the same study area in this location because they both include Roadway Segment L. All 42 Coulter's goldfields found in the study area for Build Alternative 2a have LTCV. Information about these LTCV populations is presented in a separate subsection.

Small-Flowered Microseris

One small population of small-flowered microseris (with 15 plants) was identified in the West Hemet Hills in the study area for Build Alternative 2a (see Roadway Segment H in Figure 3.3-38).

Little Mousetail

A total of 122 little mousetail populations with 446,887 plants were identified in the study area for Build Alternative 2a. Ninety of the 122 populations, more than 375,000 plants, were found in Additional Indirect Impact Study Area 1 (Figure 3.3-32).

Thirty little mousetail populations with 49,001 plants were found in Additional Indirect Impact Study Area 2. These same populations are in the study areas for all of the Build alternatives and are discussed in detail under Build Alternative 1a.

One small population with seven plants was observed in the indirect impact area (Roadway Segment F).

Assessment of LTCV Populations in the Build Alternative 2a Study Area

MSHCP Criteria Area Cells 2683, 2774, 2775, 2878, 2364, 3584, 3683, 3684, 3791, 3891, 3887, and 4007 are in the Build Alternative 2a study area (Table 3.3-5 and Figure 3.3-22). Five species with LTCV populations are present in this study area.

- Parish's brittlescale
- Davidson's saltscale
- Smooth tarplant

- Coulter's goldfields
- Little mousetail

A total of 644 special-status plant populations in the Build Alternative 2a study area are in Criteria Area Cells (Table 3.3-5). These populations have been identified and evaluated for LTCV consistent with the species-specific goals and objectives of the MSHCP. The findings are provided in Tables 3.3-5 and 3.3-6 and are described in the following sections.

Parish's Brittlescale

Thirteen populations of Parish's brittlescale (with 1,320 plants) were identified in the MWD Upper Salt Creek Reserve in Additional Indirect Impact Study Area 1.These populations are in Criteria Area Cells 3683 and 3791 (Table 3.3-5). The objectives for these Cells include conservation of playas, vernal pools, and upland habitat. Only one other location of this species has been confirmed, in San Diego County. All 13 populations of Parish's brittlescale have very high LTCV. Continued conservation of these Parish's brittlescale populations and the supporting vernal pool hydrology is required to achieve long-term sustainability of this species.

Davidson's Saltscale

Fifty-nine populations of Davidson's saltscale with 12,136 plants were identified in Additional Indirect Impact Study Area 1 (Table 3.3-5). These populations are in Criteria Area Cells 3791, 3891, and 4007. Most of the populations were found east of California Avenue and south of Stetson Avenue, but a few populations were identified at the MWD Upper Salt Creek Reserve, north of Stetson Road (Figure 3.3-25). These 59 populations represent the core for the population complex in the study area, and their viability is essential for the survival of this species. The populations in Additional Indirect Impact Study Area 1 could contribute substantially toward reserve assembly, thus have very high LTCV.

Smooth Tarplant

One hundred forty-five populations of smooth tarplant in Criteria Area Cells were found in the study area for Build Alternative 2a (see Table 3.3-5 and Figure 3.3-27), as follows:

- Criteria Area Cell 3683: 1 population, Roadway Segment H
- Criteria Area Cell 3584: 7 populations, Roadway Segment I
- Criteria Area Cell 3291: 2 populations, Roadway Segment K
- Criteria Area Cells 2774, 2775, and 2878: 20 populations, Roadway Segment L
- Criteria Area Cell 2364: 5 populations, Roadway Segment N
- Criteria Area Cells 3683, 3684, 3791, 3887, and 4007: 80 populations, Additional Indirect Impact Study Area 1
- Criteria Area Cell 3291: 30 populations, Additional Indirect Impact Study Area 2

The smooth tarplant populations located in the Roadway Segment L portion of the study area and in Additional Indirect Impact Study Areas 1 and 2 have LTCV. These LTCV populations are described in more detail below.

Twenty smooth tarplant populations (with 31,863 plants) were identified in the Roadway Segment L portion of the Build Alternative 2a study area (Tables 3.3-5 and 3.3-6). These populations are in three Criteria Area Cells (2774, 2775, and 2878) in an area of relatively intact alkali grassland habitat. Conservation of these populations could contribute toward reserve assembly and species conservation objectives, so these populations have LTCV.

Most of the 80 populations (and 183,250 plants) in Additional Indirect Impact Study Area 1 were found between Stetson Avenue and SR 74/Florida Avenue, but a few populations were observed in the Stowe Road Vernal Pool Complex west of California Avenue. Conservation of these populations, particularly the moderate to large ones that are in relatively undisturbed natural habitats and are not isolated hydrologically, would contribute substantially toward reserve assembly. Smaller populations also could contribute toward reserve assembly if they are located adjacent to larger ones or if they would connect other populations (Tables 3.3-5 and 3.3-6). Therefore, the 80 populations in Additional Indirect Impact Study Area 1 have LTCV.

The 30 smooth tarplant populations in Additional Indirect Impact Study Area 2 are the same ones discussed in the Build Alternative 1a results and are present in the study areas of all of the Build alternatives.

Coulter's Goldfields

Forty-two populations of Coulter's goldfields were found in the Build Alternative 2a study area. Twenty-two populations (with 5,380 plants) are in Criteria Area Cells 2774 and 2775 (Table 3.3-5 and Figure 3.3-31). These are the same populations that were found in the Build Alternative 1a study area.

Twenty populations of Coulter's goldfields with about 560,000 plants were identified roughly between the MWD Upper Salt Creek Reserve and SR 74/Florida Avenue (Figure 3.3-31). These populations are in Criteria Area Cells 2683 and 3684. The largest concentration, with more than 500,000 plants, was found in the alkali grasslands and seasonal wetlands south of Florida Avenue. The Coulter's goldfields in the Build Alternative 2a study area are part of the last two major population complexes left in California, and conservation of the populations in these two Criteria Area Cells could contribute substantially toward reserve assembly (Tables 3.35 and 3.3-6). These localities therefore have very high LTCV.

Little Mousetail

Ninety little mousetail populations (with 377,993 plants) are in Criteria Area Cells 3887, 3891, 4007, 3791, and 3684 in Additional Indirect Impact Study Area 1 (Table 3.3-5). These populations form the only very large complex in the MSHCP Conservation Area (Table 3.3-5). Populations of little mousetail in Additional Indirect Impact Study Area 1, such as those in the MWD Upper Salt Creek Reserve, in the vicinity of Esplanade Avenue, and east of the San Diego Canal (directly east of the Reserve), could contribute substantially toward reserve assembly. Therefore, they have LTCV.

Thirty little mousetail populations with 49,001 plants were observed in Additional Indirect Impact Study Area 2 in Criteria Area Cell 3291 (Figure 3.3-32). These are the same populations that were found in the Build Alternative 1a study area. One of the populations extends into the Build Alternative 2a indirect impact area. About 9,886 little

mousetail individuals are in the indirect impact area at this location. The little mousetail populations in Additional Indirect Impact Study Area 2 and the indirect impact area could contribute toward reserve assembly, so they have LTCV (Table 3.3-5).

Special-Status Plant Species Not Included in the MSHCP

Two special-status plants that are not in the MSHCP were found in the Build Alternative 2a study area.

- Paniculate tarplant – 41 populations (46,758 plants)
- Robinson's peppergrass – 19 populations (7,872 plants)

Paniculate Tarplant

Forty-one paniculate tarplant populations with 46,758 plants were found south of Domenigoni Parkway, in the West Hemet Hills north of Stowe Road, on the lower slopes of the Tres Cerritos Hills, and on the lower slopes of the western edge of Additional Indirect Impact Study Area 1 (Figure 3.3-33). As stated in the discussion for Build Alternative 1a, this species is on CNPS List 4 (watch list) and is important in a regional context, but individual populations do not have high value.

Robinson's Peppergrass

Nineteen populations of Robinson's peppergrass (with 7,872 plants) were identified in the West Hemet Hills in the study area for Build Alternative 2a (Figure 3.3-34). These populations are part of a larger complex that extends beyond the study area boundary. This complex has 114,000 plants in 86 populations and is the same one discussed for Build Alternative 1a. As stated in the Build Alternative 1a results, this population complex is the largest one currently known in western Riverside County (Table 3.3-6), Robinson's peppergrass is a CNPS List 1B species, and these large populations could have high conservation value, even though this species is not included in the MSHCP. Although the Build Alternative 2a study area has slightly more populations than Build Alternatives 1a and 1b (19 populations versus 16), the populations are smaller (about 7,000 plants versus 80,000) (Table 3.3-1).

Build Alternative 2b and Design Option 2b1

Adding Design Option 2b1 in 2009 did not change the study area, so the survey results for Build Alternative 2b apply to the design option as well. Twelve special-status plant species were identified within the Build Alternative 2b study area (Table 3.3-1). Additional Indirect Impact Study Areas 1 and 2 are included in the Build Alternative 2b study area, and most of the special-status plant populations were found in these two additional indirect impact areas. Ten of the 12 species are MSHCP Covered Species. Of these 10 Covered Species, 5 have populations with LTCV. Information about these LTCV populations is presented in a separate subsection. The remaining two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

Two MSHCP species that are unique to the alkali playa, vernal pools, and grassland habitats in the central part of the study area are in Additional Indirect Impact Study Area 1. These species are Parish's brittlescale and Palmer's grapplinghook.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

Ten MSHCP species were identified in the Build Alternative 2b study area (Table 3.3-1). One Criteria Area species (Parish's brittlescale), although not considered an MSHCP Narrow Endemic species, has very limited distribution. The following 10 MSHCP species were identified in the Build Alternative 2b study area.

- Parish's brittlescale – 13 populations (1,320 plants)
- Davidson's saltscale – 60 populations (12,142 plants)
- Smooth tarplant – 346 populations (613,336 plants)
- Parry's spineflower –36 populations (16,431 plants)
- Long-spined spineflower – 27 populations (15,564 plants)
- Palmer's grapplinghook – 1 population (500 plants)
- Vernal barley – 32 populations (10,839,292 plants)
- Coulter's goldfields – 23 populations (592,676 plants)
- Small-flowered microseris – 1 population (15 plants)
- Little mousetail – 122 populations (445,590 plants)

Parish's Brittlescale

Thirteen Parish's brittlescale populations with 1,320 plants were observed in the alkali grassland and wetland habitats in the MWD Upper Salt Creek Reserve in Additional Indirect Impact Study Area 1 (Figure 3.3-35). These populations are the same ones that were found in the study area for Build Alternative 2a. As previously noted, Parish's brittlescale is extremely rare and is found in only one other location. Continued conservation of these populations is important for the long-term existence of this species. These populations have LTCV. More information about these LTCV populations is presented in a separate subsection.

Davidson's Saltscale

Sixty Davidson's saltscale populations (with 12,142 plants) were identified in the Build Alternative 2b study area. These are the same populations that were found in the study area for Build Alternative 2a. Only one small population was observed outside Additional Indirect Impact Study Area 1, northwest of the Stoney Mountain Preserve (Figure 3.3-25). As described in the separate LTCV discussion, the Davidson's saltscale populations in Additional Indirect Impact Study Area 1 have LTCV, but the small population outside is not in a Criteria Area Cell, so it does not have LTCV.

Smooth Tarplant

More than 600,000 smooth tarplant individuals in 346 populations were identified in the Build Alternative 2b study area (Table 3.3-1). Smooth tarplant was found throughout this Build alternative, as well as in both of the additional indirect impact study areas and Utility Relocation Corridors 1 and 2. Most of the populations were found in the Roadway Segment B and D portions of the study area and in Additional Indirect Impact Study Area 1. The Build Alternative 2a study area had more individual plants (613,336) than any of the other Build alternatives. Some of these smooth tarplant populations have LTCV. Those populations are discussed in a separate subsection.

Parry's Spineflower

Thirty-six Parry's spineflower populations with 16,431 plants were found in the study area for Build Alternative 2b, in Roadway Segment H and along the lower slopes of the hills at the western edge of Additional Indirect Impact Study Area 1 (Figure 3.3-28). These populations are the same as those found in the Build Alternative 2a study area.

Long-Spined Spineflower

Twenty-seven populations of long-spined spineflower with 15,564 plants were found in the study area for Build Alternative 2b (Table 3.3-1 and Figure 3.3-29). These populations are the same ones that were identified in the Build Alternative 2a study area.

Palmer's Grapplinghook

One population of Palmer's grapplinghook with 500 plants was identified just north of Stowe Road, on the lower slopes of the West Hemet Hills (Figure 3.3-37). This is the same population that was found in the Build Alternative 2a study area.

Vernal Barley

Extensive stands of alkali grasslands dominated by vernal barley were found in the Build Alternative 2b study area. Nearly 11 million vernal barley plants were estimated in the study area for this Build alternative. Most of the vernal barley plants (more than 9 million individuals) were found in Additional Indirect Impact Study Area 1, but large populations were also identified in Additional Indirect Impact Study Area 2, at the Stoney Mountain Preserve. Small populations of vernal barley were identified east of the San Diego Canal (roughly between Devonshire and Tres Cerritos Avenues), near Esplanade Avenue, and adjacent to the Casa Loma Canal north of Scott Street.

Coulter's Goldfields

Twenty-three populations of Coulter's goldfields, with more than 600,000 plants, were identified in the Build Alternative 2b study area. Twenty populations with about 560,000 plants were located between the MWD Upper Salt Creek Reserve and SR 74/Florida Avenue in Additional Indirect Impact Study Area 1 (Figure 3.3-31). These are the same populations that were found in the Build Alternative 2a study area. These populations have very high LTCV and are discussed in a separate subsection.

Two populations of Coulter's goldfields with 29,329 plants were identified east of Sanderson Avenue and north of Scott Street. One very small population, consisting of two plants, was found in the Salt Creek Channel, in the southern part of the study area.

Small-Flowered Microseris

One small population of small-flowered microseris (with 15 plants) was identified in the West Hemet Hills (Figure 3.3-38). This population was also found in the Build Alternative 2a study area. The two Build alternatives would be the same in this location.

Little Mousetail

Ninety little mousetail populations (with 377,993 plants) occur within Additional Indirect Impact Study Area 1 (Table 3.3-5). Thirty little mousetail populations with about 49,001 plants were observed within the Additional Indirect Impact Study Area 2. These 30 populations are in the study areas for all of the Build alternatives. They have LTCV. LTCV populations are discussed in a separate subsection.

One small population with seven plants was found in the Build Alternative 2b indirect impact area (Roadway Segment D). This is the same population that was found in Build Alternative 2a (Roadway Segment F).

Assessment of LTCV Populations in the Build Alternative 2b Study Area

MSHCP Criteria Area Cells 2683, 2364, 3291, 3584, 3683, 3684, 3791, 3891, 3887, and 4007 are in the Build Alternative 2b study area (Table 3.3-5 and Figure 3.3-22).

A total of 602 populations of special-status plants are present in these Criteria Area Cells (Table 3.3-5). Conservation of most of these populations could contribute substantially toward attaining species-specific conservation goals and reserve assembly, so these populations have LTCV. Except for a smaller number of Coulter's goldfields in Build Alternative 2b, the LTCV populations in the study areas of Build Alternative 2a and Build Alternative 2b are the same. The following species have LTCV.

- Parish's brittlescale
- Davidson's saltscale
- Smooth tarplant
- Coulter's goldfields
- Little mousetail

These LTCV populations are described below.

Parish's Brittlescale

Thirteen Parish's brittlescale populations with 1,320 plants were found in the MWD Upper Salt Creek Reserve in Additional Indirect Impact Study Area 1. These are the same populations that were found in the study area for Build Alternative 2a.

Davidson's Saltscale

Fifty-nine populations of Davidson's saltscale with 12,136 plants were identified in Additional Indirect Impact Study Area 1 (Table 3.3-5 and Figure 3.3-25). These are the same populations that were found in Build Alternative 2a. Only one small population (with six plants) was found outside Additional Indirect Impact Study Area 1, in Cell 3291. This small population is not in a Criteria Area Cell, so it does not have LTCV.

Smooth Tarplant

Ninety-five populations of smooth tarplant in Criteria Area Cells were found in the study area for Build Alternative 2b (see Table 3.3-5 and Figure 3.3-27), as follows:

- Criteria Area Cell 3683: 1 population, Roadway Segment G
- Criteria Area Cell 3584: 7 populations, Roadway Segment I
- Criteria Area Cell 2364: 5 populations, Roadway Segment N
- Criteria Area Cells 3683, 3684, 3791, 3887, 4007: 80 populations, Additional Indirect Impact Study Area 1
- Criteria Area Cell 3291: 2 populations, Roadway Segment J; 30 populations, Additional Indirect Impact Study Area 2

The populations in Additional Indirect Impact Study Areas 1 and 2 are the same as Build Alternative 2a, and they have LTCV.

Coulter's Goldfields

Twenty populations of Coulter's goldfields with about 560,000 plants were identified roughly between the MWD Upper Salt Creek Reserve and SR 74/Florida Avenue (Figure 3.3-31). These are the same populations that were found in the study area for Build Alternative 2a.

Little Mousetail

Ninety little mousetail populations (with 377,993 plants) were found in Additional Indirect Impact Study Area 1 (Table 3.3-5). These, and the 30 populations in Additional Indirect Impact Study Area 2 are the same populations that were found in the study area for Build Alternative 2a.

Special-Status Plant Species Not Included in the MSHCP

Two special-status plants that are not included in the MSHCP were found in the Build Alternative 2b study area.

- Paniculate tarplant – 39 populations (33,495 plants)
- Robinson's peppergrass – 19 populations (7,872 plants)

Paniculate Tarplant

Thirty-nine paniculate tarplant populations with 33,495 plants were found in the Build Alternative 2b study area (Table 3.3-1 and Figure 3.3-33). The largest concentrations were in the central and southern portions of the alternative, on the lower hill slopes of the Tres Cerritos Hills, the West Hemet Hills, and the study area for Roadway Segment B, south of the Domenigoni Parkway. As stated in the discussion for Build Alternative 1a, this species is on CNPS List 4 (watch list) and is important in a regional context, but individual populations do not have high value.

Robinson's Peppergrass

Nineteen populations of Robinson's peppergrass (with 7,872 plants) were identified in the study area for Build Alternative 2b (Figure 3.3-34). These are the same populations that were found in the study area for Build Alternative 2a.

3.3.3.3 Environmental Consequences

The following sections describe the potential permanent (direct and indirect) and temporary impacts to plant species from each of the Project alternatives and design options. The design options added in 2009 did not change the study area, so they would have the same impacts as their respective Build alternatives. All impacts to special-status plants are considered permanent because there would be no temporary construction easements, and the potential for degradation of habitat in the direct and indirect impact areas is high. Temporary impacts to special-status plants are not expected.

The locations of rare plants that could be impacted by the proposed Project are provided in Figures 3.3-24 through 3.3-40.

Permanent Impacts

The potential for permanent impacts to special-status plants from the Build alternatives and design options is discussed in the following sections. This analysis assumes that construction or operation of the Project would result in direct and permanent impacts to all special-status plants in the PIA and unique design features.

Permanent indirect impacts could occur in the 100-ft indirect impact area or in Additional Indirect Impact Study Areas 1 and 2. A summary of potential impacts to special-status plants is presented in Table 3.3-3.

No Build Alternative

No impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

Build Alternative 1a could have permanent direct or indirect impacts to 10 special-status plant species. Eight of these 10 species are MSHCP Covered Species. Two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

Build Alternative 1a would cross MSHCP Criteria Area Cells 3683, 3584, 3291, 2364, 2774, 2775, and 2878 (Table 3.3-5 and Figure 3.3-1). Three species with LTCV populations could be permanently impacted—smooth tarplant, Coulter's goldfields, and little mousetail. Potential permanent impacts to these LTCV populations are discussed in a separate subsection.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

Permanent direct and indirect impacts to eight MSHCP species are expected to result from Build Alternative 1a. The eight MSHCP species that would be permanently impacted (directly and indirectly) by Build Alternative 1a are as follows:

- Davidson's saltscale
- Plummer's mariposa lily
- Smooth tarplant
- Parry's spineflower
- Long-spined spineflower
- Vernal barley
- Coulter's goldfields
- Little mousetail

Davidson's Saltscale

Build Alternative 1a would permanently and directly impact 1 population of Davidson's saltscale, with 6 individuals, in the PIA south of Esplanade Avenue. This small population would be in the PIA of all of the Build alternatives. Impacts could not be avoided, regardless of which Build alternative is identified as the Preferred Alternative.

Plummer's Mariposa Lily

Build Alternative 1a would result in the permanent loss of 1 population of Plummer's mariposa lily with 2 plants. This was the only population found in the Project study area, but as stated in Section 3.3.3.2, it is possible that more plants could be in the West Hemet Hills than were found at the time of the survey.

Smooth Tarplant

A total of 168 populations of smooth tarplant with 73,072 individuals would be permanently and directly impacted by Build Alternative 1a.

An additional 80 populations with 26,512 plants (some of which would span both the PIA and the indirect impact area) could be indirectly impacted.

Eighteen populations (26,221 plants) with LTCV would be directly impacted in the PIA (Roadway Segment L). Two LTCV populations (5,642 plants) could be affected in the indirect impact area.

Thirty smooth tarplant populations with LTCV (4,995 plants) in Additional Indirect Impact Study Area 2 could also be indirectly affected.

Parry's Spineflower

Build Alternative 1a is expected to result in permanent direct impacts to 24 populations of Parry's spineflower (110,996 plants). Indirect impacts may occur to another 3 populations and 1,570 plants. Except for one small population in the PIA of Roadway Segment A, all of the impacts to Parry's spineflower would be in the West Hemet Hills.

Long-Spined Spineflower

Two long-spined spineflower populations with 815 plants in the PIA would be directly impacted by Build Alternative 1a. Two additional populations with 3,801 plants in the indirect impact area could also be permanently impacted.

Vernal Barley

Permanent direct impacts to six vernal barley populations (8,425 plants) are expected from Build Alternative 1a. Two of these populations would span the PIA and the indirect impact area. Six populations with an estimated 10,496 plants in the alkali grassland habitat in the indirect impact area (Roadway Segments I, J, and L) could also be permanently impacted.

Coulter's Goldfields

Twenty Coulter's goldfields populations (4,785 plants), located east of Warren Road and south of Byrd Street, would be directly impacted by Build Alternative 1a. One of these populations would extend beyond the PIA into the indirect impact area. This population and another two Coulter's goldfields populations (650 plants) could be indirectly impacted by construction.

Little Mousetail

Build Alternative 1a is expected to have direct impacts to one population of little mousetail (about 10,000 plants) that would be in the PIA, at the northwest corner of Warren Road and Esplanade Avenue. This population is not in a Criteria Area Cell, so it does not have LTCV. Permanent impacts to this population do not require mitigation to comply with the MSHCP, but large populations of little mousetail such as this still have high conservation value. To avoid permanent direct impacts as much as possible, this location will be designated as an Environmentally Sensitive Area (ESA), and an ESA fence will be installed around the perimeter of the vernal pool (see BIO-34 in Section 3.3.3.4). However, due to engineering constraints, permanent direct impacts to some of this population cannot be avoided.

A portion of one population complex with 8,589 little mousetail plants that extends into the indirect impact area (Roadway Segment J) could be indirectly impacted by construction of Build Alternative 1a.

Assessment of LTCV Populations in Build Alternative 1a

Some populations that would be impacted by Build Alternative 1a, including Davidson's saltscale, Plummer's mariposa lily, smooth tarplant, Parry's spineflower, long-spined spineflower, vernal barley, and little mousetail (the one population at the northwest corner of Warren Road and Esplanade Avenue), do not have LTCV. These populations would not require mitigation to comply with the MSHCP.

Permanent indirect impacts to the little mousetail and smooth tarplant LTCV populations in the indirect impact area and Additional Indirect Impact Study Area 2 could exceed the 90-percent avoidance threshold. If this occurs, it would be a substantial impact, but is not likely. Rainfall is the most important source of water for the little mousetail populations, but shallow seasonal surface runoff may also contribute to the local hydrology. This part of the Project area is relatively flat, and the populations would be up slope and southeast of the PIA. Runoff in this area flows principally from the south during storms, so it is unlikely that the hydrology within Additional Indirect Impact Study Area 2 or the Build Alternative 1a indirect impact area would be affected by construction. Therefore, permanent indirect impacts associated with changes in hydrology are not expected to the LTCV populations of little mousetail in the Roadway Segment J portion of the Build Alternative 1a indirect impact area or to the little mousetail and smooth tarplant populations with LTCV in Additional Indirect Impact Study Area 2. The 90-percent LTCV population avoidance threshold can be attained by using minimization measures (see Section 3.3.3.4).

Direct impacts to the 20 LTCV populations of Coulter's goldfields and 18 LTCV populations of smooth tarplant in the PIA of Build Alternative 1a could not be avoided if this Build alternative is identified for construction. Impacts (e.g., hydrologic alteration, introduction of noxious weeds) to the 3 Coulter's goldfields and 2 smooth tarplant LTCV populations in the indirect impact area would be avoided or minimized during construction (see Section 3.3.3.4).

With Build Alternative 1a, permanent direct and indirect impacts to these populations of Coulter's goldfields and smooth tarplant would exceed the 90-percent LTCV avoidance threshold. This would be a substantial impact. A Determination of Biological Equivalent or Superior Preservation (DBESP) and appropriate mitigation would be required to comply with the MSHCP.

Special-Status Plant Species Not Included in the MSHCP

Two non-MSHCP special-status plants would be permanently impacted by Build Alternative 1a. Impacts to these species are described below.

Paniculate Tarplant

Build Alternative 1a is expected to result in the permanent loss of 20 paniculate tarplant populations (8,729 plants). Some of these populations would also extend into the indirect impact area, where 17 populations (12,645 plants) could be permanently and indirectly impacted by construction.

As stated in Section 3.3.3.2, paniculate tarplant is a CNPS List 4 (watch list) species. These populations are important in a regional context, but the permanent direct impacts expected from constructing Build Alternative 1a would not be substantial.

Robinson's Peppergrass

Build Alternative 1a would have permanent direct impacts to 14 Robinson's peppergrass populations (79,074 plants). Two small populations (50 plants) could be permanently and indirectly impacted. All of these populations are in the West Hemet Hills and are part of the largest Robinson's peppergrass complex identified during the surveys.

As stated in Section 3.3.3.2, Robinson's peppergrass is on CNPS List 1B. Permanent direct and indirect impacts to the populations in the West Hemet Hills would be substantial, so mitigation would be required.

Build Alternative 1b and Design Option 1b1

Adding Design Option 1b1 in 2009 did not change the PIA or indirect impact area, so the impact assessment for Build Alternative 1b would apply to the design option as well. Build Alternative 1b could have permanent direct and indirect impacts to 10 special-status plant species. Eight of these 10 are MSHCP Covered Species. Two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

Build Alternative 1b would cross MSHCP Criteria Area Cells 3683, 3584, and 3291, and 2364 (Table 3.3-5 and Figure 3.3-1). Smooth tarplant and little mousetail populations with LTCV could be permanently impacted by Build Alternative 1b. Potential permanent impacts to these LTCV populations are discussed in a separate subsection.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

The eight MSHCP species that could be permanently impacted by Build Alternative 1b are:

- Davidson's saltscale
- Plummer's mariposa lily
- Smooth tarplant
- Parry's spineflower
- Long-spined spineflower
- Vernal barley
- Coulter's goldfields
- Little mousetail

Davidson's Saltscale

Build Alternative 1b, like all of the Build alternatives, would result in permanent direct impacts to one population of Davidson's saltscale (six plants) in the PIA south of Esplanade Avenue.

Plummer's Mariposa Lily

Impacts to Plummer's mariposa lily would be the same as Build Alternative 1a.

Smooth Tarplant

A total of 149 populations of smooth tarplant with 373,322 individuals would be permanently and directly impacted by Build Alternative 1b. Another 102 populations with 156,666 individuals could be permanently affected in the indirect impact area.

Parry's Spineflower

Impacts to Parry's spineflower would be the same as Build Alternative 1a.

Long-Spined Spineflower

Impacts to long-spined spineflower would be the same as Build Alternative 1a.

Vernal Barley

Build Alternative 1b would cause the permanent loss of 5 vernal barley populations (5,425 plants) in the PIA. Eleven populations (12,796 plants) in the indirect impact area could be impacted as well.

Coulter's Goldfields

Build Alternative 1b would have permanent and direct impacts to 2 Coulter's goldfields populations (28,079 plants) in the PIA (Roadway Segment M). One of these two populations (1,044 plants) would extend into the indirect impact area, thus could be permanently affected. One other population (2 plants) in Salt Creek Channel could be indirectly impacted.

Little Mousetail

Build Alternative 1b would have permanent direct impacts to the same population of little mousetail (approximately 10,000 plants) as Build Alternative 1a.

A portion of a little mousetail population complex (9,886 plants) in Additional Indirect Impact Study Area 2 would extend into the indirect impact area. These populations have LTCV.

Assessment of LTCV Populations in Build Alternative 1b

Some of the populations that would be impacted by Build Alternative 1b, including Davidson's saltscale, Plummer's mariposa lily, smooth tarplant, Parry's spineflower, long-spined spineflower, and vernal barley, do not have LTCV. These populations would not require mitigation to comply with the MSHCP.

The little mousetail and smooth tarplant LTCV populations in the indirect impact area and Additional Indirect Impact Study Area 2 would be the same as Build Alternative 1a. Although the two Build alternatives would differ in this location, the LTCV assessment would be the same.

Special-Status Plant Species Not Included in the MSHCP

Two non-MSHCP special-status plants could be permanently impacted by construction of Build Alternative 1b. Impacts to these species are described below.

Paniculate Tarplant

Build Alternative 1b is expected to result in the permanent loss of 14 paniculate tarplant populations (1,288 plants). Some of these populations also extend into the indirect impact area, so as many as 15 paniculate tarplant populations (5,706 plants) could be indirectly impacted by construction.

As stated in Section 3.3.3.2, paniculate tarplant is a CNPS List 4 (watch list) species. These populations are important in a regional context, but the permanent direct impacts expected from constructing Build Alternative 1b would not be substantial.

Robinson's Peppergrass

Impacts to Robinson's peppergrass from Build Alternative 1b would be the same as Build Alternative 1a.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative could have permanent direct and indirect impacts to nine special-status plant species. Seven of these nine are MSHCP Covered Species. Two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

The Preferred Alternative would cross MSHCP Criteria Area Cells 3683, 3584, 3291, and 2364 (Table 3.3-5 and Figure 3.3-1). Smooth tarplant populations with LTCV could be permanently impacted by the Preferred Alternative. Potential permanent impacts to these LTCV populations are discussed in a separate subsection.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

The seven MSHCP species that could be permanently impacted by the Preferred Alternative are:

- Davidson's saltscale
- Smooth tarplant
- Parry's spineflower
- Long-spined spineflower
- Vernal barley
- Coulter's goldfields
- Little mousetail

Davidson's Saltscale

The Preferred Alternative, like all of the Build alternatives, would result in permanent direct impacts to one population of Davidson's saltscale (six plants) in the PIA south of Esplanade Avenue.

Smooth Tarplant

A total of 149 populations of smooth tarplant with 382,751 individuals would be permanently and directly impacted by the Preferred Alternative. Another 79 populations with 148,730 individuals could be permanently affected in the indirect impact area.

Parry's Spineflower

A total of 9 populations of Parry's spineflower with 7,550 individuals would be permanently and directly impacted by the Preferred Alternative. Another 8 populations with 2,256 individuals could be permanently affected in the indirect impact area. While the number of populations that would be permanently and directly impacted by the Preferred Alternative is much less than the other Build Alternatives, the number of populations that would be permanently affected in the indirect area of the Preferred Alternative is higher than the other Build Alternatives.

Long-Spined Spineflower

A total of 4 populations of long-spined spineflower with 3,584 individuals would be permanently and directly impacted by the Preferred Alternative. Another 2 populations with 10,333 individuals could be permanently affected in the indirect impact area.

Vernal Barley

The Preferred Alternative would cause the permanent loss of 8 vernal barley populations (9,289 plants) in the PIA. In addition, seven populations (4,559 plants) in the indirect impact area could be impacted.

Coulter's Goldfields

The Preferred Alternative would have permanent and direct impacts to 2 Coulter's goldfields populations (1,718 plants) in the PIA (Roadway Segment M). One of these two populations (784 plants) would extend into the indirect impact area, and thus could be permanently affected. One other population with 2 plants in Salt Creek Channel could be indirectly impacted. The number of populations in the permanent direct and indirect areas of the Preferred Alternative is less than Build Alternative 1b.

Little Mousetail

The Preferred Alternative would have permanent direct impacts to the same population of little mousetail (approximately 10,000 plants) as all of the Build Alternatives would.

A portion of a little mousetail population complex (9,403 plants) in Cell 3291 would extend into the indirect impact area. These populations have LTCV. However, as discussed below in the LTCV section, based on topography and site conditions in this area, construction activities associated with the Preferred Alternative would not affect the little mousetail populations with LTCV.

Assessment of LTCV Populations in the Preferred Alternative

Some of the populations that would be impacted by the Preferred Alternative, including Davidson's saltscale, smooth tarplant, Parry's spineflower, long-spined spineflower, vernal barley, Coulter's goldfields and little mousetail do not have LTCV. Impacts to these populations would not require mitigation to comply with the MSHCP.

There are, however, LTCV populations of little mousetail and smooth tarplant in Additional Indirect Impact Study Area 2 in Cell 3291. The impacts to these LTCV populations would be the same for all Build Alternatives, including the Preferred Alternative. The LTCV assessment would be the same regardless of Build Alternative.

Little Mousetail

A portion of the Preferred Alternative is located within the northwest portion of Cell 3291, which is a component of Noncontiguous Habitat Block 7. Grassland habitat containing vernal pools and little mousetail populations with LTCV are located within this Cell, adjacent to the PIA. However, indirect impacts to hydrology that may impact these resources would not occur based on the topography and observations of conditions in this location during the wet season, which indicated that site drainage is from the south to the north. No Project activity (direct impacts) would

occur in the areas with vernal pools and LTCV little mousetail populations, which are located upgradient from the PIA and work areas. As a result, construction activities associated with the Preferred Alternative are not expected to affect the local hydrology that would affect the populations with LTCV.

Smooth Tarplant

Smooth tarplant is the only CASSA 3 species that would be permanently and directly impacted by the Preferred Alternative. The impacts to CASSA 3 plants suitable for long-term conservation value (LTCV) are limited to Criteria Cells 3683, 3584, and 3291. Within Criteria Cell 3683, there is 1 population consisting of 1,000 plants, within Criteria Cell 3584 there are 4 populations consisting of 884 plants, and within Criteria Cell 3291, there is 1 population with 60 plants (Figure 3.3-27). In addition to the direct impacts within Criteria Cell 3291, there are a total of 2 populations consisting of 50 plants that could be indirectly impacted. Because these populations were identified within criteria cells within CASSA 3, they have LTCV.

Special-Status Plant Species Not Included in the MSHCP

Two non-MSHCP special-status plants could be permanently impacted by construction of the Preferred Alternative. Impacts to these species are described below.

Paniculate Tarplant

The Preferred Alternative is expected to result in the permanent loss of 17 paniculate tarplant populations (2,090 plants). Some of these populations also extend into the indirect impact area, therefore 14 paniculate tarplant populations (7,703 plants) could be indirectly impacted by construction.

As stated in Section 3.3.3.2, paniculate tarplant is a CNPS List 4 (watch list) species. These populations are important in a regional context, but the permanent direct impacts expected from constructing the Preferred Alternative would not be substantial.

Robinson's Peppergrass

While direct impacts to Robinson's peppergrass from the Preferred Alternative (6 populations containing 5,753 plants) would be much less than the other Build Alternatives , the indirect impacts to 3 populations (3,303 plants) are higher than the other Build Alternatives.

Build Alternative 2a

Build Alternative 2a could have permanent direct or indirect impacts to 12 special-status plant species. Ten of these species are MSHCP Covered Species. Two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

Build Alternative 2a would cross Criteria Area Cells 3683, 3684, 3791, 3887, 3791, 3891, 4007, 3584, 3291, 2774, 2775, 2878, and 2364. Five special-status plant species with LTCV populations could be permanently directly or indirectly impacted—Davidson's saltscale, smooth tarplant, Coulter's goldfields, Parish's brittlescale, and little mousetail. Potential impacts to these LTCV populations are discussed in a separate subsection.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

The 10 MSHCP Covered Species that could be permanently impacted by Build Alternative 2a are listed below and described in the following sections.

- Davidson's saltscale
- Smooth tarplant
- Parry's spineflower
- Long-spined spineflower
- Palmer's grapplinghook
- Vernal barley
- Coulter's goldfields
- Parish's brittlescale
- Small-flowered microseris
- Little mousetail

Davidson's Saltscale

Build Alternative 2a, like all of the other Build alternatives, would have permanent direct impacts to one Davidson's saltscale population (6 plants) located south of Esplanade Avenue. Impacts could not be avoided, regardless of which Build alternative is identified as the Preferred Alternative.

Smooth Tarplant

Impacts to smooth tarplant populations from Build Alternative 2a would be the same as those from Build Alternative 1a. Both Build alternatives would include Roadway Segment L, where the impacts would occur.

Parry's Spineflower

Build Alternative 2a would have permanent direct impacts to 32 populations of Parry's spineflower (13,629 plants). Another 4 populations (264 plants) could be impacted indirectly. Except for one small population in the PIA of Roadway Segment A, all of the Parry's spineflower in Build Alternative 2a would be in the West Hemet Hills. Build Alternative 2a would result in fewer impacts to Parry's spineflower individuals (but not to the number of populations) than Build Alternatives 1a or 1b.

Long-Spined Spineflower

Build Alternative 2a would cause permanent direct impacts to 24 long-spined spineflower populations with 14,651 plants in the PIA. Three populations with 913 plants in the indirect impact area could be impacted. These populations are part of the largest long-spined spineflower complex in the Project area, so Build Alternative 2a would have more impacts to long-spined spineflower than Build Alternative 1a or 1b.

Palmer's Grapplinghook

Palmer's grapplinghook was not found in the PIA, so permanent direct impacts to this species are not expected. However, Build Alternative 2a could have permanent indirect impacts to one population of Palmer's grapplinghook (500 plants) on the lower slopes of the West Hemet Hills in Additional Indirect Impact Study Area 1.

Vernal Barley

With Build Alternative 2a, three vernal barley populations (3,925 plants) in the PIA would be permanently lost. Indirect impacts to more than 5 million plants in 11 populations could also occur. These indirect impacts would be mostly in Additional Indirect Impact Study Area 1. Small populations of vernal barley in the indirect impact area (Roadway Segments I, K, and L) could also be impacted.

Coulter's Goldfields

Impacts to Coulter's goldfields populations would be the same as Build Alternative 1a (page 3-676).

Parish's Brittlescale

Thirteen populations (1,320 plants) in the MWD Upper Salt Creek Reserve could be indirectly impacted by Build Alternative 2a due to changes in hydrology. All of the Parish's brittlescale populations have LTCV, but because these populations are in the MWD Upper Salt Creek Reserve, conservation has already been attained. However, indirect impacts to vernal pool hydrology could result in the loss of populations or individual plants or degradation of the vernal pool habitat. Such a loss could affect the long-term sustainability of these populations and could make attaining the MSHCP conservation objectives for this species more difficult.

Small-Flowered Microseris

Build Alternative 2a would have permanent direct impacts to one small population of small-flowered microseris (15 plants) in the West Hemet Hills. This population would be in the PIA of the Roadway Segment H portion of this Build alternative.

Little Mousetail

Build Alternative 2a would have permanent direct impacts to one population of little mousetail (approximately 10,000 plants) that would be in the PIA, at the northwest corner of Warren Road and Esplanade Avenue. This is the same population that would be directly impacted by Build Alternative 1a.

Build Alternative 2a could also have permanent indirect impacts to 14 populations of little mousetail (12,750 plants), with one of those populations (7 plants) in the indirect impact area (Roadway Segment F). Twelve (2,799 plants) of the 14 populations have LTCV and are in Additional Indirect Impact Study Area 1.

A portion of a little mousetail population complex (9,886 plants) in Additional Indirect Impact Study Area 2 would extend into the indirect impact area (Roadway Segment K). These populations have LTCV.

Assessment of LTCV Populations in Build Alternative 2a

As stated in the previous section, a portion of a little mousetail population complex (9,886 plants) within Additional Indirect Impact Study Area 2 would extend into the indirect impact area. These populations have LTCV. They could be permanently and indirectly impacted by Build Alternative 2a.

Permanent indirect impacts to the LTCV little mousetail and smooth tarplant populations in the indirect impact area and in Additional Indirect Impact Study Area 2 would be the same as Build Alternative 1a.

Impacts to the 20 populations of Coulter's goldfields and 18 populations of smooth tarplant with LTCV in the PIA and indirect impact area would be the same as Build Alternative 1a.

Build Alternative 2a could cause permanent indirect impacts to the LTCV populations of Parish's brittlescale, smooth tarplant, and little mousetail in Additional Indirect Impact Study Area 1. These impacts could exceed the 90-percent avoidance threshold for these species. If the threshold were exceeded for any of these species, that would be substantial impact. However, measures were taken during the Project development and siting phase to avoid impacts to these populations as much as possible and to maintain the existing hydrologic conditions after construction, as described in Section 3.3.3.4. Also described in Section 3.3.3.4, measures would be implemented to avoid and minimize permanent indirect impacts during construction. With these measures, permanent indirect impacts to these LTCV populations could be avoided, and the 90-percent LTCV population avoidance threshold could be attained.

Special-Status Plant Species Not Included in the MSHCP

Two non-MSHCP special-status plants could be permanently impacted by Build Alternative 2a. Impacts to these species are described below.

Paniculate Tarplant

Build Alternative 2a would cause the permanent loss of 20 paniculate tarplant populations (29,629 plants) in the PIA. Some of these populations would also extend into the indirect impact area and Additional Indirect Impact Study Area 1. Collectively, 19 paniculate tarplant populations (12,795 plants) could be indirectly impacted.

As stated in Section 3.3.3.2, paniculate tarplant is a CNPS List 4 (watch list) species. These populations are important in a regional context, but the permanent direct impacts expected from construction of Build Alternative 2a would not be substantial. Therefore, mitigation would not be required.

Robinson's Peppergrass

Build Alternative 2a would have permanent direct impacts to 16 Robinson's peppergrass populations (7,700 plants) in the PIA. Three other small populations of Robinson's peppergrass (172 plants) could be permanently and indirectly impacted.

As stated in Section 3.3.3.2, Robinson's peppergrass is on CNPS List 1B. Fewer plants would be impacted by Build Alternative 2a than Build Alternatives 1a or 1b, but these impacts would still be substantial. Mitigation would be required.

Build Alternative 2b and Design Option 2b1

Adding Design Option 2b1 in 2009 did not change the PIA or indirect impact area, so the impact assessment for Build Alternative 2b would apply to the design option as well. Build Alternative 2b would have permanent direct and indirect impacts to 12 special-status plant species. Ten of these are MSHCP Covered Species. Two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

Build Alternative 2b would cross Criteria Area Cells 3683, 3684, 3791, 3887, 3791, 3891, 4007, 3584, 3291, 2774, 2775, 2878, and 2364. Similar to Build Alternative 2a, five special-status plant species with LTCV populations could be permanently directly or indirectly impacted by Build Alternative 2b: Davidson's saltscale, smooth tarplant, Coulter's goldfields, Parish's brittlescale, and little mousetail. Potential impacts to these LTCV populations are discussed in a separate subsection.

MSHCP Criteria Area, Narrow Endemic, Other MSHCP Covered Species, and MSHCP Planning Species

The 10 MSHCP species that would be permanently impacted by Build Alternative 2b are:

- Davidson's saltscale
- Smooth tarplant
- Parry's spineflower
- Long-spined spineflower
- Palmer's grapplinghook
- Vernal barley
- Coulter's goldfields
- Parish's brittlescale
- Small-flowered microseris
- Little mousetail

Davidson's Saltscale

Build Alternative 2b, like all of the Build alternatives, would result in permanent direct impacts to one population of Davidson's saltscale (six plants) in the PIA south of Esplanade Avenue.

Smooth Tarplant

A total of 155 populations of smooth tarplant (374,837 plants) in the PIA would be permanently lost because of Build Alternative 2b. Another 97 populations (152,589 plants) could be permanently impacted in the indirect impact area and Additional Indirect Impact Study Area 1.

Parry's Spineflower

Impacts to Parry's spineflower from Build Alternative 2b would be the same as Build Alternative 2a.

Long-Spined Spineflower

Impacts to long-spined spineflower from Build Alternative 2b would be the same as Build Alternative 2a.

Palmer's Grapplinghook

Impacts to Palmer's grapplinghook from Build Alternative 2b would be the same as Build Alternative 2a.

Vernal Barley

Six vernal barley populations (8,425 plants) would be permanently lost because of Build Alternative 2b. Potential indirect impacts to more than 5 million plants in 11 populations could also occur. These indirect impacts would mostly be in the extensive stands of alkali grasslands in Additional Indirect Impact Study Area 1. Small populations of vernal barley could also be affected in the indirect impact area in the northern portion of this Build alternative (Roadway Segments I, J, and M).

Coulter's Goldfields

Impacts to 2 populations (28,079 plants) of Coulter's goldfields in the PIA of Build Alternative 2b (Roadway Segment M) would be the same as Build Alternative 1b. One other population (2 plants) in the PIA of the Roadway Segment D portion of this Build alternative would also be permanently lost.

Parish's Brittlescale

Impacts to Parish's brittlescale from Build Alternative 2b would be the same as Build Alternative 2a.

Small-Flowered Microseris

Impacts to small-flowered microseris from Build Alternative 2b would be the same as Build Alternative 2a.

Little Mousetail

Impacts to one population of little mousetail (approximately 10,000 plants) in the PIA of Build Alternative 2b (Roadway Segment J) at the northwest corner of Warren Road and Esplanade Avenue would be the same as Build Alternative 1a.

Build Alternative 2b could also have permanent indirect impacts to 14 populations of little mousetail (11,395 plants). One population (7 plants) in the indirect impact area (Roadway Segment D) could be affected. Twelve populations (2,799 plants) of the 14 have LTCV. Those 12 populations are in Additional Indirect Impact Study Area 1.

Assessment of LTCV Populations in Build Alternative 2b

Impacts to the little mousetail and smooth tarplant LTCV populations from Build Alternative 2b would be the same as Build Alternative 1a. Both Build alternatives include Roadway Segment J.

Impacts to the LTCV populations of Parish's brittlescale, smooth tarplant, and little mousetail in Additional Indirect Impact Study Area 1 would be the same as Build Alternative 2a.

Special-Status Plant Species Not Included in the MSHCP

Two non-MSHCP special-status plants could be permanently impacted by Build Alternative 2b. Impacts to these species are described below.

Paniculate Tarplant

Build Alternative 2b is expected to result in the permanent loss of 14 paniculate tarplant populations (22,188 plants). Some of these populations also extend into the indirect impact area and Additional Indirect Impact Study Area 1. In all, 17 paniculate tarplant populations (5,856 plants) in these areas could be indirectly impacted.

As stated in Section 3.3.3.2, paniculate tarplant is a CNPS List 4 (watch list) species, so these populations are important in a regional context, but the permanent impacts expected from Build Alternative 2b would not be substantial, and mitigation would not be required.

Robinson's Peppergrass

Impacts to Robinson's peppergrass from Build Alternative 2b would be the same as Build Alternative 2a.

Temporary Impacts

As described previously, this impact analysis assumes that all special-status plants present in the PIA and unique design features would be directly and permanently impacted because of construction or operation of the proposed Project, and temporary impacts would not occur. Impacts to special-status plants within the 100-ft indirect impact area adjacent to the PIA and Additional Indirect Impact Study Areas 1 and 2 are included in the permanent impact analysis in the Permanent Impacts section.

3.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Avoidance Measures

The Build alternatives for the Project will incorporate the following avoidance measures for plants:

BIO-27 **Environmentally Sensitive Area Fencing.** This ESA fence measure, per Caltrans Standard Specifications, as described in Section 3.3.2.4, would also protect sensitive plant populations, including Coulter's goldfields (Narrow Endemic), smooth tarplant (Narrow Endemic), and little mousetail (Critical Area), in the Stowe Road Vernal Pool Complex located in Additional Indirect Impact Study Area 1.

BIO-34 **Avoidance of Sensitive Plant Populations.** An ESA fence will be installed as shown on the contractor's plans, and per Caltrans Standard Specifications, at the outer edge of the ROW of Roadway Segment J of the Preferred Alternative during construction, within Criteria Cell 3291, to avoid long-term conservation value (LTCV) little mousetail populations (approximately 10,000 plants) located in

the indirect impact area. A contractor-supplied biological monitor who has knowledge about and experience with local sensitive plant species will determine the location of the ESA fence in the field and identify it on construction drawings and plans and will supervise installation of the fence. The biological monitor will also inspect the ESA fencing regularly during construction and coordinate with the Resident Engineer if fence repairs should be required.

An ESA fence will be installed along the edge of the Roadway Segment L ROW, for either Build Alternative 1a or 2a, to avoid impacts to Coulter's goldfields populations 49 and 52 and smooth tarplant populations 483 and 511 (Figure 3.3-27 and Figure 3.3-31). The locations of these populations will be shown on construction plans and drawings. A contractor-supplied biological monitor who has knowledge about and experience with local sensitive plant species will demark the location of the ESA fence in the field and on construction drawings and plans and will supervise installation of the fence. The biological monitor will also inspect the ESA fencing regularly during construction and coordinate with the Resident Engineer if fence repairs should be required.

An ESA will be established for all Build alternatives, except Build Alternative 1br, at the edge of the Roadway Segment I ROW adjacent to the federally listed as endangered San Jacinto Valley crownscale populations. The location of these populations will be shown on construction plans and drawings. A contractor-supplied biological monitor who has knowledge about and experience with local sensitive plant species will demark the location of the ESA fence in the field and on construction drawings and plans and will supervise installation of the fence. The biological monitor will also inspect the ESA fencing regularly during construction and coordinate with the Resident Engineer if fence repairs should be required.

Minimization Measures

All Build alternatives and design options will incorporate the following measures to comply with all MSHCP guidelines related to minimizing impacts to plant species within or adjacent to the MSHCP Conservation Area.

BIO-1 **Landscaping Plans.** This measure, as described in Section 3.3.1.4, would also apply to sensitive plant species. Landscaping plans will include native seed for erosion control in areas near the MSHCP Conservation Area.

BIO-2 **Avoid the Use of Invasive and Non-Native Plants.** This measure, as described in Section 3.3.1.4, would also apply to sensitive plant species. The landscaping plans will avoid the use of invasive and non-native plants listed in MSHCP Table 6-2, Plants that Should be Avoided Adjacent to the MSHCP Conservation Area, where applicable.

BIO-35 **Avoid the Spread of Invasive Plant Species.** The Project will incorporate specifications in the landscape plans to avoid the spread of invasive plant species.

- **BIO-35a. Cleaning of Equipment.** All construction equipment shall be cleaned, with a broom or other appropriate method, of potential invasive plant seeds before entering sensitive habitat areas.

- **BIO-35b. Monitoring.** Periodic invasive plant species monitoring of the ROW and adjacent sensitive areas will be conducted during construction by contractor-supplied plant biologists who have knowledge about and experience with the local flora and invasive species of the region. Key monitoring objectives are to identify and eradicate any invasive weed infestations that establish or spread within the ROW during construction to prevent them from extending into adjacent sensitive areas. Monitoring will be conducted quarterly, at a minimum, and will focus on the portions of the ROW that are adjacent to Additional Indirect Impact Study Areas 1 and 2, in particular, the Stowe Road Vernal Pool Complex and in Cell 3291. Qualified biologists will demark the location of noxious weeds in the field, on construction and engineering drawings, and with GPS units.

- **BIO-35c. Eradication.** A variety of methods, including mechanical control or herbicides, will be used to eradicate invasive plant species identified during monitoring.

Mitigation Measures

BIO-32a-c **Modification of the Project Design to Construct a Gravity-Based Surface Water Diversion System.** This measure, as described in Section 3.3.2.4, if Build Alternative 2a or Build Alternative 2b is identified as the Preferred Alternative for the Project, requires the design of the Alternative to include measures to avoid and reduce impacts to the vernal pool complex adjacent to Stowe Road that would reduce impacts to the sensitive plant populations located in Additional Indirect Impact Study Area 1, including Coulter's goldfields (Narrow Endemic), smooth tarplant (Narrow Endemic), and little mousetail (Criteria Area).

BIO-36 **Mitigation for Robinson's Peppergrass Populations.** Applicable mitigation for impacts to populations of Robinson's peppergrass that are considered to have high value will be determined during pre-construction surveys by a qualified botanist familiar with plant species in the region. Potential mitigation could include one of the measures listed below or a combination of the two measures. The conservation value of the Robinson's peppergrass populations would be based on the location, population size, habitat quality, and other variables. For example, small populations in disturbed habitats would likely be considered to have low conservation value while large populations located in the West Hemet Hills would likely rank high.

- **BIO-36a**. Onsite conservation of existing Robinson's peppergrass populations.

- **BIO-36b.** Translocation of Robinson's peppergrass individuals or seed collection, salvage, and transfer to areas of suitable habitat, as identified by a contractor-supplied plant biologist who has knowledge about and experience with the local flora species of the region, within the Project ROW.

BIO-37 **Coulter's Goldfields and Smooth Tarplant Populations.** Mitigation for permanent direct or indirect impacts to Coulter's goldfields and smooth tarplant populations will be implemented if Build Alternative 1a, 1br, or 2a are selected. Both 1a and 2a include Roadway Segment L. Roadway Segment L would pass through MSHCP Criteria Area Cells 2774, 2775, and 2878 and San Jacinto Area Plan Subunit 4: Vernal Pool Areas – East. Build Alternative 1br includes Roadway Segments, G, I and J, which pass through Criteria Cells, 3584, 3683, and 3291.

- **BIO-37a.** A Determination of Biological Equivalent or Superior Preservation (DBESP) has been prepared to evaluate and address direct impacts to Criteria Area plant species. Applicable mitigation for the Preferred Alternative has been determined through coordination with the resource agencies. The DBESP includes the Conceptual Mitigation Plan as presented above in Section 3.3.2.4, which would preserve 1.2 acres of smooth tarplant habitat. Other potential mitigation measures listed below or a combination of the two measures could also be implemented.
- **BIO-37b.** Onsite conservation of existing smooth tarplant and Coulter's goldfields populations.
- **BIO-37c.** Translocation of smooth tarplant and Coulter's goldfields individuals to areas of suitable habitat outside the Project ROW.

BIO-38 **Culvert/Drainage System for Coulter's Goldfields and Smooth Tarplant Populations.** If Build Alternative 1a or 2a is identified as the Preferred Alternative, a culvert/drainage system would be designed to maintain the existing amount of surface water flow in the indirect impact area of Roadway Segment L. This would maintain hydrology for two populations of Narrow Endemic plant species, Coulter's goldfields and smooth tarplant, by capturing flows from the southern edge of the ROW of Roadway Segment L and conveying flow north to the alkali grassland/wetland habitat. The design of this culvert/drainage system would be completed during final design to provide flexibility in the flow discharges after construction is completed.

3.3.4 Animal Species

3.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals that are not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 3.3.5 below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the California Fish and Game Code
- Section 4150 and 4152 of the California Fish and Game Code

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) imposes criminal and civil penalties on anyone (including associations, partnerships, and corporations) in the United States or within its jurisdiction who, unless excepted, takes, possesses, sells, purchases, barters, offers to sell or purchase or barter, transports, exports, or imports at any time or in any manner a bald or golden eagle, alive or dead; or any part, nest, or egg of these eagles; or violates any permit or regulations issued under the BGEPA.

California Fully Protected Wildlife Species Provisions (CDFG Code Sections 3511, 4700, 5050, and 5515)

These provisions prohibit the taking of fully protected birds, mammals, amphibians, and fish. The CDFW might authorize a project, with conditions, after reviewing project impacts.

Birds of Prey Protection Provision (CDFG Code Section 3503.5)

This provision prohibits the taking of birds of prey, including any birds of the order Falconiformes or Strigiformes, and includes the nests or eggs of such birds.

3.3.4.2 Affected Environment

The Affected Environment section for Animal Species is based on the findings of the following focused survey reports, which were completed for the Project in December 2007, and the Natural Environment Study of April 2010 (RCTC 2010a) and the NES Technical Report Addendum Memorandum of August 2010 (RCTC 2010b).

- Final Sensitive Wildlife Survey Report
- Final Riparian Bird Survey Report
- Final Burrowing Owl Survey Report
- Final Vernal Pool Branchiopod Survey Report
- Final Sensitive Small Mammal Focused Survey Report

Study Areas

All survey work for the Project was conducted in accordance with right-of-entry agreements and court orders. Once access was assured and a survey was required on a property, a Project-specific landowner notification process was

completed to coordinate survey activities with property owners. Prior to fieldwork, a survey-specific letter was sent to appropriate landowners as notification. The letter included a brief description of the survey activity and proposed survey dates. Many parcels required special handling due to locked gates or loose animals, so appointments were scheduled with landowners to accommodate these requests.

Study areas were defined by the biological resources to be evaluated and included a direct and indirect impact area. The direct impact area for all biological resources is represented by the PIA, utility relocation areas, and connections to Hemet Channel outside the Project ROW. The indirect impact study area for each biological resource varies, which resulted in three study areas for wildlife, described in the following paragraphs.

Rare Plant Aquatic Resources Study Area

The first study area was used to evaluate aquatic animal species and is referred to as the Rare Plant Aquatic Resources Study Area (RPARSA). As previously described in Natural Communities, Wetlands and Other Waters, and Plant Species sections, the RPARSA included the PIA, utility relocation areas, connections to Hemet Channel outside the Project ROW, and a 100-ft indirect impact area adjacent to the PIA. Additional Indirect Impact Study Areas 1 and 2 were also included. Specifically, the RPARSA was used to evaluate vernal pool branchiopods and amphibians based on the actual width of the Project footprint, topography, and the proximity of biological resources to the direct impact area. The RPARSA included a buffer large enough to account for reasonably foreseeable indirect impacts to vernal pool branchiopods and amphibians. Vernal pool branchiopods, which are federally listed as endangered or threatened, are discussed in Section 3.3.5.

Terrestrial Wildlife and Golden Eagle Study Areas

A second study area, the Terrestrial Wildlife Study Area (TWSA), was used to evaluate terrestrial animal species, bats, and some nesting raptors. The TWSA included the PIA, utility relocation areas, connections to Hemet Channel outside the Project ROW, traffic detours, and a 500-ft indirect impact area adjacent to the PIA and the unique design features. The TWSA is shown in Figure 3.3-3.

As described in Section 3.3.1.2, Natural Communities [Volume 1]), the TWSA indirect impact area was initially defined according to the guidelines presented by the California Burrowing Owl Consortium (CBOC) for analyzing indirect impacts to burrowing owls because the TWSA contained burrowing owl survey areas identified in the MSHCP (CBOC 1993, CDFG 1995, County 2006a). The Department and the appropriate resource agencies determined that the 500-ft buffer zone contained in the TWSA would be sufficient to analyze impacts to all sensitive terrestrial animal species, including indirect impacts and wildlife movement.

In addition to general nesting raptor surveys that were conducted in the TWSA, a third study area, the Golden Eagle Study Area, was used to assess golden eagles. This study area was added based on background information about nesting golden eagles near the Project area. The nesting habits of golden eagles made it difficult to survey for this species using the same methods that were used for other nesting raptors. Because golden eagles require extremely large tracts of land, the Golden Eagle Study Area extended 1.0 mi from the PIA and unique design features. For the proposed Project, impacts could occur to an active golden eagle nest that is within 1.0 mi of construction activities (blasting and

other loud, intermittent noises) (Bloom 2006). Therefore, direct and indirect impacts were evaluated for nests within 1.0 mi of the construction areas. The Golden Eagle Study Area is shown in Figure 3.3-41.

Study Methods[13]

This section describes the species-specific methods and procedures used to conduct surveys for sensitive animal species.

Database Queries

Prior to initiating field surveys, a target list of special-status wildlife species likely to be present in the study area was compiled using the following sources:

- CNDDB (CDFG 2006b)
- Special animals list (CDFG 2006c, 2015b)
- MSHCP (RCIP 2003)
- USFWS, Carlsbad Field Office species list for Riverside County (USFWS 2012, 2015, and 2016)
- Focused surveys conducted in 2005 and 2006

The reference information used to compile the list was based on known occurrences, historical records, or the presence of suitable habitat for any of the life stages of a particular species. The 5-mile special-status species reference search for CNDDB records included the El Casco, Beaumont, Perris, Lakeview, San Jacinto, Romoland, Winchester, Hemet, Murrieta, and Bachelor, California, 7.5-minute United States Geological Survey (USGS) quadrangles.

The target list of special-status wildlife species that resulted from these queries is provided in Table 3.3-7. The table also includes special-status wildlife species that were either observed onsite or could be present based on habitat and previous sightings. A complete list of wildlife species observed during the surveys of the Project study area is included in the NES as Appendix H.

Amphibians

Arroyo toad (*Bufo californicus*), California red-legged frog (*Rana aurora draytonii*), mountain yellow-legged frog (*Rana muscosa*), and western spadefoot toad (*Scaphiopus hammondii*) are all MSHCP Covered Species. Although arroyo toad, California red-legged frog, and mountain yellow-legged frog require focused surveys per the MSHCP, none of the MSHCP survey areas for these species was in the Project study area. However, all four species are included in Section 6.1.2 of the MSHCP, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (RCIP 2003), so habitat assessments and amphibian surveys for these species were conducted in 2005 and 2006.

Daytime habitat assessments took place on April 5, 2005, and March 23, 2006. Based on the results of the habitat assessments and literature review, focused protocol surveys were not conducted for arroyo toad, California red-legged

[13] Although some of the survey protocols described in this section have been updated, focused surveys and field work for the Project were conducted in accordance with the latest guidance at that time. Likewise, some of the sources are outdated. However, the sources for the literature review, database queries, and data analyses remain the same for the Preferred Alternative in order to be consistent with analyses of the other Build Alternatives.

frog, or mountain yellow-legged frog. However, general nighttime surveys were conducted on April 5 and April 6, 2005, and March 27 through March 30, 2006, for other sensitive amphibians, such as the western spadefoot toad. To increase the potential for detection, surveys started shortly after dusk and ended about 10:00 p.m. Surveys were conducted in areas where amphibian larvae or adults were observed during vernal pool branchiopod surveys and where suitable riparian vegetation and aquatic habitat were known to be present. Biologists walked throughout all suitable habitat looking for amphibian larvae and/or adults. At strategic locations in each survey site, they paused to listen for amphibian vocalizations. Survey equipment included flashlights, a digital camera, and a Trimble GeoXT GPS unit. Photographs of suitable habitat and a more detailed discussion of the amphibian survey methodology are in the Final Sensitive Wildlife Survey Report.

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Table 3.3-7 Potential Special-Status Wildlife in the Project Study Area

Scientific Name/Common Name	CDFW Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Requirements	Comments	Habitat Present/Absent	Species Observed in Study Area
Fish						
Gila orcutti Arroyo chub	CSC	Covered	Slow moving, fluctuating streams with warm to cool water. Prefers a sandy or muddy bottom. Often found in intermittent streams. Species distribution in Riverside County is limited to the Santa Ana River, Santa Margarita River, Temecula Creek, and Temescal Wash (RCIP 2003).	The Project study area is outside the current distribution in Riverside County. Additionally, slow moving, permanent streams do not occur. Therefore, suitable habitat is not present within the study area.	A	No
Rhinichthys osculus ssp. *3* Santa Ana speckled dace	CSC	-	Permanent, flowing streams with cool water and gravel bottom. Prefers shallow cobble with runs and riffles. Species distribution in Riverside County includes: Santa Clara River, Cuyama River, south fork of the San Jacinto River and associated tributaries, Strawberry Creek, Cajon Creek, and the west fork of City Creek.	The San Jacinto River is in the northern portion of the Project study area. However, this portion of the river does not support permanent flow. Therefore, suitable habitat is not present in the study area.	A	No
Amphibians						
Spea hammondii Western spadefoot toad	CSC	Covered	Primarily in grassland and valley-foothill hardwood communities. Requires vernal pools and ephemeral ponds for breeding. Found in numerous scattered locations and is widely distributed throughout western Riverside County, east of the San Jacinto Mountains, and desert regions.	Suitable vernal pool breeding habitat is present, and there are known occurrences within the special-status species search area (CDFG 2006b). This species was observed outside the Project study area during amphibian surveys.	P	Yes
Taricha torosa torosa Coast Range newt	CSC	Covered	Breeds in low-elevation streams and ponds, primarily near the coast. Upland habitat includes rocky canyons with streams and well-developed pools. Occurs in coastal drainages of the westernmost portions of Riverside County (RCIP 2003).	No suitable habitat along ponds and streams located adjacent to grassland habitat. This species was not detected during amphibian surveys in the Project study area.	A	No
Reptiles						
Anniella pulchra pulchra Silvery legless lizard	CSC	-	Requires moist soil consisting of sandy or loose loam. Often burrows under logs, rocks, or leaf litter. Associated with chaparral, pine-oak woodland, sycamores, cottonwoods, oaks, dunes, and desert scrub.	Potentially suitable sandy soils and habitat located along ponds and drainages adjacent to riparian and scrub habitat.	P	No
Aspidoscelis hyperythra beldingi Belding's orange-throated whiptail	CSC	Covered	Sandy washes, rocky hillsides, chaparral, and sage scrub habitats that support adequate prey species. Located throughout western Riverside County up to 3,400 ft elevation (RCIP 2003).	Suitable scrub habitat in the Project study area. Known occurrences in the special-status species search area (CDFG 2006b), and this species was observed in the study area.	P	Yes
Aspidoscelis tigris stejnegeri Coastal western whiptail	–	Covered	Open, rocky areas associated with shrub or grassland habitats from sea level to 7,000 ft.	Suitable rocky, scrub, and grassland habitat in the Project study area. Known occurrences in the special-status species search area (CDFG 2006b), and this species was observed in the study area.	P	Yes
Charina trivirgata Rosy boa	–	-	Rocky habitat in scrub and chaparral. Scattered throughout western Riverside County with aggregations present east of Riverside and east of Lake Mathews. Additional locations include Chino area, Allessandro Heights, Santa Ana Mountains, San Jacinto Mountains, Sage area, Corn Springs, Hemet, and Lakeview Mountains and throughout the MSHCP Plan Area where suitable habitat exists (RCIP 2003).	Suitable rocky scrub habitat is present in the Project study area. CNDDB occurrences have been in the special-status species search area (CDFG 2006b).	P	Yes
Actinemys marmorata pallida Southwestern pond turtle	CSC	Covered	Permanent or nearly permanent water. Found along slow-moving streams with deep pools and microhabitats such as partially submerged vegetation, logs, rocks, and undercut banks for basking and shelter. In Riverside County, this species generally ranges from the Santa Ana River to Chino Creek, along the eastern slopes of the Santa Ana Mountains and Elsinore Mountains, and south to the Temecula River at I-15. Other important locations include Temecula Creek at the confluence with Murrieta Creek, Santa Rosa Plateau, San Jacinto River, and Santa Ana River (RCIP 2003).	Stock ponds and treatment wetlands represent the only suitable habitat in the Project study area.	P	No

Table 3.3-7 Potential Special-Status Wildlife in the Project Study Area

Scientific Name/Common Name	CDFW Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Requirements	Comments	Habitat Present/Absent	Species Observed in Study Area
Coleonyx variegatus abbotti San Diego banded gecko	–	Covered	Granite or rocky outcrops in coastal sage scrub and chaparral habitats. Distributed throughout suitable habitat in western Riverside County.	Suitable rocky outcrops are present in the Project study area. CNDDB occurrences are located in the special-status species search area (CDFG 2006b).	P	No
Crotalus ruber ruber Northern red-diamond rattlesnake	CSC	Covered	Chaparral, woodland, grassland, and desert communities. Often found in rocky areas with dense vegetation and is well distributed throughout western Riverside County.	Suitable rocky scrub and grassland habitat in the Project study area. Known occurrences in the special-status species search area (CDFG 2006b), and this species was observed in the study area.	P	Yes
Lampropeltis zonata pulchra San Diego mountain kingsnake	CSC	CO	Variety of moist habitats, including mixed coniferous habitat, riparian woodlands, coastal sage scrub, and chaparral. Often found in rock outcrops or rock fractures. Found in suitable habitat in the Santa Ana and Santa Rosa Mountains.	Project study area is outside the species' elevation range.	A	No
Phrynosoma coronatum blainvillii San Diego horned lizard	CSC	Covered	Shrub-dominated habitats with friable, rocky, or sandy soils that support adequate prey species. Seeks refuge in areas with low, dense shrubs and basks in open areas with limited overstory. Found throughout western Riverside County in suitable habitats up to 6,890 ft in elevation.	Suitable scrub and grassland habitat in the Project study area. Known occurrences in the special-status species search area (CDFG 2006b), and this species was observed in the study area.	P	Yes
Birds						
Accipiter cooperii Cooper's hawk (nesting)	WL	Covered	Wooded areas associated with riparian vegetation and oak woodlands, usually near a water source. Typically nests in dense stands of medium-sized to large trees. Can also be found in suburban settings. Located throughout western Riverside County, with key populations in Prado Basin, Santa Ana River, Lake Elsinore/Canyon Lake, Temecula Creek, Murrieta Creek, and the Santa Margarita River (RCIP 2003).	Although oak woodlands do not exist in the Project study area, suitable nesting habitat is present in riparian vegetation and other wooded areas. Individuals and nesting locations were documented in the study area during nesting raptor surveys.	P	Yes
Accipiter striatus Sharp-shinned hawk (nesting)	CSC	Covered	Nests in dense stands of high- and mid-elevation coniferous forests and woodlands. A fairly common migrant and wintering species in Southern California and much of the MSHCP Plan Area (RCIP 2003).	This species does not breed in the Project study area; however, suitable wintering habitat is present.	Nesting – A Wintering – P	No
Agelaius tricolor Tricolored blackbird (nesting colony)	CSC	Covered	A colonial nester that breeds near fresh water, preferably in wetlands with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs (Zeiner 1990). Forages in nearby grassland and cropland habitats that support insect populations.	Suitable emergent wetland habitat is present in the Project study area. A nesting colony has been documented in the northern portion of the special-status species search area.	P	No
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	CSC	Covered	Associated with coastal sage scrub and sparse, mixed chaparral. Frequents relatively steep, often rocky hillsides that have patches of grass and forbs. Found in the MSHCP Plan Area near Lake Mathews, Lake Elsinore/Canyon Lake area, Santa Rosa Plateau, Wildomar, Murrieta, Temecula, Lake Skinner, Sage, Lakeview Mountains, Diamond Valley Reservoir, Lake Perris, Badlands, and east of the city of Riverside (RCIP 2003).	Suitable scrub habitat is present in the Project study area. Known occurrences in the special-status species search area (CDFG 2006b). Although this species is known to nest in the study area, only sightings of individuals were documented. No nests were found.	P	Yes
Amphispiza belli belli Bell's sage sparrow	CSC	Covered	Fairly dense stands of sagebrush, chaparral, and other dry scrub habitats. Occurrences in western Riverside County include Lake Mathews, Gavilan Hills, Lake Elsinore/Canyon Lake, Santa Rosa Plateau, Wildomar, Murrieta, Temecula, Lake Skinner, Sage, Lakeview Mountains, Diamond Valley Reservoir, Lake Perris, Badlands, and east of the city of Riverside (RCIP 2003).	Riversidian sage scrub is present in the Project study area. Known occurrences in the special-status species search area (CDFG 2006b). Although this species is known to nest in the study area, only sightings of individuals were documented. No nests were found.	P	Yes
Aquila chrysaetos Golden eagle (nesting and wintering)	FP	Covered	Open terrain such as grasslands, deserts, oak savannahs, rolling foothills, and wide arid plateaus. Nests in rugged, mountainous country (Garrett 1981). Located throughout the central and foothill portions of western Riverside County, with key population areas in the Badlands, Lake Perris, Lake Mathews, Steele Peak, Menifee, Temecula, at the western escarpment of the San Jacinto Mountains, Prado Basin, Potrero Valley, Hemet, Banning, and Santa Rosa Plateau (RCIP 2003).	This species is not expected to breed in the Project study area. However, suitable foraging, shelter areas, and roost sites include open grasslands, fields, and rocky outcrops and are present in the study area. Known occurrences in the special-status species search area (CDFG 2006b). Foraging and wintering sightings were documented in the study area.	P	Yes

Table 3.3-7 Potential Special-Status Wildlife in the Project Study Area

Scientific Name/Common Name	CDFW Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Requirements	Comments	Habitat Present/Absent	Species Observed in Study Area
Ardea herodias Great blue heron (rookery)	–	Covered	A colonial nester found in aquatic environments such as brackish and freshwater marshes, swamps, lakes, and rivers.	Suitable open water habitat is present in the Project study area. No rookery sites were found in the study area; only sightings of individuals were documented during focused surveys.	P	Yes
Asio flammeus Short-eared owl (nesting)	CSC	N/A	A ground-nester found in open habitats such as wetlands, grasslands, wet meadows, and prairies. Considered an uncommon and local winter visitor in the MSHCP Plan Area and is likely overwinter with some regularity (Garrett 1981).	Potentially suitable habitat is present in the Project study area. However, this species was not observed during nesting raptor surveys.	P	No
Asio otus Long-eared owl (nesting)	CSC	N/A	Nests in dense, closed-canopy stands of oak or riparian woodlands or single trees adjacent to open habitats such as grassland, meadow, or open scrub.	Potentially suitable habitat is present in the Project study area. However, this species was not observed during nesting raptor surveys.	P	No
Athene cunicularia Burrowing owl	CSC	CA	Nests and forages in dry, open areas such as shortgrass prairies, pastures, hayfields, and fallow fields (Dechant et al. 1999). Urban habitats include road and railway right-of-ways, irrigation ditches, airports, university campuses, and vacant dirt lots (Haug et al. 1993). Low vegetation cover and mammal burrows are essential. Occurrences in western Riverside County include March Air Reserve Base, Perris Reservoir area, Skinner Reservoir area, upper Menifee Valley, San Jacinto Reservoir area, along Santa Gertrudis Creek, and in the cities of Corona, Riverside, and Banning, Lake Skinner-Domenigoni Valley Reserve, Lake Mathews Reserve, and the Sycamore Canyon-March Air Reserve Base Reserve (RCIP 2003).	Suitable nesting and foraging habitat located within grassland, scrub, agricultural, and urban areas throughout the Project study area. Known occurrences in the special-status species search area (CDFG 2006b). This species was observed in the study area during focused surveys.	P	Yes
Buteo regalis Ferruginous hawk (wintering)	CSC	Covered	Large tracts of dry, open terrain such as grasslands and foothills. Wintering habitat includes open fields, grasslands, and agricultural fields (Garrett 1981). Western Riverside County is an important wintering area for this species. Occurrences throughout the western portion of the county, with key population areas in the Lakeview-Perris area, Prado Basin, the Murrieta area, Domenigoni Valley, and Rawson Canyon (RCIP 2003).	This species does not breed in the Project study area, but suitable wintering habitat in the study area includes open fields, grasslands, and agricultural fields. Known occurrences in the special-status species search area (CDFG 2006b). Wintering individuals were documented in the study area.	Nesting – A Wintering – P	Yes
Campylorhynchus brunneicapillus couesi Coastal cactus wren	CSC	Covered	Nests in thickets of cholla and pricklypear associated with the coastal sage scrub community. Occurrences in western Riverside County include Corona to Alberhill, Lake Mathews, city of Riverside east to Box Springs Mountains, San Jacinto Mountains to the city of San Jacinto, Moreno Valley, Bernasconi Hills, and in the Lakeview Mountains north of Homeland. The Badlands, Anza, Temecula area, and Sage Valley appear to be the remaining strongholds (RCIP 2003).	Although suitable foraging habitat in Riversidian sage scrub is present, suitable stands of cactus for nesting do not exist in the Project study area. However, there are known occurrences in the special-status species search area (CDFG 2006b).	A	No
Charadrius montanus Mountain plover (wintering)	CSC	Covered	A winter resident found in short grasslands, agricultural areas, plowed fields, and alkali playa. Occurrences in western Riverside County include Perris, the Mystic Lake area, Nuevo, the Domenigoni Valley, and in the vicinity of Winchester (RCIP 2003).	Suitable wintering habitat is present.	P	No
Circus cyaneus Northern harrier (nesting)	CSC	Covered	Associated with saltwater marshes, fresh and saltwater wetlands, and grasslands. Also forages in agricultural fields and pastures. Widespread distribution throughout suitable habitat in the MSHCP Plan Area (RCIP 2003).	Suitable grassland and marsh habitat is present in the Project study area. Observed foraging in the study area. Although a nest site was not confirmed, breeding behavior was observed during nesting raptor surveys, species was assumed to be nesting adjacent to the study area.	P	Yes
Dendroica petechia brewsteri Yellow warbler (nesting)	CSC	Covered	Associated with open-canopy riparian habitats, and prefers willows, cottonwoods, aspens, and alders for nesting and foraging. Found scattered throughout much of western Riverside County in appropriate woodland habitats (RCIP 2003).	Suitable nesting habitat is present. Observed in the Project study area during riparian bird surveys. Although no nest sites were confirmed, pairs were observed regularly. Males were heard singing throughout suitable riparian habitat in the study area.	P	Yes

Table 3.3-7 Potential Special-Status Wildlife in the Project Study Area

Scientific Name/Common Name	CDFW Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Requirements	Comments	Habitat Present/Absent	Species Observed in Study Area
Elanus leucurus White-tailed kite (nesting)	FP	Covered	Nests mainly in scattered tall trees in open grasslands, oak woodlands, wetlands, savannah-like areas, orchards, and agricultural areas. Found scattered throughout western Riverside County as a year-round resident (RCIP 2003).	Suitable woodlands are present in the Project study area. Individual sightings and nesting locations were documented in the study area during nesting raptor surveys.	P	Yes
Eremophila alpestris actia California horned lark	CSC	Covered	Found in open habitats such as short-grass prairie, open coastal plains, fallow agricultural fields, and alkali flats. Occurs throughout much of western Riverside County in suitable habitat and is broadly scattered throughout the central portion of the MSHCP Area.	Suitable grassland and open habitat is present throughout the Project study area. Known occurrences in the special-status species search area (CDFG 2006b). Although this species is known to nest in the area, only individuals were sighted during surveys. No nests were found.	P	Yes
Falco columbarius Merlin (wintering)	CSC	Covered	Sparse and widespread distribution throughout suitable habitat in the MSHCP Plan Area. Is a transient in the spring and fall and may occasionally winter in the area.	Nesting habitat is not present in the Project study area, but suitable grassland and open wintering habitat is available throughout the study area.	P	No
Falco mexicanus Prairie falcon (nesting)	CSC	Covered	Nests in cliffs and bluffs in open habitats such as grasslands, savannahs, rangeland, agricultural fields, and desert scrub. Occurs in the Santa Ana Mountains during the winter and as a year-round resident throughout the rest of western Riverside County from the central portion to the eastern boundary (Zeiner 1990).	Nesting habitat is not present in the Project study area, wintering habitat is. Wintering individuals were sighted outside the study area.	Nesting – A Wintering – P	No
Icteria virens Yellow-breasted chat (nesting)	CSC	Covered	Inhabits riparian thickets of willow with a brushy understory near water. Nests in low, dense vegetation, often consisting of willow, blackberry, and wild grape. Found scattered throughout much of western Riverside County in appropriate woodland habitats, often in habitats occupied by yellow warblers (RCIP 2003).	Suitable riparian habitat is present in the Project study area, but this species was not observed during riparian bird surveys.	P	No
Lanius ludovicianus Loggerhead shrike (nesting)	CSC	Covered	Prefers open country for hunting, perches for scanning, and fairly dense shrubs and brush for nesting. Occurs throughout areas of suitable habitat as a year-long resident, breeding and wintering in western Riverside County (Zeiner 1990). Frequently found in the central portion of the MSHCP Plan Area, with a few recorded in the mountains (RCIP 2003).	Suitable grassland and open habitat is present throughout the Project study area. Known occurrences in the special-status species search area (CDFG 2006b). Regularly observed throughout the study area, and several nest locations were documented.	P	Yes
Nycticorax nycticorax Black-crowned night heron (rookery)	–	Covered	Various wetland areas, including marshes, ponds, and man-made areas such as canals and reservoirs. Nests in dense trees and wetlands. Although the only known rookery is in Prado Basin, individual sightings in western Riverside County include Santa Ana River, Temescal Wash, Cajalco Creek, Woodcrest, San Jacinto Wildlife Area, San Jacinto, Winchester, Lake Elsinore, Canyon Lake, Temecula Creek, and Lake Skinner (RCIP 2003).	Several areas with suitable nesting and foraging habitat in emergent vegetation are present in the Project study area. No rookery sites were found, only individuals were sighted.	P	Yes
Pandion haliaetus Osprey (nesting)	CSC	Covered	Restricted to large water bodies that support fish. Often use rivers, lakes, and reservoirs for foraging and rocky pinnacles, large trees, and snags for cover and nesting (Zeiner 1990; Call 1978). An uncommon winter visitor along the coast of California, including the western Riverside County area.	Suitable nesting habitat is not present in the Project study area. However, this species was observed adjacent to and could be expected to forage in the study area.	A	No

Table 3.3-7 Potential Special-Status Wildlife in the Project Study Area

Scientific Name/Common Name	CDFW Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Requirements	Comments	Habitat Present/Absent	Species Observed in Study Area
Phalacrocorax auritus Double-crested cormorant (rookery site)	CSC	Covered	Aquatic environments such as lakes, reservoirs, estuaries, and oceans for foraging. Nests on the mainland in tall trees, rock ledges, or rugged slopes near a water source (Zeiner 1990). Although the only known rookery is in Prado Basin, other occurrences in western Riverside County include Lake Mathews, Lake Perris, Lake Skinner, and Lake Elsinore (RCIP 2003).	Limited suitable aquatic environments are present in and immediately adjacent to the Project study area. Known occurrences in the special-status species search area (CDFG 2006b). Individuals were observed in the study area. No rookery sites were found.	P	Yes
Plegadis chihi White-faced ibis (rookery)	CSC	Covered	Rookery sites consist of freshwater marsh habitat. Requires dense tule thickets for nesting. Wintering habitats include marshy pasture lands, managed or natural freshwater marsh, pond edges, lake shores, and margins of brackish lagoons and estuaries (Shuford et al. 1996). Migrants or wintering birds can be found in appropriate habitat throughout most of the MSHCP Plan Area (RCIP 2003).	Wetland and open-water habitat is present in the Project study area. Observed primarily in the northern portion of the study area near agricultural areas with standing water. A rookery site was documented in the EMWD treatment wetlands.	P	Yes
Mammals						
Antrozous pallidus Pallid bat	CSC	N/A	Prefers to roost in rock and boulder outcrops, rocky cliff faces, and bridges.	Suitable rocky outcrop and bridges are present in the Project study area, but this species was not observed during bat surveys.	P	No
Chaetodipus californicus femoralis Dulzura pocket mouse	CSC	N/A	Variety of habitats, including coastal sage scrub, chaparral, and grasslands primarily in San Diego County. Microhabitat includes grassland-chaparral edges.	Suitable scrub habitat is limited and grassland habitat is present in the Project study area. Known to occur in the special-status species search area (CDFG 2006b). This species was not captured during small mammal trapping.	P	No
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	CSC	Covered	Sandy herbaceous areas in a variety of habitats, including coastal scrub, chaparral, grasslands, and sagebrush, primarily in western San Diego County. Often associated with rocks or coarse gravel.	Suitable open, sandy scrub and grassland habitat is present in the Project study area. Known to occur in the special-status search area (CDFG 2006b). This species was captured during small mammal trapping.	P	Yes
Corynorhinus townsendii Townsend's big-eared bat	CSC	N/A	Variety of roost habitats that include rock and boulder outcrops, trees, buildings, and bridges.	Suitable roost habitats are in the Project study area, but this species was not observed during bat surveys.	P	No
Dipodomys merriami collinus Aguanga kangaroo rat (Earthquake Merriam's kangaroo rat)	–	Covered	Associated with Riversidian sage scrub, chaparral, and non-native grassland. Known only in San Diego and Riverside counties. Requires sandy loam substrates for digging burrows.	Suitable habitat is not located in the Project study area. This species was not captured during small mammal trapping.	A	No
Euderma maculatum Spotted bat	CSC	N/A	Cliffs and rock, boulder outcrops.	Suitable roost habitats are in the Project study area, but this species was not observed during bat surveys.	P	No
Eumops perotis Western mastiff bat	CSC	N/A	Rock cliffs and buildings.	Suitable rock cliffs and buildings are present in the Project study area. This species was observed during bat surveys.	P	Yes
Lasiurus blossevillii Western red bat	CSC	N/A	External foliage rooster that prefers deciduous trees, especially Fremont cottonwood and western sycamore.	Suitable trees are present in the Project study area. This species was observed during bat surveys.	P	Yes
Lasiurus xanthinus Western yellow bat	CSC	N/A	External foliage rooster that prefers dead palm frond skirts in unmanicured Washington fan palms and other broad-leaved palms.	Suitable palm trees are present in the Project study area. This species was observed during bat surveys. Known to occur in the special-status search area (CDFG 2006b).	P	Yes
Lepus californicus bennettii San Diego black-tailed jackrabbit	CSC	Covered	Coastal sage scrub habitats in Southern California. Prefers intermediate canopy stages of shrub habitats and open shrub with herbaceous and tree layers.	Suitable grassland, scrub, and open habitat is in the Project study area. Known occurrences in the special-status species search area (CDFG 2006b). Was regularly observed throughout the study area. Successful reproduction was assumed from observations of individuals that varied in age from juveniles to fully mature.	P	Yes
Neotoma lepida intermedia San Diego desert woodrat	CSC	Covered	Coastal scrub habitat in Southern California from San Luis Obispo to San Diego County. Prefers moderate-to-dense canopy scrub and rock outcrops/cliffs and slopes.	Suitable scrub and rocky habitat is present in the Project study area. Known to occur in the special-status search area (CDFG 2006b). Observed in the study area and captured during small mammal trapping.	P	Yes

Table 3.3-7 Potential Special-Status Wildlife in the Project Study Area

Scientific Name/Common Name	CDFW Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Requirements	Comments	Habitat Present/Absent	Species Observed in Study Area
Nyctinomops femorosaccus Pocketed free-tailed bat	CSC	N/A	Rock and boulder outcrops and bridges.	Suitable rock cliffs (limited) and buildings are present in the Project study area, but this species was not observed during bat surveys.	P	No
Nyctinomops macrotis Big free-tailed bat	CSC	N/A	Rock and boulder outcrops and bridges.	Suitable rock cliffs (limited) and buildings are present in the Project study area, but this species was not observed during bat surveys.	P	No
Onychomys torridus ramona Southern grasshopper mouse	CSC	N/A	Desert areas with moderate shrub cover, especially in scrub habitats with friable soils for digging. Adequate prey base is critical and consists almost exclusively of arthropods.	Suitable open scrub habitat is present in the Project study area. Known to occur in the special-status search area (CDFG 2006b), but this species was not captured during small mammal trapping.	P	No
Perognathus longimembris brevinasus Los Angeles pocket mouse	CSC	CA	Alluvial systems or areas with wind-blown deposition that exhibit fine sandy soils. Found in a variety of habitats with relatively open substrate and limited vegetative cover, including alluvial fan sage scrub, sage scrub, grassland, and chaparral.	Suitable open, sandy habitat is present in the northern portion of the Project study area. Known to occur fairly regularly in the special-status species search area (Montgomery 1994, 2002, 2005a; LSA 2004; RCIP 2003; CDFG 2006b). Occupied habitat was found adjacent to and within San Jacinto River sandy wash. This species was captured during small mammal trapping.	P	Yes
Taxidea taxus American badger	CSC	Covered	Variety of arid habitats, including grasslands, savannahs, mountain meadows, and desert scrub. Requires a sufficient prey base, friable soils, and relatively open habitat in areas of low to moderate slope.	Suitable open grassland habitat is present in the Project study area, but scrub habitat is limited. Known to occur in the special-status search area (CDFG 2006b).	P	No

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

Note: The following USGS 7.5-minute quadrangles were queried, and they include the PIA and a 5-mi buffer adjacent to the PIA: Bachelor Mountain, Beaumont, El Casco, Hemet, Lakeview, Murrieta, Perris, Romoland, San Jacinto, and Winchester.

[a] Status Codes:

California Department of Fish and Wildlife

CSC – California Species of Concern

FP – Fully protected

WL- Watch List

N/A – not applicable

Other Designations:

[b] Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) Definitions (RCIP 2003).

Special Conditions of MSHCP Covered Species:

CA – Surveys may be required for these species within locations shown on survey maps as described in Section 6.3.2 of the MSHCP. This includes the list of additional survey needs and procedures species and the Criteria Area Species (see MSHCP pages 6-63 to 6-65) and the MSHCP Errata Letter, dated August 9, 2004.

CO – These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met. Species-specific conservation objectives for these species are presented in Section 9.0 of the MSHCP. Refer to Table 9-3 of the MSHCP for specific conservation objectives that must be met for these species prior to including them on the list of Covered Species Adequately Conserved.

Covered – Species addressed in the MSHCP and included in the 10(a)(1)(B) permit. Also includes species that will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met.

NE – Surveys may be required for these species within Narrow Endemic Plant Species survey areas as described in Section 6.1.3 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

PS – Planning Species – Subsets of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans per Volume I, Section 3, of the MSHCP (RCIP 2003) and the MSHCP Errata Letter, dated August 9, 2004.

RRVP – These species should be protected as they are associated with riparian/riverine areas and vernal pools as described in Section 6.1.2 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

Aguanga Kangaroo Rat and Los Angeles Pocket Mouse

Aguanga Kangaroo Rat

Although it is not expected in the Project study area or vicinity, surveys were conducted for Aguanga kangaroo rat (*Dipodomys merriami collinus*), also known as the Earthquake Merriam's kangaroo rat, concurrently with surveys for the San Bernardino kangaroo rat (*Dipodomys merriami parvus*) and Los Angeles pocket mouse (*Perognathus longimembris longimembris*), according to the survey protocols. Surveys were conducted in areas with suitable habitat, shown in Figure 3.3-42. Because the Aguanga kangaroo rat was not detected and is not expected in the study area, this species is not discussed further.

Los Angeles Pocket Mouse

The Los Angeles pocket mouse is a California Species of Special Concern (CSC) and an MSHCP Covered Species, for which focused surveys are required.

The small mammal surveys followed the requirements of the MSHCP survey protocols for Los Angeles pocket mouse and San Bernardino kangaroo rat, as well as the survey protocols developed by CDFW and USFWS. The surveys also satisfied CEQA and NEPA requirements. The following section discusses the methodology for the focused surveys for small mammals conducted for the Project. The San Bernardino Kangaroo Rat is discussed further in Section 3.3.5.

Habitat Assessment

Prior to field surveys, CNDDB, USFWS, museum, and professional and personal records were reviewed for previous documentation of Los Angeles pocket mouse and San Bernardino kangaroo rat captures in the Project area.

Habitat assessments for Los Angeles pocket mouse and San Bernardino kangaroo rat involved systematic surveys on foot. Suitable habitat includes Riversidian sage scrub, coastal sage scrub, Riversidian alluvial fan sage scrub, desert scrub, chaparral, grassland, and/or playas that support sandy or otherwise granular soils. These species are usually (but not always) found in or adjacent to sandy washes or areas of windblown sand. Surveys consisted of examining suitable habitat areas for burrows, scat, and tracks.

Because of the rarity of these two species and the potential for indirect and habitat fragmentation impacts because of the Project, surveys for Los Angeles pocket mouse and San Bernardino kangaroo rat were conducted well beyond the Project study area, up to 1 mi from the PIA. In addition, intensive evaluation and habitat assessment surveys were conducted in areas identified by the MSHCP as having high potential for Los Angeles pocket mouse and San Bernardino kangaroo rat. Once suitable habitat was identified, live-trapping took place to confirm the presence or absence of Los Angeles pocket mouse and San Bernardino kangaroo rat.

Live-Trapping

Live-trapping was conducted when the target species was most likely to be active aboveground. For Los Angeles pocket mouse, this is generally between April 15 and October 15. There is no defined trapping period for San Bernardino kangaroo rat. Traps were placed in areas that best typified suitable habitat. Live-trapping was conducted by qualified biologists (authorized under existing permits) for five consecutive nights or until target species were captured. Traps

were set at dusk and checked twice each night, once about midnight and again at sunrise. Traps were closed during the day. To ensure the well-being of captured animals, trapping was conducted in mild weather conditions (relatively dry and calm, with a minimum nighttime temperature of 50 degrees Fahrenheit [°F]). Target species were held only long enough to identify their species, sex, age-class, reproductive conditions, and weight. All captured animals (target and nontarget) were released unharmed at the trap site.

Traps were set between August 22, 2005, and September 30, 2005, and between April 6, 2006, and June 24, 2006, in areas that exhibited varying potential for Los Angeles pocket mouse (see the Final Sensitive Wildlife Focused Survey Report for mapped locations of all trap lines). Although traps were set throughout the proposed Project in potentially suitable habitats, most of the trap lines were in the northern portion, near the MSHCP focused survey area for Los Angeles pocket mouse.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is a CSC and an MSHCP Covered Species, for which focused surveys are required. The Project study area contains suitable habitat for burrowing owl and is in MSHCP-designated survey areas (shown in Figure 3.3-43). A habitat assessment and focused surveys were conducted during 2005 and 2006.

A baseline habitat assessment was conducted throughout the study area on January 24, 2005. Habitat suitability was determined by driving and walking throughout the study area. Initial habitat suitability determinations were continually refined throughout the course of the 2005 and 2006 focused surveys as the study area was walked, surveyed, and closely inspected for burrowing owl indicators. The three categories of habitat suitability included excellent, suitable, and excluded. They are described below.

Excellent Burrowing Owl Habitat

Excellent habitat included a wide range of habitat types, land uses, and disturbance levels, both natural and manmade. Types of excellent habitat included equestrian areas, pastures, grasslands, alkali playas, canal and railroad berms, dairies, poultry farms, and rock outcrops. Common factors in excellent habitat included abundant ground squirrel burrows in open areas with short vegetation and suitable perch sites. An abundant food source was assumed present.

Suitable Burrowing Owl Habitat

Because of the rural character of the region, most of the study area can be considered suitable habitat for burrowing owls. Suitable habitat included a wide range of habitat types, land uses, and disturbance levels, both natural and manmade. Types of suitable habitat included agricultural fields, equestrian areas, pastures, grasslands, dairies, poultry farms, and rural residential areas. Suitable habitat still included suitable perch sites, but had few or no ground squirrel burrows, taller vegetation with more dense cover, and more human disturbance. Areas with irrigated row crops were considered suitable habitat, but only the perimeter roads, berms, canals, or debris piles were surveyed.

Excluded Burrowing Owl Habitat

Excluded habitat included developed areas with 100-percent asphalt or concrete and landscaped vegetation. Types of excluded areas included residences, mobile home parks, shopping plazas, industrial areas, and areas being actively graded for future development. Steep hillsides were also excluded because burrowing owls require relatively flat areas.

Focused Surveys

Focused surveys were conducted according to guidelines set forth by the California Burrowing Owl Consortium, CDFW-approved Project-specific survey methodology, the MSHCP, and the County of Riverside's Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area (CBOC 1993, CDFG 1995[14], RCIP 2003, County 2006a). The large scale of the Project required a revised survey methodology, which was approved by CDFW in July 2005 (see Final Burrowing Owl Survey Report, Appendix B).

Since focused surveys were conducted, the CDFG Staff Report on Burrowing Owl Mitigation has been updated (CDFG 2012). However, in order to remain consistent with how field data was collected, all subsequent impact analysis reflect the 1995 CDFG guidance, as well as project-specific methodology approved by CDFW at the time field work was conducted. Moving forward, all pre-construction and take avoidance surveys, as well as relocation efforts will be conducted according to the 2012 CDFG Staff Report or the most recent guidance at that time.

Qualified biologists experienced with burrowing owl habitat and identification conducted focused nesting surveys during the peak of breeding season, between April 15 and July 15. Three more surveys were conducted after July 15, but were still within the nesting cycle (February 1 to August 31). These three surveys were primarily to determine the number of young at several late nesting territories, so they had to take place after July 15, when the young were aboveground.

As stated earlier, burrowing owl surveys were conducted in 2005 and 2006. During the 2005 surveys, suitable habitat and excluded areas were surveyed once, and excellent habitat was surveyed twice. The study area was expanded in 2006. In keeping with the methodology that had been approved by CDFW, during the 2006 surveys of the new areas, suitable habitat and excluded areas were surveyed once, and excellent quality habitat was surveyed twice. Any excellent habitat that was surveyed twice in 2005 was surveyed once in 2006. All active territories (at least one adult sighted) discovered in 2005 were revisited in 2006 to determine whether they were still active and to document alternate nest sites. Although one night survey took place in 2006 to locate foraging areas, no attempt was made to quantify territory size or foraging range. Night surveys were not conducted in 2005. Details about dates and personnel for the 2005 and 2006 focused surveys are in the Final Burrowing Owl Survey Report.

Burrowing owl presence was determined at all active territories by direct observation of at least one adult. A territory can be a single owl, a pair, or a family group. Nest burrows were observed in all cases. After detecting a territory, the biologists visited the area throughout the course of the breeding season until the breeding status and nest success were determined. Surveys were conducted during suitable weather conditions and, therefore, were not conducted within 5 days of measurable precipitation, during high winds (more than 20 mi per hour), or dense fog. Because burrowing owls tend to stay underground during the heat of the day, surveys were suspended when temperatures exceeded 90ºF, then resumed when temperatures were conducive to detecting juvenile and adult owls outside their burrows. Specific

[14] The March 7, 2012 Staff Report on Burrowing Owl Mitigation document replaces the Department of Fish and Game 1995 Staff Report On Burrowing Owl Mitigation. However, focused surveys for the Project were conducted in 2005 and 2006 prior to the update and were therefore conducted in accordance with the latest survey guidance at that time (CDFG 1995). Thus, survey data and subsequent data analysis reflect the 1995 guidance from CDFG and 1993 guidance from CBOC.

information about survey times and weather conditions is in the Final Burrowing Owl Survey Report. Survey equipment included binoculars, spotting scopes, digital cameras, and Trimble GeoXT GPS units.

During all surveys, biologists recorded the habitat type and land use for each parcel on standardized data sheets. The presence of ground squirrel burrows, perimeter roads or berms, and posts were also documented. Biologists counted and mapped all burrowing owl observations, occupied nest burrows, and burrows with owl sign. Burrowing owls were color banded to determine dispersal and movement. The breeding activity and status of burrowing owls were determined by the number of young and stage of development.

In order to facilitate an accurate count of owls between survey years and within the large survey area, burrowing owls were color banded. Resighting color banded owls also helped to determine dispersal and movement within the survey area (for example, the different nest burrows in 2005 and 2006 for RIV-BUO-005 and RIV-BUO-023 as shown in Figure 3.3-49, were mapped based on resights of color banded owls). More information regarding resights of color banded owls can be found in the Final Burrowing Owl Survey Report, Appendix B.

Pedestrian Surveys

Traditional pedestrian surveys were conducted throughout excellent and suitable habitat. As recommended by the CBOC (1993), CDFG (1995), and County of Riverside Environmental Programs Department (2006), transects were spaced at approximately 98.43-ft intervals, depending on terrain and vegetative cover. This enabled 100-percent visual coverage of the study area.

Perimeter Surveys

Perimeter surveys were conducted in portions of the study area that contained densely planted row crops, which were not considered suitable burrowing owl habitat and were essentially devoid of owls. However, many of these areas contain perimeter roads, berms, and canals that constitute excellent and/or suitable habitat. In these cases, the planted fields were not surveyed, but all perimeter roads, berms, and canals were surveyed at 100-percent visual coverage. In some cases, after areas with row crops were disked and harvested, perimeter surveys were followed by standard pedestrian surveys because disked fields provide excellent foraging habitat.

Nesting Raptors

Except for burrowing owls, there are no MSHCP survey areas or additional survey requirements for nesting raptors. However, general nesting raptor surveys were conducted in the Project study area to comply with the Birds of Prey Protection Provision (CDFG Code Section 3503.5), the California Fully Protected Wildlife Species Provisions (CDFG Code Sections 3511, 4700, 5050, and 5515), the Bald and Golden Eagle Protection Act (BGEPA), and the Migratory Bird Treaty Act (MBTA) in 2005 and 2006.

Surveys for nesting raptors took place in the Project study area in 2005 and 2006. In addition to nonlisted raptor species, general raptor surveys also focused on white-tailed kites (*Elanus leucurus*) because they are considered Fully Protected CSCs and, like all other raptor species, are protected by the California Birds of Prey Protection Provision and the MBTA. Additionally, the MSHCP 10(a)(1)(B) permit only covers habitat loss for this species. The permit does not authorize actual take or disturbance of the species, eggs, or active nests. Compliance with these regulations would

require that there be no impacts to active nests during the nesting season. Therefore, nesting raptor surveys were conducted to locate nests and assess potential impacts based on proximity to Project activity. Assessments included potential impacts to the nests, eggs, or young because active nest sites could be used by the same pair of raptors each year. Golden eagles and white-tailed kites are Fully Protected CSCs. White-tailed kite nest searches were concurrent with the general nesting raptor surveys because, unlike golden eagles, their nesting characteristics are similar to other raptors. A separate helicopter survey was necessary for golden eagles because they require such large areas of land. The golden eagle survey is discussed in a separate subsection.

Although most of the nesting raptor surveys were conducted during the breeding seasons (March through August), some nests were identified during the winter months. Nests were located by walking and driving throughout the study area. Where feasible, active nests were revisited to determine nest success. Survey equipment included binoculars, spotting scopes, digital cameras, and Trimble GeoXT GPS units. All raptor nests (natural and man-made) were mapped on aerial photographs or using a Trimble GeoXT GPS unit.

Bats

No federally listed bat species are in the Project study area, but several bats listed as CSCs could be present. Consequently, bat surveys were conducted to determine the presence of these CSCs.

Although some bat species were considered during the initial wildlife status review for the MSHCP in March 1999, they were removed from the list of species that were initially considered for conservation because of insufficient data. The amount of data available about bat species was not adequate for conservation planning (RCIP 2003). Therefore, no bats are designated as Covered Species in the MSHCP.

Habitat suitability assessments for bats were conducted on March 15 and 16 and October 10, 2007. Bat habitat was classified by type, location, and qualitative value (roosting and foraging potential). Roosting habitat in the study area included bridges, buildings, and other man-made structures, as well as trees, cliffs, rocks, and boulder outcrops. High-quality foraging areas included open space with natural vegetation that created habitat edges (or ecotones), open water areas with some emergent vegetation, and other riparian habitat.

Bridge Surveys

Bridges in the study area were assessed for suitable bat roosting habitat by searching for evidence of bats (such as guano and urine staining). Only one existing bridge was surveyed closely, the SR 79/Sanderson Avenue bridge across the San Jacinto River. This bridge is located outside the study area, but it has expansion joints that are suitable for several sensitive bat species. The bridge joints were inspected for the presence of urine staining or guano, and joint spaces were visually checked for bats.

Outflight Surveys

Bat outflights were observed at several palm trees that contained well-developed skirts of dead fronds. These palm trees were targeted in the survey because of the preference that western yellow bats, a CSC species, have for these trees as roost sites.

Palm tree outflights were observed with night-vision scopes as the bats exited the palms. The outflights were recorded acoustically for identification. Selected palms were watched for about 90 minutes, beginning about 30 minutes after sunset.

Acoustic Surveys

Acoustic surveys for the Project were conducted using Anabat II and Pettersen D240x bat detectors in areas with suitable habitat. The bat detectors were placed in the field at these locations and retrieved later the same evening for analysis. Acoustic recordings were later analyzed with Analook and Sonobat bat-call analysis software.

Golden Eagle

Focused golden eagle (*Aquila chrysaetos*) nest surveys were conducted because golden eagles are considered Fully Protected CSCs, are included in the California Birds of Prey Protection Provision, and are covered by the BGEPA and the MBTA. The MSHCP 10(a)(1)(B) permit only covers habitat loss for this species. The permit does not authorize actual take or disturbance of the species, eggs, or active nests. Also, because the anticipated construction schedule would require year-round access to the Project site, suspending work during the nesting season would not be feasible. Therefore, locating nests was necessary to determine what impacts, if any, the Project might have on this species. Because the golden eagle has such a large range, an expanded study area was required as well a different survey method than those used for other raptors. The aerial golden eagle survey was conducted within a 3-mile and 5-mile area. However, in order to assess impacts related to the proposed Project as discussed in this document, the Golden Eagle Study Area extended 1.0 mi from the PIA and unique design features. For the proposed Project, impacts could occur to an active golden eagle nest that is within 1.0 mi of construction activities (blasting and other loud, intermittent noises) (Bloom 2006). Therefore, direct and indirect impacts were evaluated for nests within 1.0 mi of the construction areas.

The golden eagle nest survey was conducted on August 9, 2006, via helicopter (MD 500, Western Helicopters). Canyons, cliff faces, and areas with large boulders and rugged topography were overflown to survey for nest sites. Equipment included binoculars, digital camera, Trimble GeoXT GPS unit, and detailed topographic and aerial maps. A more detailed discussion of the golden eagle nest surveys is in the Final Sensitive Wildlife Survey Report.

Animal Species in the Study Area

Los Angeles Pocket Mouse

The Los Angeles pocket mouse was observed during focused surveys in the northern portion of the study area. Five individuals were captured there in 2005 and 2006. Los Angeles pocket mice were also observed along the berms/levees of the San Jacinto River and in the Massacre Canyon wash (west of the existing SR 79 alignment, south of Gilman Springs Road, and north of the San Jacinto wash). About 6.7 ac of occupied habitat is present in the study area. In the study area, Los Angeles pocket mice were observed south of the San Jacinto wash and east of the existing SR 79 alignment (Figure 3.3-45).

Although the alluvial fan scrub habitat for Los Angeles pocket mouse in the San Jacinto River area is high in quantity and quality in relation to the known species range, repeated disturbances to this Los Angeles pocket mouse habitat in recent years have severely threatened this population. Relatively recent disturbances in the San Jacinto River area have

been caused by sand mining, clearing vegetation, flood-control activities, off-road vehicle use, and agricultural activities and have likely resulted in the loss and degradation of previously occupied habitat in the study area.

Amphibians

Sensitive amphibians were not detected in the study area. However, western spadefoot toads (larvae, metamorphs, and adults) were detected outside the study area, about 928 ft from the PIA. Because no sensitive amphibian species were detected inside the study area, they will not be discussed further.

Burrowing Owl

As described in Study Methods, existing burrowing owl habitat in the study area was classified into three categories—excellent, suitable, and excluded. Ten pairs and a single male were observed in the excellent and suitable habitat areas. Habitat suitability and survey results are summarized in Table 3.3-8. Habitat suitability is shown in Figure 3.3-48, and burrowing owl territories are shown in Figure 3.3-49. An active territory consisted of at least one adult burrowing owl and a nest burrow. The territories in Figure 3.3-49 are centered on the nest burrow. Some territories that were active during both survey years used the same nest burrow, so the same location is shown in the figure for 2005 and 2006 (locations appear to be on top of one another). Some territories that were active during both survey years used alternate nest burrows, so the figure shows different locations for 2005 and 2006 (two different locations for the same territory).

Table 3.3-8 2005 and 2006 Burrowing Owl Survey Results in the Study Area

Territory Number	Activity Status 2005	Activity Status 2006	Alternate Nest Site 2006	Habitat Suitability	Habitat Type
RIV-BUO-004	Active	Active	No	Excellent	Annual Grassland
RIV-BUO-005	Active	Active	Yes	Excellent	Annual Grassland (was Annual Grassland/Riversidian Sage Scrub in 2005)
RIV-BUO-006	Active	Active	Yes	Excellent	Annual Grassland
RIV-BUO-023	Active	Active	Yes	Excellent	Agriculture – Barley Field
RIV-BUO-024	Active	Inactive	No	Suitable	Ruderal
RIV-BUO-031	Active	Active	No	Excellent	Annual Grassland
RIV-BUO-041	N/A[a]	Yes	N/A	Excellent	Man-Made – Water Canal
RIV-BUO-042	N/A[a]	Yes	N/A	Excellent	Man-Made – Developed
RIV-BUO-052	N/A[a]	Yes	N/A	Excellent	Annual Grassland
RIV-BUO-053	N/A[a]	Yes	N/A	Excellent	Ruderal
RIV-BUO-056	N/A[a]	Yes	N/A	Excellent	Agriculture – Barley Field

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010
Note: RIV = Riverside County
BUO = Burrowing Owl
001 = Territory Number
[a] Territory not determined until 2006

Of the six active territories detected during 2005, four were successful and fledged at least 10 young. Of the 10 active territories detected in 2006, 9 were successful and fledged at least 30 young. A nest was considered successful if at least one young was observed. A failed nest was defined as an area where adult owls were observed or where there was evidence of a breeding attempt, but for unknown reasons the pair did not fledge young. Nest success summaries for territories detected in the study area during 2005 and 2006 are presented in Table 3.3-9.

Table 3.3-9 2005 and 2006 Burrowing Owl Nest Success

Territory Number	2005			2006		
	Activity Status	Nest Success	Minimum Number of Young	Activity Status	Nest Success	Minimum Number of Young
RIV-BUO-004	Active	Unknown	N/A	Active	Successful	1
RIV-BUO-005	Active	Unknown	N/A	Active	Successful	3
RIV-BUO-006	Active	Successful	2	Active	Successful	5
RIV-BUO-023	Active	Successful	3	Active	Successful	1
RIV-BUO-024	Active	Successful	4	Inactive	N/A	N/A
RIV-BUO-031	Active	Successful	1	Active	Successful	5
RIV-BUO-041	ND[a]	N/A	N/A	Yes	Successful	5
RIV-BUO-042	ND[a]	N/A	N/A	Yes	Successful	4
RIV-BUO-052	ND[a]	N/A	N/A	Yes	Successful	5
RIV-BUO-053	ND[a]	N/A	N/A	Yes	Failed	0
RIV-BUO-056	ND[a]	N/A	N/A	Yes	Successful	1
Total	10 young			30 young		

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010
Note: Territories were numbered consecutively as they were discovered.
BUO = burrowing owl
RIV = Riverside
001 = territory number
[a] Territory was not detected until 2006.

Nine of the 10 pairs and the single male were in excellent quality habitat, with either grassland or agricultural components, or were in man-made habitat (e.g., water canal and water treatment facility). Only one pair was found in suitable habitat, a ruderal field.

Golden Eagle

Habitat Assessment

Nesting habitat for the golden eagle in the study area is considered marginal due to rural development and a general lack of steep topography, large boulders, and cliff faces. The foraging habitat could also be considered marginal because it has been altered by rural development, but the rolling hills and open space could provide some foraging opportunities.

Focused Surveys

No golden eagles or active nests were observed in the study area during the focused surveys. However, golden eagle perches were found in Tres Cerritos Hills and the central portions of the study area.

Although no golden eagles were observed during the focused surveys, they were seen foraging and using perch sites in the hills surrounding Stowe Road during other biological survey work. Most of the golden eagles were overwintering individuals. The locations of all golden eagle sightings are shown in Figure 3.3-41.

Four golden eagle nests were found outside the study area during focused surveys. The Laborde Canyon site is located 3.4 mi from the TWSA, the Lamb Canyon site is located 3.0 mi from the TWSA, the Potrero Creek site is located 3.5 mi from the TWSA, and the Double Butte site is located 3.1 mi from the TWSA.

As previously stated, impacts could occur to an active golden eagle nest that is within 1.0 mi of construction activities (blasting and other loud, intermittent noises) (Bloom 2006). Therefore, direct and indirect impacts were evaluated for nests within 1.0 mi of the construction areas. All four nests are located outside the study area, between approximately 3.0 to 3.5 miles from the TWSA. Therefore, impacts from the Project are not expected and golden eagles are not discussed further.

Nesting and Foraging Raptors

As described in Study Methods, general raptor surveys were performed in 2005 and 2006. Six raptor species were observed in the study area. Of the six raptor species, four were nesting and two were either foraging or overwintering. The observation locations are shown in Figure 3.3-50. A summary of the raptors found in the study area is presented in Table 3.3-10.

Table 3.3-10 Raptors Observed during Surveys in the Study Area

Species Name	MSHCP Status	Federal Status	State Status	Comments
Cooper's hawk (*Accipiter cooperii*)	Covered Species	–	WL Nesting	Individual and nesting locations in the study area were documented.
Ferruginous hawk (*Buteo regalis*)	Covered Species	–	CSC Wintering	Only wintering observations were documented.
Northern harrier (*Circus cyaneus*)	Covered Species	–	CSC Nesting	Although the nest site was not confirmed, breeding behavior was observed, and northern harriers were assumed to be nesting adjacent to the study area. Additionally, foraging observations were documented.
White-tailed kite (*Elanus leucurus*)	Covered Species	–	CSC Nesting Fully Protected	Individual and nesting locations in the study area were documented.
Barn owl (*Tyto alba*)	Noncovered Species	–	–	Four barn owl nests were observed in a man-made nest (boxes and hay bales) in the study area.
Red-tailed hawk (*Buteo jamaicensis*)	Noncovered Species	–	–	A total of 11 pairs nested in eucalyptus, willow, pine, and tamarisk.

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010
Note: CSC = California Species of Concern, WL = Watch List

Five additional raptor species were observed outside the study area, American kestrel (*Falco sparverius*), prairie falcon (*Falco mexicanus*), osprey (*Pandion haliaetus*), red-shouldered hawk (*Buteo lineatus*), and Swainson's hawk (*Buteo swainsoni*). Although these raptor species were observed outside the study area, the study area contains potential foraging habitat that these species could use. Therefore, raptor foraging habitat was calculated, and potential impacts to foraging habitat were evaluated.

Of these additional species, American kestrel, northern harrier, and red-shouldered hawk nested outside the study area, but are located in the immediate vicinity and would be expected to forage in the study area. A few prairie falcons were observed during the spring, but these individuals did not nest because of the lack of suitable cliff and open, arid habitat within or immediately adjacent to the study area. A few ospreys were observed flying over, but these individuals did not nest in the study area because of the lack of suitable aquatic and open water habitat. A male Swainson's hawk was observed soaring and displaying on two different days. However, this male did not nest in the study area. Hemet is south of the current distribution for nesting Swainson's hawks, so this species would not be expected to nest in the study area. Swainson's hawks have not nested in Riverside County since before 1950 (BLM 1980, Bloom 2007).

Raptor foraging habitat in the study area is summarized in Table 3.3-7 and was calculated based on the following types of plant communities: Agricultural (which includes Dryland Farming, Irrigated Crops, Pasture, and Developed), Annual Grassland/Riversidian sage scrub, Alkali Grassland, Annual Grassland, Alkali Playa, Ruderal alkali flats, and Ruderal.

The diversity of raptor species observed in the study area can be attributed to the wide variety of high-quality nesting, foraging, and wintering habitat. Most of the raptor species that would be expected to breed onsite were observed nesting within or immediately adjacent to the study area. The combination of tall, mature tree groves and windrows and man-made structures such as hay bales and nest boxes located in a sparsely populated area provides excellent nesting habitat. The quality of nesting habitat is enhanced by abundant grasslands, intermittent scrub habitat, and open pastures for foraging. Wintering habitat includes large contiguous tracts of agricultural fields and pastures. The sparsely populated area and rural nature of the region is conducive to raptors that live almost exclusively in natural areas, as well as those that frequent the urban-rural interface. Raptors are often at the top of many food chains, so they are good indicators of overall ecosystem health. The numbers and varieties of raptors observed during the surveys show the biological richness of the study area.

Bats

Rock and Boulder Outcrop Roosting Bats

Many species of bats use crevices in boulders, cracks in cliff faces, spaces between rocks and natural holes, mud cracks and solution caves, and mines and rock caves as roosting habitat (USFWS 1999). Most of the rock outcrops in the study area are granitic and metamorphic boulder clusters and exposed bedrock in the hills north and west of Diamond Valley Lake, on the eastern slopes of the Lakeview Mountains northwest of Hemet and San Jacinto, and in the hills between Winchester and Hemet. Some of the boulders in these formations contain numerous fractures that provide suitable roost sites for bats.

Based on known species distribution and habitat preferences (roosting in rocks, boulders, and rocky cliff faces), bat species with CSC status that are present or have the potential to be present in the study area include fringed myotis (*Myotis thysanodes*), long-legged myotis (*M. volans*), spotted bat (*Euderma maculatum*), Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), big free-tailed bat (*N. macrotis*), and western mastiff bat (*Eumops perotis californicus*) (WBWG 2006).

Tree Roosting Bats

Various CSC-status bat species roost in trees, and some types of trees are favored over others. External foliage roosters, which are bats that roost among the leaves of trees, include western yellow bats (*Lasiurus xanthinus*) and western red bats (*L. blossevillii*). Western yellow bats prefer to roost in the dead palm-frond "skirts" that occur in unmanicured Washington fan palms and other broad-leafed palms. Western red bats prefer to roost among deciduous tree leaves, such as those of the Fremont cottonwood, western sycamore, and others. Some CSC-status bat species roost in trees that have internal cavities. These include the fringed myotis, long-legged myotis, Townsend's big-eared bat, and pallid bat (WBWG 2006).

Building Roosting Bats

Bats that roost in buildings include both roost-site generalists and specialists (e.g., cliff-roosting bats). Bats can roost in buildings that contain enclosed but not sealed attic spaces and/or crawl spaces, shutters, roof tiles, or other structures that can protect them during the day. They have been known to use these structures year round as maternity roosts. CSC bat

species that use suitable buildings for roosting and that could be present in the study area include fringed myotis, long-legged myotis, Townsend's big-eared bat, pallid bat, pocketed free-tailed bat, big free-tailed bat, and western mastiff bats (WBWG 2006).

Bridge Roosting Bats

Depending on their design, concrete bridges can simulate rock- and boulder-like roosting crevices in their expansion joints and small cave-like internal spaces in their superstructures. None of the bridges in the study area showed substantial evidence of bats, but the SR 79/Sanderson Avenue bridge across the San Jacinto River did. The bridge, which is about 200 ft north of the study area and contains expansion joints that are suitable for bats, and was occupied by nonstatus Mexican free-tailed bats (*Tadarida brasiliensis*) during bat surveys. CSC status bat species that could also use this bridge for roosting include fringed myotis, Townsend's big-eared bat, and pallid bats (WBWG 2006). However, because this bridge is outside the study area, it will not be discussed further.

The bat species that could be found in the study area are summarized in Table 3.3-11. Potential bat roost habitat in the study area is summarized in Table 3.3-12.

Table 3.3-11 Potential Bat Species in the Study Area

Family/Scientific Name	Common Name	Legal Status	WBWG Priority	Presence	Roost Preference
Vespertilionidae	***Mouse-eared bats***				
Myotis californicus	California myotis	None	Low	P	Multiple
Myotis ciliolabrum	small-footed myotis	FSC, BLM, MSHCP	Med	P	Cliffs, rocks, bridges
Myotis yumanensis	Yuma myotis	FSC, BLM	Low	LP	Multiple
Myotis evotis	long-eared myotis	FSC, BLM, MSHCP	Med	R	Multiple
Myotis thysanodes	fringed myotis	CSC*, FSC, BLM, MSHCP	High	R	Multiple
Myotis volans	long-legged myotis	CSC*, FSC, BLM, MSHCP	High	R	Multiple
Pipistrellus hesperus	western pipistrelle	None	Low	P	Rocks, mines
Eptesicus fuscus	big brown bat	None	Low	P	Multiple
Lasionycteris noctivagans	silver-haired bat	None	Med	R	Trees
Lasiurus blossevillii	western red bat	CSC, FSS	High	P	Trees
Lasiurus cinereus	hoary bat	None	Med	LP	Trees
Lasiurus xanthinus	western yellow bat	CSC, MSHCP	High	P	Palm trees
Euderma maculatum	spotted bat	CSC, FSC, BLM, MSHCP	High	R	Cliffs
Corynorhinus townsendii	Townsend's big-eared bat	CSC, FSC, FSS, BLM, MSHCP	High	LP	Multiple
Antrozous pallidus	pallid bat	CSC, FSS, BLM, MSHCP	High	LP	Multiple

Table 3.3-11 Potential Bat Species in the Study Area

Family/Scientific Name	Common Name	Legal Status	WBWG Priority	Presence	Roost Preference
Molossidae	***Free-tailed bats***				
Tadarida brasiliensis	Mexican free-tailed bat	None	Low	P	Multiple
Nyctinomops femorosaccus	pocketed free-tailed bat	CSC, MSHCP	Med	LP	Rock cliffs, buildings
Nyctinomops macrotis	big free-tailed bat	CSC, MSHCP	Med	R	Rock cliffs, buildings
Eumops perotis californicus	western mastiff bat	CSC, FSC, BLM, MSHCP	High	P	Rock cliffs, buildings

Source: WBWG 1998 and MSR 2006

Note:

Legal Status: Western Bat Working Group

CA Species of Special Concern (CSC) Prioritizes funding, planning, and Proposed CA Species of Special Concern (CSC*) conservation actions:

Federal Endangered (FE) Low Priority (Low)

Federal Species of Concern (FSC) Medium Priority (Med)

Forest Service Sensitive (FSS) High Priority (High)

Present (P)

Bureau of Land Management Sensitive (BLM)

Riverside County Multi-Species Habitat Conservation Plan (MSHCP) – All of the bat species noted in this category were initially considered, but not included as Covered Species to the MSHCP due to insufficient population data.

Presence/Reference

Currently Roosting and/or Foraging in Study Area (P), Likely to be Present in Study Area (Both roosting and/or foraging) (LP), Rare/Only Low Possibly of Presence in Study Area (R)

Table 3.3-12 Bat Roost Habitat and Potential Bat Roost Bridges in the Study Area by Roadway Segment and Unique Design Feature

Roadway Segment	Rock Outcrops and Boulders	Trees	Buildings	Proposed Bridges
A	X	X	X	Salt Creek
B	X	X	X	
C		X	X	Salt Creek, Hemet Channel, and San Jacinto Branch Line
D	X	X	X	Salt Creek, Hemet Channel, and San Jacinto Branch Line
E		X	X	San Jacinto Branch Line
F	X	X	X	Hemet Channel and San Jacinto Branch Line
G	X	X	X	
H	X	X	X	
I	X	X	X	San Diego Canal
J	X	X	X	San Diego Canal
K	X	X	X	San Diego Canal
L		X	X	Casa Loma Canal

Table 3.3-12 Bat Roost Habitat and Potential Bat Roost Bridges in the Study Area by Roadway Segment and Unique Design Feature

Roadway Segment	Rock Outcrops and Boulders	Trees	Buildings	Proposed Bridges
M		X	X	Casa Loma Canal
N		X	X	Unnamed Drainage Area
Unique Design Feature				
Utility Relocation Area 1		X		
Utility Relocation Area 2		X	X	
Connection 1 to Hemet Channel Outside the ROW				
Connection 2 to Hemet Channel Outside the ROW				
Connection 3 to Hemet Channel Outside the ROW		X		

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

Note: Although all of the roadway segments would include bridges over existing streets, they would also include bridges that would cross a seldom-used railway, a canal, or a wash that could offer the highest quality undisturbed roosting habitat for bridge-roosting bats. Existing roadway bridges are not listed as suitable habitat.

MSHCP Covered Animal Species that Did Not Require Surveys

Additional sensitive wildlife species observed within the study area during 2005 and 2006 are listed in Table 3.3-13. These are all MSHCP Covered Species Considered to be Adequately Conserved, so they do not require additional surveys or analyses. Because the MSHCP has already been certified through the CEQA review process in Volume 4 of the MSHCP, Final EIR/EIS, impacts to these Covered Species have been adequately addressed and mitigated. Specifically, Section 4.1.4, Impacts, Non-Listed Covered Species, of the Final EIR/EIS for the MSHCP discusses impacts to sensitive wildlife species covered in the MSHCP. Section 4.1.5 of the Final EIR/EIS for the MSHCP discusses mitigation measures, and Section 4.1.6 discusses level of significance after mitigation. The management and monitoring programs in the MSHCP would be implemented to mitigate to the extent feasible any significant effects that remain after applying the minimization measures incorporated in the MSHCP (RCIP 2003). The Final EIR/EIS for the MSHCP can be found online at *http://www.rctlma.org/mshcp/volume4/index.html*. Therefore, these species are not discussed further. Avoidance and minimization measures for sensitive wildlife are discussed in detail in Section 3.3.4.4.

Planning Species for the Harvest Valley/Winchester Area Plan (HVWAP), San Jacinto Valley Area Plan (SJVAP), proposed Noncontiguous Habitat Blocks 6 and 7 and Existing Constrained Linkage B (Salt Creek), that were observed in the study area include burrowing owl, Los Angeles pocket mouse, loggerhead shrike (*Lanius ludovicianus*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and white-faced ibis (*Plegadis chihi*).

Although burrowing owl and Los Angeles pocket mouse required focused surveys, the other three wildlife species are considered Covered Species that do not require additional surveys. Individual and nesting loggerhead shrikes were distributed throughout the study area. Although Southern California rufous-crowned sparrows are known to nest in the region, only individuals were observed in the southern portion of the study area. No nests were found. White-faced ibis were observed scattered throughout the study area in flooded fields and other areas with standing water.

Table 3.3-13 Additional Sensitive Wildlife Observations in the Study Area

Species Name	MSHCP Status	Federal Status	State Status	Comments
Reptiles				
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	Covered Species	–	CSC	Individual observations in the study area were documented.
Coastal western whiptail (*Aspidoscelis tigris stejnegeri*)	Covered Species	–	-	Individual observations in the study area were documented.
San Diego horned lizard (*Phrynosoma coronatum blainvillii*)	Covered Species	–	CSC	An individual observation in the study area was documented.
Birds				
Bell's sage sparrow (*Amphispiza belli belli*)	Covered Species	–	CSC	Although this species is known to breed in the vicinity of the study area, this species was not observed nesting; only individual observations were documented.
Black-crowned night heron (*Nycticorax nycticorax*)	Covered Species	–	-	No rookery sites were observed in the study area; only individual observations were documented.
California horned lark (*Eremophila alpestris actia*)	Covered Species	–	CSC	Although this species is known to breed in the vicinity of the study area, it was not observed nesting; only individual observations were documented.
Cooper's hawk (*Accipiter cooperii*)	Covered Species	–	WL Nesting	Individual and nesting locations in the study area were documented.
Ferruginous hawk (*Buteo regalis*)	Covered Species	–	CSC Wintering	Only wintering observations were documented.
Golden eagle (*Aquila chrysaetos*)	Covered Species	–	CSC Fully Protected	This species was not observed nesting in the study area; only individual observations (foraging and wintering occurrences) were documented.
Great blue heron (*Ardea herodias*)	Covered Species	–	-	No rookery sites were observed in the study area; only individual observations were documented.
Loggerhead shrike (*Lanius ludovicianus*)	Covered Species	–	CSC Nesting	Although this species was regularly observed throughout the study area, there were only a few locations where nesting was documented.

Table 3.3-13 Additional Sensitive Wildlife Observations in the Study Area

Species Name	MSHCP Status	Federal Status	State Status	Comments
Northern harrier (*Circus cyaneus*)	Covered Species	–	CSC Nesting	Although the nest site was not confirmed, breeding behavior was observed and northern harriers were assumed to be nesting adjacent to the study area. Additionally, foraging observations were documented.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	Covered Species	–	CSC	Although this species is known to breed in the vicinity of the study area, it was not observed nesting; only individual observations were documented.
White-faced ibis (*Plegadis chihi*)	Covered Species	–	CSC Rookery Site	This species was observed primarily in the northern portion of the study area near agricultural areas with standing water. A rookery site was documented in the EMWD treatment wetlands.
White-tailed kite (*Elanus leucurus*)	Covered Species	–	CSC Nesting Fully Protected	Individual and nesting locations in the study area were documented.
Mammals				
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	Covered Species	–	CSC	This species was regularly observed throughout the study area. Successful reproduction was assumed to have occurred based on observations of juveniles.

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010
[a] CSC = California Species of Special Concern, WL = Watch List

Animal Species in the Build Alternatives and Design Options

All Build Alternatives and Design Options

Because of the nature of the sensitive wildlife surveys, affected environment determinations can be the same for otherwise dissimilar Build alternatives and design options. These instances are discussed first for all of the Build alternatives and design options, then individually when the determinations differ.

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

The affected environment determination for Los Angeles pocket mouse is the same for all of the Build alternatives and design options. All of the study areas contain Criteria Area Cell 2364. Conservation in this Cell will contribute to the assembly of Proposed Core 3, where Los Angeles pocket mouse is a Planning Species.

The study area contains 6.7 ac of occupied Los Angeles pocket mouse habitat. Los Angeles pocket mice were observed at the northeastern end of the study area, south of the San Jacinto wash and east of the existing SR 79 alignment. Five individual Los Angeles pocket mice were captured in the study area from 2005 to 2006.

Build Alternative 1a

MSHCP Covered Species and/or Planning Species

Burrowing Owl

The study area for Build Alternative 1a contains Criteria Area Cells 3584, 3683, and 3684. Conservation in these Cells will contribute to the assembly of Proposed Noncontiguous Habitat Block 7, where burrowing owl is a Planning Species.

Five pairs of burrowing owls and a single male, RIV-BUO-005, RIV-BUO-006, RIV-BUO-023, RIV-BUO-024, RIV-BUO-052, and RIV-BUO-053 (single male), were observed in the study area for Build Alternative 1a. The study area for Build Alternative 1a contains 805.04 ac of excellent quality habitat, 1,791.54 ac of suitable quality habitat, and 555.19 ac of excluded habitat.

White-Tailed Kite

Three pairs of white-tailed kites were observed nesting in the study area for Build Alternative 1a. The study area for Build Alternative 1a contains 2,443.84 ac of raptor foraging habitat.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Thirteen pairs of nesting raptors not covered by the MSHCP were observed in the study area for Build Alternative 1a. These include four pairs of barn owls and nine pairs of red-tailed hawks. As stated above, the study area for Build Alternative 1a contains 2,443.84 ac of raptor foraging habitat.

Bats

The study area for Build Alternative 1a contains bat foraging habitat in Salt Creek Channel and other open areas, including undisturbed coastal sage scrub habitat, non-native annual grasslands, and agricultural fields. It also contains numerous boulder outcrops with suitable crevices for potential CSC bat species roost sites. Western mastiff bats were detected acoustically in the southern portion of the study area for this Build alternative during surveys conducted in 2006 for the Southwestern Riverside County Multi-Species Reserve (MSR 2006). Numerous mixed trees, and some isolated buildings, that could provide suitable roost habitat are present throughout the study area. The study area for Build Alternative 1a also includes the open-water tertiary treatment wetlands owned by EMWD off Sanderson Avenue. These wetlands contain numerous willows and cottonwoods that could provide additional tree-roosting habitat for CSC bat species.

Build Alternative 1b

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Like Build Alternative 1a, the study area for Build Alternative 1b contains Criteria Area Cells 3584, 3683, and 3684. Conservation in these Cells will contribute to the assembly of Proposed Noncontiguous Habitat Block 7, where burrowing owl is a Planning Species.

Seven pairs of burrowing owls, RIV-BUO-005, RIV-BUO-006, RIV-BUO-023, RIV-BUO-024, RIV-BUO-041, RIV-BUO-042, and RIV-BUO-052, were observed in the study area for Build Alternative 1b. The study area for Build Alternative 1b contains 752.30 ac of excellent quality habitat, 1,731.62 ac of suitable quality habitat, and 538.54 ac of excluded habitat.

White-Tailed Kite

Two pairs of white-tailed kites were observed nesting in the study area for Build Alternative 1b. The study area for Build Alternative 1b contains 2,343.05 ac of raptor foraging habitat.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Two pairs of barn owls and 10 pairs of red-tailed hawks, which are not covered by the MSHCP, were observed in the study area for Build Alternative 1b. These species use the same raptor foraging habitat as the white-tailed kite.

Bats

The bat roosting and foraging habitat in the study area for Build Alternative 1b is identical to that in Build Alternative 1a, except that Build Alternative 1b would not pass by the EMWD tertiary treatment wetlands in the northern portion of the Project. The study area for this Build alternative does contain several cottonwoods, black willows, pines, eucalyptus, pepper, tamarisk, and a few palms. Adjacent to Simpson Road, there are a few mature fan palm trees, one of which contained a red bat observed during outflight surveys. Additional roost sites may be present in other trees and isolated buildings within this study area, which could provide suitable roost habitat for tree and building roosting CSC-status bats.

Design Option 1b1

The affected environment for Design Option 1b1 would be the same as Build Alternative 1b for Los Angeles pocket mouse, burrowing owl, white-tailed kite, and bats. The amount of raptor foraging habitat would increase slightly, from 2,343.05 ac in the base condition to 2,343.10 ac in the design option.

Preferred Alternative (Build Alternative 1b with Refinements)

MSHCP Covered Species and/or Planning Species

Burrowing Owl

The study area for the Preferred Alternative contains Criteria Area Cells 2364, 3291, 3584, and 3683. Whereas conservation in Cell 2364 will contribute to the assembly of Proposed Core 3, where burrowing owl is not a planning species, conservation in Cells 3291, 3584, and 3683 will contribute to the assembly of Proposed Noncontiguous Habitat Block 7, where burrowing owl is a planning species.

Five pairs of burrowing owls, RIV-BUO-005, RIV-BUO-006, RIV-BUO-023, RIV-BUO-024, and RIV-BUO-052, were observed in the study area for the Preferred Alternative. The study area for the Preferred Alternative contains 765.9 ac of excellent quality habitat, 1673.0 ac of suitable quality habitat, and 470.3 ac of excluded habitat.

White-Tailed Kite

Two pairs of white-tailed kites were observed nesting in the study area for the Preferred Alternative and are the same nest locations as described in Build Alternative 1b. The study area for the Preferred Alternative contains 2,317.27 ac of raptor foraging habitat.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Two pairs of barn owls and 7 pairs of red-tailed hawks, which are not covered by the MSHCP, were observed in the study area for the Preferred Alternative. These species use the same raptor foraging habitat as the white-tailed kite.

Bats

The affected environment for bats in Build Alternative 1br is similar to that in Build Alternative 1b, except that Build Alternative 1br has fewer rock and boulder outcrops in the Hemet Hills area (between Stowe Road and Florida Avenue) and fewer mixed trees at Tres Cerritos Avenue and around Sanderson Avenue for bat roosting. In addition, the Build Alternative 1br contains less open-water foraging habitat for bats around Sanderson Avenue than Build Alternative 1b.

Build Alternative 2a

MSHCP Covered Species and/or Planning Species

Burrowing Owl

The study area for Build Alternative 2a contains Criteria Area Cells 3584, 3683, 3684, and 3791. Conservation in these Cells will contribute to the assembly of Proposed Noncontiguous Habitat Block 7, where burrowing owl is a planning species.

Seven pairs of burrowing owls and a single male, RIV-BUO-004, RIV-BUO-005, RIV-BUO-023, RIV-BUO-031, RIV-BUO-041, RIV-BUO-052, RIV-BUO-053 (single male), and RIV-BUO-056, were observed in the study area for Build

Alternative 2a. The study area for this Build alternative contains 824.32 ac of excellent quality habitat, 1,727.39 ac of suitable quality habitat, and 574.42 ac of excluded habitat.

White-Tailed Kite and Cooper's Hawk

Five pairs of white-tailed kites and one pair of Cooper's hawks were observed nesting in the study area for Build Alternative 2a. These species would be expected to use the raptor foraging habitat that is quantified in the next section.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Thirteen pairs of nesting raptors not covered by the MSHCP, 4 pairs of barn owls and 9 pairs of red-tailed hawks, were observed in the study area for Build Alternative 2a. The study area for Build Alternative 2a contains 2,423.76 ac of raptor foraging habitat.

Bats

The affected environment for bats in Build Alternative 2a is much the same as Build Alternative 1a, except that part of the study area for Build Alternative 2a, adjacent to Simpson Road, contains a few mature fan palm trees. A red bat was observed in one them during outflight surveys.

Build Alternative 2b

MSHCP Covered Species and/or Planning Species

Burrowing Owl

The study area for Build Alternative 2b contains the same Criteria Area Cells (3584, 3683, 3684, and 3791) as Build Alternative 2a.

Eight pairs of burrowing owls, RIV-BUO-004, RIV-BUO-005, RIV-BUO-023, RIV-BUO-031, RIV-BUO-041, RIV-BUO-042, RIV-BUO-052, and RIV-BUO-056, were observed in the study area for Build Alternative 2b. The study area for Build Alternative 2b contains 771.79 ac of excellent quality habitat, 1,608.13 ac of suitable quality habitat, and 577.01 ac of excluded habitat.

White-Tailed Kite and Cooper's Hawk

Two pairs of white-tailed kites and one pair of Cooper's hawks were observed nesting in the study area for Build Alternative 2b. These species would be expected to use the raptor foraging habitat that is quantified in the next section.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Twelve pairs of nesting raptors not covered by the MSHCP, 2 pairs of barn owls and 10 pairs of red-tailed hawks, were observed in the study area for Build Alternative 2b. The study area for Build Alternative 2b contains 2,264.36 ac of raptor foraging habitat.

Bats

The affected environment in the study area for Build Alternative 2b is the same as Build Alternative 2a.

Design Option 2b1

The affected environment in the study area for Design Option 2b1 is the same as Build Alternative 2b for Los Angeles pocket mouse, burrowing owl, white-tailed kite, and bats.

Nesting and Foraging Raptors

The affected environment for nesting and foraging raptors in the study area for Design Option 2b1 is the same Build Alternative 2b, except that the raptor foraging habitat would increase slightly, from 2,264.36 ac for the Build alternative to 2,264.41 ac for the design option.

3.3.4.3 Environmental Consequences

This section describes the potential permanent (direct and indirect) and temporary impacts to animal species from each of the Project alternatives and design options. A detailed discussion of impacts for each roadway segment is presented in the NES.

MSHCP Covered Species are addressed first, followed by special-status animal species not covered by the MSHCP. Potential permanent impacts to bats are also presented. Animal species that could be permanently and temporarily impacted by the proposed Project are shown in Table 3.3-3.

Permanent Impacts

For this analysis, permanent direct impacts to animal species can include direct take of habitat or individuals in the PIA or the direct impact areas of the unique design features. Indirect impacts can include increased noise from roadway operation, degraded habitat due to fragmentation and the resulting reduction in numbers of prey and foraging area, and more potential for being struck by vehicles due to increased traffic. Habitat fragmentation results not only in isolated populations, but encourages invasive animal species that degrade habitat quality and availability. Permanent indirect impacts from the Project are expected to the Los Angeles pocket mouse, burrowing owls, nesting raptors, and bats.

Los Angeles Pocket Mouse

Permanent direct impacts associated with the Project would include the loss of grassland, sage scrub, and alluvial fan scrub habitats. Roadway operation could also impede the movement of small mammals across the San Jacinto River Valley floor. This would be a permanent indirect impact.

Burrowing Owls and Nesting Raptors

Permanent direct impacts to burrowing owl and nesting raptor habitat were based on the amount of suitable habitat within the PIA of the roadway segment where an owl or nesting raptor would be directly impacted. Permanent indirect impacts to burrowing owls and nesting raptors, including operational roadway noise, were assessed based on the TWSA which consists of a 500-ft buffer zone described in Section 3.3.4.2, Study Methods. In addition to the reasoning

described in that section, 500 ft is a standard buffer often used by CDFW for assessing indirect impacts to nesting raptors.

Operational roadway noise can affect burrowing owls and raptors because birds communicate through vocalizations and auditory cues, and increased traffic noise can interfere with this communication. Background traffic noise can interfere with contact between mated birds, warning and distress calls that signify predators and other threats, feeding behavior, and protection of the young. High noise levels can make an area that is otherwise appropriate for nesting unsuitable. Currently, a standard noise threshold does not exist for birds; however, based on a study by Rieger (AASHTO 2008) and guidance from the USFWS and CDFW, 60 A-weighted decibels (dBA) is often used when assessing noise impacts. Although there may be different interspecific sensitivities to noise, this threshold was applied to all raptor species to maintain consistency throughout the noise analysis.

For this analysis, operational roadway noise levels were based on monitoring data from the Project noise study (see Section 3.2.7 [Volume 1]) and on the variables described below. Future roadway noise was calculated using the Federal Highway Administration's Traffic Noise Model (FHWA TNM) (FHWA 2004) based on the distance from the owl or raptor to the roadway centerline. Test calculations based on the closest lane of traffic versus roadway centerline did not indicate a change that would result in an audible difference. The test calculations resulted in either the same noise level or resulted in a difference between 1 to 2 dBA; 3dBA is generally when differences in noise levels are audible. Therefore, roadway centerline was used throughout the operational noise analysis. For more information on the FHWA TNM, please refer to the Noise and Vibration Section 3.2.7 of the Partially Recirculated Draft EIR/SDEIS. Operational roadway noise levels for burrowing owls and nesting raptors located in the indirect impact area (500-ft) buffer are listed in Tables 3.3-14 and 3.3-15, respectively. Existing ambient noise levels were taken from receiver locations throughout the Study Area and are listed below in order to provide information on ambient noise levels in the general vicinity of each owl and raptor in the indirect impact area. Existing noise levels are stated in dBA 1-hour equivalent noise level ($L_{eq(h)}$).

Table 3.3-14 Operational Roadway Noise Levels for Burrowing Owls

Build Alternative	Burrowing Owl	Burrowing Owl Distance from Centerline	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Future Operational Noise Level (dBA)
1a	RIV-BUO-053	1,015 ft	1A-A3	45-53	60	65
	RIV-BUO-023 (2005 nest)	993 ft	1A-E2	40-47	60	63
	RIV-BUO-024	685 ft	1A-E2	40-47	60	66
	RIV-BUO-005	733 ft	1A-G2	42-48	60	64
	RIV-BUO-006	607 ft	1A-G2	42-48	60	61
	RIV-BUO-052	298 ft	1A-G2	42-48	60	66
1b (including Design Option 1b1)[b]	RIV-BUO-023 (2005 nest)	874 ft	1A-E2	40-47	60	64
	RIV-BUO-024	685 ft	1A-E2	40-47	60	66

Table 3.3-14 Operational Roadway Noise Levels for Burrowing Owls

Build Alternative	Burrowing Owl	Burrowing Owl Distance from Centerline	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Future Operational Noise Level (dBA)
	RIV-BUO-005	733 ft	1A-G2	42-48	60	64
	RIV-BUO-006	607 ft	1A-G2	42-48	60	61
	RIV-BUO-052	298 ft	1A-G2	42-48	60	66
	RIV-BUO-042	1,404 ft	1A-L14	53-51	60	63
Preferred Alternative (Build Alternative 1b with Refinements)	RIV-BUO-005	738 ft	1B-G2	50-76	60	63
	RIV-BUO-006	663 ft	1B-G2	50-76	60	64
	RIV-BUO-024	666 ft	1A-E2	40-47	60	63
	RIV-BUO-052	299 ft	1B-G2	50-76	60	66
2a	RIV-BUO-053	1,015 ft	1A-A3	45-53	60	65
	RIV-BUO-023	436 ft	1A-E2	40-47	60	69
	RIV-BUO-004	620 ft	1A-G2	42-48	60	65
	RIV-BUO-005	454 ft	1A-G2	42-48	60	67
	RIV-BUO-052	558 ft	1A-G2	42-48	60	62
2b (including Design Option 2b1)[b]	RIV-BUO-023	436 ft	1A-E2	40-47	60	69
	RIV-BUO-004	620 ft	1A-G2	42-48	60	65
	RIV-BUO-005	454 ft	1A-G2	42-48	60	67
	RIV-BUO-052	558 ft	1A-G2	42-48	60	62
	RIV-BUO-042	1,404 ft	1A-L14	53-51	60	63

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

[a] Represents the range of existing ambient noise measured at receiver locations associated with the noise barrier in the adjacent column. Existing noise levels are stated in dBA 1-hour equivalent noise level ($L_{eq(h)}$). Additional detail can be found in the existing and predicted future noise level tables in the Noise and Vibration section.

[b] Information for Design Options 1b1 and 2b1 is the same as Build Alternatives 1b and 2b. Because there is no variation between the base condition and the design options, the information is given only once.

Table 3.3-15 Operational Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from Centerline	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Future Operational Noise Level (dBA)
1a	Barn owl 1	772 ft	1A-I1	45-39	60	66
	Barn owl 2	353 ft	1A-L4	43-38	60	78
	Red-tailed hawk 1	1,103 ft	1A-A2	45-58	60	62
	Red-tailed hawk 2	1,140 ft	1A-A2	45-58	60	62
	Red-tailed hawk 3	439 ft	1A-G11	39-40	60	67

Table 3.3-15 Operational Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from Centerline	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Future Operational Noise Level (dBA)
	Red-tailed hawk 4	1,015 ft	1A-I6	56-54	60	65
	Red-tailed hawk 5	1,044 ft	1A-L14	53-51	60	66
	White-tailed kite 1	406 ft	1A-E31	44-47	60	60
	White-tailed kite 2	191 ft	1A-G11	39-40	60	73
1b (including Design Option 1b1)[b]	Barn owl 1	772 ft	1A-I1	45-39	60	66
	Red-tailed hawk 1	1,313 ft	1A-A2	45-58	60	61
	Red-tailed hawk 2	1,348 ft	1A-A2	45-58	60	61
	Red-tailed hawk 3	439 ft	1A-G11	39-40	60	67
	Red-tailed hawk 4	1,015 ft	1A-I6	56-54	60	65
	Red-tailed hawk 5	400 ft	1A-L16	46-41	60	71
	Red-tailed hawk 6	1,135 ft	1A-L14	53-51	60	66
	White-tailed kite 1	191 ft	1A-G11	39-40	60	73
	White-tailed kite 2	827 ft	1B-G2	50-76	60	60
Preferred Alternative (Build Alternative 1b with Refinements)	Barn owl 1	771 ft	1B-I2	53-62	60	66
	Red-tailed hawk 1	440 ft	1B-G2	50-76	60	67
	Red-tailed hawk 2	289 ft	1B-M5	52-66	60	67
	Red-tailed hawk 3	1,135 ft	1B-N2	46-50	60	66
	White-tailed kite 1	827 ft	1B-G2	50-76	60	60
	White-tailed kite 2	190 ft	1B-I2	53-62	60	73
2a	Barn owl 1	772 ft	1A-I1	45-39	60	66
	Barn owl 2	353 ft	1A-L4	43-38	60	78
	Cooper's hawk 1	651 ft	1A-G2	42-48	60	62
	Red-tailed hawk 1	1,103 ft	1A-A2	45-58	60	62
	Red-tailed hawk 2	1,140 ft	1A-A2	45-58	60	62
	Red-tailed hawk 3	439 ft	1A-G11	39-40	60	67
	Red-tailed hawk 4	1,015 ft	1A-I6	56-54	60	65
	Red-tailed hawk 5	1,044 ft	1A-L14	53-51	60	66
	White-tailed kite 1	380 ft	1A-E26	45-50	60	61
	White-tailed kite 2	191 ft	1A-G11	39-40	60	73
	White-tailed kite 3	765 ft	1A-G4	45-51	60	61
	White-tailed kite 4	522 ft	1A-E1	50-69	60	53

Table 3.3-15 Operational Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from Centerline	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Future Operational Noise Level (dBA)
2b (including Design Option 2b1)[b]	Barn owl 1	772 ft	1A-I1	45-39	60	66
	Cooper's hawk 1	651 ft	1A-G2	42-48	60	62
	Red-tailed hawk 1	1,313 ft	1A-A2	45-58	60	61
	Red-tailed hawk 2	1,348 ft	1A-A2	45-58	60	61
	Red-tailed hawk 3	439 ft	1A-G11	39-40	60	67
	Red-tailed hawk 4	1,015 ft	1A-I6	56-54	60	65
	Red-tailed hawk 5	400 ft	1A-L16	46-41	60	71
	Red-tailed hawk 6	1,135 ft	1A-L14	53-51	60	66
	White-tailed kite 1	191 ft	1A-G11	39-40	60	73
	White-tailed kite 2	765 ft	1A-G4	45-51	60	61

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

Note: NI – No Impact. Species was not observed and impacts are not anticipated.

N/A – Not Applicable. Unique design features are not associated with roadway segments and operational roadway noise.

[a] Represents the range of existing ambient noise measured at receiver locations associated with the noise barrier in the adjacent column. Existing noise levels are stated in dBA 1-hour equivalent noise level ($L_{eq(h)}$). Additional detail can be found in the existing and predicted future noise level tables in the Noise and Vibration section.

[b] Information for Design Options 1b1 and 2b1 is the same as Build Alternatives 1b and 2b. Because there is no variation between the base condition and the design options, the information is given only once.

Permanent Impacts to Animal Species from the Project Alternatives and Design Options

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Build Alternative 1a could permanently impact 4.8 ac of habitat occupied by the Los Angeles pocket mouse just east of the existing SR 79 alignment, north of Ramona Expressway and south of the San Jacinto River. This Los Angeles pocket mouse population is part of the regionally important core population within and near the San Jacinto River and Massacre Canyon wash. Permanent impacts would include direct impacts to 2.6 ac and indirect impacts to 2.2 ac of occupied habitat.

Build Alternative could also have permanent direct and indirect impacts to the Los Angeles pocket mouse itself. Direct impacts would include the loss of grassland, sage scrub, and alluvial fan scrub habitats. Indirect impacts to the

population of Los Angeles pocket mouse in the indirect impact area north of Build Alternative 1a could include degraded habitat due to increased vehicle noise, vibration, lights from vehicles, dispersing Los Angeles pocket mice being struck by vehicles, and long-term effects of habitat fragmentation. Habitat fragmentation could decrease gene flow in the species and could increase the number of subpopulations through isolation. Populations that were once continuous could become divided into separate fragments, forming small islands isolated from one another. Subsequently, local extirpations and genetic inbreeding could result.

Additionally, Build Alternative 1a would have permanent direct and indirect impacts to the southern portion of Criteria Area Cell 2364, where occupied habitat and Los Angeles pocket mice were observed. However, Build Alternative 1a would not preclude the goals of this Criteria Area Cell.

Burrowing Owl

Six pairs of burrowing owls and a single male could be permanently impacted by Build Alternative 1a. Of these, one pair would be directly impacted (RIV-BUO-023, 2006 nest). A total of 9.95 ac of excellent quality habitat and 122.02 ac of suitable quality habitat could be directly impacted.

The remaining five pairs of burrowing owls and single male could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Their locations include RIV-BUO-005, 733 ft from the roadway centerline, RIV-BUO-006, 607 ft from centerline, RIV-BUO-023 (2005 nest), 993 ft from centerline, RIV-BUO-024, 685 ft from centerline, RIV-BUO-052, 298 ft from centerline, and RIV-BUO-053 (single male), 1,015 ft from centerline.

Additionally, Build Alternative 1a would directly impact the western portion of Criteria Area Cell 3683, so could indirectly impact RIV-BUO-005, which was observed in excellent quality habitat in the southwestern corner. However, Build Alternative 1a would not preclude the goals of this Criteria Area Cell.

Nesting and Foraging Raptors

No MSHCP covered nesting raptors would be directly impacted by Build Alternative 1a. However, two pairs of white-tailed kites were found 191 ft and 406 ft from centerline and could be indirectly impacted. The pair at 191 ft is expected to be impacted by operational roadway noise. The pair at 406 ft is expected to be impacted by habitat fragmentation and increased potential for collisions with vehicles. Therefore, this Build alternative may result in permanent, indirect impacts to two pairs of white-tailed kites.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Twelve pairs of nesting raptors could be permanently impacted by Build Alternative 1a. Of these 12 pairs, one pair of barn owls and four pairs of red-tailed hawks, would be directly impacted. A total of 351.70 ac of raptor foraging habitat would be directly impacted.

The remaining seven pairs of nesting raptors could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased potential for collisions with vehicles. Their locations include two pairs of barn owls 772 ft and 353 ft from centerline and five pairs of red-tailed hawks at 1,103 ft, 1,140 ft, 439 ft, 1,015 ft, and 1,044 ft from centerline.

Bats

Removal of rock outcrops would permanently reduce available roosting habitat for bat species that are dependent on this limited resource. Additional permanent impacts to roosting habitat would also include removal of mature trees that may offer tree roosts (e.g., those containing cavities, exfoliating bark, suitable foliage, or well-developed frond skirts) for sensitive bat species. Established building roosts could also be permanently impacted by the demolition of man-made structures.

Build Alternative 1b

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Impacts to Los Angeles pocket mouse, both habitat and populations, from Build Alternative 1b would be the same as Build Alternative 1a.

Burrowing Owl

Seven pairs of burrowing owls would be permanently impacted by Build Alternative 1b. Of these, one pair would be directly impacted (RIV-BUO-023, 2006 nest). A total of 23.54 ac of excellent quality habitat and 143.96 ac of suitable quality habitat would be directly impacted.

The remaining six pairs of burrowing owls would be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include RIV-BUO-005, 733 ft from centerline, RIV-BUO-006, 607 ft from centerline, RIV-BUO-023 (2005 nest), 874 ft from centerline, RIV-BUO-024, 685 ft from centerline, RIV-BUO-042, 1,404 ft from centerline, and RIV-BUO-052, 298 ft from centerline.

Impacts to burrowing owls in the western portion of Criteria Area Cell 3683 would be the same as Build Alternative 1a.

Nesting and Foraging Raptors

No MSHCP covered nesting raptors would be directly impacted by Build Alternative 1b. However, two pairs of white-tailed kites were found 191 ft and 827 ft from centerline and could be indirectly impacted by operational roadway noise.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Twelve pairs of nesting raptors would be permanently impacted by Build Alternative 1b. Of these 12 pairs, one pair of barn owls and four pairs of red-tailed hawks would be directly impacted. A total of 264.42 ac of raptor foraging habitat would be directly impacted.

The remaining seven pairs of nesting raptors could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include one pair of barn owls 772 ft from centerline and six pairs of red-tailed hawks at 1,313 ft, 1,348 ft, 439 ft, 1,015 ft, 400 ft, and 1,135 ft from centerline.

Bats

Impacts to bats would be the same as Build Alternative 1a.

Design Option 1b1

Impacts from Design Option 1b1 to Los Angeles pocket mouse, burrowing owl, white-tailed kite, and bats would be the same as Build Alternative 1b.

Nesting and Foraging Raptors

The direct and indirect impacts to nesting and foraging raptors from Design Option 1b1 would be the same as Build Alternative 1b, except that the amount of raptor foraging habitat impacted by the design option would be 265.25 ac, versus 264.42 ac with the base condition.

Preferred Alternative (Build Alternative 1b with Refinements)

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Impacts to Los Angeles pocket mouse from Build Alternative 1br would be the same as Build Alternatives 1a and 1b.

Burrowing Owl

Five pairs of burrowing owls would be permanently impacted by the Preferred Alternative. Of these, one pair would be directly impacted (RIV-BUO-023, 2006 nest). A total of 23.54 ac of excellent quality habitat and 143.96 ac of suitable quality habitat would be directly impacted.

The remaining four pairs[15] of burrowing owls would be indirectly impacted. Locations include RIV-BUO-005, 732 ft from centerline, RIV-BUO-006, 663 ft from centerline, RIV-BUO-024, 666 ft from centerline, and RIV-BUO-052, 299 ft from centerline. Although operational roadway noise would be higher than the wildlife noise threshold for all four pairs within the indirect impact area, operational roadway noise would still be within the range of existing ambient noise levels for three of the four pairs within the indirect impact area (RIV-BUO-005, RIV-BUO-006, and RIV-BUO-052). Although roadway noise may not impact these nest locations, other indirect impacts such as habitat fragmentation or increased mortality from collisions with vehicles could still affect these sites.

[15] RIV-BUO-023 (2005 nest) as discussed in the indirect impacts for Build Alternatives 1a and 1b also falls within the Preferred Alternative. However, impacts to this territory are already accounted for in the direct impacts [RIV-BUO-023 (2006 nest)]. Therefore, the 2005 nest location is not considered an indirect impact.

There would be no direct impacts to burrowing owls in Criteria Area Cell 3683 from any of the Build Alternatives because there are no burrowing owls within the PIA in this area. Indirect impacts to burrowing owls in the western portion of Criteria Area Cell 3683 would be similar to Build Alternatives 1a and 1b (and Design Option 1b1) and would be less than Build Alternatives 2a and 2b (and Design Option 2b1) because the PIA is located further away from known owl locations.

Nesting and Foraging Raptors

No MSHCP covered nesting raptors would be directly impacted by the Preferred Alternative. However, two pairs of white-tailed kites would be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. The white-tailed kites are located approximately 827 ft and 190 ft from centerline. Operational roadway noise at the kite nest located 827 ft from centerline would not be higher than the wildlife noise threshold. In fact, roadway noise at this location would still be within the range of existing ambient noise levels measured in the vicinity. Although roadway noise may not impact this nest location, other indirect impacts such as habitat fragmentation could still affect this site. Operational roadway noise at the kite nest located 190 ft from centerline would be higher than the wildlife noise threshold and higher than the range of existing ambient noise levels measured in the vicinity. Therefore, this nest is expected to be indirectly impacted by operational roadway noise and/or habitat fragmentation.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

A total of nine pairs of nesting raptors would be permanently impacted by the Preferred Alternative. Of these, one pair of barn owls and four pairs of red-tailed hawks would be directly impacted and are the same nest locations as described in Build Alternative 1b. A total of 299.75 ac of raptor foraging habitat would be directly impacted.

The remaining four pairs of nesting raptors could be indirectly impacted by roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include one pair of barn owls 771 ft from centerline and three pairs of red-tailed hawks located 440 ft, 289 ft, and 1,135 ft from centerline. Operational roadway noise at all four nest locations in the indirect impact area would be higher than the wildlife noise threshold. However, operational roadway noise at the red-tailed hawk nest located 440 ft from centerline would still be within the range of existing ambient noise levels measured in the vicinity. Although roadway noise may not impact this nest location, other indirect impacts such as habitat fragmentation could still affect this site. Operational roadway noise at the remaining three nest locations would be higher than the range of existing ambient noise levels measured in the vicinity. Therefore, these sites are expected to be indirectly impacted by operational roadway noise, habitat fragmentation, and/or increased mortality from collisions with vehicles.

Bats

Impacts to bats from Build Alternative 1br would be the same as Build Alternative 1a and 1b.

Build Alternative 2a

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Impacts to Los Angeles pocket mouse from Build Alternative 2a would be the same as Build Alternative 1a.

Burrowing Owl

Six pairs of burrowing owls and a single male would be permanently impacted by Build Alternative 2a. Of these, two pairs (RIV-BUO-031 and RIV-BUO-056) would be directly impacted. A total of 76.92 ac of excellent quality habitat and 130.84 ac of suitable quality habitat would be directly impacted.

The remaining four pairs of burrowing owls and single male could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include RIV-BUO-004, 620 ft from centerline, RIV-BUO-005, 454 ft from centerline, RIV-BUO-023, 436 ft from centerline, RIV-BUO-052, 558 ft from centerline, and RIV-BUO-053 (single male), 1,015 ft from centerline.

Impacts to burrowing owls in the western portion of Criteria Area Cell 3683 would be similar to Build Alternative 1a, except that Build Alternative 2a would impact both RIV-BUO-004 and RIV-BUO-005.

Nesting and Foraging Raptors

No MSHCP covered nesting raptors would be permanently, directly impacted by Build Alternative 2a. However, four pairs of white-tailed kites located 380 ft, 191 ft, 765 ft, and 522 ft from centerline and one pair of Cooper's hawks 651 ft from the centerline would be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Twelve pairs of nesting raptors would be permanently impacted by Build Alternative 2a. Of these 12 pairs, one pair of barn owls and four pairs of red-tailed hawks would be directly impacted. A total of 351.70 ac of raptor foraging habitat would be directly impacted.

The remaining seven pairs of nesting raptors would be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include two pairs of barn owls 772 ft and 353 ft from centerline and five pairs of red-tailed hawks at 1,103 ft, 1,140 ft, 439 ft, 1,015 ft, and 1,044 ft from centerline.

Bats

Impacts to bats from Build Alternative 2a would be the same as Build Alternative 1a.

Build Alternative 2b

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Impacts to Los Angeles pocket mouse from Build Alternative 2b would be the same as Build Alternative 1a.

Burrowing Owl

Seven pairs of burrowing owls would be permanently impacted by Build Alternative 2b. Of these, two pairs, RIV-BUO-031 and RIV-BUO-056, would be directly impacted. A total of 81.72 ac of excellent quality habitat and 150.77 ac of suitable quality habitat would be directly impacted.

The remaining five pairs of burrowing owls could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include RIV-BUO-004, 620 ft from centerline, RIV-BUO-005, 454 ft from centerline, RIV-BUO-023, 436 ft from centerline, RIV-BUO-042, 1,404 ft from centerline, and RIV-BUO-052, 558 ft from centerline.

Impacts to burrowing owls in the western portion of Criteria Area Cell 3683 would be the same as Build Alternative 2a.

Nesting and Foraging Raptors

No MSHCP covered nesting raptors would be directly impacted by Build Alternative 2b. However, two pairs of white-tailed kites located 191 ft and 765 ft from centerline and one pair of Cooper's hawks 651 ft from centerline would be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Impacts to nesting and foraging raptors from Build Alternative 2b would be the same as Build Alternative 1b.

Bats

Impacts to bats from Build Alternative 2a would be the same as Build Alternative 1a.

Design Option 2b1

The impacts to Los Angeles pocket mouse, burrowing owl, white-tailed kite, and bats would be the same as Build Alternative 2b.

Nesting and Foraging Raptors

Impacts to nesting and foraging raptors from Design Option 2b1 would be the same and Design Option 1b1.

Temporary Impacts

No temporary construction easements are required for any of the Project features, so no temporary impacts to animal species habitat would occur. Of the animal species presented in this document, those that were included in the temporary impact analysis include Los Angeles pocket mice, burrowing owls, nesting raptors, and bats. The temporary impact analysis for these species overlaps with the permanent, indirect impact analysis because the species located in the indirect impact area would be impacted by construction activities and by operation of the roadway once construction is complete.

All other impacts to animal species are presented in Permanent Impacts. That discussion includes direct impacts associated with the PIA and unique design features and impacts in the indirect impact area.

A summary of potential temporary impacts from the Build alternatives and design options is provided in Table 3.3-3.

Los Angeles Pocket Mouse

Temporary impacts to occupied Los Angeles pocket mouse habitat that could result from the Project include degraded habitat quality and suitability because of construction noise, lights, vibration, dust, and soil compaction along the PIA, as well as disturbance from staging and access routes. Los Angeles pocket mice may be subject to mortality and injury from being struck by construction vehicles and equipment traveling along access dirt roads and staging areas. Although construction is temporary, the effects can be long-term disruptions to the species because Los Angeles pocket mice have short lives and are very sensitive to disturbances in their environment. Therefore, the Project could have long-term impacts on Los Angeles pocket mouse breeding, foraging, movement, hibernation/sleeping patterns, dispersal, and predator-avoidance behavior.

Because the Los Angeles pocket mouse is small and has very specific metabolic requirements, this species is only able to be active in a very narrow range of temperatures. While active, they require a relatively high intake of calories to maintain their body temperature and activity patterns and avoid going into torpor. Construction could disrupt foraging, which would lower calorie intake. Vibration and noise from construction could also disrupt sleeping and aestivating (lying dormant in warm temperatures) patterns. Some individuals might leave the immediate Project area during the construction process because of noise and vibration. Los Angeles pocket mouse survival often depends on using their acute hearing to detect approaching predators in the dark, and this ability could be affected by construction noise. In addition, trash and food discarded by construction contractors could attract predators of the Los Angeles pocket mouse.

Burrowing Owls and Nesting Raptors

Temporary impacts to burrowing owls and nesting raptors may include construction noise, night lighting, and increased human presence (construction personnel). Temporary construction noise may affect burrowing owls and raptors because birds primarily communicate with one another through vocalizations and auditory cues. Increased noise levels can interfere with normal communication. Therefore, background noise and isolated, impulsive noise (e.g., drilling, excavation) can interfere with contact between mated birds, warning and distress calls that signify predators and other threats, feeding behavior, and protection of the young. In addition, high noise levels may prevent an area that is otherwise appropriate for nesting from being suitable.

The same 500-ft buffer used in the permanent impacts analysis was used to analyze temporary indirect impacts to burrowing owls and nesting raptors from construction noise, night lighting, and increased human presence.

Night lighting and increased human presence during construction can affect normal foraging patterns for burrowing owls and raptors. Although construction activities would be located entirely within the PIA and would not extend into the indirect impact area for burrowing owls or nesting raptors, the sheer amount of construction activity, equipment, and increased human presence for the approximate 39 to 40 months construction period could still affect daily behavior for these species. The potential for impacts would vary throughout the construction period, but the beginning and middle stages, when construction activities and numbers of personnel would peak, would be most likely to have the most effect. The potential for impacts would decrease as construction winds down, and activities and personnel would be minimal.

The two construction activities that would generate the highest noise levels are roadway excavation, which would require blasting, and construction of roadway overpasses and bridges, which would require pile driving. Both of these activities create impulsive noises that occur in isolated events, which can result in startle effects.

Roadway excavation would take place in the West Hemet Hills for all Build alternatives and design options. However, the low frequency impulsive noise from blasting has the potential to affect species within a 1.0-mi radius, so the potential for startle effects could extend into the valley.

Roadway overpasses and bridges would be required with all Build alternatives and design options, but not all of these structures would require pile driving. However, the structures that would require pile driving will not be determined until final design, so to include all potential impacts to burrowing owls and nesting raptors, this construction noise impact analysis assumes that every roadway overpass and bridge would require pile driving.

Construction noise levels were based on the distance of the resource from the PIA. In terms of construction, the PIA encompasses cut and fill boundaries where all of the construction activities will take place, as well as areas where vehicles would be allowed during construction but no work would be performed. Therefore, calculating construction noise based on the distance from the PIA represents a conservative estimate because it includes areas beyond where active construction will take place. Existing ambient noise levels were taken from receiver locations throughout the Study Area and are shown in order to provide information on ambient noise levels in the general vicinity of each owl and raptor in the indirect impact area. Existing noise levels are stated in dBA 1-hour equivalent noise level ($L_{eq(h)}$). In order to capture noise impacts from different construction activities described above, construction noise relative to each burrowing owl and nesting raptor has been calculated separately for three general types of construction activities: general roadway, structure construction, and substantial excavation. Reference noise levels of 98 decibels (dBA) were used for general roadway and 105 dBA for structure construction. To take a conservative approach and account for the loudest possible construction activity, both reference noise levels represent the loudest noise level for that activity (e.g., noises associated with dump trucks and pile driving). For more information, please refer to Table 3.2-40 Noise Levels of Construction Equipment Grouped by Construction Activity in the Section 3.2.7 Noise and Vibration. Construction noise calculations were based on the reference numbers and a standard attenuation formula. Although a reference noise level of 95 dBA is listed for substantial excavation, the construction noise level for excavation (e.g., blasting) has been left blank (N/A) because this number depends on variables, such as amount of detonation material and blasting method,

that cannot be determined until construction. Therefore, it is assumed that all resources within a 1.0-mi radius of blasting will be temporarily impacted by excavation activities and that the radius includes all Build alternatives and design options. Construction noise for burrowing owls and nesting raptors located in the indirect impact area (500-ft buffer) is shown in Tables 3.3-16 and 3.3-17, respectively.

Construction is scheduled to take place in two 12-hour timeframes over a 24-hour period, in a 5-day work week, Monday through Friday. Excessive noise levels from roadway excavation and bridge construction would be intermittent and only during daylight hours, Monday through Friday. Project construction is estimated to take 39 to 40 months.

Table 3.3-16 Construction Noise Levels for Burrowing Owls

Build Alternative	Burrowing Owl	Burrowing Owl Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
1a	RIV-BUO-053	481 ft	1A-A3	45-53	60	General Roadway	98	78.3
	RIV-BUO-053	481 ft	1A-A3	45-53	60	Structure Construction	105	85.3
	RIV-BUO-053	481 ft	1A-A3	45-53	60	Substantial Excavation	95	N/A
	RIV-BUO-023 (2005 nest)	568 ft	1A-E2	40-47	60	General Roadway	98	76.9
	RIV-BUO-023 (2005 nest)	568 ft	1A-E2	40-47	60	Structure Construction	105	83.9
	RIV-BUO-023 (2005 nest)	568 ft	1A-E2	40-47	60	Substantial Excavation	95	N/A
	RIV-BUO-024	104 ft	1A-E2	40-47	60	General Roadway	98	91.6
	RIV-BUO-024	104 ft	1A-E2	40-47	60	Structure Construction	105	98.6
	RIV-BUO-024	104 ft	1A-E2	40-47	60	Substantial Excavation	95	N/A
	RIV-BUO-005	454 ft	1A-G2	42-48	60	General Roadway	98	78.8
	RIV-BUO-005	454 ft	1A-G2	42-48	60	Structure Construction	105	85.8
	RIV-BUO-005	454 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	RIV-BUO-006	387 ft	1A-G2	42-48	60	General Roadway	98	80.2
	RIV-BUO-006	387 ft	1A-G2	42-48	60	Structure Construction	105	87.2
	RIV-BUO-006	387 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A

Table 3.3-16 Construction Noise Levels for Burrowing Owls

Build Alternative	Burrowing Owl	Burrowing Owl Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	RIV-BUO-052	47 ft	1A-G2	42-48	60	General Roadway	98	98.5
	RIV-BUO-052	47 ft	1A-G2	42-48	60	Structure Construction	105	105.5
	RIV-BUO-052	47 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
1b (including Design Option 1b1)[b]	RIV-BUO-023 (2005 nest)	568 ft	1A-E2	40-47	60	General Roadway	98	76.9
	RIV-BUO-023 (2005 nest)	568 ft	1A-E2	40-47	60	Structure Construction	105	83.9
	RIV-BUO-023 (2005 nest)	568 ft	1A-E2	40-47	60	Substantial Excavation	95	N/A
	RIV-BUO-024	104 ft	1A-E2	40-47	60	General Roadway	98	91.6
	RIV-BUO-024	104 ft	1A-E2	40-47	60	Structure Construction	105	98.6
	RIV-BUO-024	104 ft	1A-E2	40-47	60	Substantial Excavation	95	N/A
	RIV-BUO-005	454 ft	1A-G2	42-48	60	General Roadway	98	78.8
	RIV-BUO-005	454 ft	1A-G2	42-48	60	Structure Construction	105	85.8
	RIV-BUO-005	454 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	RIV-BUO-006	387 ft	1A-G2	42-48	60	General Roadway	98	80.2
	RIV-BUO-006	387 ft	1A-G2	42-48	60	Structure Construction	105	87.2
	RIV-BUO-006	387 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	RIV-BUO-052	47 ft	1A-G2	42-48	60	General Roadway	98	98.5
	RIV-BUO-052	47 ft	1A-G2	42-48	60	Structure Construction	105	105.5
	RIV-BUO-052	47 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	RIV-BUO-042	577 ft	1A-L14	53-51	60	General Roadway	98	76.8
	RIV-BUO-042	577 ft	1A-L14	53-51	60	Structure Construction	105	83.8

Table 3.3-16 Construction Noise Levels for Burrowing Owls

Build Alternative	Burrowing Owl	Burrowing Owl Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	RIV-BUO-042	577 ft	1A-L14	53-51	60	Substantial Excavation	95	N/A
Preferred Alternative (Build Alternative 1b with Refinements)	RIV-BUO-005	446 ft	1B-G2	50-76	60	General Roadway	98	79
	RIV-BUO-005	446 ft	1B-G2	50-76	60	Structure Construction	105	86
	RIV-BUO-005	446 ft	1B-G2	50-76	60	Substantial Excavation	95	N/A
	RIV-BUO-006	420 ft	1B-G2	50-76	60	General Roadway	98	80
	RIV-BUO-006	420 ft	1B-G2	50-76	60	Structure Construction	105	87
	RIV-BUO-006	420 ft	1B-G2	50-76	60	Substantial Excavation	95	N/A
	RIV-BUO-024	78 ft	1A-E2	40-47	60	General Roadway	98	94
	RIV-BUO-024	78 ft	1A-E2	40-47	60	Structure Construction	105	101
	RIV-BUO-024	78 ft	1A-E2	40-47	60	Substantial Excavation	95	N/A
	RIV-BUO-052	46 ft	1B-G2	50-76	60	General Roadway	98	99
	RIV-BUO-052	46 ft	1B-G2	50-76	60	Structure Construction	105	106
	RIV-BUO-052	46 ft	1B-G2	50-76	60	Substantial Excavation	95	N/A
2a	RIV-BUO-053	481 ft	1A-A3	45-53	60	General Roadway	98	78.3
	RIV-BUO-053	481 ft	1A-A3	45-53	60	Structure Construction	105	85.3
	RIV-BUO-053	481 ft	1A-A3	45-53	60	Substantial Excavation	95	N/A
	RIV-BUO-023	568 ft	1A-E2	40-47	60	General Roadway	98	88.6
	RIV-BUO-023	568 ft	1A-E2	40-47	60	Structure Construction	105	95.6
	RIV-BUO-023	568 ft	1A-E2	40-47	60	Substantial Excavation	95	N/A
	RIV-BUO-004	424 ft	1A-G2	42-48	60	General Roadway	98	79.7

Table 3.3-16 Construction Noise Levels for Burrowing Owls

Build Alternative	Burrowing Owl	Burrowing Owl Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	RIV-BUO-004	424 ft	1A-G2	42-48	60	Structure Construction	105	86.7
	RIV-BUO-004	424 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	RIV-BUO-005	454 ft	1A-G2	42-48	60	General Roadway	98	84.2
	RIV-BUO-005	454 ft	1A-G2	42-48	60	Structure Construction	105	91.2
	RIV-BUO-005	454 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	RIV-BUO-052	47 ft	1A-G2	42-48	60	General Roadway	98	83.0
	RIV-BUO-052	47 ft	1A-G2	42-48	60	Structure Construction	105	90.0
	RIV-BUO-052	47 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
2b (including Design Option 2b1)[b]	RIV-BUO-023	147 ft	1A-E2	40-47	60	General Roadway	98	88.6
	RIV-BUO-023	147 ft	1A-E2	40-47	60	Structure Construction	105	95.6
	RIV-BUO-023	147 ft	1A-E2	40-47	60	Substantial Excavation	95	N/A
	RIV-BUO-004	424 ft	1A-G2	42-48	60	General Roadway	98	79.7
	RIV-BUO-004	424 ft	1A-G2	42-48	60	Structure Construction	105	86.7
	RIV-BUO-004	424 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	RIV-BUO-005	213 ft	1A-G2	42-48	60	General Roadway	98	84.2
	RIV-BUO-005	213 ft	1A-G2	42-48	60	Structure Construction	105	91.2
	RIV-BUO-005	213 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	RIV-BUO-052	280 ft	1A-G2	42-48	60	General Roadway	98	83.0
	RIV-BUO-052	280 ft	1A-G2	42-48	60	Structure Construction	105	90.0
	RIV-BUO-052	280 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A

Table 3.3-16 Construction Noise Levels for Burrowing Owls

Build Alternative	Burrowing Owl	Burrowing Owl Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	RIV-BUO-042	577 ft	1A-L14	53-51	60	General Roadway	98	76.8
	RIV-BUO-042	577 ft	1A-L14	53-51	60	Structure Construction	105	83.8
	RIV-BUO-042	577 ft	1A-L14	53-51	60	Substantial Excavation	95	N/A

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

[a] Represents the range of existing ambient noise measured at receiver locations associated with the noise barrier in the adjacent column. Existing noise levels are stated in dBA 1-hour equivalent noise level ($L_{eq(h)}$). Additional detail can be found in the existing and predicted future noise level tables in the Noise and Vibration section.

[b] Information for Design Options 1b1 and 2b1 is the same as the base condition of Build Alternatives 1b and 2b. Because there is no variation between the base condition and the design option, the information is given only once.

Table 3.3-17 Construction Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
1a	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	General Roadway	98	83.2
	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	Structure Construction	105	90.2
	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	Substantial Excavation	95	N/A
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	General Roadway	98	82.1
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	Structure Construction	105	89.1
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	Substantial Excavation	95	N/A
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	General Roadway	98	91.0
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	Structure Construction	105	98.0
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	Substantial Excavation	95	N/A

Table 3.3-17 Construction Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	White-tailed kite 1	36 ft	1A-G11	39-40	60	General Roadway	98	100.9
	White-tailed kite 1	36 ft	1A-G11	39-40	60	Structure Construction	105	107.9
	White-tailed kite 1	36 ft	1A-G11	39-40	60	Substantial Excavation	95	N/A
	White-tailed kite 2	478 ft	1A-G4	45-51	60	General Roadway	98	78.4
	White-tailed kite 2	478 ft	1A-G4	45-51	60	Structure Construction	105	85.4
	White-tailed kite 2	478 ft	1A-G4	45-51	60	Substantial Excavation	95	N/A
	Barn owl 1	207 ft	1A-I1	45-39	60	General Roadway	98	85.7
	Barn owl 1	207 ft	1A-I1	45-39	60	Structure Construction	105	92.7
	Barn owl 1	207 ft	1A-I1	45-39	60	Substantial Excavation	95	N/A
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	General Roadway	98	96.4
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	Structure Construction	105	103.4
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	Substantial Excavation	95	N/A
	Barn owl 2	151 ft	1A-L4	43-38	60	General Roadway	98	88.4
	Barn owl 2	151 ft	1A-L4	43-38	60	Structure Construction	105	95.4
	Barn owl 2	151 ft	1A-L4	43-38	60	Substantial Excavation	95	N/A
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	General Roadway	98	110.4
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	Structure Construction	105	117.4
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	Substantial Excavation	95	N/A
1b (including Design Option 1b1)[c]	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	General Roadway	98	83.2
	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	Structure Construction	105	90.2

Table 3.3-17 Construction Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	Substantial Excavation	95	N/A
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	General Roadway	98	82.1
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	Structure Construction	105	89.1
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	Substantial Excavation	95	N/A
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	General Roadway	98	91.0
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	Structure Construction	105	98.0
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	Substantial Excavation	95	N/A
	White-tailed kite 1	36 ft	1A-G11	39-40	60	General Roadway	98	100.9
	White-tailed kite 1	36 ft	1A-G11	39-40	60	Structure Construction	105	107.9
	White-tailed kite 1	36 ft	1A-G11	39-40	60	Substantial Excavation	95	N/A
	White-tailed kite 2	478 ft	1A-G4	45-51	60	General Roadway	98	78.4
	White-tailed kite 2	478 ft	1A-G4	45-51	60	Structure Construction	105	85.4
	White-tailed kite 2	478 ft	1A-G4	45-51	60	Substantial Excavation	95	N/A
	Barn owl 1	207 ft	1A-I1	45-39	60	General Roadway	98	85.7
	Barn owl 1	207 ft	1A-I1	45-39	60	Structure Construction	105	92.7
	Barn owl 1	207 ft	1A-I1	45-39	60	Substantial Excavation	95	N/A
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	General Roadway	98	96.4
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	Structure Construction	105	103.4
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	Substantial Excavation	95	N/A
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	General Roadway	98	109.7

Table 3.3-17 Construction Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	Structure Construction	105	116.7
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	Substantial Excavation	95	N/A
	Red-tailed hawk 6	148 ft	1A-L14	53-51	60	General Roadway	98	88.6
	Red-tailed hawk 6	148 ft	1A-L14	53-51	60	Structure Construction	105	95.6
	Red-tailed hawk 6	148 ft	1A-L14	53-51	60	Substantial Excavation	95	N/A
Preferred Alternative (Build Alternative 1b with Refinements)	Barn owl 2	207 ft	1B-I2	53-62	60	General Roadway	98	86
	Barn owl 2	207 ft	1B-I2	53-62	60	Structure Construction	105	93
	Barn owl 2	207 ft	1B-I2	53-62	60	Substantial Excavation	95	N/A
	Red-tailed hawk 5	16 ft	1B-G2	50-76	60	General Roadway	98	108
	Red-tailed hawk 5	16 ft	1B-G2	50-76	60	Structure Construction	105	115
	Red-tailed hawk 5	6 ft	1B-G2	50-76	60	Substantial Excavation	95	N/A
	Red-tailed hawk 6	148 ft	1B-M5	52-66	60	General Roadway	98	89
	Red-tailed hawk 6	148 ft	1B-M5	52-66	60	Structure Construction	105	96
	Red-tailed hawk 6	148 ft	1B-M5	52-66	60	Substantial Excavation	95	N/A
	Red-tailed hawk 7	13 ft	1B-N2	46-50	60	General Roadway	98	110
	Red-tailed hawk 7	13 ft	1B-N2	46-50	60	Structure Construction	105	117
	Red-tailed hawk 7	13 ft	1B-N2	46-50	60	Substantial Excavation	95	N/A
	White-tailed kite 1	325 ft	1B-G2	50-76	60	General Roadway	98	82
	White-tailed kite 1	325 ft	1B-G2	50-76	60	Structure Construction	105	89
	White-tailed kite 1	325 ft	1B-G2	50-76	60	Substantial Excavation	95	N/A

Table 3.3-17 Construction Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	White-tailed kite 2	36 ft	1B-I2	53-62	60	General Roadway	98	101
	White-tailed kite 2	36 ft	1B-I2	53-62	60	Structure Construction	105	108
	White-tailed kite 2	36 ft	1B-I2	53-62	60	Substantial Excavation	95	N/A
2a	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	General Roadway	98	83.2
	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	Structure Construction	105	90.2
	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	Substantial Excavation	95	N/A
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	General Roadway	98	82.1
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	Structure Construction	105	89.1
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	Substantial Excavation	95	N/A
	White-tailed kite 1	144 ft	1A-E26	45-50	60	General Roadway	98	88.8
	White-tailed kite 1	144 ft	1A-E26	45-50	60	Structure Construction	105	95.8
	White-tailed kite 1	144 ft	1A-E26	45-50	60	Substantial Excavation	95	N/A
	White-tailed kite 2	176 ft	1A-E31	44-47	60	General Roadway	98	87.1
	White-tailed kite 2	176 ft	1A-E31	44-47	60	Structure Construction	105	94.1
	White-tailed kite 2	176 ft	1A-E31	44-47	60	Substantial Excavation	95	N/A
	White-tailed kite 3	36 ft	1A-G11	39-40	60	General Roadway	98	100.9
	White-tailed kite 3	36 ft	1A-G11	39-40	60	Structure Construction	105	107.9
	White-tailed kite 3	36 ft	1A-G11	39-40	60	Substantial Excavation	95	N/A
	White-tailed kite 4	411 ft	1A-G4	45-51	60	General Roadway	98	79.7
	White-tailed kite 4	411 ft	1A-G4	45-51	60	Structure Construction	105	86.7

Table 3.3-17 Construction Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	White-tailed kite 4	411 ft	1A-G4	45-51	60	Substantial Excavation	95	N/A
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	General Roadway	98	91.0
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	Structure Construction	105	98.0
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	Substantial Excavation	95	N/A
	Cooper's hawk 1	430 ft	1A-G2	42-48	60	General Roadway	98	79.3
	Cooper's hawk 1	430 ft	1A-G2	42-48	60	Structure Construction	105	86.3
	Cooper's hawk 1	430 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	Barn owl 1	207 ft	1A-I1	45-39	60	General Roadway	98	85.7
	Barn owl 1	207 ft	1A-I1	45-39	60	Structure Construction	105	92.7
	Barn owl 1	207 ft	1A-I1	45-39	60	Substantial Excavation	95	N/A
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	General Roadway	98	96.4
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	Structure Construction	105	103.4
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	Substantial Excavation	95	N/A
	Barn owl 3	151 ft	1A-L4	43-38	60	General Roadway	98	88.4
	Barn owl 3	151 ft	1A-L4	43-38	60	Structure Construction	105	95.4
	Barn owl 3	151 ft	1A-L4	43-38	60	Substantial Excavation	95	N/A
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	General Roadway	98	110.4
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	Structure Construction	105	117.4
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	Substantial Excavation	95	N/A

Table 3.3-17 Construction Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
2b (including Design Option 2b1)[c]	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	General Roadway	98	83.2
	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	Structure Construction	105	90.2
	Red-tailed hawk 1	275 ft	1A-A2	45-58	60	Substantial Excavation	95	N/A
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	General Roadway	98	82.1
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	Structure Construction	105	89.1
	Red-tailed hawk 2	313 ft	1A-A2	45-58	60	Substantial Excavation	95	N/A
	White-tailed kite 1	36 ft	1A-G11	39-40	60	General Roadway	98	100.9
	White-tailed kite 1	36 ft	1A-G11	39-40	60	Structure Construction	105	107.9
	White-tailed kite 1	36 ft	1A-G11	39-40	60	Substantial Excavation	95	N/A
	White-tailed kite 2	411 ft	1A-G4	45-51	60	General Roadway	98	79.7
	White-tailed kite 2	411 ft	1A-G4	45-51	60	Structure Construction	105	86.7
	White-tailed kite 2	411 ft	1A-G4	45-51	60	Substantial Excavation	95	N/A
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	General Roadway	98	91.0
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	Structure Construction	105	98.0
	Red-tailed hawk 3	112 ft	1A-G11	39-40	60	Substantial Excavation	95	N/A
	Cooper's hawk 1	430 ft	1A-G2	42-48	60	General Roadway	98	79.3
	Cooper's hawk 1	430 ft	1A-G2	42-48	60	Structure Construction	105	86.3
	Cooper's hawk 1	430 ft	1A-G2	42-48	60	Substantial Excavation	95	N/A
	Barn owl 1	207 ft	1A-I1	45-39	60	General Roadway	98	85.7
	Barn owl 1	207 ft	1A-I1	45-39	60	Structure Construction	105	92.7

Table 3.3-17 Construction Noise Levels for Nesting Raptors

Build Alternative	Nesting Raptor Species	Nesting Raptor Distance from PIA	Noise Barrier I.D.	Existing Ambient Noise Range[a] ($L_{eq(h)}$ dBA)	Wildlife Noise Threshold (dBA)	Type of Construction Activity	Construction Activity Reference Noise Level (dBA at 50 ft)	Resulting Construction Noise Level (dBA)
	Barn owl 1	207 ft	1A-I1	45-39	60	Substantial Excavation	95	N/A
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	General Roadway	98	96.4
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	Structure Construction	105	103.4
	Red-tailed hawk 4	60 ft	1A-I6	56-54	60	Substantial Excavation	95	N/A
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	General Roadway	98	109.7
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	Structure Construction	105	116.7
	Red-tailed hawk 5	13 ft	–[b]	49-57	60	Substantial Excavation	95	N/A
	Red-tailed hawk 6	148 ft	1A-L14	53-51	60	General Roadway	98	88.6
	Red-tailed hawk 6	148 ft	1A-L14	53-51	60	Structure Construction	105	95.6
	Red-tailed hawk 6	148 ft	1A-L14	53-51	60	Substantial Excavation	95	N/A

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

[a] Represents the range of existing ambient noise measured at receiver locations associated with the noise barrier in the adjacent column. Existing noise levels are stated in dBA 1-hour equivalent noise level ($L_{eq(h)}$). Additional detail can be found in the existing and predicted future noise level tables in the Noise and Vibration section.

[b] Noise receiver location not available adjacent to resource. Ambient noise range was extrapolated.

[c] Information for Design Options 1b1 and 2b1 is the same as the base condition of Build Alternatives 1b and 2b. Because there is no variation between the base condition and the design option, the information is given only once.

Temporary Impacts to Animal Species from the Project Alternatives and Design Options

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

All Build Alternatives and Design Options

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Although construction-related activities would be limited to the PIA and the utility relocation areas, the Los Angeles pocket mice in the indirect impact areas are expected to be temporarily impacted by increased noise, dust, vibration, and

lights during construction. The Project would temporarily impact 4.1 ac of habitat occupied by the Los Angeles pocket mouse just east of the existing SR 79 alignment, north of Ramona Expressway and south of the San Jacinto River. This Los Angeles pocket mouse population is part of the regionally important core population within and near the San Jacinto River and Massacre Canyon wash.

Animal Species Not Covered by the MSHCP

Bats

Temporary impacts to bats from construction of any of the Build alternatives or design options could include disturbances to roost sites and disruptions of foraging areas due to increased vehicular traffic, night illumination, pile driving for bridges, tree cutting, building demolition, grubbing, and other construction noise, as well as blasting, drilling, rock hammering, and grading in areas that have rock outcrops or hills. Bats could abandon roost sites as a result of local disturbances and could alter their foraging behavior near lights, which could benefit them by attracting insects or repel them from an area to avoid predators.

Build Alternative 1a

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Five pairs of burrowing owls and a single male, RIV-BUO-005, 454 ft from the PIA, RIV-BUO-006, 387 ft from the PIA, RIV-BUO-023, 568 ft from the PIA, RIV-BUO-024, 104 ft from the PIA, RIV-BUO-052, 47 ft from the PIA, and RIV-BUO-053 (single male), 481 ft from the PIA, could be temporarily impacted by construction of Build Alternative 1a. Temporary impacts to these five pairs of burrowing owls and single male could include construction noise, night lighting, or increased human presence.

Nesting and Foraging Raptors

Two pairs of white-tailed kites were found 36 ft and 478 ft from the PIA of Build Alternative 1a. Although these raptors would be outside the PIA, they could still be impacted by construction activities. Therefore, this Build alternative could result in temporary impacts to two pairs of white-tailed kites from construction noise, night lighting, or increased human presence.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Two pairs of barn owls were found 207 ft and 151 ft from the PIA of Build Alternative 1a. In addition, five pairs of red-tailed hawks were found 275 ft, 313 ft, 112 ft, 60 ft, and 13 ft from the PIA of Build Alternative 1a. Although these raptors would be outside the PIA, they could still be impacted by construction activities. Therefore, this Build alternative could result in temporary impacts to seven pairs of nesting raptors from construction noise, night lighting, or increased human presence.

Build Alternative 1b and Design Option 1b1

Any temporary impacts from Design Option 1b1 would be the same as those from Build Alternative 1b, so the following discussion applies to both.

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Six pairs of burrowing owls, RIV-BUO-005, 454 ft from the PIA, RIV-BUO-006, 387 ft from the PIA, RIV-BUO-023, 568 ft from the PIA, RIV-BUO-024, 104 ft from the PIA, RIV-BUO-042, 577 ft from the PIA, and RIV-BUO-052, 47 ft from the PIA, could be temporarily impacted by construction of Build Alternative 1b. Temporary impacts to these six pairs of burrowing owls could include construction noise, night lighting, or increased human presence.

Nesting and Foraging Raptors

Two pairs of white-tailed kites were found 36 ft and 478 ft from the Build Alternative 1b PIA. Although these raptors would be outside the PIA, they could still be impacted by construction activities. Impacts to these two pairs of white-tailed kites could include construction noise, night lighting, or increased human presence.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

One pair of barn owls and six pairs of red-tailed hawks would be in the indirect impact area of Build Alternative 1b. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The barn owls were 207 ft from the PIA, and the red-tailed hawks were 275 ft, 313 ft, 112 ft, 60 ft, and 13 ft, and 148 ft from the PIA. Temporary impacts to these raptors could include construction noise, night lighting, or increased human presence.

Preferred Alternative (Build Alternative 1b with Refinements)

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Four pairs of burrowing owls, RIV-BUO-005 located 446 ft from the PIA, RIV-BUO-006 located 420 ft from the PIA, RIV-BUO-024 located 78 ft from the PIA, and RIV-BUO-052, 46 ft from the PIA, could be temporarily impacted by construction of the Preferred Alternative. Temporary impacts to these four pairs of burrowing owls could include construction noise, night lighting, or increased human presence. Temporary impacts due to construction noise would differ based on the construction phase and associated work activities. However, for all phases of active construction listed in Table 3.3-16, construction noise levels would be higher than the wildlife noise threshold as well as the range of existing ambient noise in the general vicinity.

Nesting and Foraging Raptors

Two pairs of white-tailed kites located 325 ft from the PIA and 36 ft from the PIA, could be temporarily impacted by construction of the Preferred Alternative. Temporary impacts to these two pairs of white-tailed kites could include construction noise, night lighting, or increased human presence. Temporary impacts due to construction noise would

differ based on the construction phase and associated work activities. However, for all phases of active construction listed in Table 3.3-17, construction noise levels would be higher than the wildlife noise threshold as well as the range of existing ambient noise in the general vicinity.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Four pairs of raptors including one barn owl located 207 ft from the PIA, and three red-tailed hawks located 16 ft from the PIA, 148 ft from the PIA, and 13 ft from the PIA, could be temporarily impacted by construction of the Preferred Alternative. Temporary impacts to these four pairs of nesting raptors could include construction noise, night lighting, or increased human presence. Temporary impacts due to construction noise would differ based on the construction phase and associated work activities. However, for all phases of active construction listed in Table 3.3-17, construction noise levels would be higher than the wildlife noise threshold as well as the range of existing ambient noise in the general vicinity.

Build Alternative 2a

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Four pairs of burrowing owls and a single male, including RIV-BUO-004, 424 ft from the PIA, RIV-BUO-005, 454 ft from the PIA, RIV-BUO-023, 568 ft from the PIA, RIV-BUO-052, 47 ft from the PIA, and RIV-BUO-053 (single male), 481 ft from the PIA, could be temporarily impacted by Build Alternative 2a. Impacts could include construction noise, night lighting, or increased human presence.

Nesting and Foraging Raptors

One pair of Cooper's hawks and four pairs of white-tailed kites would be in the indirect impact area of Build Alternative 2a. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The Cooper's hawks were found 430 ft from the PIA, and the white-tailed kites were found 176 ft, 144 ft, 411 ft, and 36 ft from the PIA. Temporary impacts could include construction noise, night lighting, or increased human presence.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Two pairs of barn owls and five pairs of red-tailed hawks were found in the indirect impact area of Build Alternative 2a. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The barn owls were 207 ft and 151 ft from the PIA, and the red-tailed hawks were 275 ft, 313 ft, 112 ft, 60 ft, and 13 ft from the PIA. Temporary impacts to these raptors could include construction noise, night lighting, or increased human presence.

Build Alternative 2b and Design Option 2b1

Any temporary impacts from Design Option 2b1 would be the same as those from Build Alternative 2b, so the following discussion applies to both.

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Five pairs of burrowing owls, RIV-BUO-004, 424 ft from the PIA, RIV-BUO-005, 213 ft from the PIA, RIV-BUO-023, 147 ft from the PIA, RIV-BUO-042, 577 ft from the PIA, and RIV-BUO-052, 280 ft from the PIA, could be temporarily impacted by construction of Build Alternative 2b. These impacts could include construction noise, night lighting, or increased human presence.

Nesting and Foraging Raptors

One pair of Cooper's hawks and two pairs of white-tailed kites were found in the indirect impact area of Build Alternative 2b. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The Cooper's hawks were 430 ft from the PIA, and the white-tailed kites were 411 ft and 36 ft from the PIA. Temporary impacts could include construction noise, night lighting, or increased human presence.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

One pair of barn owls and six pairs of red-tailed hawks were found in the indirect impact area of Build Alternative 2b. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The barn owls were 207 ft from the PIA, and the red-tailed hawks were 275 ft, 313 ft, 112 ft, 60 ft, and 13 ft, and 148 ft from the PIA. Temporary impacts could include construction noise, night lighting, or increased human presence.

3.3.4.4 Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

No impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged. No Project avoidance, minimization, or mitigation would be required.

Minimization Measures

All Build Alternatives and Design Options

The following avoidance measures will apply regardless of the Build alternative or design option identified for construction.

MSHCP Additional Survey Areas

Burrowing Owl

The following measures will be implemented for all Build alternatives to minimize impacts to burrowing owls.

BIO-39 **Conduct Presence/Absence Surveys Immediately Prior to Construction Each Year.** Preconstruction presence/absence surveys will be conducted for burrowing owls in each year of construction during the spring immediately prior to ground disturbance and construction activities. Surveys will be conducted within the PIA and 246-ft buffer or additional areas based on construction and operations noise impacts, if warranted. In addition, due to the transitory nature of owls and their tendency to colonize areas that may

not have been colonized before, clearance surveys (also known as Take Avoidance Surveys in the 2012 CDFG guidance) will be conducted at least 30 days [and no less than 14 days per CDFG (2012)] prior to ground disturbing activities in order to identify any owls that may have colonized suitable habitat areas.

BIO-40 **Relocation of Burrowing Owls.** All burrowing owls found in the PIA will be actively relocated away from the Project to translocation sites[16]. Prior to active relocation the proposed locations, habitat suitability, future management, and conservation status of the proposed sites will be coordinated with CDFW and USFWS. A burrowing owl relocation plan will be prepared for submittal to the wildlife agencies for approval 60-90 days prior to ground-disturbing activities. Burrowing owls found 246 ft [17] or less from the PIA will be considered for relocation based on the adjacent construction activities and consultation with the wildlife agencies. Burrowing owls found more than 246 ft from the PIA will only be considered for active relocation if CDFW and USFWS deem appropriate based on construction noise impacts.

For burrowing owls found 246 ft or less from the PIA that are not relocated, impacts may be lessened by the following minimization measures: use of disturbance buffers, visual screening, and marking off nests to avoidance accidental disturbance.

Indirect impacts associated with the degradation of habitat and increased light and glare will be minimized by regular roadside maintenance to remove litter and weeds from the Project right-of-way, and by incorporating shielded lighting near environmentally sensitive areas.

Noncontiguous Habitat Blocks 6 and 7

BIO-41 **Maintenance of Hydrology to Existing Vernal Pool/Alkali Playa Habitat.** The planning species for Noncontiguous Habitat Blocks 6 and 7 are as follows.

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[16] Given the large size and linear nature of the construction area, active relocation is preferable to passive relocation. The large-scale construction effort as well as the phased approach to construction would increase the likelihood of an evicted owl moving into an area of the Project where construction has yet to occur, therefore resulting in multiple evictions. In order to avoid multiple evictions, the primary approach to mitigate for displaced owls will be to actively relocate them to protected lands agreed upon in consultation and coordination with the RCA and the wildlife agencies. However, if it is determined following presence/absence surveys, that passive relocation at certain sites may be more successful than active relocation, then passive relocation may be conducted in consultation and coordination with the RCA and the wildlife agencies and will be done in accordance with the most current guidance available at that time.

[17] CDFG and CBOC guidance for avoiding impacts to burrowing owls specifies that no disturbance should occur within 246 ft of occupied burrows during the nonbreeding season (CDFG 1995, CBOC 1993). As previously stated, the Department of Fish and Game 1995 Staff Report On Burrowing Owl Mitigation has since been replaced by the March 7, 2012 Staff Report on Burrowing Owl Mitigation. However, focused surveys for the Project were conducted in 2005 and 2006 prior to the update and were therefore conducted in accordance with the latest CDFG (1995) survey guidance at that time. Thus, survey data and subsequent data analysis reflect the 1995 guidance from CDFG and 1993 guidance from CBOC.

- Vernal pool fairy shrimp
- Riverside fairy shrimp
- Burrowing owl
- Mountain plover
- Loggerhead shrike
- Davidson's saltscale
- Thread-leaved brodiaea
- Vernal barley
- Little mousetail
- Spreading navarretia
- California Orcutt grass
- Munz's onion
- Los Angeles pocket mouse
- San Jacinto Valley crownscale
- Parish's brittlescale
- Coulter's goldfields
- Wright's trichocoronis

The Project will maintain hydrology to existing vernal pool/alkali playa habitat to provide for the conservation of the Planning Species listed above. This will be accomplished by maintaining natural hydrologic processes or designing and implementing an engineered solution that has the same effect.

Urban/Wildlands Interface, Siting and Design Criteria, Construction Guidelines and Best Management Practices (Appendix C of the MSHCP)

Although BIO-14 was presented in the Natural Communities discussion in Section 3.3.1.4, it is specific to animal species and is therefore presented again.

BIO-14 **Night Lighting.** Lighting used during nighttime construction activities shall be directed away from the MSHCP Conservation Area. If lighting cannot be directed away from the MSHCP Conservation Area, shielding will be incorporated into the Project to ensure that ambient light in the MSHCP Conservation Area is not increased.

BIO-42 **Conducting Vegetation Clearance to Avoid Active Breeding Season (February 15 through September 15).** For each year of construction, vegetation clearing will avoid the active breeding season (February 15 through September 15) in designated upland habitats. If avoiding the active breeding season is not possible and ground disturbance and construction activities must occur during this period, a contractor-supplied biologist who is experienced in bird identification will conduct preconstruction surveys no more than three days prior to vegetation clearing or ground disturbing activities to determine the presence of nesting birds protected by the Migratory Bird Treaty Act (MBTA). If birds that are protected by the MBTA are observed nesting within 500 ft of proposed construction activities, the biologist will determine whether or

not construction activities could disturb nesting birds. If necessary, the biologist will coordinate with the wildlife agencies and implement appropriate measures (e.g., onsite monitor, timing restriction, chick relocation) to adequately protect the nesting birds.

Nesting Raptors

BIO-43 **Nesting Raptor Surveys and Implementation of Nest Exclusion.** To ascertain the presence of nesting raptors, preconstruction surveys will be conducted by a contractor-supplied biologist who is experienced in raptor ecology and identification. The surveys will be conducted in the PIA and within 500 ft of the PIA between February 15 and September 15 for each year of construction, 1 year prior to ground disturbance and construction activities.

Nest exclusion (e.g., tree removal) would only be conducted following confirmation that a nest is inactive and no longer being used by a raptor. If raptor nests are found in the preconstruction survey, a contractor-supplied biologist experienced in raptor ecology will conduct a survey of all nest sites to ensure that nests are not actively being used by raptors prior to removal of any trees during the non-breeding season (Sept. 16 through Feb. 14). All nest exclusion activities will be coordinated with the wildlife agencies.

Bats

Bat minimization measures for impacts associated with all Build alternatives will include the following.

BIO-44 **Inspections for Roosting Bats before Demolition.** Buildings, structures, and trees identified for demolition or removal will be inspected prior to construction activities to determine if roosting bats are present or are likely to be seasonally present. Before beginning the inspections, the inspectors will be trained by a contractor-supplied biologist who is experienced in bat identification.

If roosting bats are present or are likely to be seasonally present in trees with palm fronds or other hollows suitable for bats, removal of the trees will be scheduled at an appropriate time. A contractor-supplied biologist who is experienced in bat ecology will supervise the removal.

If roosting bats are present in a building slated for demolition, bats will be removed using approved bat exclusion techniques. Such techniques may include bat exclusion devices, which are designed to allow one-way exits for bats from the structure, that are installed under the direction of a contractor-supplied biologist who is experienced in bat ecology. Installation of new exclusion devices, and the repair of failed or incomplete exclusion devices, will be conducted between September and March to avoid entrapping nonvolant (nonflying) young bats inside structures during the maternity season, as feasible.

Mitigation Measures

All Build Alternatives and Design Options

The following mitigation measures are applicable regardless of the Build alternative or design option that is identified as the Preferred Alternative. All Build alternatives would provide mitigation for bat species.

Bats

BIO-45 **Installation of Bat-Friendly Gate on Mine Adit Adjacent to Roadway Segments A, B, and C.** To mitigate impacts to rock roosting bats, RCTC will provide funding to install a bat-friendly gate on a mine adit (entrance) located on the Southwestern Riverside County Multi-Species Reserve (Reserve) adjacent to Roadway Segments A, B, and C. The gate would deter human disturbance and restore the roost-site quality of the mine for sensitive bat species. Reserve staff will install and maintain the gate.

BIO-46 **Provision of Suitable Habitat for Vegetation-Roosting Bats.** During final design, areas proposed for mature plantings will be determined as part of the development of the landscaping plan for the Project. In these areas, mature specimens of native deciduous trees, such as Fremont cottonwood, black willow, and western sycamore, and ornamental fan palms, particularly the California native Washington, or Mexican, fan palm, will be considered for planting because these species would provide suitable habitat for vegetation-roosting bats.

Burrowing Owl

BIO-39, 40 Minimization measures BIO-39 and BIO-40, which are described earlier in this section, will provide consistency with species conservation objectives identified in the MSHCP, Volume II-B, Species Accounts, Burrowing Owl. No additional mitigation is proposed.

3.3.5 Threatened and Endangered Species

3.3.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a no effect finding. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species

determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Stephens' Kangaroo Rat Habitat Conservation Plan

The Riverside County Habitat Conservation Agency prepared a long-term HCP (SKR HCP) under Section 10(a)(1)(B) (incidental take authorization) of FESA and under Section 2081 of the California Fish and Game Code (Endangered Species Permit) for the Stephens' kangaroo rat (federally listed as endangered), in western Riverside County. The preparation of the SKR HCP included a combined NEPA/CEQA document (EIS/EIR) (Volume III of the HCP) which analyzed the potential effects of the actions from USFWS and CDFW in providing this federal and state authorization/approval, subsequently issued in 1996.

The SKR HCP established a "core reserve" system consisting of seven reserves managed to maintain the long-term survival of SKR. As part of the approval of the SKR HCP, incidental take would be authorized for projects within the SKR HCP plan area (Figure S-1 of HCP Plan), which would be outside of the core reserve. Conditions were provided for approval of projects within the core reserve. The proposed Project is within the SKR HCP plan area and not within any of the seven core reserves. Additionally, the Department does not anticipate that the Project would result in any adverse effects to the SKR that were not previously evaluated in the EIS/EIR for the SKR HCP and so the mitigation required in the EIS/EIR for the HCP, and further clarified in Riverside County Ordinance No. 663.10, is sufficient.

Riverside County Ordinance No. 663.10 was established to implement the mitigation provisions of the HCP, which included a mitigation fee for new development in western Riverside County, but outside the limits of the proposed HCP core reserve areas. The fee program is considered adequate to implement the mitigation provisions of the HCP despite specifically exempting public works projects from the fee. Therefore, so long as the Project receives a Consistency Determination from the Wildlife Agencies, no fee would be required for the proposed Project, but the Project's effects would still be addressed by the HCP. "Incidental take" of SKR would be extended through formal Section 7 consultation for the Project.

3.3.5.2 Affected Environment

This section is based on the findings in the following survey reports, which were approved in December 2007 and used to complete the Natural Environment Study of April 2010 (RCTC 2010a) and the NES Technical Report Addendum Memorandum of August 2010 (RCTC 2010b).

- Final Sensitive Wildlife Survey Report
- Final Riparian Bird Survey Report
- Final Burrowing Owl Survey Report
- Final Vernal Pool Branchiopod Survey Report
- Final Sensitive Small Mammal Focused Survey Report

A summary of threatened and endangered plant and animal species in the study area is presented first, followed by specific information for each Project alternative. A summary of resource agency coordination on the Project is provided as well.

Study Area

The study area for threatened and endangered species encompassed both the Rare Plant Aquatic Resource Study Area (RPARSA), the Terrestrial Wildlife Study Area (TWSA), and Additional Indirect Impact Study Areas 1 and 2. This section presents information on threatened and endangered plant and animal species located within the study area. A summary of listed plants and animals is presented first. Following the summary, specific discussions about listed plant and animal species within the study area are presented for each Project alternative and design option.

Study Methods

Plants

The study methods for threatened and endangered plants are described in Section 3.3.3.2. The target list of potential threatened and/or endangered plants and species observed during plant surveys is in Table 3.3-18.

Table 3.3-18 Potential Threatened or Endangered Plants for which Suitable Habitat is Present in the Study Area

Scientific Name/ Common Name	Federal/State/ CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys
Allium munzii Munz's onion	FE/ST/ 1B.1	NE	Upland clay soils, generally in clay grasslands and shrublands and juniper woodlands; endemic to western Riverside County. Elevation 1,000 to 3,500 ft.	April – May	North Domenigoni Hills and Bachelor Mountain	No
Atriplex coronata var. *notatior* San Jacinto Valley crownscale	FE/-/1B.1	CA, PS, RRVP	Alkali grasslands, playas, vernal pools, saltbush scrub and alkaline sinks; silty-clay soils; endemic to Perris and Elsinore basins, western Riverside County. Elevation 1,200 to 1,700 ft.	April – May	Upper Salt Creek area, west of Hemet, and the San Jacinto River, from Mystic Lake to the Perris area	Yes
Brodiaea filifolia Thread-leaved brodiaea	FT/SE/1B.1	CA, PS, RRVP	Clay grasslands, alkali grasslands, alkaline seeps, needlegrass grasslands, vernal pools and riparian herb; scattered localities in foothills and valleys (Los Angeles County east to San Bernardino County, south to San Diego County). Elevation below 2,000 ft.	April – June	Upper Salt Creek area, west of Hemet	Yes
Deinandra mohavensis [Hemizonia mohavensis] Mojave tarplant	-/SE/1B.3	CO, RRVP	Riparian scrub, meadows and mesic ephemeral washes in sandy, eroded granitic landscapes; San Jacinto Mountains and foothills, mountains of San Diego County; one historic location in Mojave River wash north of San Bernardino Mountains, 2 locations in eastern Kern County. Elevation 2,000 to 6,000 ft.	July – October	Gibbel Flat area of the Santa Rosa Hills, about 5 mi southeast of Hemet; San Jacinto River, 1 mi south of the State Street bridge	No
Dodecahema leptoceras Slender-horned spineflower	FE/SE/1B.1	NE, RRVP	Open alluvial fan sage scrub found on upper sandy alluvial benches in valleys and canyons, sometimes with cryptogramic crusts; San Fernando, San Bernardino, Santa Clarita valleys, western Riverside County. Elevation 650 to 2,500 ft.	April – June	San Jacinto River 1.5 mi east of Valle Vista; Bautista Canyon 6 mi southeast of Valle Vista	No

Table 3.3-18 Potential Threatened or Endangered Plants for which Suitable Habitat is Present in the Study Area

Scientific Name/ Common Name	Federal/State/ CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys
Navarretia fossalis Spreading navarretia	FT/-/1B.1	NE, PS, RRVP	Vernal pools and margins and playas on saline-alkaline soils; northwestern Los Angeles County, western Riverside and San Diego counties to Baja California, Mexico. Elevation sea level to 4,200 ft.	April – June	Stowe Road Vernal Pool Complex (located north of Stowe Road and west of California Avenue), Upper Salt Creek area, west of Hemet	Yes
Orcuttia californica California Orcutt grass	FE/SE/1B.1	NE, PS, RRVP	Vernal pools; Simi Hills south to San Diego County and northern Baja California, Mexico, and inland to western Riverside County. Elevation below 2,200 ft.	April – August	Stowe Road Vernal Pool Complex, Upper Salt Creek area, west of Hemet	Yes

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

Note: The following USGS 7.5-minute quadrangles were queried, and they include the study area and an 8-mi buffer adjacent to the study area: Bachelor Mountain, Beaumont, Cabazon, El Casco, Hemet, Lake Fulmor, Lakeview, Murrieta, Perris, Romoland, Sage, San Jacinto, Sunnymead, and Winchester.

[a] Status Codes:

Federal Status

FE – Federally listed as endangered

FT – Federally listed as threatened

State Status

SE – State listed as endangered

ST – State listed as threatened

California Native Plant Society (CNPS) Status (CNPS 2007)

1A – Plants Presumed Extinct in California

1B – Plants Rare, Threatened, or Endangered in California and Elsewhere

2 – Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere

3 – Plants About Which We Need More Information - A Review List

4 – Plants of Limited Distribution - A Watch List

CNPS Threat Rank (Suffixes to CNPS List Status Codes):

1 –Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

2 – Fairly endangered in California (20-80% occurrences threatened)

3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

Other Designations:

[b] Western Riverside MSHCP Definitions (RCIP 2003).

Special Conditions of MSHCP Covered Species:

Table 3.3-18 Potential Threatened or Endangered Plants for which Suitable Habitat is Present in the Study Area

Scientific Name/ Common Name	Federal/State/ CNPS Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Description	Blooming Period	Occurrence in Project Vicinity	Species Observed during Surveys

CA – Surveys may be required for these species within locations shown on survey maps as described in Section 6.3.2 of the MSHCP. This includes the list of additional survey needs and procedures species and the Criteria Area Species (see MSHCP pp. 6-63 to 6-65) and the MSHCP Errata Letter, dated August 9, 2004.

CO – These species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met. Species-specific conservation objectives for these species are presented in Section 9.0 of the MSHCP. Refer to Table 9-3 of the MSHCP for specific conservation objectives that must be met for these species prior to including them on the list of Covered Species Adequately Conserved.

Covered – Species addressed in the MSHCP and included in the 10(a)(1)(B) permit. Also includes species that will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met.

NE – Surveys may be required for these species within Narrow Endemic Plant Species survey areas as described in Section 6.1.3 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

PS – Planning Species - Subsets of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans per Volume I, Section 3, of the MSHCP (RCIP 2003) and the MSHCP Errata Letter, dated August 9, 2004.

RRVP – These species should be protected as they are associated with riparian/riverine areas and vernal pools as described in Section 6.1.2 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

Animals

This section describes the species-specific methods and procedures used to conduct surveys for threatened and/or endangered animal species potentially located within the study area.

Database Queries[18]

Prior to initiating field surveys, a target list of potential threatened and/or endangered wildlife species was compiled for the study area using the following sources: CNDDB (CDFG 2006b); Special Animals list (CDFG 2006c, 2015b); MSHCP (RCIP 2003); USFWS, Carlsbad Field Office species list for Riverside County (USFWS 2012, 2015, and 2016); and focused surveys conducted in 2005 and 2006. The reference information is based on known occurrences, historical records, or the presence of suitable habitat for any life stage of a particular species. The special-status species reference search for CNDDB records within 8.05 km (5 mi) of the Project included the El Casco, Beaumont, Perris, Lakeview, San Jacinto, Romoland, Winchester, Hemet, Murrieta, and Bachelor, California, 7.5-minute United States Geological Survey (USGS) quadrangles.

The target list of potential threatened and/or endangered wildlife species in the study area that resulted from these queries is provided in Table 3.3-19. The table also includes listed wildlife species that were either observed onsite or had the potential to occur.

Vernal Pool Branchiopods

Two listed branchiopod species have the potential to occur in the study area.

- Riverside fairy shrimp (*Streptocephalus woottoni*), which is federally listed as endangered
- Vernal pool fairy shrimp (*Branchinecta lynchi*), which is federally listed as threatened

The Santa Rosa Plateau fairy shrimp is not expected to be present in the study area because it is restricted to the basalt flow vernal pools located on the Santa Rosa Plateau about 25 mi southwest of the study area.

Focused Surveys

Vernal pool branchiopod surveys were conducted by permitted biologists from 2000 through 2007 in accordance with both MSHCP requirements (RCIP 2003) and the USFWS wet season and dry season survey guidelines (USFWS 1996) to determine the presence or absence of listed vernal pool branchiopods in the study area.

[18] Although some of the survey protocols described in this section have been updated, focused surveys and field work for the Project were conducted in accordance with the latest guidance at that time. Likewise, some of the sources are outdated. However, in some cases the sources for the literature review, database queries, and data analyses remain the same for the Preferred Alternative in order to be consistent with analyses of the other Build Alternatives.

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Table 3.3-19 Potential Threatened and/or Endangered Wildlife in the Project Study Area

Scientific Name/Common Name	Federal/State/CDFW Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Requirements	Comments	Habitat Present/ Absent	Species Observed in the Study Area
Invertebrates						
Branchinecta lynchi Vernal pool fairy shrimp	FT/-/-	RRVP	Vernal pools and seasonally wet areas that are often short lived. Prefers cool-water pools and often requires a frost before emerging.	Vernal pools and seasonally wet areas are present in the study area. CNDDB occurrences have been documented in the special-status species search area (CDFG 2006b). This species was observed during focused surveys.	P	Yes
Euphydryas editha quino Quino checkerspot butterfly	FE/-/-	CO	Open-canopy habitats such as sparsely vegetated hilltops, ridgelines, and rocky outcrops. Often associated with sage scrub, chaparral, vernal pools, juniper and oak woodlands, and grasslands with moderate to high amounts of clay. Topographically diverse areas with host plants and nectar sources are also required.	Suitable open-canopy sage scrub, grassland, and vernal pool habitats are present in the study area. CNDDB occurrences have been documented in the special-status species search area (CDFG 2006b).	P	No
Streptocephalus woottoni Riverside fairy shrimp	FE/-/-	RRVP	Deep vernal pools, seasonally wet areas, and stock ponds that remain ponded for extended periods of time. Prefers warm-water pools most often associated with annual grassland, sage scrub, and chaparral habitats. Species distribution in Riverside County includes Skunk Hollow and the Pechanga Indian Reservation in Rancho California (RCIP 2003).	Vernal pools, seasonally wet areas, and stock ponds are present within the study area. CNDDB occurrences have been documented in the special-status species search area (CDFG 2006b). This species was not detected during focused surveys.	P	No
Fish						
Catostomus santaanae Santa Ana sucker	FT/ - /CSC	Covered	Permanent flowing streams with shallow cobble, gravel riffle, or other coarse substrate. Prefers cool, clean, and clear waters. Species distribution in Riverside County includes the lower reaches of the Santa Ana River and associated tributaries such as Temescal Wash and San Timoteo Creek (RCIP 2003).	The study area does not include Temescal Wash or San Timoteo Creek. It has no shallow, permanent streams. Therefore, suitable habitat is not present in the study area.	A	No
Amphibians						
Ambystoma californiense California tiger salamander	FE/ - /CSC	-	A lowland species restricted to grasslands and low foothill regions. Requires seasonally ponded areas for breeding and adjacent upland habitat for refuge sites and overwintering.	Although suitable habitat is present, the study area is outside the current distribution. This species was not detected during amphibian surveys in the study area.	P	No
Bufo californicus Arroyo toad	FE/ - /CSC	CA	Found in semi-arid regions, often near washes or intermittent streams with sandy banks, flood terraces, and riparian vegetation. Occasionally found in ephemeral drainages. Key population areas in Riverside County include Temecula Creek, Arroyo Seca, San Mateo Creek, Tenaja Creek, and Dripping Springs (RCIP 2003).	Suitable habitat does not exist in the study area, so focused surveys were not conducted. This species was not detected during amphibian surveys in the study area.	A	No
Rana aurora draytonii California red-legged frog	FT/ - /CSC	CA	Highly aquatic. Requires dense, shrubby riparian vegetation associated with deep, still, or slow-moving water. Species is very rare in Riverside County and is only known from the Santa Rosa Plateau (RCIP 2003).	Stock ponds and treatment wetlands represent the only suitable habitat in the study area. Focused surveys were not conducted. This species was not detected during amphibian surveys within the study area.	P	No
Rana muscosa Mountain yellow-legged frog	FE/ - /CSC	CA	Highly aquatic. Inhabits high-elevation streams that are typically steep with rocky canyons, usually above 4,000 ft. Found in the upper reaches and tributaries of the San Jacinto River: South Fork, Middle Fork, and North Fork San Jacinto River, Poppet Creek, Bautista Creek, and Potrero Creek (RCIP 2003).	The study area is not in the elevation range. Suitable habitat does not occur in the study area, so focused surveys were not conducted. This species was not detected during amphibian surveys in the study area. However, CNDDB occurrences have been documented in the special-status species search area (CDFG 2006b).	A	No
Birds						
Buteo swainsoni Swainson's hawk	-/ ST/-	Covered	Found in open desert habitat, sparse shrub habitat, grasslands, agricultural fields, or croplands containing isolated or scattered, large trees or small groves. Within the MSHCP area, it would be expected in the agricultural areas with rural and low-density	Suitable nesting habitat does exist in the study area, but the study area is not in the current nesting range for this species. This species was observed outside the study area during nesting raptor surveys.	Nesting – P Wintering – P	No

Table 3.3-19 Potential Threatened and/or Endangered Wildlife in the Project Study Area

Scientific Name/Common Name	Federal/State/CDFW Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Requirements	Comments	Habitat Present/ Absent	Species Observed in the Study Area
			residential land use and would be present for short periods of time during its migration from wintering to breeding areas (RCIP 2003).			
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FC/ SE /-	RRVP	Requires extensive riparian woodlands with dense vegetation and a well-developed understory for nesting. Restricted to river bottoms and other mesic habitats where humidity is high and where the dense understory abuts slow-moving watercourses, backwaters or seeps. In the western Riverside County area, it is only known from Prado Basin and the adjacent, Riverside County reach of the Santa Ana River (RCIP 2003).	Suitable nesting habitat is not located in the study area. This species was not observed during riparian bird surveys.	A	No
Empidonax traillii extimus Southwestern willow flycatcher	FE/-/-	RRVP	Restricted to riparian woodlands along streams and rivers with mature, dense stands of willows, cottonwoods, or smaller spring-fed or boggy areas with willows or alders, often with a dense understory. Sparsely located throughout the region and plan area.	Suitable nesting and foraging habitat includes several areas of willow woodlands and dense riparian vegetation in the study area. A migrant was observed during focused surveys.	P	Yes
Falco peregrinus anatum Peregrine falcon (nesting)	Delisted/SE/FP	Covered	Found in a variety of habitats such as tundras, marshes, savannahs, wetlands, forests, and other coastal habitats, but is scarce throughout its range. Typically nests high in cliffs and rocky outcrops, but is also known to nest in man-made structures in urban areas. Wintering and transient individuals are known in Prado Basin, Santa Ana River basin, San Jacinto Wildlife Area, Lake Perris, Lake Skinner, and Hemet Lake, all of which would concentrate waterfowl or shorebirds and constitute foraging areas (RCIP 2003).	The study area does not have nesting habitat, and this species was not observed.	Nesting – A Wintering – P	No
Haliaeetus leucocephalus Bald eagle (nesting and wintering)	Delisted/SE/-	Covered	Found along sea coasts, rivers, swamps, and large lakes. Locally, also found near large, deep inland bodies of water. Occurrences in western Riverside County include Santa Ana River/Prado Basin, Lake Elsinore, Vail Lake, Lake Hemet, Lake Mathews, Lake Perris, and Lake Skinner (RCIP 2003).	Generally a migrant and wintering species in western Riverside county. Suitable breeding and foraging habitat is present near Diamond Valley Reservoir, just south of the study area.	A	No
Polioptila californica californica Coastal California gnatcatcher	FT/-/CSC	Covered	Associated with coastal sage scrub vegetation on mesas, hillsides, and in washes. Often forages in chaparral, grassland, and riparian habitats located adjacent to sage scrub. Occurrences throughout western Riverside County, with key population areas in the city of Lake Elsinore, the Temecula area, and the southern portion of Lake Skinner west to Winchester Road (RCIP 2003).	Suitable nesting and foraging habitat in Riversidian sage scrub is present in the study area. Known occurrences in the special-status species search area (CDFG 2006b). Although this species is known to nest in the area, only individuals were documented in the study area.	P	Yes
Vireo bellii pusillus Least Bell's vireo (nesting)	FE/SE/-	RRVP	Moist thickets and dense riparian areas, primarily dominated by willow and mule fat. Requires a stratified canopy in the vicinity of a water source. Occurs throughout western Riverside County, with key population areas in Prado Basin and contiguous reaches of the Santa Ana River, Chino Creek, Temescal Wash, San Timoteo Creek, Alberhill Creek, Tucalota Creek, Murrieta and Temecula Creeks, Wilson Creek, March Air Force Base, in the vicinity of De Luz, Santa Margarita River, and Potrero Creek (RCIP 2003).	Suitable nesting and foraging habitat includes several areas of willow woodlands and dense riparian vegetation in the study area. A lone male was observed outside the study area during focused surveys.	P	No

Table 3.3-19 Potential Threatened and/or Endangered Wildlife in the Project Study Area

Scientific Name/Common Name	Federal/State/CDFW Status Codes[a]	MSHCP Status and Special Conditions[b]	Habitat Requirements	Comments	Habitat Present/ Absent	Species Observed in the Study Area
Mammals						
Dipodomys merriami parvus San Bernardino kangaroo rat	FE/-/CSC	CA	Prefers open habitats where it can excavate shallow burrows in sandy and loamy sand substrates.	Marginally suitable alluvial fan sage scrub vegetation is located in the northern portion of the study area along the San Jacinto River, and there are known occurrences within the area (Verne 2007). However, this species was not captured during small mammal trapping.	P	No
Dipodomys stephensi Stephens' kangaroo rat	FE/ST/-	Covered	Occurs primarily in annual and perennial grassland habitats with firm soil, but may also occur in coastal scrub or sagebrush habitat with sparse canopy cover, or in disturbed areas (CDFG 2005).	Suitable open habitat is present in the study area, and this species has been documented in many locations (CDFG 2006b). Remnant populations were captured outside the study area during small mammal trapping, but none were observed in the study area.	P	No

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

Note: The following USGS 7.5-minute quadrangles were queried, and they include the PIA and an 8-km (5-mile) buffer adjacent to the PIA: Bachelor Mountain, Beaumont, El Casco, Hemet, Lakeview, Murrieta, Perris, Romoland, San Jacinto, and Winchester.

[a] Status Codes:

Federal Status

FE – Federally listed as endangered

FT – Federally listed as threatened

FC – Federal candidate species

Delisted – Delisted species are monitored for 5 years

State Status

SE – State listed as endangered

ST – State listed as threatened

California Department of Fish and Game

CSC – California Species of Concern

FP – Fully protected

N/A – not applicable

Other Designations:

[b] Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) Definitions (RCIP 2003).

Special Conditions of MSHCP Covered Species:

CA – Surveys may be required for these species within locations shown on survey maps as described in Section 6.3.2 of the MSHCP. This includes the list of additional survey needs and procedures species and the Criteria Area Species (see MSHCP pages 6-63 to 6-65) and the MSHCP Errata Letter, dated August 9, 2004.

CO – These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met. Species-specific conservation objectives for these species are presented in Section 9.0 of the MSHCP. Refer to Table 9-3 of the MSHCP for specific conservation objectives that must be met for these species prior to including them on the list of Covered Species Adequately Conserved.

Covered – Species addressed in the MSHCP and included in the 10(a)(1)(B) permit. Also includes species that will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met.

NE – Surveys may be required for these species within Narrow Endemic Plant Species survey areas as described in Section 6.1.3 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

PS – Planning Species – Subsets of Covered Species that are identified to provide guidance for Reserve Assembly in Cores and Linkages and/or Area Plans per Volume I, Section 3, of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

RRVP – These species should be protected as they are associated with riparian/riverine areas and vernal pools as described in Section 6.1.2 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004.

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Western Riverside County Multiple Species Habitat Conservation Plan Survey Requirements

The Riverside fairy shrimp, vernal pool fairy shrimp, and Santa Rosa plateau fairy shrimp are Covered Species in the MSHCP. Although no survey area has been designated for these species, Section 6.0 of the MSHCP requires mapping of any vernal pools, stock ponds, ephemeral pools, or other water features to identify potential habitat areas. If potential habitat is identified, focused surveys for these species are required.

Areas of vernal pools, playas, open water, and wetlands within and adjacent to the study area that could provide suitable habitat for these listed vernal pool branchiopods are identified in the MSHCP map of wetland resources (Figure 2-3, MSHCP [RCIP 2003]). This map and Project-specific vegetation mapping were used to determine suitable branchiopod habitat in the study area. In addition, the study area was monitored during each wet season to identify suitable ponded water habitat. Suitable pools were measured in the field by mapping the perimeters with a Trimble GPS unit.

United States Fish and Wildlife Service Survey Requirements

The vernal pool wet season and dry season branchiopod surveys complied with the USFWS Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods (USFWS 1996[19]).

Wet Season Survey Methodology

Between 2000 and 2007, wet season surveys were conducted by permitted biologists in suitable ponded areas in the Project study area. Suitable areas were monitored for ponding during each winter rainy season (October through April), and surveys began within 2 weeks after inundation was observed. A pool was considered inundated if it held 1.2 inches of standing water 24 hours after a rain. The pools were visited once every 2 weeks while they were inundated or until 120 days of inundation had occurred.

Samples were collected using a 0.04-inch dip net. Specimens were identified to species using a 14x-to-90x stereo zoom microscope and dichotomous key from *Fairy Shrimps of California's Puddles, Pools, and Playas* (Eriksen 1999).

Dry Season Survey Methodology

Dry season surveys were conducted in the Project study area by permitted biologists during September and October 2006 in accordance with USFWS guidelines (USFWS 1996). Ten soil samples were collected from the top 0.4 to 1.2 inches in the bottom of each pool. The soil samples were approximately 6.10 cubic inches each, for a total soil volume of 61.0 cubic inches from each pool. If the pool had a diameter of less than 9.8 ft, the total soil volume collected did not exceed 30.5 cubic inches, and the soil samples were approximately 3.05 cubic inches each.

Soil samples were examined in the laboratory to identify branchiopod cysts to the lowest identifiable taxon. Cysts from the genus *Branchinecta* could not be identified to the species (only to genus) due to the similarity in the surface

[19] Although USFWS has since issued a 2015 update to the survey guidelines for the listed large branchiopods, focused surveys for the Project were conducted between 2000 and 2007, prior to the update and were therefore conducted in accordance with the current guidance at the time of the surveys (USFWS 1996).

morphology of cysts. Within the genus *Branchinecta*, two species, *Branchinecta lynchi* and *Branchinecta lindahli*, are known to occur in this region. Because the results of this dry season study required the determination to species for the *Branchinecta* genus, the cysts were hydrated and reared for identification.

Adult shrimp were reared from the recovered cysts following USEPA protocol (USEPA 1985, Rogers 2006). Reared adult shrimp were examined under a stereo dissection microscope and identified to species based upon comparisons with specimens in collections, the original species descriptions, and professional experience.

Quino Checkerspot Butterfly

The Quino checkerspot butterfly (QCB) (*Euphydryas editha quino*) is federally listed as an endangered species and is a Covered Species Adequately Conserved in the MSHCP. Because it has been adequately conserved, focused protocol-level QCB surveys are not required for projects in the MSHCP Conservation Area, so a qualitative discussion is not provided in this section. However, because of the estimated amount and extent of take covered under the Take Permit for the Project, the potentially suitable habitat that would be lost must be quantified. The potentially suitable QCB habitat in the study area is provided in Table 3.3-1, and the suitable habitat that would be permanently impacted by each Build alternative is provided in Table 3.3-3. Potentially suitable QCB habitat in the PIA was based on the following vegetation communities: alkali grassland, alkali playa, annual grassland, annual grassland/Riversidian sage scrub, Riversidian sage scrub, ruderal, ruderal alkali flats, and vernal pool.

The QCB is narrowly distributed in suitable habitat at relatively few locations in the MSHCP Conservation Area (RCIP 2003). Observations of QCB clusters have been categorized into 22 occurrence complexes. Large or strategically located occurrence complexes are considered core populations. The MSHCP identifies seven core population areas. Conservation of QCB will be achieved through an adaptive management program limited to the designated Core Areas. Core Area reserve managers are responsible for implementing the species-specific conservation goals set forth in the MSHCP.

Stephens' Kangaroo Rat

The Stephens' kangaroo rat (*Dipodomys stephensi*), which is federally listed as endangered and state listed as a threatened species, is considered adequately conserved under the MSHCP. Therefore, no Stephens' kangaroo rat (SKR) protocol surveys are required for projects in the MSHCP Conservation Area, but suitable habitat should be documented. The amount of potentially suitable SKR habitat in the study area is provided in Table 3.3-1 and the amount of suitable habitat permanently and temporarily impacted by the Build alternatives is provided in Table 3.3-3.

The long-term Stephens' kangaroo rat habitat conservation plan (SKR HCP) includes mitigation for impacts and provides take authorization for Stephens' kangaroo rat within its boundaries for member agencies. In accordance with Section 10 of the Endangered Species Act, which authorizes incidental take under an approved HCP, the implementation agreement and Section 10 Permit associated with the MSHCP will provide take authorization for Stephens' kangaroo rat outside the boundaries of the SKR HCP, but inside the MSHCP area boundaries for member agencies. The core reserves established by the SKR HCP will be managed as part of the MSHCP Conservation Area consistent with the

SKR HCP (RCIP 2003). Since the City of San Jacinto is a non-member of the SKR HCP, take authorization for SKR will be extended through formal Section 7 consultation for this Project.

Stephens' kangaroo rat is relatively widespread throughout the MSHCP area, but the main blocks of occupied habitat are concentrated in several core areas that must be conserved. Stephens' kangaroo rat also requires species-specific monitoring and management to ensure its long-term viability in the MSHCP area, including tracking population densities and maintaining sparse, open grassland habitats.

Although not a target species for focused surveys, small isolated remnant populations of Stephens' kangaroo rat were expected to be present in the Project area. Eight captures of four individuals were made in two small areas of grassland and sparse sage scrub outside the study area. One individual was captured north of Domenigoni Parkway and west of Winchester Road, about 98 ft northeast of the study area for Build Alternatives 1a and 2a. The other seven captures (repeated captures of three individuals) occurred west of the existing SR 79 alignment, south of Gilman Springs Road and north of the San Jacinto wash. This was about 0.6 mi north of the Project study area. The largest population of Stephens' kangaroo rat in the region is on the Potrero Unit of the CDFW San Jacinto Wildlife Area, about 0.7 mi northeast of the Project, where about 2,000 ac of Stephens' kangaroo rat habitat have been documented.

San Bernardino Kangaroo Rat

The San Bernardino kangaroo rat is federally listed as endangered, is a California Species of Concern (CSC), and is a Covered Species under the MSHCP, for which focused surveys are required. See Section 3.3.4.2 for the study methodology used for San Bernardino Kangaroo Rat trapping.

Coastal California Gnatcatcher

The coastal California gnatcatcher (*Polioptila californica californica*) is federally listed as a threatened species and is a Covered Species Adequately Conserved in the MSHCP. Because it has been adequately conserved, focused protocol-level coastal California gnatcatcher surveys are not required for projects in the MSHCP Conservation Area. Projects are required to disclose and calculate the area of critical habitat impacted for the species and to disclose this in the Consistency Analysis to attain a Consistency Determination from the RCA for the Project to confirm that it is a Covered Activity. The potentially suitable coastal California gnatcatcher habitat in the study area is in Table 3.3-1, and the suitable habitat that could be permanently impacted is in Table 3.3-3. Potentially suitable coastal California gnatcatcher habitat in the PIA was based on the following vegetation communities: annual grassland/Riversidian sage scrub and Riversidian sage scrub. Coastal California gnatcatchers were incidentally observed during field surveys.

Per the MSHCP, this species will be managed at the habitat level with site-specific requirements in Core Areas and Linkages. Core Area reserve managers are responsible for implementing the species-specific conservation goals set forth in the MSHCP.

Least Bell's Vireo, Southwestern Willow Flycatcher, and Western Yellow-Billed Cuckoo

Least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) are all MSHCP Covered Species, for which focused surveys

are required. These species are included in MSHCP Section 6.1.2 (RCIP 2003). Because of this, habitat assessments and focused surveys for these species were conducted in the study area during 2005.

Least Bell's Vireo

A habitat assessment for least Bell's vireo took place on March 17 and 18, 2005. Focused surveys were subsequently conducted in areas with potentially suitable riparian habitat. The least Bell's vireo survey guidelines established by USFWS (2001) require eight surveys in each survey area between April 10 and July 31. These surveys are to be conducted at least 10 days apart to determine the presence or absence of nesting least Bell's vireos. Surveys were conducted between April 12 and July 25, 2005. A summary of surveys by date, time, and survey site is in the Final Riparian Bird Survey Report of December 2007.

The eight focused surveys were conducted by biologists who were experienced with the songs, whisper songs, calls, scolds, and plumage characteristics of adult and juvenile vireos. Surveys took place between 5:30 a.m. and 11:00 a.m. during suitable weather conditions. No more than 123.5 ac of suitable riparian habitat were surveyed per day. The biologists walked all suitable riparian habitats and positioned themselves in the best locations to listen and look for vireos. If a least Bell's vireo was detected, it was observed until territory information or a positive location could be obtained. All vireo detection, including number of individuals, sex, age, and leg bands, was recorded on standardized data sheets. In addition to the least Bell's vireo, any detections of the parasitic brown-headed cowbird (*Molothrus ater*) or other bird species were also recorded.

Southwestern Willow Flycatcher

A habitat assessment for southwestern willow flycatcher took place on March 17 and 18, 2005. Focused surveys were subsequently conducted in areas with potentially suitable riparian habitat. The southwestern willow flycatcher survey protocol, established by Sogge et al. (1997) and modified by the USFWS, consists of five surveys in each survey site between May 15 and July 17 (USFWS 2000[20]). The five surveys are to be conducted in three survey periods, one between May 15 and May 31, one between June 1 and June 21, and three between June 22 and July 17. The three surveys needed in the third survey period are to be at least 5 days apart.

Surveys for southwestern willow flycatchers took place in the study area between May 16 and July 6, 2005. Four of the surveys were conducted under federal endangered species permit TE-092622-0. One was under federal permit TE-787376-9. Surveys began between 5:30 a.m. and 6:00 a.m., lasted 4 to 4.5 hours, and ended no later than 10:00 a.m. Surveys only took place in appropriate weather; mornings with rain or excessive wind were avoided.

Tape playbacks were used during the surveys, as outlined in Sogge et al. (1997). Tape playbacks are a reliable method of determining southwestern willow flycatcher presence or absence and breeding status (territorial residents versus migrants). This survey technique involved playing tape-recorded southwestern willow flycatcher songs at 98.4 ft

[20] Although USFWS has since issued a 2010 update to the southwestern willow flycatcher survey protocol, focused surveys for the Project were conducted in 2005 prior to the update and were therefore conducted in accordance with Sogge et al. (1997) and USFWS (2000) survey protocols.

intervals along the survey routes to elicit a response from individuals, if present. A southwestern willow flycatcher survey tape, distributed by the Arizona Game and Fish Department, was played at natural volume and included a mixture of "fitz bew" songs and "whit" calls.

A period of 1 or 2 minutes was taken at the beginning of each day's survey route to listen for southwestern willow flycatchers and to acclimate the surveyor to background noise and the sounds of other birds singing and calling in the area. After the initial listening period, the taped southwestern willow flycatcher song was played for 15 to 30 seconds, followed by a 1- or 2-minute listening period. If no southwestern willow flycatchers were detected, the surveyors walked 98.4 ft to the next survey station and repeated this process. A 10- to 20-second listening period took place at each survey station before playing the tape.

Several *Empidonax* flycatchers look very similar and may pass through the San Jacinto Valley during migration. Therefore, positive identification of a southwestern willow flycatcher can only be made by hearing the "fitz-bew" song. Once a southwestern willow flycatcher was detected, the tape was no longer played or was played again only very briefly to avoid harassing the birds or attracting the attention of potential predators and brood parasites. Any southwestern willow flycatchers that were heard were visually monitored for a few minutes to determine the exact location and territory information. After viewing the legs of the willow flycatchers to ascertain banding information, surveyors continued on to the next calling station, 98.4 ft away. All detections were mapped and recorded on standardized data sheets. Negative survey data were recorded in the same manner. These data sheets were filled out daily and submitted to CDFW and USFWS as part of the 90-day report, as required by the federal endangered species permits. Other information recorded on the data sheets included vegetation characteristics of the study area, dominant tree species and canopy height, presence of cowbirds, evidence of cattle grazing, and presence of surface water.

Western Yellow-Billed Cuckoo

Although surveys were conducted for western yellow-billed cuckoo concurrently with the southwestern willow flycatcher and least Bell's vireo surveys, the habitat in the study area is poor quality and is essentially unsuitable for the western yellow-billed cuckoo. Because the western yellow-billed cuckoo was not detected and is not expected to be present in the study area, this species is not discussed or evaluated further.

Additional Information

In addition, the USFWS Critical Habitat Portal website was used to identify proposed and final published critical habitat for threatened and endangered species that may be present in the study area (USFWS 2011). The USFWS and the National Oceanic and Atmospheric Administration (NOAA) are responsible for administering all facets of protecting federally listed threatened and endangered species, including critical habitat. The NOAA's definition of critical habitat (shown below) would also apply to areas regulated by the USFWS:

> *The Endangered Species Act (ESA) requires the federal government to designate "critical habitat" for any species it lists under the ESA. Critical habitat is defined as: (1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) specific*

areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation (NOAA 2011).

The information from the Critical Habitat Portal was used to prepare figures and assess potential impacts to areas designated as critical habitat.

Overview of Critical Habitat, Plant Species, and Animal Species within the Study Area

Critical Habitat

One critical habitat designation is present in the study area, spreading navarretia (*Navarretia fossalis*). Final revised critical habitat for spreading navarretia was issued on November 8, 2010 (75 FR 19575, pp 19575 – 19590). This critical habitat, a part of USFWS Unit 6: Riverside Management Area, Subunit 6B. Salt Creek Seasonally Flooded Alkali Plain, is present in the study area, as shown in Figure 3.3-51. Primary constituent elements (PCEs) used to determine critical habitat, as defined in the Federal Register listing, include: 1) ephemeral wetlands such as vernal pools and seasonally flooded alkali vernal plains, 2) intermixed wetland and upland habitats that act as the local watershed, and 3) clay soils that support ponding during winter and spring, which create an impermeable surface layer. Critical habitat for spreading navarretia in the Project study area contains these PCEs, particularly Additional Indirect Impact Study Area 1 near the Stowe Road Vernal Pool Complex. The amount of critical habitat that could be impacted by the Project is shown in Table 3.3-3.

No other critical habitat designations are present in the study area or expected to be affected by any of the Build alternatives or design options. However, final revised critical habitat for the coastal California gnatcatcher is within the scale of Figure 3.3-51 and is therefore shown in the figure. This final revised critical habitat is outside the study area, so it is not discussed further in this section.

Plant Species

Seven federally or state-listed threatened or endangered plants could be present in the study area (Table 3.3-18), and four federally and/or state-listed plant species were identified during the rare plant surveys (Table 3.3-1 and Table 3.3-3). These are San Jacinto Valley crownscale, spreading navarretia, California Orcutt grass, and thread-leaved brodiaea. All are federally listed as threatened or endangered, and California Orcutt grass and thread-leaved brodiaea are also state listed as endangered. All four of these plants are included in the MSHCP. Federal, state, CNPS, and MSHCP conservation status codes for each species are provided in Table 3.3-18.

San Jacinto Valley crownscale was found in the PIA and the indirect impact area, while spreading navarretia, California Orcutt grass, and thread-leaved brodiaea were found only in the indirect impact area. As outlined below, these four listed plants were observed in the study area for Roadway Segment I and the extensive alkali grassland, playa, and vernal pool habitats located within Additional Indirect Impact Study Areas 1 and 2.

Long-term conservation value (LTCV) populations are Criteria Area and Narrow Endemic plants in Criteria Area Cells or required survey areas that contribute toward MSHCP Covered Species conservation objectives and reserve assembly. Table 3.3-20 presents assessments of LTCV for the four listed plant species discussed in this section. The LTCV populations are all in Additional Indirect Impact Study Area 1.

Animal Species

The only listed animal species observed in the study area is vernal pool fairy shrimp (*Branchinecta lynchi*), which are federally listed as threatened. Vernal pool fairy shrimp were observed in one pool in Additional Indirect Impact Study Area 1 during the 2004 to 2005 wet season survey (Figure 3.3-44). The USFWS Listed Species Verification and Notification is in Appendix G of the Final Vernal Pool Branchiopod Survey Report of December 2007.

No other animal species that are federally or state listed as threatened or endangered were observed in the study area of the Project; however, suitable habitat for the following listed species was identified.[21]

- Stephens' kangaroo rat (FE, ST)
- San Bernardino kangaroo rat (marginal habitat) (FE)
- Quino checkerspot butterfly (FE)
- Coastal California gnatcatcher (FT)
- Southwestern willow flycatcher (FE)
- Least Bell's vireo (FE, SE)

The Stephens' Kangaroo Rat (SKR), Quino checkerspot butterfly (QCB), and coastal California gnatcatcher are all considered Covered Species Adequately Conserved per the MSHCP. This means the conservation objectives for these species have been achieved, and these species are provided Take Authorization through the NCCP permit and through the Section 10(a) permit issued in conjunction with the MSHCP Implementing Agreement (RCIP 2003). Since the Project lies within both the SKR HCP fee area and the MSHCP boundary outside of the SKR fee area, SKR take authorization, for this Project, would be extended through formal Section 7 Consultation. The MSHCP defines Covered Species Adequately Conserved as follows:

> *The initial 118 Covered Species and any of the remaining 28 Covered Species where the species objectives, set forth in Section 9.2 of the MSHCP, Volume 1 and Table 9-3, are met, and which are provided Take Authorization through the NCCP Permit and for animals through the Section 10(a) Permit issued in conjunction with the IA.*

Although focused surveys are not required for these species per the MSHCP, because of the estimated amount and extent of take covered under the Take Permit for the Project, the amount of potentially suitable habitat that could be lost must be quantified. The amount of potentially suitable habitat for SKR, QCB, and coastal California gnatcatcher in the study area is provided in Table 3.3-1, and the suitable habitat that could be permanently or temporarily impacted is in Table 3.3-3.

[21]FE – federally endangered
FT – federally threatened
SE – state endangered
ST – state threatened

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Table 3.3-20 Assessment of Long-Term Conservation Value Threatened and Endangered Species Populations in the Study Area

Scientific Name	Common Name	Criteria Area Cell(s)	Build Alternative	Location of Population by Project Element	Population(s) Present in the PIA	Population(s) Present in the 30.5-m (100-ft) Indirect Impact Area	Population(s) Present in Additional Indirect Impact Study Area 1	Population(s) Present in Additional Indirect Impact Study Area 2	Do Populations Have Long-Term Conservation Value?	Rationale[a]
Atriplex coronata var. *notatior*	San Jacinto Valley crownscale	3683, 3684, 3791, 3887, 3891, 4007	Build Alternatives 2a and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 1	No	No	Yes	No	Yes	A total of 224 San Jacinto Valley crownscale populations (with a little more than 58,000 plants) occur in Additional Indirect Impact Study Area 1. These populations are part of the Upper Salt Creek core population, which may now contain half, or possibly more, of the known individuals of San Jacinto Valley crownscale. Because these populations are important to the continued existence of this species, these populations have very high LTCV. Adverse impacts to the populations within this area (including the supporting vernal pool hydrology) could result in the loss of populations, degradation of the vernal pool habitat, could affect the long-term sustainability of these localities, and could possibly make it more difficult to attain the MSHCP species conservation goals and objectives.
Brodiaea filifolia	thread-leaved brodiaea	4007	Build Alternatives 2a and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 1	No	No	Yes	No	Yes	Nine populations of thread-leaved brodiaea with 231 plants were observed within Additional Indirect Impact Study Area 1. All of these populations occurred in the alkali grasslands and wetland habitat north of the San Jacinto Branch Line and east of California Avenue and are the only known locality to occur in the study area. These populations have LTCV because these populations are the eastern known locality of this species, they are one of only six localities known from the Perris Basin region, and the habitat quality is high compared to other areas. Adverse impacts to these populations or to the supporting hydrology could result in the loss of this locality, a decrease in population size, or degradation of the habitat, could adversely affect the long-term sustainability of these localities, and could make it more difficult to attain the MSHCP species conservation goals and objectives.
Navarretia fossalis	spreading navarretia	3791, 3887, 3891	Build Alternatives 2a and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 1	No	No	Yes	No	Yes	Thirty-two populations of spreading navarretia with 30,326 plants were identified between the San Jacinto Branch Line to just north of Stetson Avenue. The largest single concentration of plants (about 80 percent of all the plants observed in the study area) was identified at the Stowe Road Vernal Pool Complex. These populations have high to very high LTCV, depending on site-specific habitat variables. Adverse impacts to these populations or to the supporting hydrology could result in the loss of this locality, a decrease in population size, or degradation of the habitat, could adversely affect the long-term sustainability of these localities, and could make it more difficult to attain the MSHCP species conservation goals and objectives.

Table 3.3-20 Assessment of Long-Term Conservation Value Threatened and Endangered Species Populations in the Study Area

Scientific Name	Common Name	Criteria Area Cell(s)	Build Alternative	Location of Population by Project Element	Population(s) Present in the PIA	Population(s) Present in the 30.5-m (100-ft) Indirect Impact Area	Population(s) Present in Additional Indirect Impact Study Area 1	Population(s) Present in Additional Indirect Impact Study Area 2	Do Populations Have Long-Term Conservation Value?	Rationale[a]
Orcuttia californica	California Orcutt grass	3887	Build Alternatives 2a and 2b (including Design Option 2b1)	Additional Indirect Impact Study Area 1	No	No	Yes	No	Yes	Two populations of California Orcutt grass with 4,266 plants were identified within the Stowe Road Vernal Pool Complex, north of Stowe Road within Additional Indirect Impact Study Area 1. The populations at the Stowe Road Vernal Pool Complex are considered one of three core population complexes in Riverside County. Although this area has been disturbed, the Stowe Road Vernal Pool Complex has very high LTCV due to: (1) the endangered status of the species, (2) fairly high population size, (3) geographic distribution of this locality, and (4) relatively high habitat quality. Adverse impacts to these populations or to the supporting hydrology could result in the loss of this locality, a decrease in population size, or degradation of the habitat, could adversely affect the long-term sustainability of these localities, and could make it more difficult to attain the MSHCP species conservation goals and objectives.

Source: Natural Environment Study, April 2010; NES Technical Report Addendum Memorandum, August 2010

[a] Information about the MSHCP Planning Species and Biological Issues and Considerations included for Subunits 2 and 4, along with the Planning Species for Noncontiguous Habitat Blocks 6 and 7 and Existing Constrained Linkage B, and the overall goals for each of the Covered species as noted in Appendix E of the MSHCP (Species Survey Requirements, Plants), and the habitat goals noted for each Criteria Area Cell in Table 3.3-2 of this document.

San Bernardino kangaroo rat was not observed in the study area. Marginally suitable habitat for this species was found in the alluvial fan scrub habitat east of the existing SR 79 alignment, north of the San Jacinto River and south of Gilman Springs Road, but suitable habitat was not found in the study area. Although this species was observed about 1,900 ft west of the study area along the San Jacinto River in 2005 (P. Vergne, pers. com), no San Bernardino kangaroo rat sign was evident in the study area, and no San Bernardino kangaroo rats were captured in any of the trap-lines set during the focused surveys. Because San Bernardino kangaroo rat was not detected in the study area, this species is not discussed further. However, see the brief discussion at the beginning of this section.

The amount of riparian habitat in the study area that is suitable for southwestern willow flycatchers is summarized in Table 3.3-1. One migrant willow flycatcher was detected (by both observation and vocalization) in the study area during the first protocol survey, about 442 ft east of the PIA of Roadway Segment M. The individual was not with a mate, and no nesting behavior was observed (Figure 3.3-46). Because the willow flycatcher was a migrant and did not nest, the surveyor concluded that this was not the federally endangered southwestern sub-species. Therefore, impacts to the southwestern willow flycatcher are not expected.

A solitary male least Bell's vireo was detected (by both observation and vocalization) 317 ft outside the study area near Utility Relocation Area 2. This location is shown in Figure 3.3-47. The solitary male was heard vocalizing and was observed foraging along the San Jacinto River in a dense area of mule fat scrub surrounded by cottonwood willow riparian woodland. This was the only detection. No nesting least Bell's vireos were found. Because it was not detected in the study area, impacts to least Bell's vireo are not expected.

Federal/California Endangered Species Act Consultation Summary

As discussed in Section 2.2 (Volume 1) and in more detail in Section 5.2, NEPA/404 Integration Process coordination with state and federal agencies has been ongoing throughout project development.

The NEPA/404 Integration Process has provided an effective means of conducting preconsultation per Section 7 of the Endangered Species Act with USFWS. In addition, RCTC and the Department integrated state agencies into the discussion and coordination of the NEPA/404 activities. These agencies included the RWQCB and CDFW. As such, preconsultation for the California Endangered Species Act (CESA) has also taken place with CDFW.

The MSHCP is an HCP pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act of 1973, as well as a Natural Community Conservation Planning program under the NCCP Act of 1991. The Section 10 Permit associated with the MSHCP allows the participating jurisdictions to "take" plant and wildlife species identified in the Plan Area. The USFWS and CDFW have authority to regulate the take of Threatened, Endangered, and Rare Species. Under the MSHCP, the wildlife agencies will grant "Take Authorization" for otherwise lawful actions, such as public and private development, that may incidentally take or harm individual species or their habitat outside the MSHCP Conservation Area in exchange for the assembly and management of a coordinated MSHCP Conservation Area (RCIP 2003). As such, Section 7 consultation will be conducted based on the MSHCP. More information about the MSHCP is in Section 3.3.1.3. The Department initiated Section 7 Consultation with the USFWS on December 15, 2015 for the Preferred Alternative and received a Biological Opinion (FWS-WRIV-09B0190-16F0335) on March 10, 2016 which can be found in Appendix N. A USFWS species list dated June 20, 2016, is attached at the end of Chapter 5.

Listed Plant and Animal Species in the Study Area of the Project Alternatives

This section provides information on listed plants and animals and critical habitat in the study area of the Project. Permanent and temporary impacts are provided in Section 3.3.5.3.

All Build Alternatives and Design Options (excluding Build Alternative 1br)

MSHCP Covered Species and/or Planning Species

San Jacinto Valley Crownscale

The same 13 San Jacinto Valley crownscale populations (with 6,749 plants) are present in the study areas of all Build alternatives and design options (Tables 3.3-5 and 3.3-6) (excluding Build Alternative 1br). Twelve populations with 6,727 plants were found in the study area for Roadway Segment I, north of Devonshire Avenue, and one small population (22 plants) was found west of Warren Road in Additional Indirect Impact Study Area 2 (Figure 3.3-24). Roadway Segment I is a component of all Build alternatives and design options; however, Roadway Segment I was shifted to the west for Build Alternative 1br, which eliminated the 12 populations from the Study Area of this Build Alternative. The study area for Build Alternative 1br only includes the small population (22 plants) found in Additional Indirect Impact Study Area 2. These13 San Jacinto Valley Crownscale populations are not in an MSHCP Criteria Area Cell and do not have LTCV (Table 3.3-5).

The study areas for Build Alternatives 2a and 2b also include Additional Indirect Impact Study Area 1 and, therefore, contain other listed plant species as described in their respective sections.

No Build Alternative

No impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

MSHCP Covered Species and/or Planning Species

Animal Species

Vernal Pool Branchiopods

No listed vernal pool branchiopods were observed in the study area for Build Alternative 1a, but 27 pools were identified as potential habitat. The pools include tire ruts and roadside drainages, man-made depressions, depressions in active agricultural fields, and vernal pools. All 27 pools received two surveys, either two wet season surveys or both a wet and a dry season survey. The only vernal pool branchiopod species observed in the study area for Build Alternative 1a was the nonlisted versatile fairy shrimp. The nonlisted versatile fairy shrimp was observed in 16 pools. No vernal pool branchiopods were observed in the other 11 pools.

Least Bell's Vireo

Least Bell's vireo was not observed in the study area for Build Alternative 1a, but 27.16 ac of suitable habitat were identified.

Southwestern Willow Flycatcher

Southwestern willow flycatchers were not observed in the study area for Build Alternative 1a, but 27.16 ac of suitable habitat were identified.

Stephens' Kangaroo Rat

About 581.0 ac of suitable Stephens' kangaroo rat habitat are present in Build Alternative 1a.

Quino Checkerspot Butterfly

About 1,369.3 ac of suitable Quino checkerspot butterfly habitat are present in the study area for Build Alternative 1a.

Coastal California Gnatcatcher

About 334.3 ac of suitable coastal California gnatcatcher habitat are present in the study area for Build Alternative 1a.

Critical Habitat

The study area for Build Alternative 1a contains 4.8 ac of spreading navarretia critical habitat.

Build Alternative 1b and Design Option 1b1

The study area for Build Alternative 1b did not change when Design Option 1b1 was added in 2009, so species counts and habitat determinations are the same for both.

MSHCP Covered Species and/or Planning Species

Animal Species

Vernal Pool Branchiopods

The results of the vernal pool branchiopod focused surveys in Build Alternative 1b were the same as Build Alternative 1a, except that the nonlisted versatile fairy shrimp was observed in 15 pools. No vernal pool branchiopods were observed in the other 12 pools.

Least Bell's Vireo

Least Bell's vireo were not observed in the study area for Build Alternative 1b, but 41.84 ac of suitable habitat were identified.

Southwestern Willow Flycatcher

A migrant willow flycatcher was detected 442 ft east of the PIA for Build Alternative 1b (Roadway Segment M). However, no mate was seen, and no nesting behavior was observed, so this individual was determined to be a migrant. About 41.84 ac of potential habitat were identified.

Stephens' Kangaroo Rat

About 573.9 ac of suitable Stephens' kangaroo rat habitat are present in the study area for Build Alternative 1b.

Quino Checkerspot Butterfly

About 1,444.1 ac of suitable Quino checkerspot butterfly habitat are present in the study area for Build Alternative 1b.

Coastal California Gnatcatcher

About 316.1 ac of suitable coastal California gnatcatcher habitat are present in the study area for Build Alternative 1b.

Critical Habitat

The study area for Build Alternative 1b contains 4.8 ac of spreading navarretia critical habitat.

Preferred Alternative (Build Alternative 1b with Refinements)

MSHCP Covered Species and/or Planning Species

Animal Species

Vernal Pool Branchiopods

The only vernal pool branchiopod species observed in the study area for Build Alternative 1br was the nonlisted versatile fairy shrimp. The results of the vernal pool branchiopod focused surveys in Build Alternative 1br were the same as Build Alternative 1b, except for one additional pool identified as potential habitat. The nonlisted versatile fairy shrimp was observed in the additional pool. All 28 pools received two surveys, either two wet season surveys or both a wet and a dry season survey.

Least Bell's Vireo

Least Bell's vireo were not observed in the study area for Build Alternative 1br, but 41.58 ac of suitable habitat were identified.

Southwestern Willow Flycatcher

A migrant willow flycatcher was detected 422 ft east of the PIA for Build Alternative 1br (Roadway Segment M). However, no mate was seen, and no nesting behavior was observed, so this individual was determined to be a migrant. About 41.58 ac of potential habitat were identified.

Stephens' Kangaroo Rat

About 491.1 ac of suitable Stephens' kangaroo rat habitat are present in the study area for Build Alternative 1br.

Quino Checkerspot Butterfly

About 578.50 ac of suitable Quino checkerspot butterfly habitat are present in the study area for Build Alternative 1br.

Coastal California Gnatcatcher

About 111.19 ac of suitable coastal California gnatcatcher habitat are present in the study area for Build Alternative 1br.

Critical Habitat

The study area for Build Alternative 1br contains 7.44 ac of spreading navarretia critical habitat.

Build Alternative 2a

MSHCP Covered Species and/or Planning Species

Plant Species

A total of 280 populations of listed plants were observed in the study area for Build Alternative 2a—San Jacinto Valley crownscale (237 populations), spreading navarretia (32 populations), California Orcutt grass (2 populations), and thread-leaved brodiaea (9 populations). Thirteen San Jacinto Valley crownscale populations were found in the study area of Roadway Segment I, one population of San Jacinto Valley crownscale was identified in Additional Indirect Impact Study Area 2 and all remaining populations of listed plants were observed in Additional Indirect Impact Study Area 1 (Tables 3.3-5 and 3.3-6).

San Jacinto Valley Crownscale

A total of 237 populations of San Jacinto Valley crownscale were found scattered throughout the alkali grasslands, alkali playa, and wetland habitats between the San Jacinto Branch Line and SR 74/Florida Avenue, west of the San Diego Canal. As presented in Tables 3.3-5 and 3.3-6, the San Jacinto Valley crownscale in this area is considered part of the Upper Salt Creek core population, one of two population cores for this species. Because of declines in the populations near the San Jacinto River, the Upper Salt Creek area may now contain half, or possibly more, of the known individuals of San Jacinto Valley crownscale. Because these populations are important to the continued existence of this species, those in Additional Indirect Impact Study Area 1 have very high LTCV.

Thread-Leaved Brodiaea

Nine small populations of thread-leaved brodiaea (231 plants) were found in Additional Indirect Impact Study Area 1 (Figure 3.3-36). All of these populations were in the alkali grassland and wetland habitat north of the San Jacinto Branch Line and east of California Avenue. These nine populations are the only ones known in the study area, and they are the easternmost locality known for this species. Only six occurrences are known from the Perris Basin (Table 3.3-6). The habitat quality where they were found is relatively high, and these populations have LTCV (Tables 3.3-5 and 3.3-6).

Spreading Navarretia

Thirty-two populations of spreading navarretia (30,326 plants) were identified in Additional Indirect Impact Study Area 1 (Figure 3.3-39). Several populations of spreading navarretia were observed east of California Avenue, between the San Jacinto Branch Line and just north of Stetson Avenue. The populations in the study area are part of the Upper Salt Creek population complex, which supports one of the largest known concentrations of individual plants. The total number of spreading navarretia plants in the Upper Salt Creek complex greatly surpasses the San Jacinto River complex, the other Riverside County population complex (Table 3.3-6). The populations in the study area have very high LTCV (Table 3.3-5).

California Orcutt Grass

Two populations of California Orcutt grass with 4,266 plants were identified in the Stowe Road Vernal Pool Complex, north of Stowe Road in Additional Indirect Impact Study Area 1 (Figure 3.3-40). California Orcutt grass is an MSHCP Narrow Endemic species that is limited to vernal pool habitats, and it is extremely rare. The populations at the Stowe Road Vernal Pool Complex are one of three core population complexes in Riverside County, and they have very high LTCV (Tables 3.3-5 and 3.3-6). Although this area has recently been disturbed, the Stowe Road Vernal Pool Complex has very high conservation value because of (1) the endangered status of the species, (2) fairly high population size, (3) geographic distribution of the populations, and (4) relatively high habitat quality (Table 3.3-6).

Animal Species

Vernal Pool Branchiopods

The study area for Build Alternative 2a contains Criteria Area Cell 3887. Conservation in this Cell will contribute to the assembly of Proposed Noncontiguous Block 7, where vernal pool fairy shrimp is a Planning Species.

Although no listed vernal pool branchiopods were found in the PIA of Build Alternative 2a, this Build alternative could affect the hydrology of a 1.79-ac vernal pool complex in Additional Indirect Impact Study Area 1. That complex contains vernal pool fairy shrimp (*Branchinecta lynchi*), a species that is federally listed as threatened.

Forty-four pools were identified as potential habitat for vernal pool branchiopods in the study area for Build Alternative 2a. The pools include tire ruts and roadside drainages, man-made depressions, depressions in active agricultural fields, vernal pools, and vernal pool complexes. All 44 pools were surveyed. Forty of the pools were surveyed twice, either two wet season surveys or both a wet and a dry season survey. The remaining four pools received only one full survey.

The four vernal pools that received one full survey included one in a cattle-grazed field that received one wet season survey, one in a cattle-grazed field that received a partial wet season survey and a full dry season survey, one in a cattle-grazed field that received one dry season survey, and an excavated depression that received one dry season survey. The vernal pool and depression that each received one dry season survey were both identified as potential vernal pool branchiopod habitat in the dry season because they contained cracked soils, but inundation or ponding was never observed. Therefore, only a dry season survey could be completed. Only the nonlisted versatile fairy shrimp was identified at both of these locations based on branchiopods cultivated in the laboratory.

Vernal pool fairy shrimp (*Branchinecta lynchi*), which are federally listed as threatened, were identified in the vernal pool complex in the grassland just northwest of the intersection of Stowe Road and California Avenue. The nonlisted versatile fairy shrimp was found in 33 of the pools in the study area for Build Alternative 2a, including the same vernal pool complex as the federally listed vernal pool fairy shrimp and the four pools that received only one full survey. No vernal pool branchiopods were found in the other 11 pools.

Least Bell's Vireo

Survey results and the suitable habitat determination for the Build Alternative 2a study area are the same as Build Alternative 1a.

Southwestern Willow Flycatcher

Survey results and the suitable habitat determination for the Build Alternative 2a study area are the same as Build Alternative 1a.

Stephens' Kangaroo Rat

About 572.9 ac of suitable Stephens' kangaroo rat habitat are present in the Build Alternative 2a study area.

Quino Checkerspot Butterfly

About 1,294.8 ac of suitable Quino checkerspot butterfly habitat are present in the Build Alternative 2a study area.

Coastal California Gnatcatcher

About 327.5 ac of suitable coastal California gnatcatcher habitat are present in the Build Alternative 2a study area.

Critical Habitat

The study area for Build Alternative 2a contains 333.7 ac of spreading navarretia critical habitat.

Build Alternative 2b and Design Option 2b1

The study area for Build Alternative 2b did not change when Design Option 2b1 was added in 2009, so species counts and habitat determinations are the same for both.

MSHCP Covered Species and/or Planning Species

Plant Species

Similar to Build Alternative 2a, 280 populations of listed plants were found in the study area for Build Alternative 2b. The affected environment and number of populations of San Jacinto Valley crownscale, thread-leaved brodiaea, spreading navarretia, and California Orcutt grass in the Build Alternative 2b study area are the same as Build Alternative 2a.

Animal Species

Vernal Pool Branchiopods

The affected environment for vernal pool branchiopods in the study area for Build Alternative 2b is essentially the same as Build Alternative 2a except that the nonlisted versatile fairy shrimp was observed in 32 of the pools in the study area for Build Alternative 2b, versus 33 in Build Alternative 2a. No vernal pool branchiopods were observed in the other 12 pools.

Least Bell's Vireo

Least Bell's vireo was not observed in the study area for Build Alternative 2b, but 41.84 ac of suitable habitat is present.

Southwestern Willow Flycatcher

The same migrant willow flycatcher discussed in Build Alternative 1b was found in the study area for Build Alternative 2b. Roadway Segment M is common to both Build alternatives. Additionally, 41.84 ac of suitable habitat is present.

Stephens' Kangaroo Rat

About 562.6 ac of suitable Stephens' kangaroo rat habitat are present in the Build Alternative 2b study area.

Quino Checkerspot Butterfly

About 1,399.7 ac of suitable Quino checkerspot butterfly habitat are present in the Build Alternative 2b study area.

Coastal California Gnatcatcher

About 309.4 ac of suitable coastal California gnatcatcher habitat are present in the Build Alternative 2b study area.

Critical Habitat

The study area of Build Alternative 2b contains 333.7 ac of spreading navarretia critical habitat.

3.3.5.3 Environmental Consequences

Permanent Impacts

MSHCP and Section 7 of the Endangered Species Act

Permanent impacts to threatened and endangered species will be handled through a joint MSHCP Consistency Determination/Biological Opinion for the proposed Project. The USFWS will review the Project impacts and proposed avoidance, minimization, and mitigation measures to verify that the Project meets the criteria in the MSHCP. The MSHCP Consistency and DBESP for the Preferred Alternative was approved by RCA on September 30, 2015. The following excerpt was taken from Section 14.9 of the Implementing Agreement for the MSHCP and explains Section 7 consultations in relation to the MSHCP:

> ***14.9 Section 7 Consultations.*** *The USFWS will evaluate the direct, indirect, and cumulative effects of the Covered Activities in its internal FESA biological opinion issued in connection with the MSHCP and issuance of the Section 10(a) Permit. As a result, and to the maximum extent allowable, in any consultation under Section 7 of FESA subsequent to the Effective Date involving the Permittee(s) or entity with Third Party Take Authorization with regard to Covered Species Adequately Conserved and Covered Activities, the USFWS shall ensure that the FESA biological opinion issued in connection with the proposed project that is the subject of the consultation is consistent with the internal FESA biological opinion. Such project must be consistent with the terms and conditions of the MSHCP and this Agreement. Any reasonable and prudent measures included under the terms and conditions of a FESA biological opinion issued subsequent to the Effective Date with regard to the Covered Species Adequately Conserved and Covered Activities shall, to the maximum extent appropriate, be consistent with the implementation measures of the MSHCP and this Agreement. The USFWS shall not impose measures in excess of those that have been or will be required by the Permittee(s) or entity with Third Party Take Authorization pursuant to the MSHCP and this Agreement. The USFWS shall process subsequent FESA*

consultations for Covered Activities in accordance with the process and time periods set forth in 50 Code of Federal Regulations, section 402.14. The Parties agree that this section does not create an independent cause of action.

Plant Species

Three threatened or endangered plant species could be impacted by construction of the proposed Project—San Jacinto Valley crownscale (federally listed as endangered), spreading navarretia (federally listed as threatened), and California Orcutt grass (federally listed as endangered and state listed as endangered). All three of these federally listed and/or state-listed plants are included in the MSHCP. The only species that would be directly impacted by construction would be the San Jacinto Valley crownscale. All other populations would be outside the PIA in Additional Indirect Impact Study Area 1. Although one population of San Jacinto Valley crownscale was observed in Additional Indirect Impact Area 2, indirect impacts would not occur to this population because Additional Indirect Impact Study Area 2 is located upgradient from the PIA and work areas. Site drainage is from the south to the north; therefore, construction activities immediately to the north are not expected to affect the local hydrology for this population.

Although nine populations of the federally listed as threatened and state listed as endangered thread-leaved brodiaea were also observed in Additional Indirect Impact Study Area 1, the hydrology in the area where these populations were found had already been altered by the construction of roads and drainage ditches. The proposed Project would not change these existing conditions. As a result, a Section 7 determination of may affect, not likely to adversely affect is made for thread-leaved brodiaea. This species is not discussed further in this section.

Potential impacts in Additional Indirect Impact Study Area 1 would be limited to the unaltered area of the watershed north of Stowe Road and west of California Avenue, where San Jacinto Valley crownscale, spreading navarretia and California Orcutt grass were observed (Figures 3.3-24, 3.3-39, and 3.3-40).

Surveys were conducted for Munz's onion (federally listed as endangered and state listed as threatened) and slender-horned spineflower (federally and state listed as endangered), but neither of these species was found. A Section 7 determination of no effect is made for these two species, so they are not discussed further in this section.

The impact analysis below assumes that all threatened and endangered plant species present in the PIA, unique design features, and indirect impact areas would be permanently impacted because of construction or operation of the proposed Project and that temporary impacts would not occur. Permanent direct impacts would include the direct removal of habitat in the PIA and unique design features. Permanent indirect impacts would include potential degradation to habitat and alteration of hydrology in the 100-ft indirect impact area and in Additional Indirect Impact Study Areas 1 and 2.

Animal Species

One threatened or endangered animal species was identified in the Project study area. Vernal pool fairy shrimp, federally listed as threatened, were identified in Additional Indirect Impact Study Area 1 in the Stowe Road Vernal Pool Complex. Permanent indirect impacts to this species are expected from the construction of Build Alternatives 2a or 2b or Design Option 2b1 (Roadway Segments D, F, and H).

No other threatened or endangered animal species were identified in the Project study area. However, suitable habitat throughout the study area was identified for the following listed species:

- San Bernardino kangaroo rat (marginal habitat) (FE)
- Stephens' kangaroo rat (FE, ST)
- Quino checkerspot butterfly (FE)
- Coastal California gnatcatcher (FT)
- Least Bell's vireo (SE, FE)
- Southwestern willow flycatcher (FE, SE)

Surveys were performed for the San Bernardino kangaroo rat in marginally suitable habitat in the study area, but none were found. A Section 7 determination of no effect is made for the San Bernardino kangaroo rat. This species is not discussed further in this section.

Surveys were not conducted for Stephens' kangaroo rat, Quino checkerspot butterfly, or coastal California gnatcatcher because they are considered adequately conserved in the SKR HCP and MSHCP and surveys are not required by the wildlife agencies. However, the impacts analysis for the Project assumes that these three species are present in the study area, so the suitable habitats for these species in the direct and indirect impact areas are quantified as permanent impacts. Section 7 determinations for these species are presented below for each Build alternative.

Although quantified suitable habitat in the PIA and indirect impact area are presented in this section for least Bell's vireo and southwestern willow flycatcher, these species were not detected during protocol surveys, and take is not expected. Section 7 determinations for these species are presented below for each Build alternative.

As stated for plants, the permanent impact analysis assumes that all threatened and endangered animal species present in the PIA, unique design features, and indirect impact areas would be permanently impacted by construction or operation of the proposed Project. Permanent direct impacts would include the direct removal of habitat in the PIA and unique design features. Permanent indirect impacts would include increased noise, light, dust, potential degradation to habitat, habitat fragmentation, increased mortality from collisions with vehicles, reduced prey and foraging availability and abundance, and alteration of the hydrology in the indirect impact area and Additional Indirect Impact Study Area 1.

Critical Habitat

Final revised critical habitat for spreading navarretia (*Navarretia fossalis*) was issued by the USFWS on November 8, 2010. The boundary of the critical habitat encompasses portions of the Project. This impact analysis assumes that all critical habitat present in the PIA, unique design features, and indirect impact area would be permanently impacted because of construction or operation of the proposed Project. Permanent direct impacts would include the direct removal of habitat. Permanent indirect impacts would include potential degradation to habitat in the 100-ft indirect impact area. Temporary impacts to critical habitat could occur in the indirect impact area and could include increased dust from construction activities and an increase in invasive plant species. However, temporarily affected areas are

accounted for in the permanent impact analysis because the areas that would be temporarily impacted are the same as the areas that would be permanently, indirectly impacted.

Permanent direct and indirect impacts to threatened and endangered plant and animal species and critical habitat from each Build alternative and design option are presented in the following sections.

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

All Build Alternatives and Design Options

Animals

All of the threatened and/or endangered animals in this section are MSHCP Covered Species. All of the Build alternatives and design options would comply with the criteria in the MSHCP for each of the Covered Species (as described in Section 6.1.2 of the MSHCP and the MSHCP Errata Letter, dated August 9, 2004), which include the minimization measures in Section 3.3.5.4. Section 7 determinations for threatened and endangered plant and animal species are discussed below for each Build alternative and are presented in Table 3.3-21.

Build Alternative 1a

Plants

Four federally listed as endangered San Jacinto Valley crownscale populations (589 plants) would be permanently and directly impacted, and eleven populations (6,138 plants) would be permanently and indirectly impacted by Build Alternative 1a. Three of the four directly impacted populations span the PIA and indirect impact area. All of these populations are located in the PIA and indirect impact area for Roadway Segment I. A Section 7 determination of may affect, likely to adversely affect is made for this build alternative. However, in terms of the MSHCP, these populations do not have LTCV and would not contribute to the overall objectives and goals of creating the MSHCP Conservation Area. Impacts to this species have been evaluated as part of the MSHCP, and the Project would comply with the criteria in the MSHCP for this species. Therefore, no mitigation for permanent direct or indirect impacts to these populations is proposed.

Animal Species

Vernal Pool Branchiopods

No listed vernal pool branchiopods were observed in the PIA or indirect impact areas of Build Alternative 1a. Therefore, a Section 7 determination of no effect is made for the federally listed as threatened vernal pool branchiopod for Build Alternative 1a.

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Table 3.3-21 Section 7 Effects Determinations for Threatened and Endangered Species and Habitats

Effects Determination	No Build Alternative	Build Alternative 1a	Build Alternative 1b and Design Option 1b1	Preferred Alternative (Build Alternative 1b with Refinements)	Build Alternative 2a	Build Alternative 2b and Design Option 2b1
		Roadway Segments A, E, G, I, J, L, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Connections 1 and 2 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, K, M, N, Additional Indirect Impact Study Area 2, Utility Relocations Areas 1 and 2 Short-term and Long-Term Traffic Detours	Roadway Segments B, C, G, I, J, M, N, Additional Indirect Impact Study Area 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours	Roadway Segments A, F, H, I, K, L, N, Additional Indirect Impact Study Area 1 and 2, Utility Relocation Areas 1 and 2 Connection 3 to Hemet Channel Outside the Project ROW Short-Term and Long-Term Traffic Detours	Roadway Segments B, D, H, I, J, M, Additional Indirect Impact Study Are and 2, Utility Relocation Areas 1 and 2 Short-Term and Long-Term Traffic Detours
Threatened and Endangered Species and Habitat						
Vernal Pool Branchiopods	NI	No effect	No effect	No effect	May affect, likely to adversely affect	May affect, likely to adversely affect
Arroyo Toad	NI	No effect	No effect	No effect	No effect	No effect
Southwestern Willow Flycatcher	NI	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely at
Least Bell's Vireo	NI	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely at
Stephens' Kangaroo Rat Habitat	NI	May affect, likely to adversely affect	May affect, likely to adversely affect	May affect, likely to adversely affect	May affect, likely to adversely affect	May affect, likely to adversely affect
San Bernardino Kangaroo Rat	NI	No effect	No effect	No effect	No effect	No effect
Quino Checkerspot Butterfly Suitable Habitat	NI	May affect, likely to adversely affect	May affect, likely to adversely affect	May affect, likely to adversely affect	May affect, likely to adversely affect	May affect, likely to adversely affect
Coastal California Gnatcatcher Suitable Habitat	NI	May affect, likely to adversely affect	May affect, likely to adversely affect	May affect, likely to adversely affect	May affect, likely to adversely affect	May affect, likely to adversely affect
San Jacinto Valley Crownscale	NI	May affect, likely to adversely affect	May affect, likely to adversely affect	No effect	May affect, likely to adversely affect	May affect, likely to adversely affect
Spreading Navarretia	NI	No effect	No effect	No effect	May affect, likely to adversely affect	May affect, likely to adversely affect
California Orcutt Grass	NI	No effect	No effect	No effect	May affect, likely to adversely affect	May affect, likely to adversely affect
Thread-leaved broadiaea	NI	No effect	No effect	No effect	May affect, not likely to adversely affect	May affect, not likely to adversely affe
Munz's onion	NI	No effect	No effect	No effect	No effect	No effect
San Diego ambrosia	NI	No effect	No effect	No effect	No effect	No effect
Critical Habitat						
Spreading Navarretia Critical Habitat	NI	Would not adversely modify critical habitat	Would not adversely modify critical habitat	Would not adversely modify critical habitat	Would not adversely modify critical habitat	Would not adversely modify critical hab
Thread-leaved brodiaea	NI	NI	NI	NI	NI	NI
Coastal California gnatcatcher	NI	NI	NI	NI	NI	NI
San Bernardino Merriam's kangaroo rat	NI	NI	NI	NI	NI	NI

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Southwestern Willow Flycatcher

No southwestern willow flycatchers were observed in the direct or indirect impact areas of Build Alternative 1a, but 27.16 ac of suitable habitat could be impacted. Because southwestern willow flycatchers were not observed during protocol surveys, no take is anticipated for this species. Therefore, a Section 7 determination of may affect, but not likely to adversely affect is made for the southwestern willow flycatcher in Build Alternative 1a.

Least Bell's Vireo

Least Bell's vireo was not observed in the direct or indirect impact areas of Build Alternative 1a, but 27.16 ac of suitable habitat could be affected. Because least Bell's vireo was not observed during protocol surveys, no take is anticipated for this species. Therefore, a Section 7 determination of may affect, but not likely to adversely affect is made for least Bell's vireo in Build Alternative 1a.

Stephens' Kangaroo Rat

About 250.4 ac of suitable Stephens' kangaroo rat habitat would be directly impacted by Build Alternative 1a, and about 330.6 ac could be indirectly impacted. A Section 7 determination of may affect, likely to adversely affect is made for Stephens' kangaroo rat in Build Alternative 1a.

Quino Checkerspot Butterfly

About 419.5 ac of suitable Quino checkerspot butterfly habitat would be directly impacted by Build Alternative 1a, and about 196.02 ac could be indirectly impacted. Quino checkerspot butterfly is an MSHCP Covered Species Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the Quino checkerspot butterfly in Build Alternative 1a.

Coastal California Gnatcatcher

About 144.7 ac of suitable coastal California gnatcatcher habitat would be directly impacted by Build Alternative 1a, and about 27.90 ac could be indirectly impacted. The coastal California gnatcatcher is an MSHCP Covered Species Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the coastal California gnatcatcher in Build Alternative 1a.

Critical Habitat

Build Alternative 1a would directly impact 2.3 ac of spreading navarretia critical habitat in Subunit 6B. Salt Creek Seasonally Flooded Alkali Plain. Indirect impacts would equal 2.4 ac. As described in Section 3.3.5.2, the spreading navarretia critical habitat located within the impact area of Build Alternative 1a does contain primary constituent elements as defined in the Federal Register. However, the portion of critical habitat in Build Alternative 1a is unoccupied. Based on the absence of spreading navarretia, the functions and values of this portion of critical habitat is determined to be low; therefore, Build Alternative 1a would not adversely modify spreading navarretia critical habitat.

Build Alternative 1b

Plants

Impacts to the federally listed as endangered San Jacinto Valley crownscale from Build Alternative 1b would be the same as Build Alternative 1a. The Section 7 determination of may affect, likely to adversely affect is also the same.

Animal Species

Vernal Pool Branchiopods

Impacts and Section 7 determination for Build Alternative 1b would be the same as Build Alternative 1a.

Southwestern Willow Flycatcher

A migrant willow flycatcher was observed 442 ft east of the PIA of Build Alternative 1b, but it was not with a mate. No nesting behavior was observed, so this individual was determined to be a migrant.

Suitable habitat totaling 41.84 ac could be impacted by Build Alternative 1b. Because southwestern willow flycatchers were not observed in the study area during protocol surveys, no take is expected for this species. Therefore, a Section 7 determination of may affect, but not likely to adversely affect is made for the southwestern willow flycatcher in Build Alternative 1b.

Least Bell's Vireo

Least Bell's vireo was not observed in the study area for Build Alternative 1b. However, 41.84 ac of suitable habitat are located in the indirect impact area of Build Alternative 1b. Because least Bell's vireo was not observed during protocol surveys, no take is anticipated for this species. Therefore, a Section 7 determination of may affect, but not likely to adversely affect is made for the least Bell's vireo in Build Alternative 1b.

Stephens' Kangaroo Rat

About 247.1 ac of suitable Stephens' kangaroo rat habitat would be directly impacted by Build Alternative 1b, and about 326.8 ac could be indirectly impacted. A Section 7 determination of may affect, likely to adversely affect is made for Stephens' kangaroo rat in Build Alternative 1b.

Quino Checkerspot Butterfly

About 432.7 ac of suitable Quino checkerspot butterfly habitat would be directly impacted by Build Alternative 1b, and about 210.25 ac could be indirectly impacted. Quino checkerspot butterfly is an MSHCP Covered Species Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the Quino checkerspot butterfly in Build Alternative 1b.

Coastal California Gnatcatcher

About 138.9 ac of suitable coastal California gnatcatcher habitat would be directly impacted by Build Alternative 1b, and about 28.62 ac could be indirectly impacted. The coastal California gnatcatcher is an MSHCP Covered Species

Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the coastal California gnatcatcher in Build Alternative 1b.

Critical Habitat

Impacts to and the Section 7 determination for spreading navarretia critical habitat in Build Alternative 1b would be the same as Build Alternative 1a.

Design Option 1b1

Design Option 1b1 would directly impact slightly more Quino checkerspot butterfly habitat than Build Alternative 1b, 433.2 ac versus 432.7 ac, respectively. Indirect impacts would be almost the same, about 210.37 ac for the design option versus 210.25 ac for the Build alternative. A Section 7 determination of may affect, likely to adversely affect is made for the Quino checkerspot butterfly for Design Option 1b1.

Design Option 1b1 would cause no other changes in impacts to or Section 7 determinations for threatened and endangered species or critical habitat than those presented for Build Alternative 1b.

Preferred Alternative (Build Alternative 1b with Refinements)

Plants

Build Alternative 1br would not impact any federally or state listed as threatened or endangered plants. Since Roadway Segment I was shifted to the west under Build Alternative 1br, the San Jacinto Valley crownscale populations impacted under the other build alternatives would no longer be impacted (Figure 3.3-24). Additionally, because Additional Indirect Impact Study Area 2 is located slightly upslope of the ROW, and surface water during storm events principally flows from the south, the local hydrology within Additional Indirect Impact Study Area 2 would not be altered as a result of construction.

Animal Species

Vernal Pool Branchiopods

Impacts and Section 7 determination for Build Alternative 1br would be the same as Build Alternatives 1a and 1b

Southwestern Willow Flycatcher

A migrant willow flycatcher was observed 422 ft east of the PIA of Build Alternative 1br, but it was not with a mate. No nesting behavior was observed, so this individual was determined to be a migrant.

Suitable habitat totaling 41.58 ac could be impacted by Build Alternative 1br. Because southwestern willow flycatchers were not observed in the study area during protocol surveys, no take is expected for this species. Therefore, a Section 7 determination of may affect, but not likely to adversely affect is made for the southwestern willow flycatcher in Build Alternative 1br.

Least Bell's Vireo

Least Bell's vireo was not observed in the study area for Build Alternative 1br. However, 41.58 ac of suitable habitat could be impacted by Build Alternative 1br. Because least Bell's vireo was not observed during protocol surveys, no take is anticipated for this species. Therefore, a Section 7 determination of may affect, but not likely to adversely affect is made for the least Bell's vireo in Build Alternative 1br.

Stephens' Kangaroo Rat

About 182.3 ac of suitable Stephens' kangaroo rat habitat would be directly impacted by Build Alternative 1br, and about 308.8 ac could be indirectly impacted. A Section 7 determination of may affect, likely to adversely affect is made for Stephens' kangaroo rat in Build Alternative 1br.

Quino Checkerspot Butterfly

About 375.36 ac of suitable Quino checkerspot butterfly habitat would be directly impacted by Build Alternative 1br, and about 186.91 ac could be indirectly impacted. Quino checkerspot butterfly is an MSHCP Covered Species Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the Quino checkerspot butterfly in Build Alternative 1br.

Coastal California Gnatcatcher

About 72.68 ac of suitable coastal California gnatcatcher habitat would be directly impacted by Build Alternative 1br, and about 38.51 ac could be indirectly impacted. The coastal California gnatcatcher is an MSHCP Covered Species Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the coastal California gnatcatcher in Build Alternative 1br.

Critical Habitat

Build Alternative 1br would directly impact 2.97 ac of spreading navarretia critical habitat in Subunit 6B, Salt Creek Seasonally Flooded Alkali Plain. Indirect impacts would equal 4.47 ac. As described in Section 3.3.5.2, the spreading navarretia critical habitat located within the impact area of Build Alternative 1br does contain primary constituent elements as defined in the Federal Register. However, the portion of critical habitat in Build Alternative 1br is unoccupied. Based on the absence of spreading navarretia, the functions and values of this portion of critical habitat is determined to be low; therefore, Build Alternative 1br would not adversely modify spreading navarretia critical habitat.

Build Alternative 2a

Plants

Three threatened and endangered plant species could be impacted by Build Alternative 2a. These three species are San Jacinto Valley crownscale (federally listed as endangered), spreading navarretia (federally listed as threatened), and California Orcutt grass (federally listed as endangered and state listed as endangered). The only species that would be directly impacted would be the San Jacinto Valley crownscale. The other two listed plant species were found outside the PIA in Additional Indirect Impact Study Area 1.

San Jacinto Valley Crownscale

Build Alternative 2a would permanently impact the San Jacinto Valley crownscale. A Section 7 determination of may affect, likely to adversely affect is made for this species because direct take of the San Jacinto Valley crownscale would occur. In addition to the impacts described for Build Alternative 1a, which also applies to Build Alternative 2a, permanent indirect impacts to 21 San Jacinto Valley crownscale populations (410 plants) located in the alkali grassland, vernal pool, and alkali playa habitats in Additional Indirect Impact Study Area 1 could be indirectly impacted by Build Alternative 2a. In the context of the MSHCP, these populations have LTCV.

Spreading Navarretia

Fifteen populations of spreading navarretia (28,533 plants) could be indirectly impacted by Build Alternative 2a. The largest concentration of plants was found in Additional Indirect Impact Study Area 1, at the Stowe Road Vernal Pool Complex, north of Stowe Road. In the context of the MSHCP, all of these populations have very high LTCV. A Section 7 determination of may affect, likely to adversely affect is made for spreading navarretia in Build Alternative 2a. However, with the implementation of measures BIO-27, BIO-32, and BIO-41, impacts would be minimized.

California Orcutt Grass

Indirect impacts to two populations of California Orcutt grass (4,366 plants) identified in Additional Indirect Impact Study Area 1 in the Stowe Road Vernal Pool Complex, north of Stowe Road, could occur because of Build Alternative 2a. In the context of the MSHCP, both of these populations have very high LTCV. A Section 7 determination of may affect, likely to adversely affect is made for California Orcutt grass in Build Alternative 2a. However, with the implementation of measures BIO-27, BIO-32, and BIO-41, impacts would be minimized.

90 Percent Avoidance Threshold

With the implementation of BIO-27, BIO-32, and BIO-41, permanent indirect impacts to the San Jacinto Valley crownscale, spreading navarretia, and California Orcutt grass in Additional Indirect Impact Area 1 can be minimized to the extent that the 90 percent LTCV population avoidance threshold specified in the MSHCP can be attained. An MSHCP consistency analysis would be conducted with the wildlife agencies to document consistency with the 90 percent avoidance requirement.

Animal Species

Vernal Pool Branchiopods

Build Alternative 2a may affect, and is likely to adversely affect the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi)* through indirect impacts to hydrology. Although no listed vernal pool branchiopods were observed in the PIA of Build Alternative 2a, this Build alternative could affect the hydrology of a vernal pool complex totaling 1.79 ac in Additional Indirect Impact Study Area 1, in the grassland just northwest of the intersection of Stowe Road and California Avenue. This impact would occur in the southeastern portion of Criteria Area Cell 3887; however, Build Alternative 2a will not preclude the goals of this Criteria Area Cell.

Southwestern Willow Flycatcher

Impacts to and the Section 7 determination for the southwestern willow flycatcher in Build Alternative 2a would be the same as Build Alternative 1a.

Least Bell's Vireo

Impacts to and the Section 7 determination for least Bell's vireo in Build Alternative 2a would be the same as Build Alternative 1a.

Stephens' Kangaroo Rat

About 216.1 ac of suitable Stephens' kangaroo rat habitat would be directly impacted by Build Alternative 2a, and about 356.8 ac would be indirectly impacted. A Section 7 determination of may affect, likely to adversely affect is made for Stephens' kangaroo rat in Build Alternative 2a.

Quino Checkerspot Butterfly

About 371.0 ac of suitable Quino checkerspot butterfly habitat would be directly impacted by Build Alternative 2a, and about 581.67 ac could be indirectly impacted. Quino checkerspot butterfly is an MSHCP Covered Species Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the Quino checkerspot butterfly in Build Alternative 2a.

Coastal California Gnatcatcher

About 114.0 ac of suitable coastal California gnatcatcher habitat would be directly impacted by Build Alternative 2a, and about 100.68 ha could be indirectly impacted. The coastal California gnatcatcher is an MSHCP Covered Species Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the coastal California gnatcatcher in Build Alternative 2a.

Critical Habitat

Build Alternative 2a would directly impact 2.4 ac of spreading navarretia critical habitat Subunit 6B. Salt Creek Seasonally Flooded Alkali Plain. Indirect impacts could be as much as 331.2 ac. As described in Section 3.3.5.2, the spreading navarretia critical habitat located in the PIA of Build Alternative 2a does contain primary constituent elements as defined in the Federal Register. The critical habitat in Additional Indirect Impact Area 1 is occupied (see Figure 3.3-39) and, therefore, is considered to have high value. However, these indirect impacts to the spreading navarretia populations would be mitigated by measure BIO-33, which would maintain hydrology in the critical habitat area. Consequently, Build Alternative 2a is not likely to adversely modify or destroy this spreading navarretia critical habitat through indirect impacts to existing hydrology.

Build Alternative 2b

Plant Species

Impacts to and the Section 7 determinations for threatened and endangered plant species in Build Alternative 2b would be the same as Build Alternative 2a.

Animal Species

Vernal Pool Branchiopods

Impacts to and Section 7 determination for the federally threatened vernal pool fairy shrimp would be the same for Build Alternative 2b as Build Alternative 2a.

Southwestern Willow Flycatcher

Impacts to and the Section 7 determination for the southwestern willow flycatcher in Build Alternative 2b would be the same as Build Alternative 1b.

Least Bell's Vireo

Impacts to and the Section 7 determination for the least Bell's vireo in Build Alternative 2b would be the same as Build Alternative 1b.

Stephens' Kangaroo Rat

About 212.5 ac of suitable Stephens' kangaroo rat habitat would be directly impacted by Build Alternative 2b, and about 350.1 ac could be indirectly impacted. A Section 7 determination of may affect, likely to adversely affect is made for Stephens' kangaroo rat in Build Alternative 2b.

Quino Checkerspot Butterfly

About 401.9 ac of suitable Quino checkerspot butterfly habitat would be directly impacted by Build Alternative 2b, and about 592.91 ac could be indirectly impacted. Quino checkerspot butterfly is an MSHCP Covered Species Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the Quino checkerspot butterfly in Build Alternative 2b.

Coastal California Gnatcatcher

About 108.3 ac of suitable coastal California gnatcatcher habitat would be directly impacted by Build Alternative 2b, and about 101.41 ac could be indirectly impacted. The coastal California gnatcatcher is an MSHCP Covered Species Adequately Conserved. A Section 7 determination of may affect, likely to adversely affect is made for the coastal California gnatcatcher in Build Alternative 2b.

Critical Habitat

Impacts to spreading navarretia critical habitat from Build Alternative 2b would be the same as Build Alternative 2a.

Design Option 2b1

Design Option 2b1 would directly impact slightly more Quino checkerspot butterfly habitat than Build Alternative 2b, 402.4 ac versus 401.9 ac, respectively. Indirect impacts would be almost the same, about 593.03 ac for the design option versus 592.91 ac for the Build alternative. A Section 7 determination of may affect, likely to adversely affect is made for the Quino checkerspot butterfly for Design Option 2b1.

Design Option 2b1 would cause no other changes in impacts to or Section 7 determinations for threatened and endangered species or critical habitat than those presented for Build Alternative 2b.

Temporary Impacts

The Project would not have any temporary construction easement areas that would result in temporary removal of threatened and endangered species habitat. However, suitable habitat for Stephens' kangaroo rat, Quino checkerspot butterfly, and the coastal California gnatcatcher is present in the indirect impact area. As stated in Permanent Impacts, these three species are Covered Species Adequately Conserved in the MSHCP, and surveys are not required by the wildlife agencies. For determinations per Section 7 of the Endangered Species Act, these species are assumed to be present in areas containing suitable habitat.

Temporary impacts to these three species could include construction noise, lights, dust, or vibration. Increased mortality and injury from being struck by construction vehicles could also occur. In addition, increased trash and discarded food from construction personnel could attract predators of the Stephens' kangaroo rat.

The analysis presented in this section overlaps with the permanent indirect impact analysis for these three species because the same individuals or pairs located in the indirect impact area may not only be impacted during construction, but could also be impacted after construction when the new roadway is in full operation.

This section presents temporary impacts to threatened and endangered animal species in the Project alternatives. All impacts to critical habitat are considered permanent and, therefore, are not presented in this section.

No Build Alternative

No impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

MSHCP Covered Species and/or Planning Species

Stephens' Kangaroo Rat

Build Alternative 1a could temporarily impact 330.6 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 1a could temporarily impact 196.02 ac of Quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 1a could temporarily impact 27.90 ac of coastal California gnatcatcher habitat.

Build Alternative 1b

MSHCP Covered Species and/or Planning Species

Stephens' Kangaroo Rat

Build Alternative 1b could temporarily impact 326.8 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 1b could temporarily impact 210.25 ac of Quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 1b could temporarily impact 28.62 ac of coastal California gnatcatcher habitat.

Design Option 1b1

Design option 1b1 would cause one minor change in temporary impacts to quino checkerspot butterfly habitat compared to Build Alternative 1b. Design option 1b1 would temporarily impact 210.37 ac of quino checkerspot butterfly habitat, instead of 210.25 ac under Build Alternative 1b. No other changes in temporary impacts to threatened and endangered species from Build Alternative 1b would occur from Design Option 1b1.

Preferred Alternative (Build Alternative 1b with Refinements)

MSHCP Covered Species and/or Planning Species

Stephens' Kangaroo Rat

Build Alternative 1br could temporarily impact 308.8 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 1br could temporarily impact 186.91 ac of Quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 1br could temporarily impact 38.51 ac of coastal California gnatcatcher habitat.

Build Alternative 2a

MSHCP Covered Species and/or Planning Species

Stephens' Kangaroo Rat

Build Alternative 2a could temporarily impact 356.8 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 2a could temporarily impact 581.69 ac of Quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 2a could temporarily impact 100.68 ac of coastal California gnatcatcher habitat.

Build Alternative 2b

MSHCP Covered Species and/or Planning Species

Stephens' Kangaroo Rat

Build Alternative 2b could temporarily impact 350.1 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 2b could temporarily impact 592.91 ac of Quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 2b could temporarily impact 101.41 ac of coastal California gnatcatcher habitat.

Design Option 2b1

Design option 2b1 could cause one minor change in temporary impacts to Quino checkerspot butterfly habitat compared to Build Alternative 2b. Design Option 2b1 could temporarily impact 593.03 ac of Quino checkerspot butterfly habitat, instead of 592.91 ac with Build Alternative 2b. No other changes in temporary impacts to threatened and endangered species from Build Alternative 2b would occur from Design Option 2b1.

3.3.5.4 Avoidance, Minimization, and/or Mitigation Measures

Avoidance Measures

BIO-27 BIO-27, which is described in Section 3.3.2.4, would protect the federally listed vernal pool branchiopods in Additional Indirect Impact Study Area 1 in the Stowe Road Vernal Pool Complex. An ESA fence will be installed for Build Alternatives 2a and 2b and Design Option 2b1 along the edge of the PIA for Roadway Segments D and H.

BIO-34 **Avoidance of Sensitive Plant Populations.** An ESA will be established for all Build alternatives, except Build Alternative 1br, at the edge of the Roadway Segment I ROW adjacent to the federally listed as endangered San Jacinto Valley crownscale populations. The location of these populations will be shown on construction plans and drawings. A contractor-supplied biological monitor who has knowledge about and experience with local sensitive plant species will demark the location of the ESA fence in the field and on construction drawings and plans and will supervise installation of the fence. The biological monitor will also inspect the ESA fencing regularly during construction and coordinate with the Resident Engineer if fence repairs should be required. This measure is not required for Build Alternative 1br because its alignment was shifted to the west and already avoids potential impacts.

Minimization Measures

BIO-47 **Conducting Clearance of Riparian Habitat Outside Riparian Bird Active Breeding Season (February 15 through September 15 with the peak generally from March 1 through June 30).** Clearing of riparian habitat should be conducted outside the active breeding season (February 15 through September 15 with the peak generally from March 1 through June 30). For each year of construction, if vegetation removal occurs in riparian habitats during the nonbreeding season for riparian birds, then preconstruction surveys are not required. However, if vegetation removal must occur in riparian habitats during the breeding season for least Bell's vireos or southwestern willow flycatchers during any construction year, then preconstruction surveys will be required to comply with the MSHCP. Additionally, preconstruction surveys should be conducted no more than three days prior to vegetation clearing or ground disturbing activities to determine the presence of nesting birds. If least Bell's vireos or southwestern willow flycatchers are detected, the appropriate resource manager will be contacted to determine if vegetation removal activities can proceed under specific conditions.

Mitigation Measures

Stephens' Kangaroo Rat

The Stephens' kangaroo rat is an MSHCP Covered Species Adequately Conserved. As such, according to Section 14.2 of the MSCHP Implementing Agreement:

> *The USFWS has found, following opportunity for public comment, that: 1) the taking of Covered Species Adequately Conserved within the MSHCP Plan Area in accordance with the MSHCP as implemented will be incidental to the carrying out of otherwise lawful activities; 2) the MSHCP as implemented will, to the maximum extent practicable, minimize and mitigate the impacts of such incidental taking; 3) the funding sources identified and provided for herein will ensure that adequate funding for the MSHCP will be provided; 4) the requested taking of Covered Species Adequately Conserved will not appreciably reduce the likelihood of survival and recovery of such species in the wild; and 5) the MSHCP, as implemented, will satisfy and fulfill all measures agreed upon by the parties for the purposes of the MSHCP (including procedures determined by the USFWS to be necessary to address Unforeseen Circumstances).*

Additionally, according to Section 14.9, Section 7 Consultations, of the MSHCP Implementing Agreement:

> *The USFWS will evaluate the direct, indirect, and cumulative effects of the Covered Activities in its internal FESA biological opinion issued in connection with the MSHCP and issuance of the Section 10(a) Permit. As a result, and to the maximum extent allowable, in any consultation under Section 7 of FESA subsequent to the Effective Date involving the Permittee(s) or entity with Third Party Take Authorization with regard to Covered Species Adequately Conserved and Covered Activities, the USFWS shall ensure that the FESA biological opinion issued in connection with the proposed project that is the subject of the consultation is consistent with the internal FESA biological opinion. Such project must be consistent with the terms and conditions of the MSHCP and this Agreement. Any reasonable and prudent measures included under the terms and conditions of a FESA biological opinion issued subsequent to the Effective Date with regard to the Covered Species*

Adequately Conserved and Covered Activities shall, to the maximum extent appropriate, be consistent with the implementation measures of the MSHCP and this Agreement. The USFWS shall not impose measures in excess of those that have been or will be required by the Permittee(s) or entity with Third Party Take Authorization pursuant to the MSHCP and this Agreement. The USFWS shall process subsequent FESA consultations for Covered Activities in accordance with the process and time periods set forth in 50 Code of Federal Regulations, section 402.14. The Parties agree that this section does not create an independent cause of action.

"Incidental take" of SKR within the SKR HCP boundaries is provided to the RCHCA under the incidental take permit for the SKR HCP and will be extended to the Project through formal Section 7 consultation. Therefore, no mitigation is proposed for impacts to the Stephens' kangaroo rat.

Vernal Pool Fairy Shrimp

BIO-27, 33 BIO-27 and BIO-32a-c, which were presented in Section 3.3.2.4, are mitigation measures for vernal pool fairy shrimp that will provide consistency with the species conservation objectives identified in the MSHCP, Volume II-B, Species Accounts, Vernal Pool Fairy Shrimp.

3.3.6 Invasive Species

3.3.6.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State's invasive species list, currently maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

3.3.6.2 Affected Environment

The following information about invasive species was taken from the analysis in the NES of April 2010.

The California Invasive Plant Council (Cal-IPC) 2006 Invasive Plant Inventory (Inventory), with 2007 updates (Cal-IPC 2007), has been developed using information obtained from a variety of sources. The Inventory highlights non-native plants that are serious problems in wildland areas. The Inventory categorizes plants as highly invasive, moderately invasive, or limited invasive based on the species' negative ecological impact in California. Plants categorized as "High" have severe ecological impacts. Plants categorized as "Moderate" have substantial and apparent, but not severe, ecological impacts. Plants categorized as "Limited" are invasive, but their ecological impacts are minor on a statewide level. Some of these plants may have a more significant impact on local ecosystems.

The California Department of Food and Agriculture (CDFA) maintains a separate list of invasive plants (CDFA 2005). Plants on the CDFA list are often weeds that may have economic importance to the state or a particular region and may

be subject to state-sponsored eradication efforts. Finally, the MSHCP contains a list of species (Table 6-2 of the MSHCP [RCIP 2003]) that should not be planted adjacent to MSHCP reserve areas.

Invasive plant species are defined as species of plants included on lists prepared by the CDFA and invasive plants identified by the Cal-IPC. Cal-IPC focuses on plant species that impact natural areas, sometimes called "wildland weeds" (Cal-IPC 2007). The state laws implemented by the CDFA are found in the CDFA Code, which defines a "noxious weed" to be any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive (to agriculture, silviculture, or important native species), and difficult to control or eradicate, or which the director, by regulation, designates to be a noxious weed.

Information about invasive plant species is tracked by these agencies because invasive plants can significantly degrade wildlife and plant habitats. According to the Cal-IPC, nationally, invasive species are the second greatest threat to endangered species, after habitat destruction (Cal-IPC 2007).

Study Methods

Invasive Plant Species Survey Methods

Presence-absence surveys for invasive plant species were conducted as part of floristic-level plant surveys of the study area. However, specific locations of invasive plants were not obtained. Therefore, the specific locations of invasive plant species are not available for each Project feature or Build alternative. Two sources were consulted to determine the invasiveness of observed plant species, the Cal-IPC Invasive Plant Inventory (Cal-IPC 2006, 2007, and 2008) and the CDFA Noxious Weed Information Project (CDFA 2008).

Cal-IPC describes invasive plant species as plants that evolved in a different location and adversely affect (crowd out or displace) native vegetation (Cal-IPC 2008). Some invasive plants can result in large-scale changes in ecosystem processes such as hydrology, fire regimes, and soil chemistry (Cal-IPC 2008).

The CDFA maintains a list of "noxious weeds" that are subject to regulation or quarantine by county agricultural departments (CDFA 2008). These weeds are typically agricultural pests that may have economic importance to the state or a particular region and may be subject to state-sponsored eradication efforts, although many also have impacts on natural areas (Cal-IPC 2008, CDFA 2008).

The MSHCP (RCIP 2003) was also consulted to identify invasive plant species documented or believed to be present in the study area that could threaten the long-term sustainability of Covered Species in the MSHCP Conservation Area.

Invasive Animal Species Survey Methods

The presence of invasive animal species was documented as part of focused wildlife surveys in the study area. However, the locations of invasive animal species were not mapped during the focused surveys, so the specific locations of invasive animal species are not available for each Project feature or Build alternative.

Invasive Plant Species within the RPARSA

Floristic studies previously conducted in western Riverside County estimated that 30 percent of the flora is non-native (Roberts et al. 2004). It is unknown how many of the non-native species known to be in western Riverside County are considered invasive, but numerous non-native plants are known to be present in the Project region. A list of invasive plant species identified during the surveys, along with their Cal-IPC and CDFA invasiveness ranks, is provided in Table 3.3-22.

Table 3.3-22 Invasive Plant Species Observed during the 2005 and 2006 Rare Plant Surveys of the Study Area

Scientific Name	Common Name	MSHCP[a]	Cal-IPC[b]	CDFA[c]
Acacia longifolia	wild golden wattle	Yes	Nominated	None
Alianthus altissima	tree of heaven	Yes	Moderate	None
Aptenia cordifolia	baby sun rose	Yes	Nominated	None
Anthemis cotula	dog mayweed	No	Evaluation	None
Arundo donax	giant reed	Yes	High	None
Atriplex glauca	glaucus-leaved saltbush	Yes	None	None
Atriplex semibaccata	Australian saltbush	Yes	Moderate	None
Avena barbata	slender wild oat	No	Moderate	None
Avena fatua	wild oat	No	Moderate	None
Bassia hyssopifolia	five-hook bassia	No	Limited	None
Brassica nigra	black mustard	No	Moderate	None
Brassica tournefortii	Sahara mustard	No	High	None
Bromus diandrus	rip-gut brome	No	Moderate	None
Bromus hordeaceus	soft chess	No	Limited	None
Bromus madritensis ssp. *rubens*	red brome	No	High	None
Bromus tectorum	cheat grass	No	High	None
Cardaria draba	hoary cress	No	Moderate	B
Chorispora tenella	Chorispora	No	Evaluation	B
Cirsium vulgare	bull thistle	No	Moderate	None
Convolvulus arvensis	field bindweed	No	Evaluation	C
Cortaderia jubata	pampas grass	Yes	High	None
*Crypsis schoenoides**	swamp timothy	No	No	No
Cynodon dactylon	Bermuda grass	Yes	Moderate	C
Cyperus difformis	rice flat sedge	Yes	None	None
Cyperus eragrostis	tall umbrella sedge	Yes	None	None
Cyperus esculentus	yellow umbrella sedge	Yes	None	B
Cyperus niger	brown umbrella sedge	Yes	None	None
Cyperus odoratus	fragrant umbrella sedge	Yes	None	None
Cyperus rotundus	purple nut grass	Yes	None	B

Table 3.3-22 Invasive Plant Species Observed during the 2005 and 2006 Rare Plant Surveys of the Study Area

Scientific Name	Common Name	MSHCP[a]	Cal-IPC[b]	CDFA[c]
Dimorphotheca sinuate	blue-eyed cape marigold	Yes	Evaluation	None
Drosanthemum floribundum	rosea ice plant	Yes	None	None
Erodium botrys	long-beaked filaree	No	Evaluation	None
Erodium brachycarpum	short-fruited filaree	No	Evaluation	None
Erodium cicutarium	red-stemmed filaree	No	Limited	None
Erodium moschatum	white-stemmed filaree	No	Evaluation	None
Eucalyptus camaldulensis	red river gum	Yes	Limited	None
Eucalyptus globulus	blue gum	Yes	Moderate	None
Eucalyptus polyanthemos	silver dollar gum	Yes	None	None
Eucalyptus rhodantha	dollar gum	Yes	None	None
Festuca arundinacea	fescue	Yes	Moderate	None
Festuca rubra	red fescue	Yes	None	None
Foeniculum vulgare	fennel	Yes	High	None
Fraxinus uhdei	shamel ash	Yes	Evaluation	None
Hirschfeldia incana [Brassica geniculata]	summer mustard	No	Moderate	None
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	No	Moderate	None
Hordeum murinum ssp. *leporinum*	foxtail barley	No	Moderate	None
Hypochaeris glabra	smooth cat's ear	No	Limited	None
Kochia scoparia	summer cypress	No	Moderate	None
Lactuca serriola	prickly lettuce	No	Evaluation	None
Lantana camara	lantana	Yes	None	None
Lepidium latifolium	broad-leaved peppergrass	No	High	B
Lobularia maritima	sweet alyssum	No	Limited	None
Lolium perenne	perennial ryegrass	Yes	None	None
Lythrum hyssopifolia	grass poly	No	Limited	None
Malvella leprosa [*Sida leprosa* var. *hederacea*]	alkali mallow	No	None	C
Marrubium vulgare	horehound	No	Limited	None
Medicago polymorpha	bur clover	No	Limited	None
Malephora crocea	croceum iceplant	Yes	Evaluation	None
Melilotus indicus	sour clover	No	Nominated	None
Mesembryanthemum nodiflorum	small-flowered ice plant	Yes	Nominated	None
Nerium oleander	oleander	No	Evaluation	None
Nicotiana glauca	tree tobacco	No	Moderate	None
Olea europea	olive	No	Limited	None

Table 3.3-22 Invasive Plant Species Observed during the 2005 and 2006 Rare Plant Surveys of the Study Area

Scientific Name	Common Name	MSHCP[a]	Cal-IPC[b]	CDFA[c]
Opuntia ficus-indica	Indian fig	Yes	None	None
Parkinsonia aculeatea	Mexican palo verde	Yes	Evaluation	None
Picris echioides	bristly ox-tongue	No	Limited	None
Piptatherum miliaceum	smilo grass	No	Limited	None
Plumbago auriculata	cape plumbago	Yes	None	None
Plantago lanceolata	rib grass	No	Limited	None
Polygonum arenastrum	common knotweed	Yes	None	None
Polygonum argyrocoleon	Persian knotweed	Yes	None	None
Polygonum lapathifolium	willow smartweed	Yes	None	None
Polypogon monspeliensis	rabbit's foot grass	No	Limited	None
Populus nigra	Lombardy poplar	Yes	None	None
Pyracantha coccinea	firethorn	No	Limited	None
Raphanus sativus	wild radish	No	Limited	None
Ricinus communis	castor bean	Yes	Limited	None
Robinia pseudoacacia	black locust	Yes	Limited	None
Rumex crispus	curly dock	No	Limited	None
Salsola tragus	Russian thistle	No	Limited	C
Schinus molle	Peruvian pepper tree	Yes	Limited	None
Schinus terebinthifolius	Brazilian pepper tree	Yes	Limited	None
Schismus barbatus	Mediterranean schismus	No	Limited	None
Sinapis arvensis [Brassica kaber]	charlock	No	Limited	None
Solanum elaeagnifolium	silver-leaf horse nettle	No	Evaluation	B
Sonchus asper	prickly sow thistle	No	Evaluation	None
Tamarix aphylla	athel	Yes	Limited	None
Tamarix ramosissima	Mediterranean tamarisk	Yes	High	None
Tribulus terrestris	puncture vine	No	None	C
Trifolium hirtum	rose clover	No	Moderate	None
Vinca major	blue periwinkle	Yes	Moderate	None
Vulpia myuros	rattail fescue or zorro fescue	No	Moderate	None
Washingtonia robusta	Mexican fan palm	No	Moderate (Alert)	None

Sources: California Invasive Plant Council (Cal-IPC). California Invasive Plant Inventory. California Invasive Plant Council: Berkeley, CA. California Invasive Plant Inventory (2006), 2007 Updates, and Online Inventory at *http://www.cal-ipc.org/ip/inventory/index.php#inventory*.

California Department of Food and Agriculture (CDFA) Encycloweedia: *Notes on Identification, Biology, and Management of Plants Defined as Noxious Weeds by California Law.* Available online at *http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/encycloweedia_hp.htm*.

Note: *Swamp timothy (*Crypsis schoenoides*) is a non-native, mat-forming grass species that can be invasive in vernal pools, where it can displace special-status plants. It is not included in either the Cal-IPC Inventory or CDFA list of noxious weeds.

[a] Included in MSHCP Table 6-2, Plants That Should Be Avoided Adjacent To The MSHCP Conservation Area (RCIP 2003).

Table 3.3-22 Invasive Plant Species Observed during the 2005 and 2006 Rare Plant Surveys of the Study Area

Scientific Name	Common Name	MSHCP[a]	Cal-IPC[b]	CDFA[c]

[b] Cal-IPC Rankings:

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent – but generally not severe – ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Evaluation – Evaluation List Species

Nominated – Species Nominated but not yet reviewed

Alert – The alert designation within the Invasive Plant Inventory refers to plants with High or Moderate ratings that have the potential to increase their ranges in California.

[c] CDFA Ranks:

"A" – An organism of known economic importance subject to state (or commissioner when acting as a state agent) enforced action involving: eradication, quarantine, containment, rejection, or other holding action.

"B" – An organism of known economic importance subject to: eradication, containment, control or other holding action at the discretion of the individual county agricultural commissioner; or an organism of known economic importance subject to state endorsed holding action and eradication only when found in a nursery.

"C" – An organism subject to no state enforced action outside of nurseries except to retard spread. At the discretion of the commissioner: or an organism subject to no state enforced action except to provide for pest cleanliness in nurseries.

The MSHCP states that habitat alteration and native species displacement by invasive plants are serious threats to many covered plant and animal species. Specifically, the MSHCP identified several species that were considered invasive and that should be avoided in landscaping adjacent to MSHCP Conservation Areas (Table 6-2, Plants That Should Be Avoided Adjacent to the MSHCP Conservation Area, of the MSHCP) (RCIP 2003). Invasive species included in Table 6-2 of the MSHCP that were observed in the study area during the 2005 and 2006 surveys are also identified in Table 3.3-22. A general overview of the most important weeds observed in the study area is presented in the following sections.

A total of 93 invasive plants were identified in the study area during the 2005 and 2006 botanical surveys (Table 3.3-22). No CDFA "A" ranked (eradication or quarantine) species were observed during the surveys. Six CDFA "B" ranked species and five "C" ranked species were noted. These B and C species are not of immediate concern to CDFA.

Eight Cal-IPC "High" ranked, 25 "Limited" ranked, and 20 "Moderate" ranked species were identified in the study area (Table 3.3-22). Eighteen species in Table 3.3-22 have either been nominated for inclusion in the Cal-IPC inventory or are being evaluated. Twenty-one plants listed in Table 3.3-22 are not included in the Cal-IPC inventory. Forty-two plant species identified in the study area are included in MSHCP Table 6-2, Plants That Should Be Avoided Adjacent to the MSHCP Conservation Area. Some of these plants may have a more significant impact on local ecosystems. One

non-native species, swamp timothy (*Crypsis schoenoides*), that was not included in either the Cal-IPC inventory or the CDFA list of noxious weeds, was also included in Table 3.3-22.

Only one of the Cal-IPC "High" ranked invasive plants presented in Table 3.3-22, broad-leaved peppergrass (*Lepidium latifolium*), is widespread in the study area. Broad-leaved peppergrass is a very aggressive habitat invader, particularly in disturbed areas, and it was abundant in the northern part of the study area, north of Cottonwood Avenue. A second Cal-IPC "High" ranked invasive plant is Sahara mustard (*Brassica tournefortii*), which was identified in the West Hemet Hills. Sahara mustard was much more abundant in 2005 than in 2006 because of the heavy rains that occurred in 2005. Sahara mustard is extremely invasive and is known to spread into sensitive Riversidian sage scrub habitats.

A third "High" ranked plant, Mediterranean tamarisk (*Tamarix ramossisma*), was observed in most of the riparian areas in the study area. Most of the other invasive weeds in the Cal-IPC "High" ranked category in the study area are less abundant and are localized.

Twenty "Moderate" ranked invasive species were encountered in fairly high numbers, including ripgut grass (*Bromus diandrus*), summer mustard (*Hirscheldia incana*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), hare barley (*Hordeum murinum* ssp. *leporinum*), and Italian ryegrass (*Lolium multiflorum*). Mediterranean barley has the most significant ecological impact of all these grasses because Mediterranean barley displaces the native grass species in alkali grasslands habitat. This is of particular concern in the central part of the study area, where high densities of special-status plant species are present.

Three "Moderate" or "Limited" ranked plant species are invasive on a smaller ecological scale in disturbed alkali habitats: five-hook bassia (*Bassia hyssopifolia*), Russian thistle (*Salsola tragus*), and summer cypress (*Kochia scoparia*).

Dog mayweed (*Anthemis cotula*), an "Evaluation" species of increasing concern, was identified in areas with moist soils (including some seasonal wetlands) in the study area. Small-flowered iceplant (*Mesembryanthemum nodiflorum*), a species nominated but not yet reviewed for the Cal-IPC inventory, was abundant in some alkali playa habitat areas, especially south of Esplanade Avenue.

Swamp timothy (*Crypsis schoenoides*) is a non-native, mat-forming grass species that can be invasive in vernal pools where it can displace special-status plants. It is not included in either the Cal-IPC inventory or CDFA list of noxious weeds.

Invasive Animal Species within the TWSA

The combination of rural and urban land uses and ongoing site disturbance in the study area support a variety of non-native animal species, including brown-headed cowbirds (*Molothrus ater*), common peafowl (*Pavo cristatus*), European starlings (*Sturnus vulgaris*), house sparrows (*Passer domesticus*), rock doves (*Columba livia*), and house mice (*Mus musculus*). Of the non-native wildlife species that were observed, only brown-headed cowbirds and European starlings are considered to be invasive. A list of the invasive animal species that were documented in the study area is included in Appendix H of the NES.

The urban areas support large populations of European starlings, house sparrows, rock doves, and house mice. Common peafowl are also present at some ranches and rural residences. Bullfrogs (*Rana catesbeiana*), an invasive amphibian predator, were expected to be present in the stock ponds and other natural and man-made water features throughout the study area, but they were not observed during amphibian surveys.

The rural agricultural areas, dairies, and horse stables support abundant brown-headed cowbird and rock dove populations. Brown-headed cowbirds are brood parasites that do not raise their own young. Instead, the females lay eggs in the nests of host bird species. This negatively impacts the nest success of the host birds because the host birds either abandon their nests or raise the cowbird chicks at the expense of their own chicks. Large flocks of approximately 15 to 25 brown-headed cowbirds (including males, females, and juveniles) were observed foraging and displaying in several survey sites in the northern portion of the study area. Brown-headed cowbirds were also observed in all of the southwestern willow flycatcher survey sites. Brown-headed cowbirds are known to have a detrimental impact on southwestern willow flycatcher and least Bell's vireo nesting success. Although brown-headed cowbird eggs were not observed during these surveys, the presence of juvenile cowbirds indicates that nest parasitism had occurred.

3.3.6.3 Environmental Consequences

The following sections describe how potential permanent (direct and indirect) and temporary impacts could promote the spread of invasive species. Because specific location information on invasive plant and animal species is not available, a qualitative discussion is presented. The potential impacts due to invasive species associated with the Project would be similar regardless of the Build alternative or design option that is identified as the Preferred Alternative. Therefore, the discussion below is presented for the collective Project, as opposed to a specific Build alternative or design option.

No Build Alternative

The impacts from invasive plant species with the No Build Alternative would be lower levels of encroachment or establishment of invasive plants that could degrade special-status plant or other sensitive habitat or displace special-status plant individuals or populations than would occur with any of the Build alternatives or design options. Because no direct impacts on animal species from invasive species are expected, there would be no difference in impacts between the No Build Alternative and the Build alternatives or design options.

All Build Alternatives and Design Options

Permanent Impacts

Plants

Ninety-three invasive plants were identified in the study area during the 2005 and 2006 botanical surveys. Invasive plant species are recognized as a substantial threat to many special-status plants and their associated or required habitat. For this reason, invasive species detection and evaluation is an important aspect of the MSHCP Biological Monitoring Program (RCIP 2003). Prevention, control, and eradication of invasive plants are key management actions for many Covered Species in MSHCP Conservation Areas.

Potential permanent direct and/or permanent indirect impacts to special-status plants or their habitats include the establishment and/or encroachment of invasive plant species. The encroachment or establishment of invasive plants

could result in the degradation of special-status plant or other sensitive habitat or displacement of special-status plant individuals or populations. These impacts, depending on the extent of infestation and magnitude of habitat degradation, could be substantial. Measures during construction will be implemented to monitor and prevent the establishment or encroachment of invasive plant species.

Animal Species

Presence of invasive animal species was documented as part of focused wildlife surveys in the study area. Of the non-native wildlife species that were observed, only brown-headed cowbirds and European starlings are considered invasive. Potential permanent direct and indirect impacts, including habitat loss and operational roadway noise, could be exacerbated due to encroachment by invasive animal species. Because cowbirds are a parasitic species that thrive in human-altered landscapes, it is not expected that the Project would cause a displacement of individuals outside the Project area. Specifically, brown-headed cowbirds are nest parasites known to have a detrimental impact on southwestern willow flycatcher and least Bell's vireo nesting success. However, nesting southwestern willow flycatcher and least Bell's vireo were not observed within the study area. Therefore, no impacts are expected.

Temporary Impacts

Plant Species

Invasive plant species could establish in the construction area and spread into sensitive areas outside the ROW. Best management practices (BMPs) will be implemented during construction to minimize the potential temporary impacts to offsite natural plant communities. Best management practices would include monitoring during construction by qualified biologists, as described in Section 3.3.6.4.

Animal Species

Temporary impacts such as habitat fragmentation can encourage the establishment and spread of invasive animal species that degrade habitat quality and availability. Brown-headed cowbirds could have a detrimental impact on southwestern willow flycatcher and least Bell's vireo nesting success. Because cowbirds are a parasitic species that thrive in human-altered landscapes, it is not expected that the Project would cause a displacement of individuals outside the Project area. In addition, nesting southwestern willow flycatcher and least Bell's vireo were not observed in the study area, so no impacts to these species are expected.

3.3.6.4 Avoidance, Minimization, and/or Mitigation Measures

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Minimization Measures

All Build Alternatives and Design Options

The following minimization measures are applicable regardless of the Build alternative or design option that is identified as the Preferred Alternative. Therefore, the discussion below is presented for the collective Project, as opposed to a specific Build alternative or design option.

Urban/Wildlands Interface, Siting and Design Criteria, Construction Guidelines and Best Management Practices (Appendix C of the MSHCP)

Although the following MSHCP guidelines and BMPs were presented in the Natural Communities discussion in Section 3.3.1.3 and Section 3.3.1.4, the following items are specific to invasive species and are, therefore, presented again.

BIO-1 **Landscaping Plans.** Landscaping plans will include native seed for erosion control in areas near the MSHCP Conservation Area.

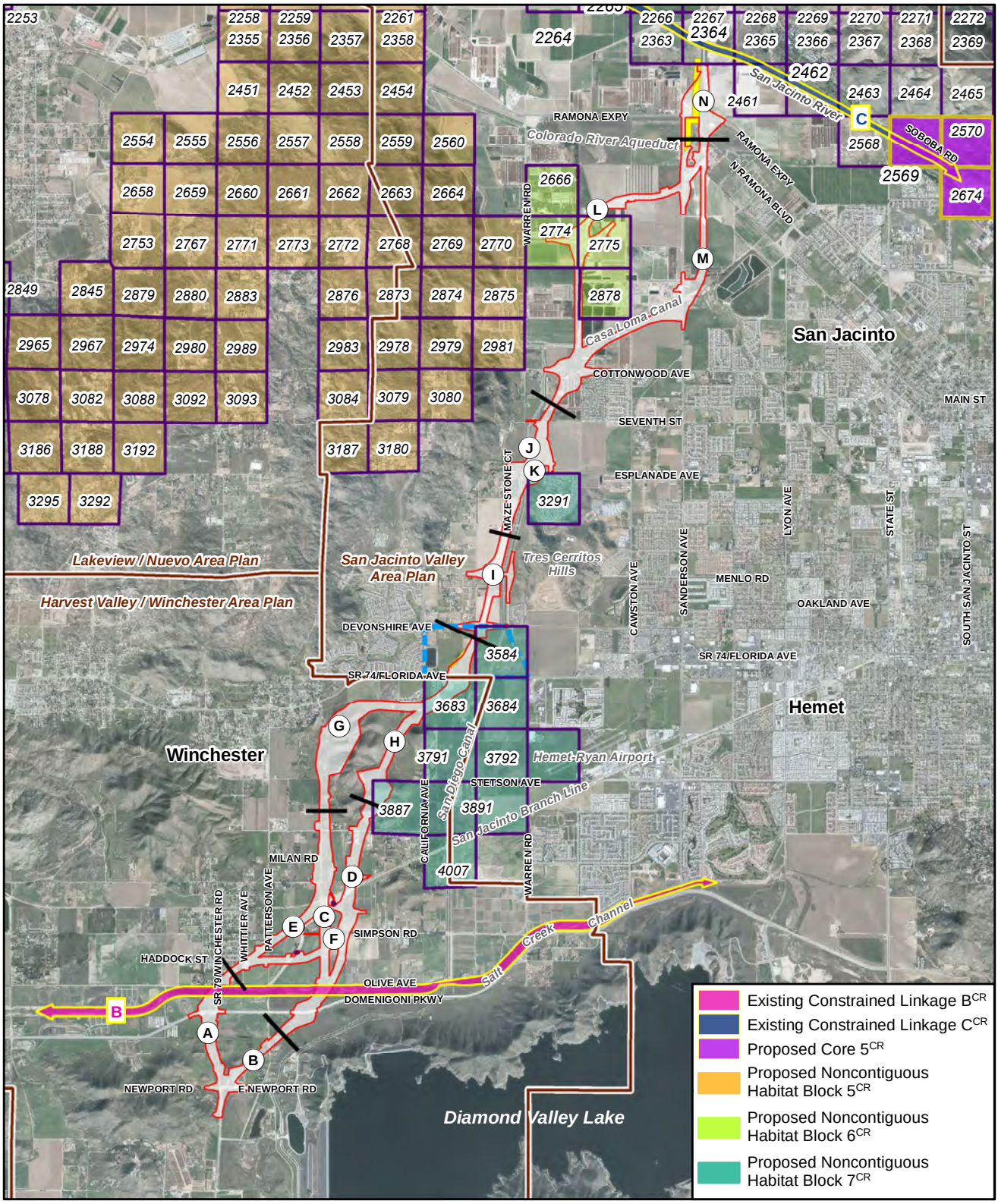
BIO-2 **Avoid the Use of Invasive and Non-Native Plants.** The landscaping plans will avoid the use of invasive and non-native plants listed in MSHCP Table 6-2, Plants that Should be Avoided Adjacent to the MSHCP Conservation Area, where applicable.

Invasive Plant Species Monitoring and Control

BIO-35 **Avoid the Spread of Invasive Plant Species.** The Project will incorporate specifications in the landscape plans to avoid the spread of invasive plant species.

- **BIO-35a. Cleaning of Equipment**. All construction equipment shall be cleaned, with a broom or other appropriate method, of potential invasive plant seeds before entering sensitive habitat areas.
- **BIO-35b. Monitoring.** Periodic invasive plant species monitoring of the ROW and adjacent sensitive areas will be conducted during construction by contractor-supplied plant biologists who have knowledge about and experience with the local flora and invasive species of the region. Key monitoring objectives are to identify and eradicate any invasive weed infestations that establish or spread within the ROW during construction to prevent them from extending into adjacent sensitive areas. Monitoring will be conducted quarterly, at a minimum, and will focus on the portions of the ROW that are adjacent to Additional Indirect Impact Study Areas 1 and 2, in particular, the Stowe Road Vernal Pool Complex and in a portion of Cell 3291. Qualified biologists will demark the location of noxious weeds in the field, on construction and engineering drawings, and with GPS units.
- **BIO-35c. Eradication.** A variety of methods, including mechanical control or herbicides, will be used to eradicate invasive plant species identified during monitoring.

Figures
Section 3.3



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Criteria Cells^CR
- Area Plan Boundary^CR

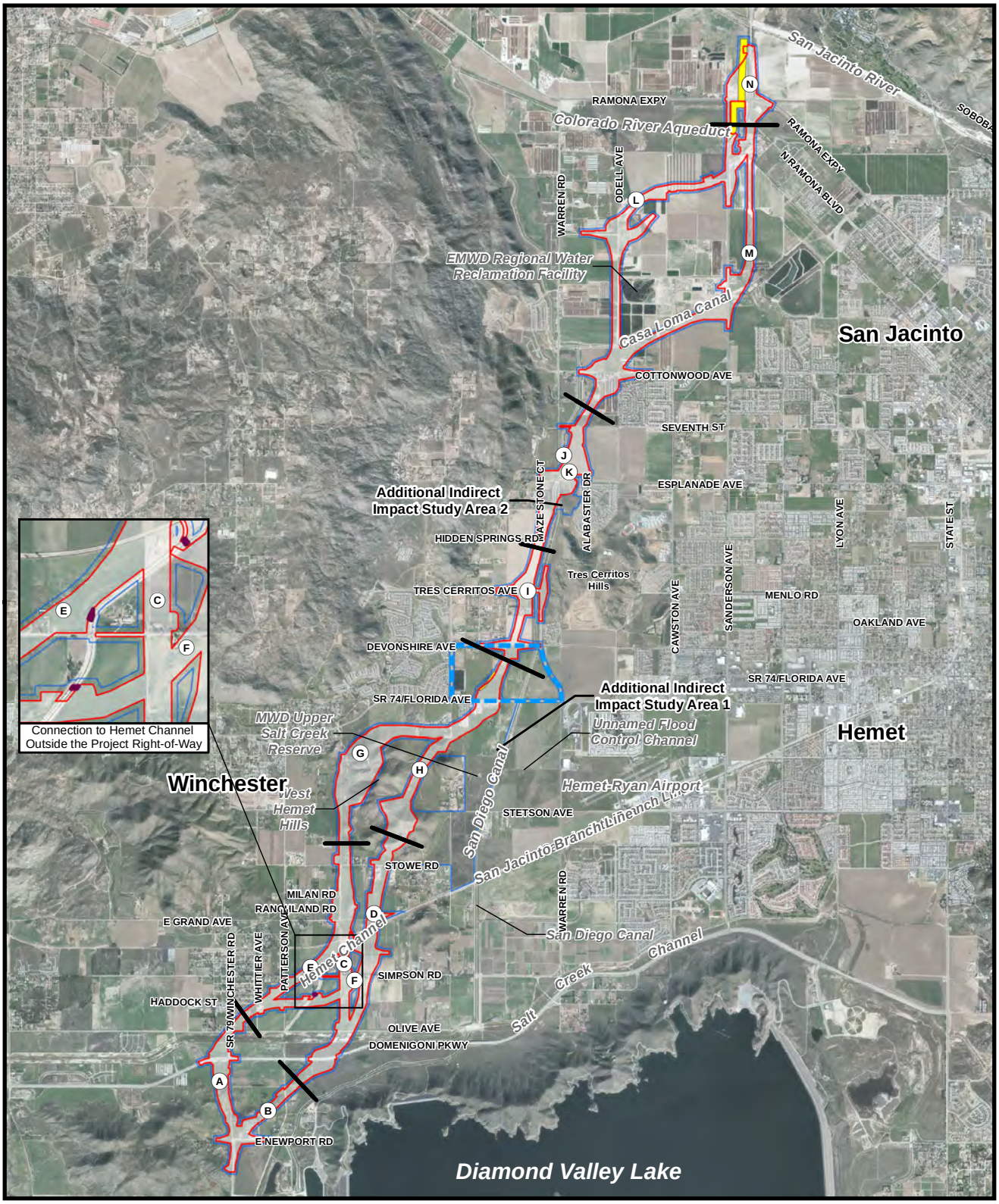
0 7,500 Feet

0 1,500 Meters

1:90,000

Source: CR - County of Riverside

Figure 3.3-1
Multiple Species Habitat Conservation Plan Area Plans, Criteria Cells, and Cores and Linkages
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

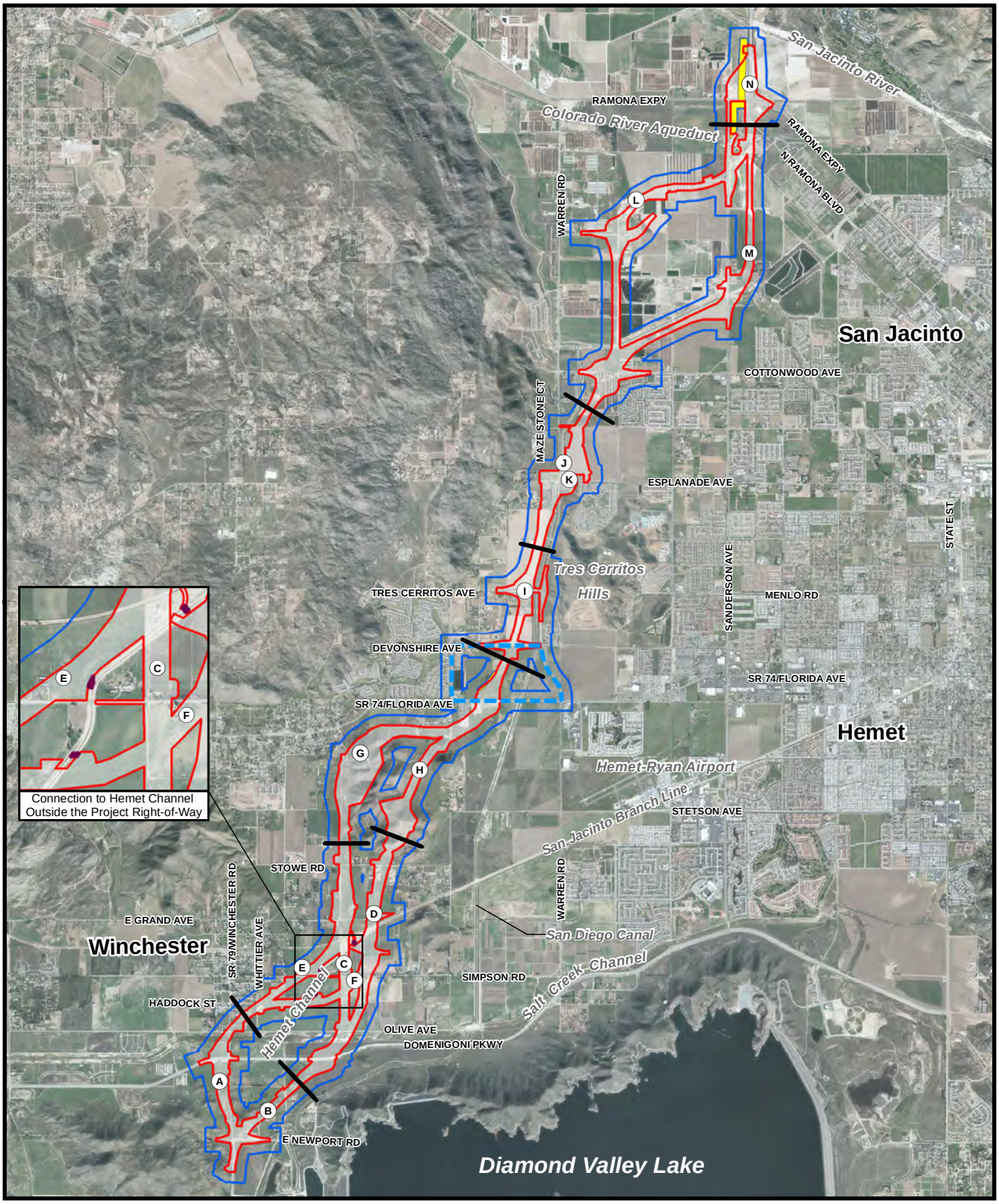
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-2
Rare Plant Aquatic Resource Study Area
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

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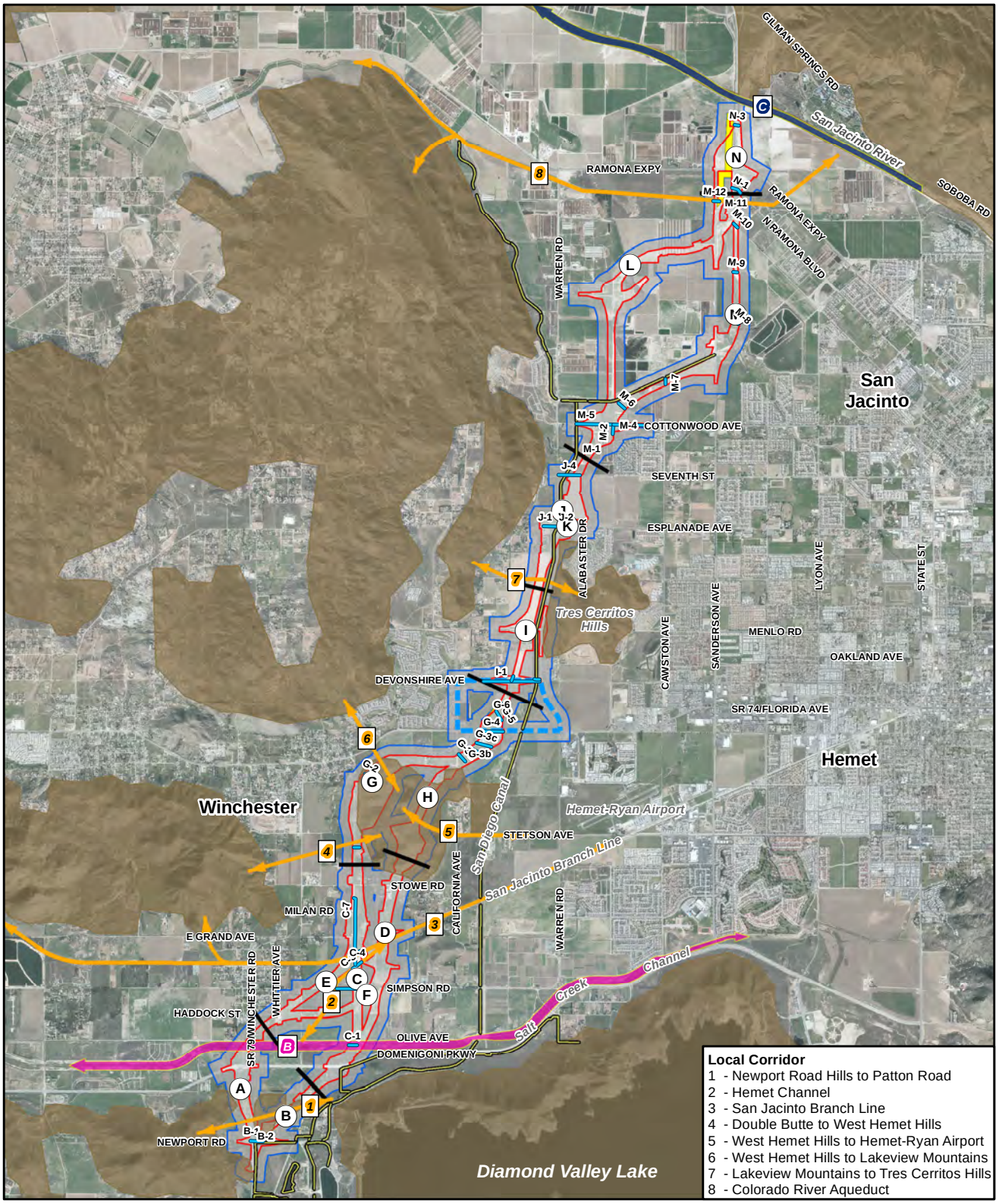
0 1,000 Meters

1:84,000

Figure 3.3-3
Terrestrial Wildlife Study Area
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Local Corridor
1 - Newport Road Hills to Patton Road
2 - Hemet Channel
3 - San Jacinto Branch Line
4 - Double Butte to West Hemet Hills
5 - West Hemet Hills to Hemet-Ryan Airport
6 - West Hemet Hills to Lakeview Mountains
7 - Lakeview Mountains to Tres Cerritos Hills
8 - Colorado River Aqueduct

Aerial Date: February 2011, Aero-Graphics, Inc

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Bridge
- Proposed Culvert
- Barrier to Wildlife Movement

MSHCP Linkage[CR]

- Existing Constrained Linkage B
- Existing Constrained Linkage C
- Local Corridor

Source: CR - County of Riverside

0 7,500 Feet

0 1,500 Meters

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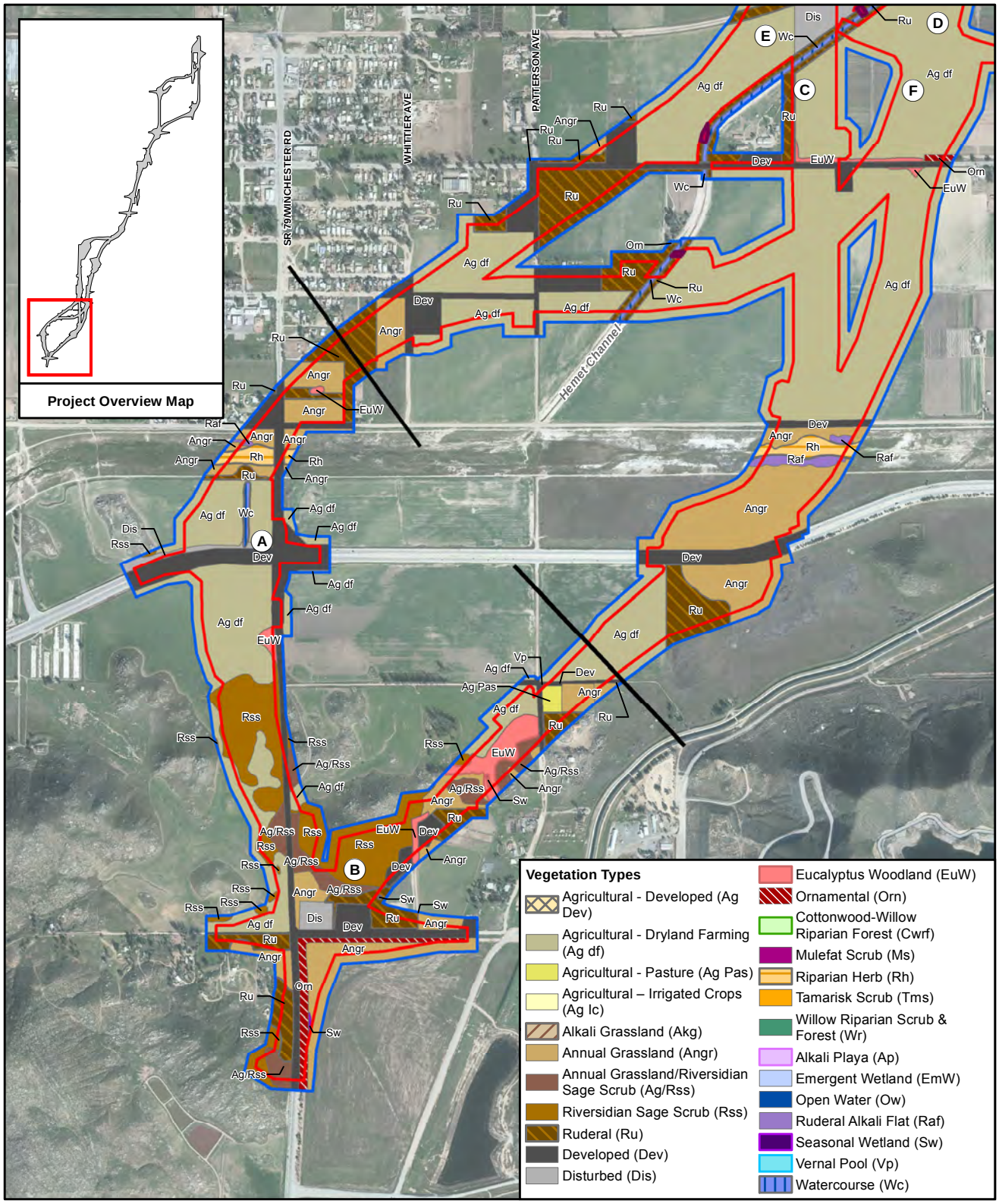
Figure 3.3-4
Existing Wildlife Movement Features and Habitat Regions
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plant and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

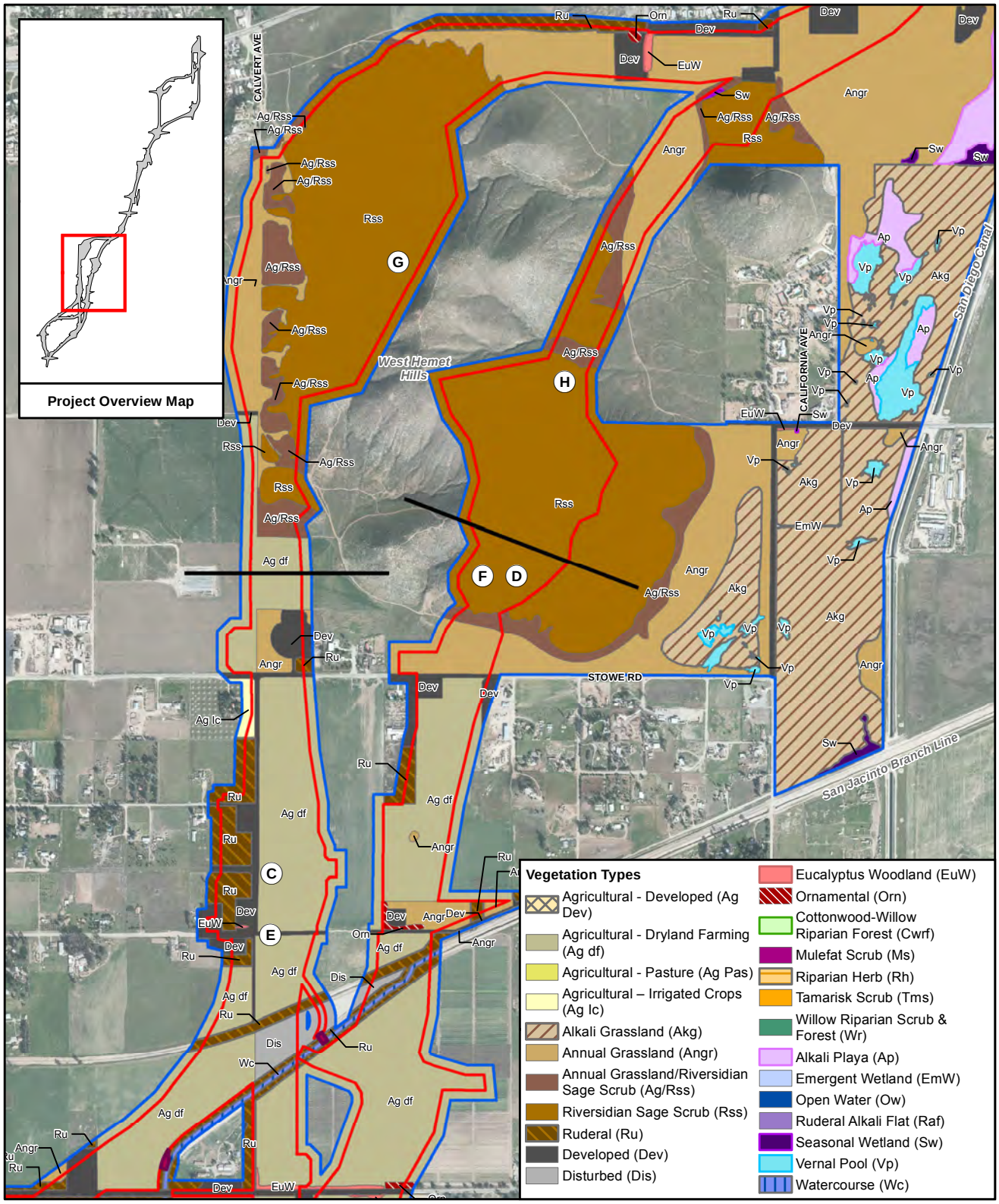
Note: Vegetation types are representative of field conditions observed during the 2005 and 2006 rare plant surveys.

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-5
Location of Vegetation Types
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plant and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Note: Vegetation types are representative of field conditions observed during the 2005 and 2006 rare plant surveys.

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0 300 Meters

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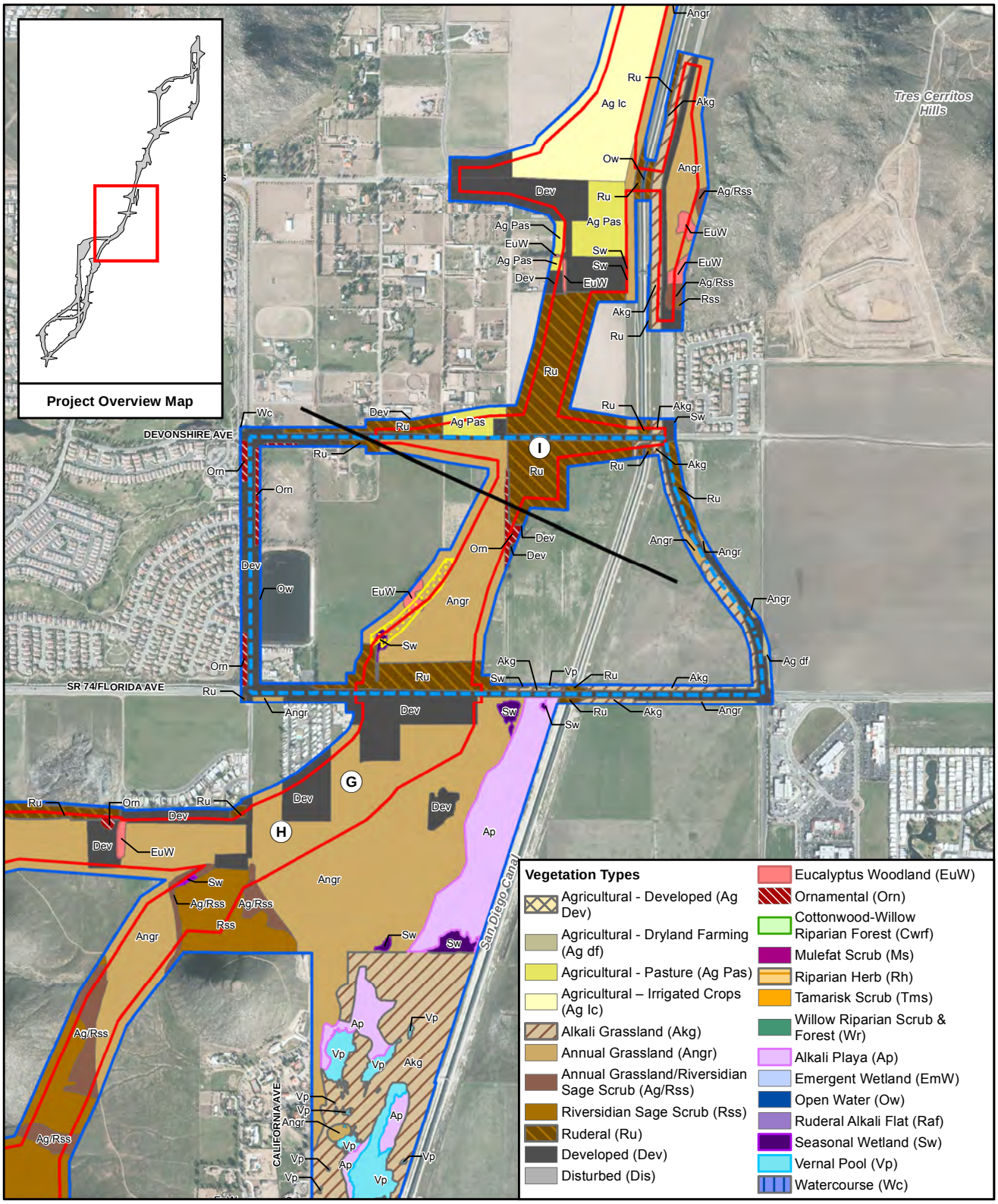
Figure 3.3-6
Location of Vegetation Types
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plant and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

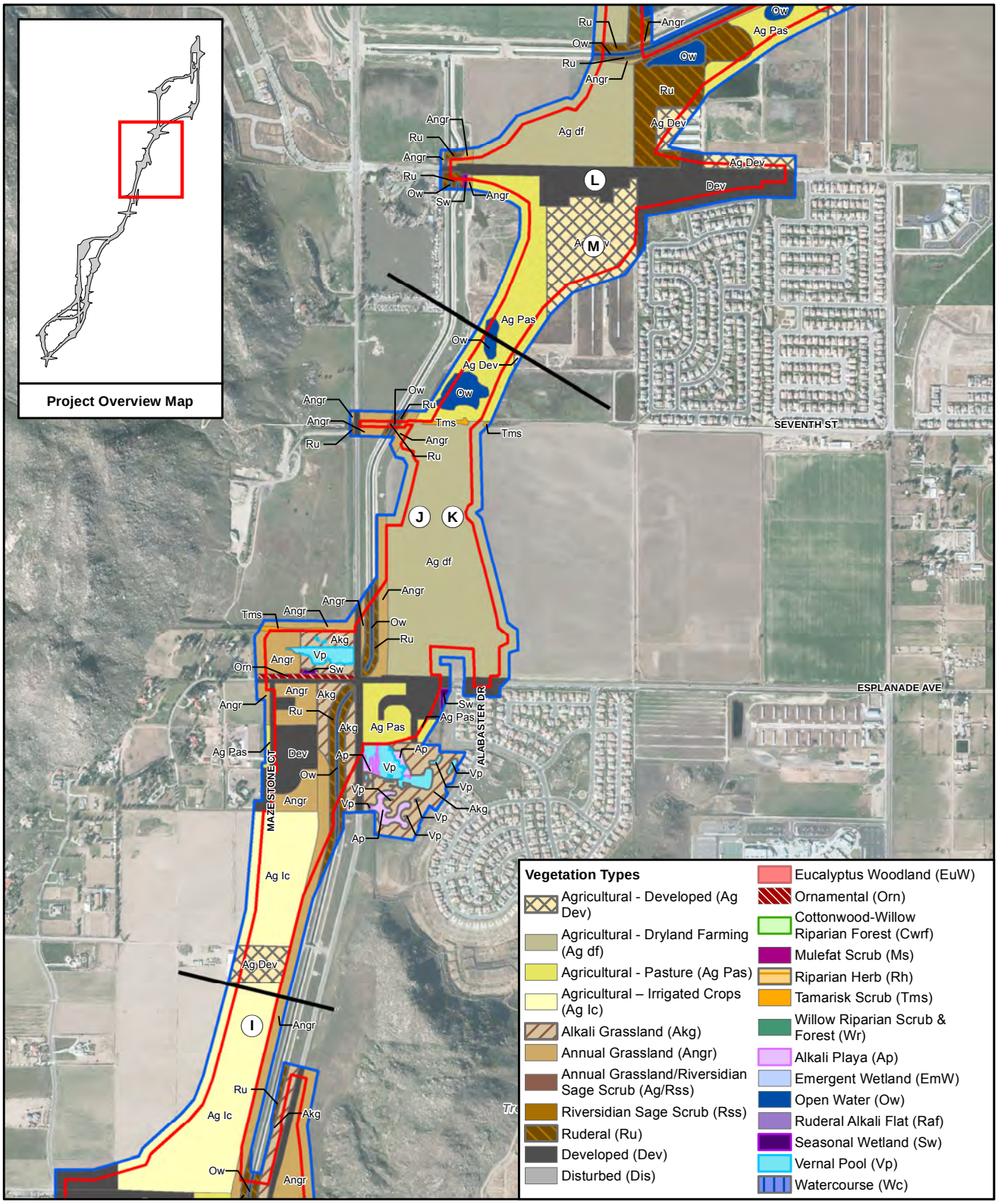
Note: Vegetation types are representative of field conditions observed during the 2005 and 2006 rare plant surveys.

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-7
Location of Vegetation Types
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plant and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

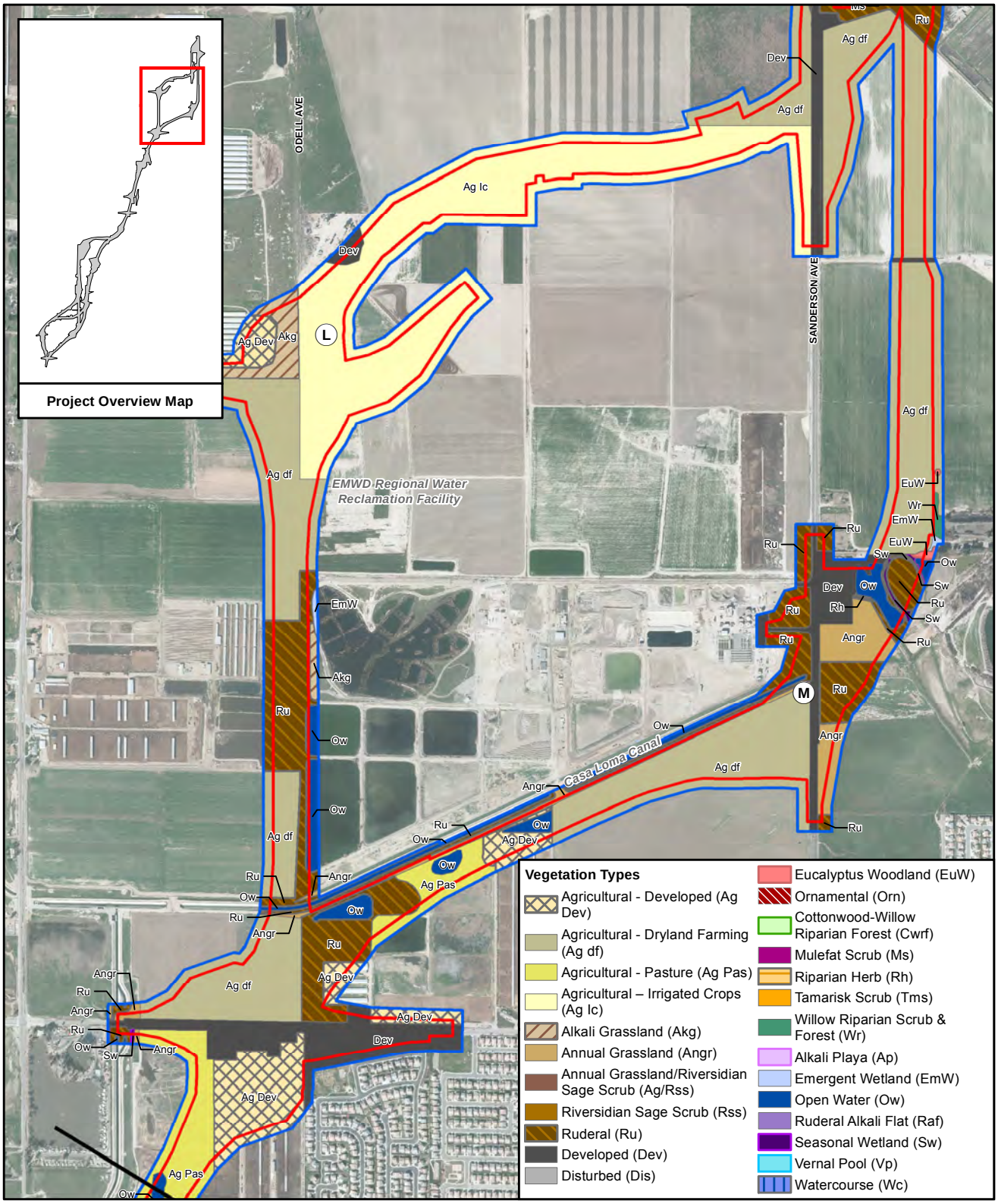
Note: Vegetation types are representative of field conditions observed during the 2005 and 2006 rare plant surveys.

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-8
Location of Vegetation Types
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plant and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

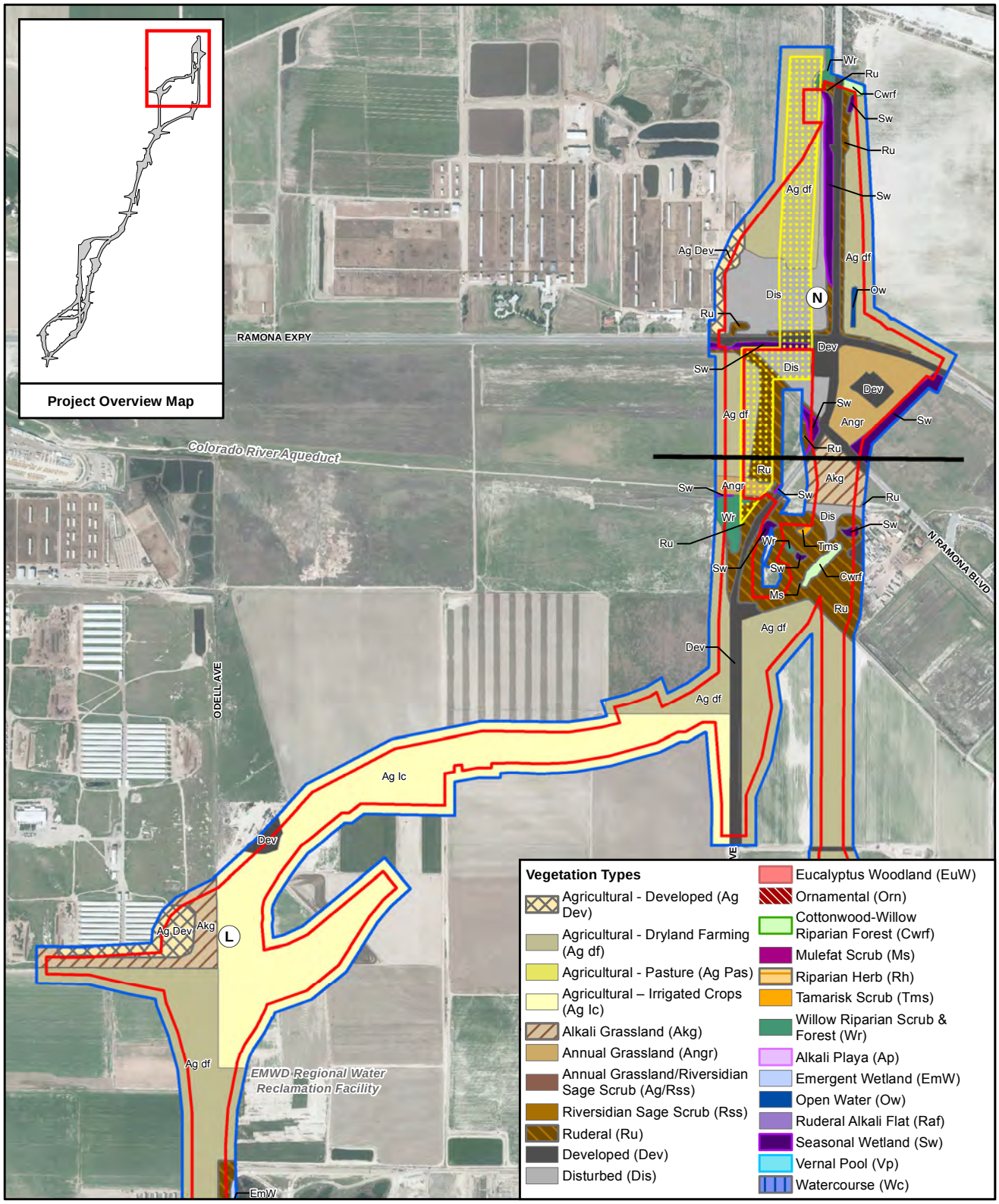
Note: Vegetation types are representative of field conditions observed during the 2005 and 2006 rare plant surveys.

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-9
Location of Vegetation Types
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plant and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

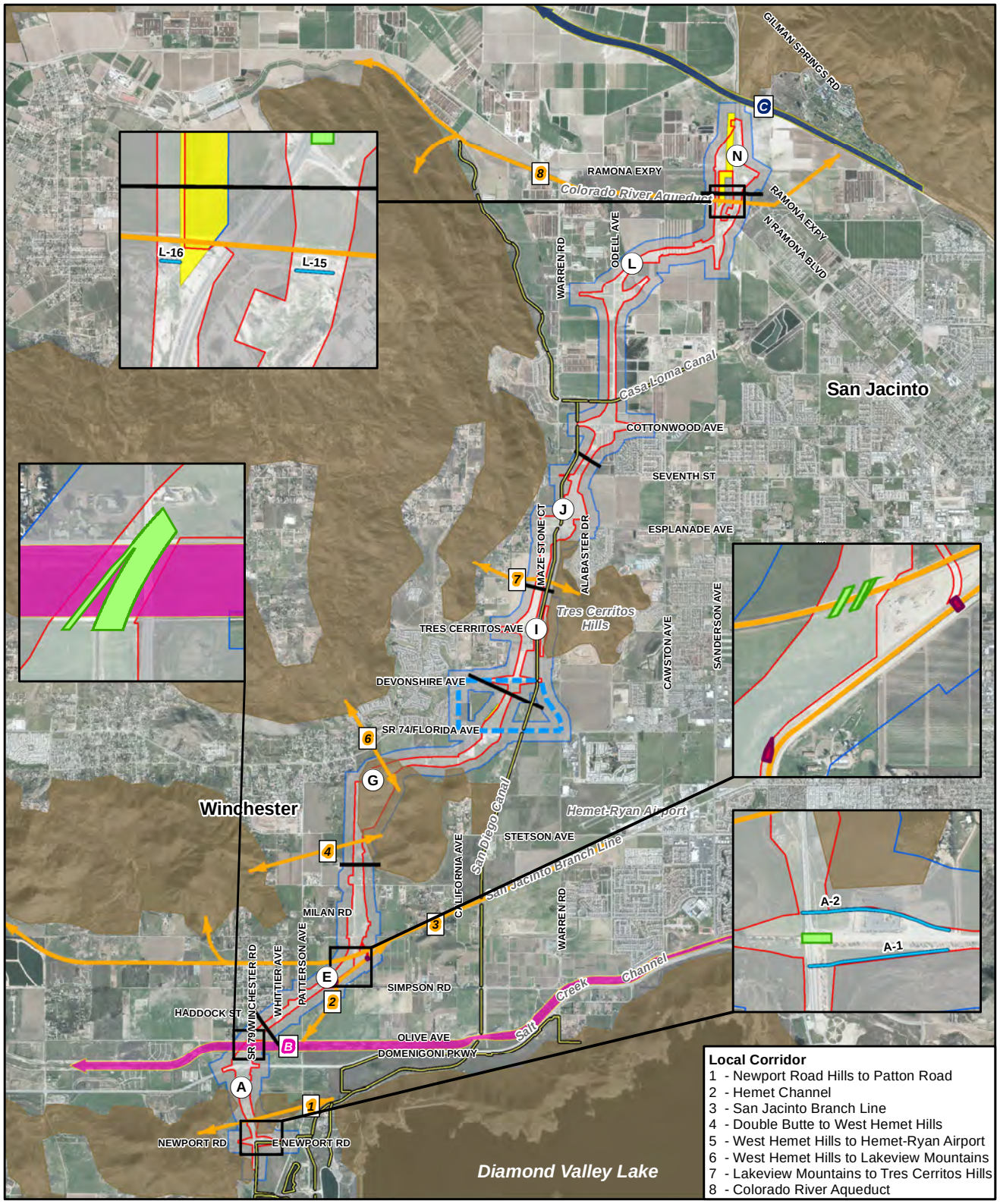
Note: Vegetation types are representative of field conditions observed during the 2005 and 2006 rare plant surveys.

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-10
Location of Vegetation Types
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Bridge
- Proposed Culvert
- Barrier to Wildlife Movement

MSHCP Linkage[CR]

- Existing Constrained Linkage B
- Existing Constrained Linkage C
- Local Corridor

Source: CR - County of Riverside

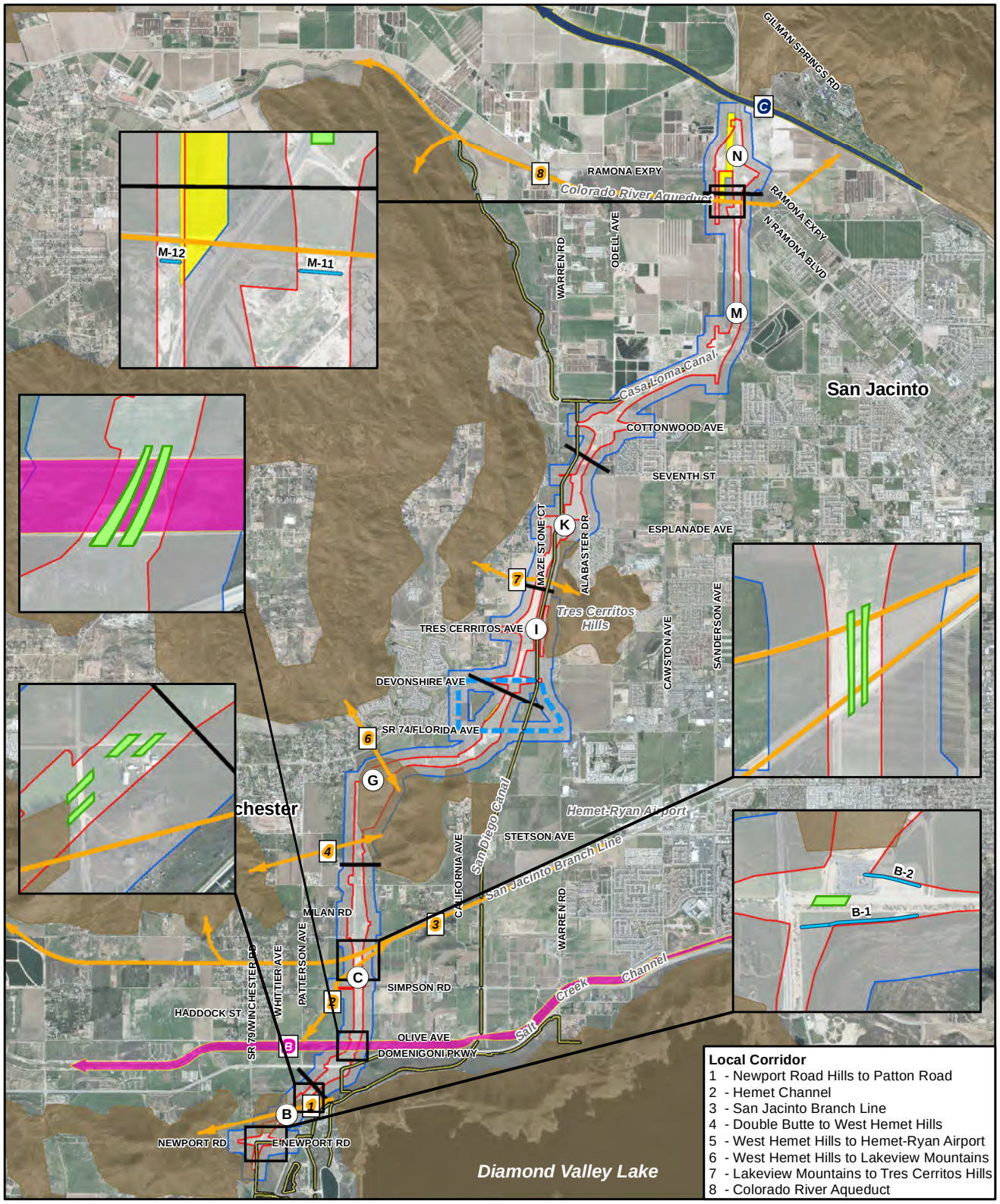
0 7,500 Feet

0 1,500 Meters

1:90,000

Figure 3.3-11
Build Alternative 1a Existing Wildlife Corridor Features with Proposed Bridge and Culvert Locations

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



Aerial Date: February 2011, Aero-Graphics, Inc

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Bridge
- Proposed Culvert
- Barrier to Wildlife Movement

MSHCP Linkage[CR]

- Existing Constrained Linkage B
- Existing Constrained Linkage C
- Local Corridor

0 7,500 Feet

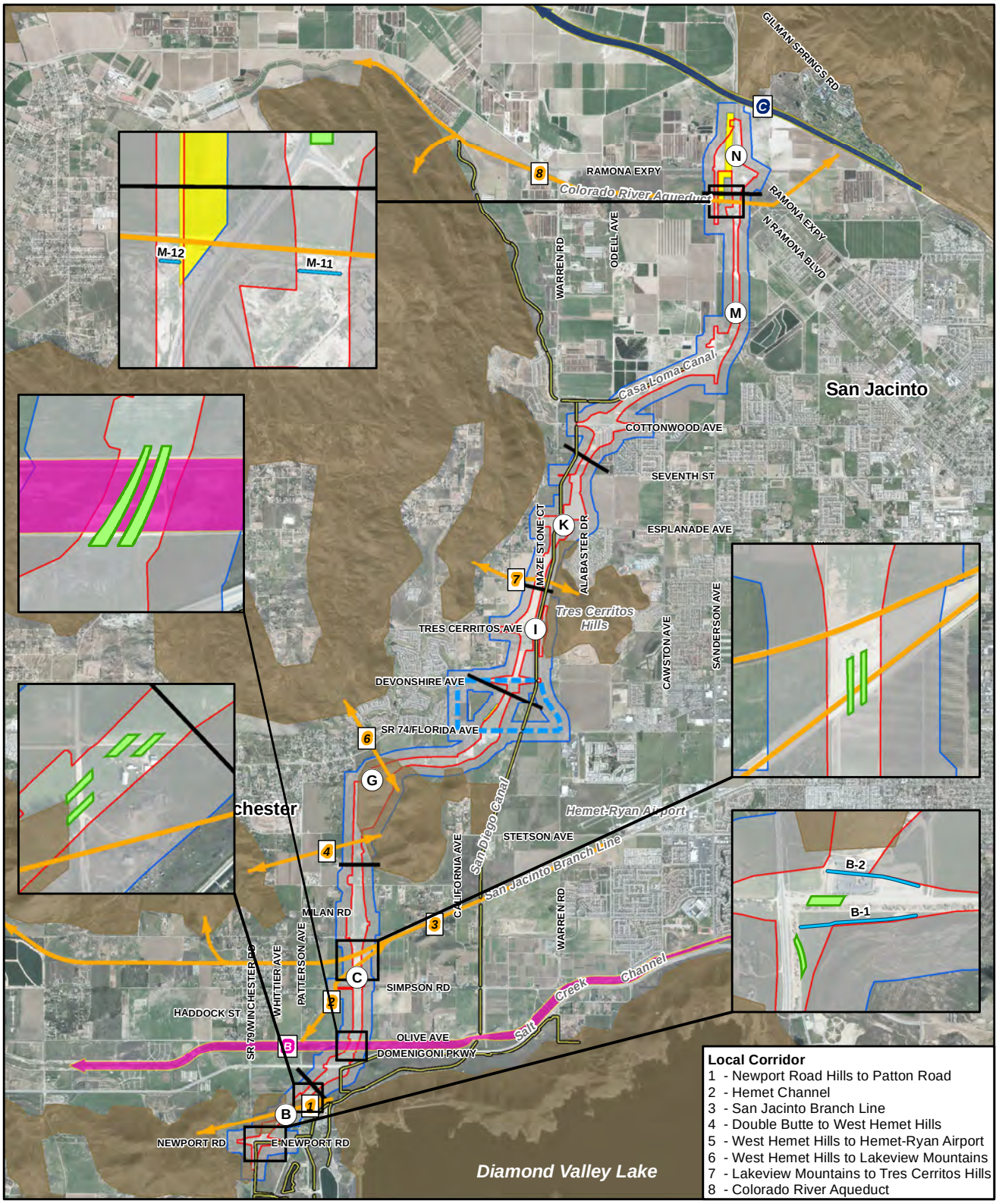
0 1,500 Meters

1:90,000

Source: CR - County of Riverside

Figure 3.3-12
Build Alternative 1b Existing Wildlife Corridor Features with Proposed Bridge and Culvert Locations

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



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Bridge
- Proposed Culvert
- Barrier to Wildlife Movement

MSHCP Linkage[CR]

- Existing Constrained Linkage B
- Existing Constrained Linkage C
- Local Corridor

0 7,500 Feet

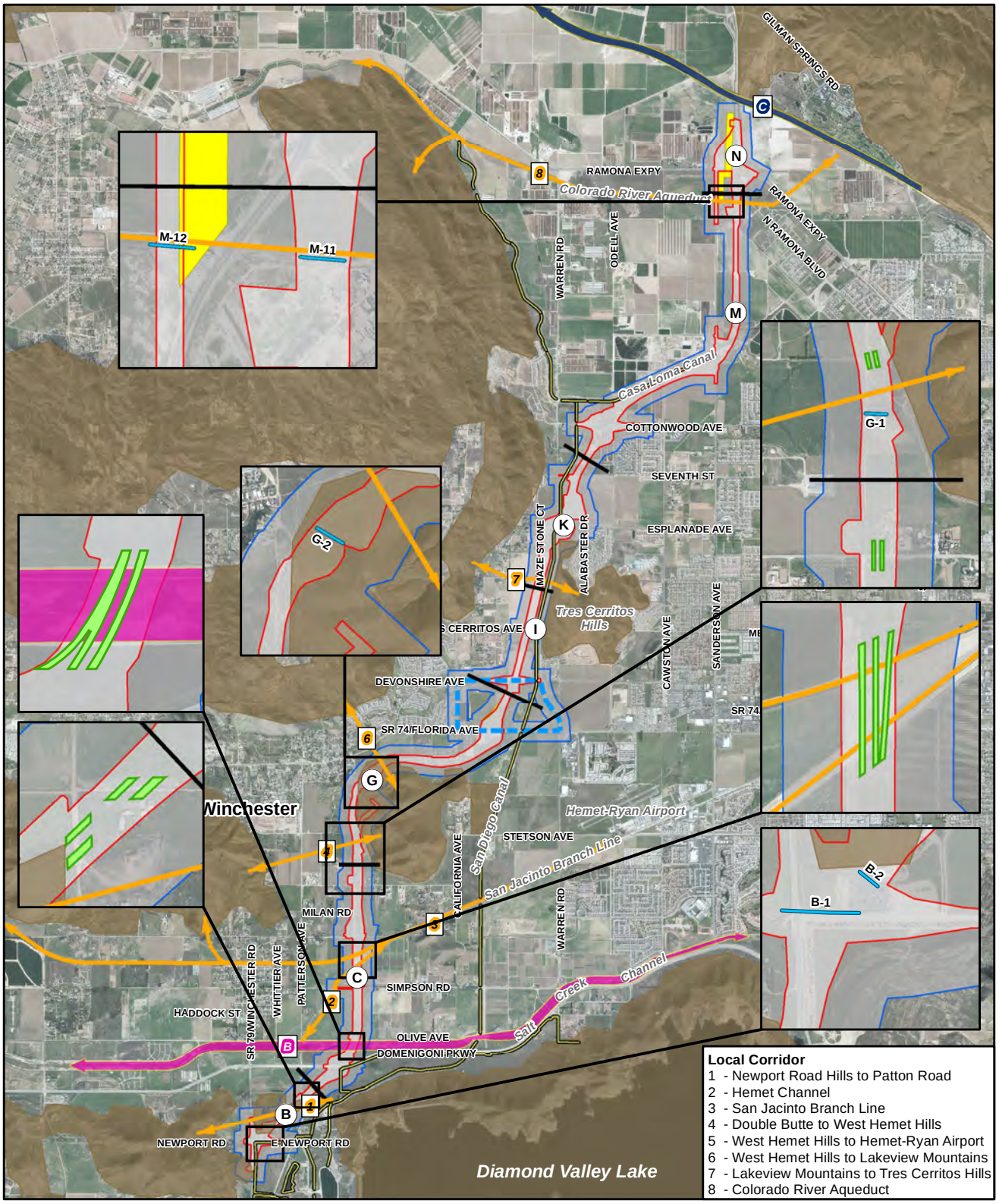
0 1,500 Meters

1:90,000

Source: CR - County of Riverside

Figure 3.3-13
Design Option 1b1 Existing Wildlife Corridor Features with Proposed Bridge and Culvert Locations

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



Aerial Date: February 2011, Aero-Graphics, Inc

\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_WC_1BR_A.MXD NES_WC_1BR_A.PDF 7/20/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Bridge
- Proposed Culvert
- Barrier to Wildlife Movement

MSHCP Linkage[CR]

- Existing Constrained Linkage B
- Existing Constrained Linkage C
- Local Corridor

Source: CR - County of Riverside

0 7,500 Feet

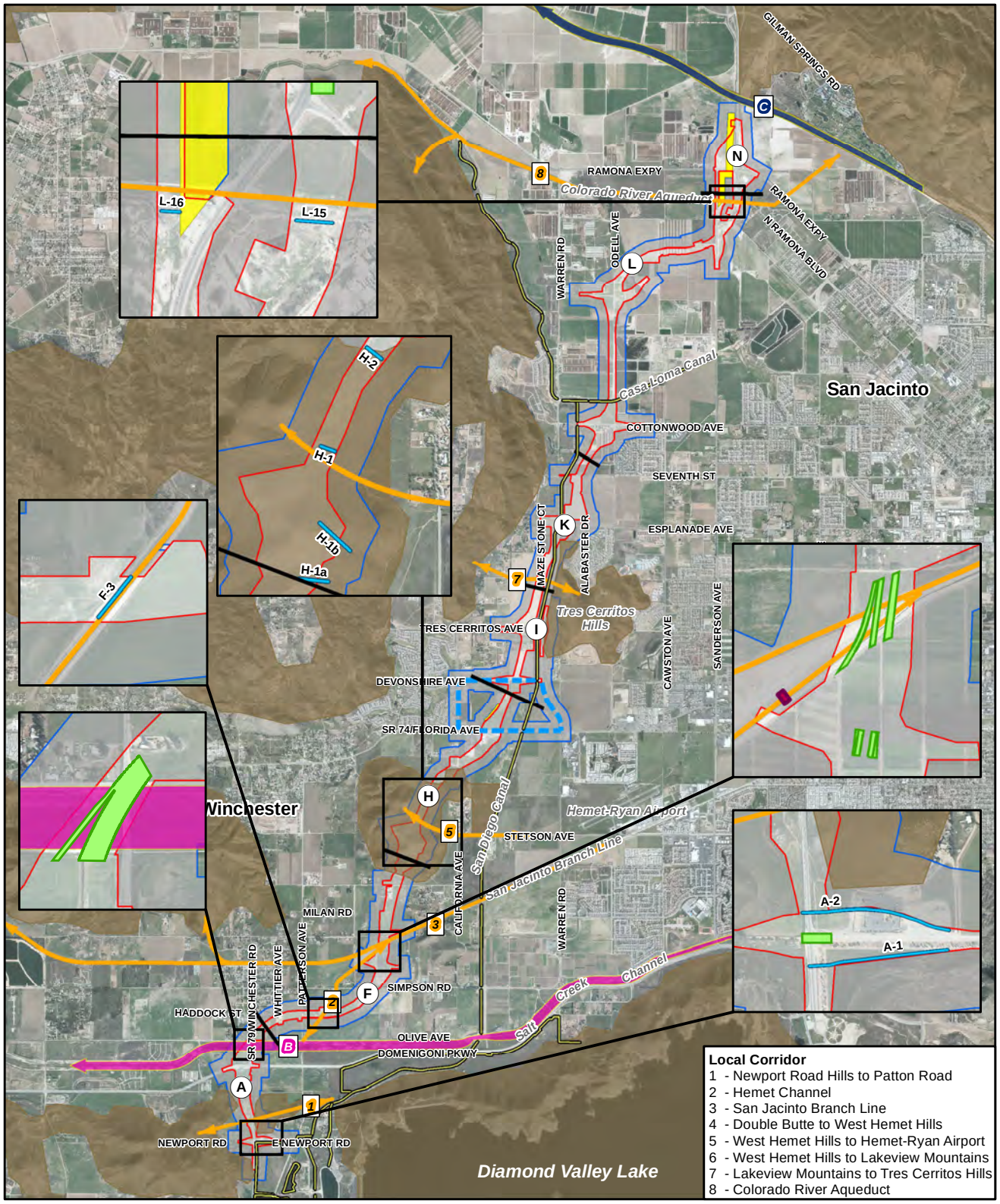
0 1,500 Meters

1:90,000

Figure 3.3-14
Build Alternative 1br Existing Wildlife Corridor Features with Proposed Bridge and Culvert Locations

Final Environmental Impact Report/ Environmental Impact Statement

State Route 79 Realignment Project



Aerial Date: February 2011, Aero-Graphics, Inc

\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_WC_2A_A.MXD NES_WC_2A_A.PDF 7/20/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Bridge
- Proposed Culvert
- Barrier to Wildlife Movement

MSHCP Linkage[CR]

- Existing Constrained Linkage B
- Existing Constrained Linkage C
- Local Corridor

Source: CR - County of Riverside

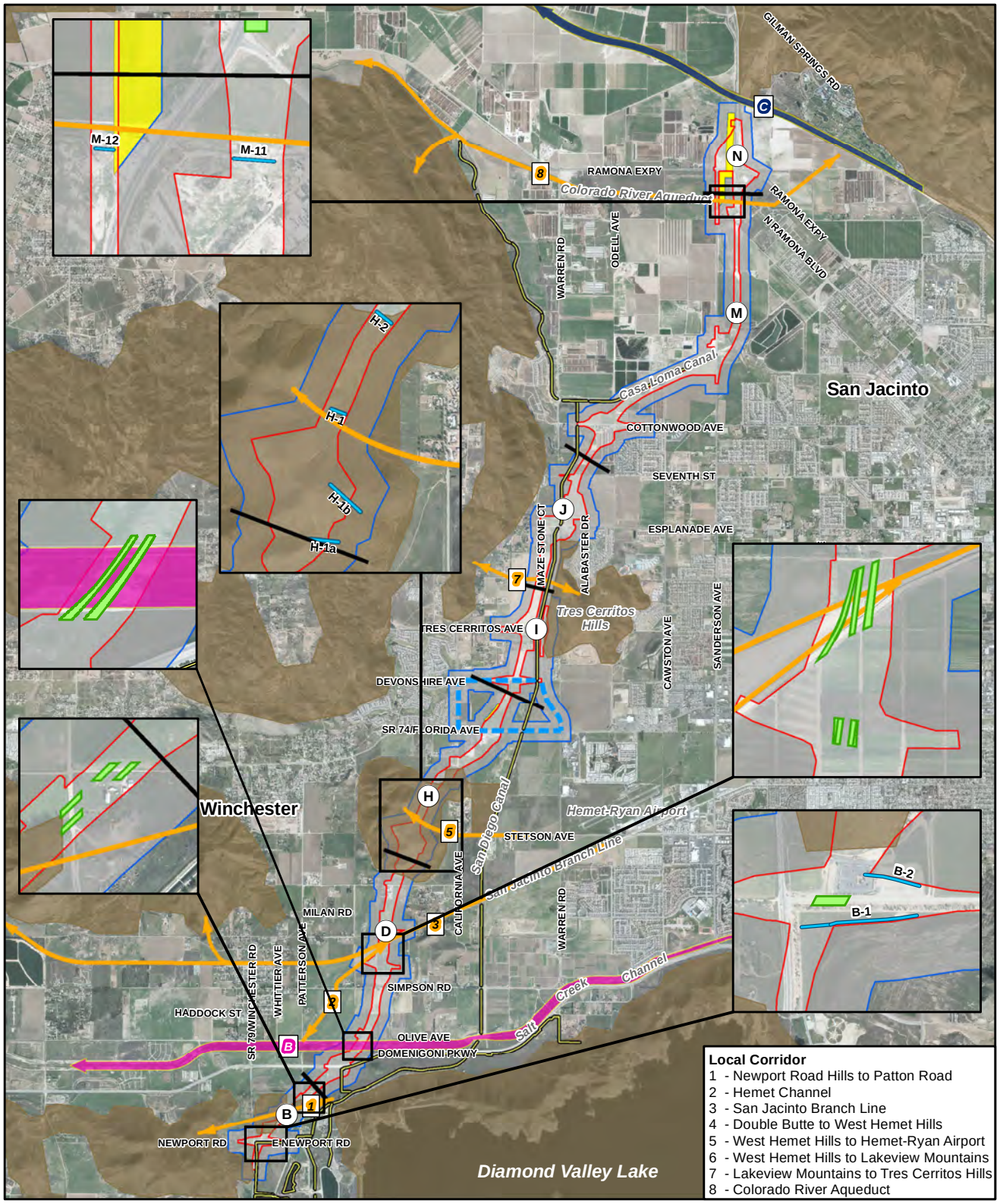
0 7,500 Feet

0 1,500 Meters

1:90,000

Figure 3.3-15
Build Alternative 2a Existing Wildlife Corridor Features with Proposed Bridge and Culvert Locations

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



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\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_WC_2B_A.MXD NES_WC_2B_A.PDF 7/20/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- ProjectImpact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Bridge
- Proposed Culvert
- Barrier to Wildlife Movement

MSHCP Linkage[CR]

- Existing Constrained Linkage B
- Existing Constrained Linkage C
- Local Corridor

Source: CR - County of Riverside

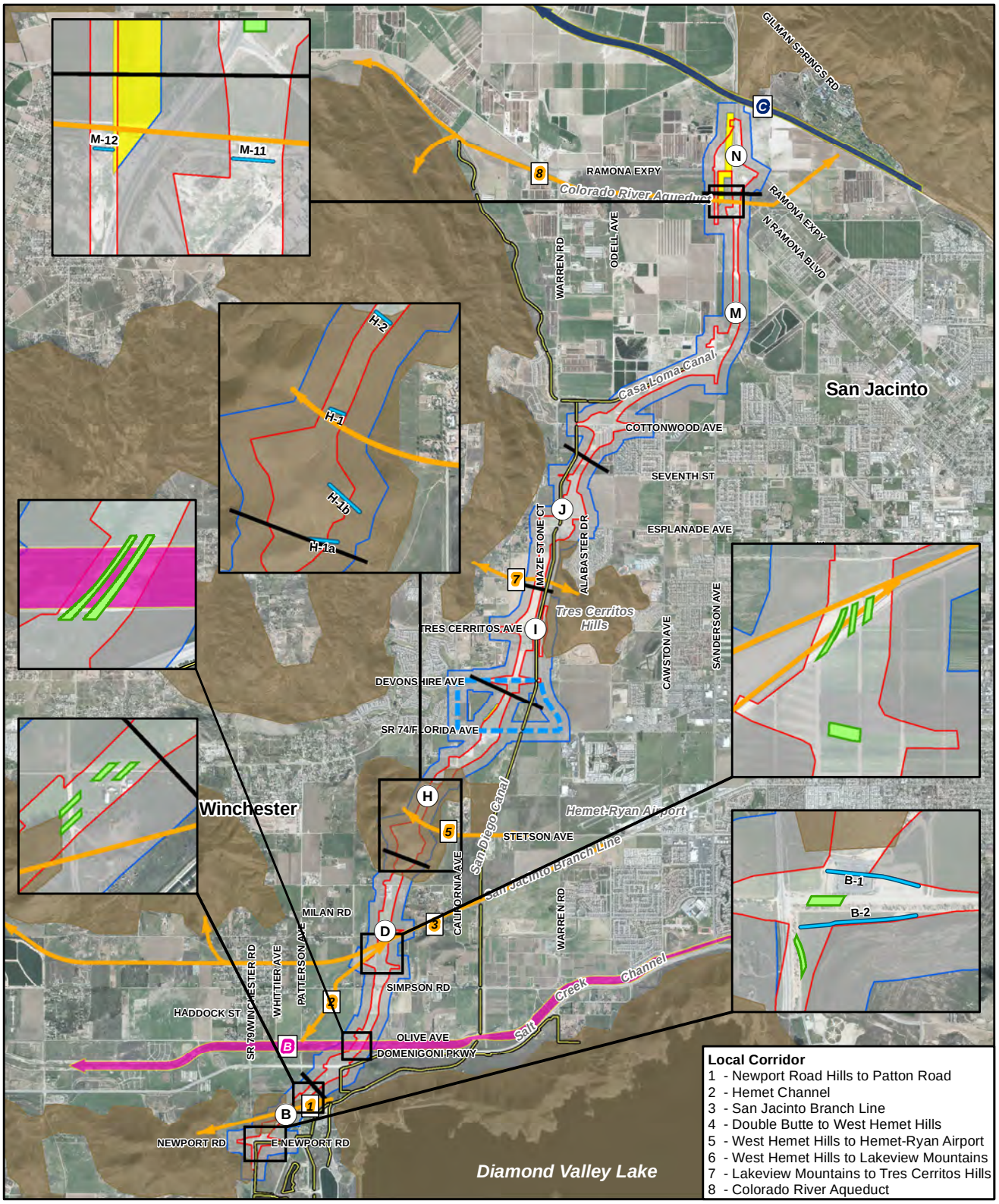
0 7,500 Feet

0 1,500 Meters

1:90,000

Figure 3.3-16
Build Alternative 2b Existing Wildlife Corridor Features with Proposed Bridge and Culvert Locations

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



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\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_WC_2B1_A.MXD NES_WC_2B1_A.PDF 7/20/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Bridge
- Proposed Culvert
- Barrier to Wildlife Movement

MSHCP Linkage[CR]

- Existing Constrained Linkage B
- Existing Constrained Linkage C
- Local Corridor

0 7,500 Feet

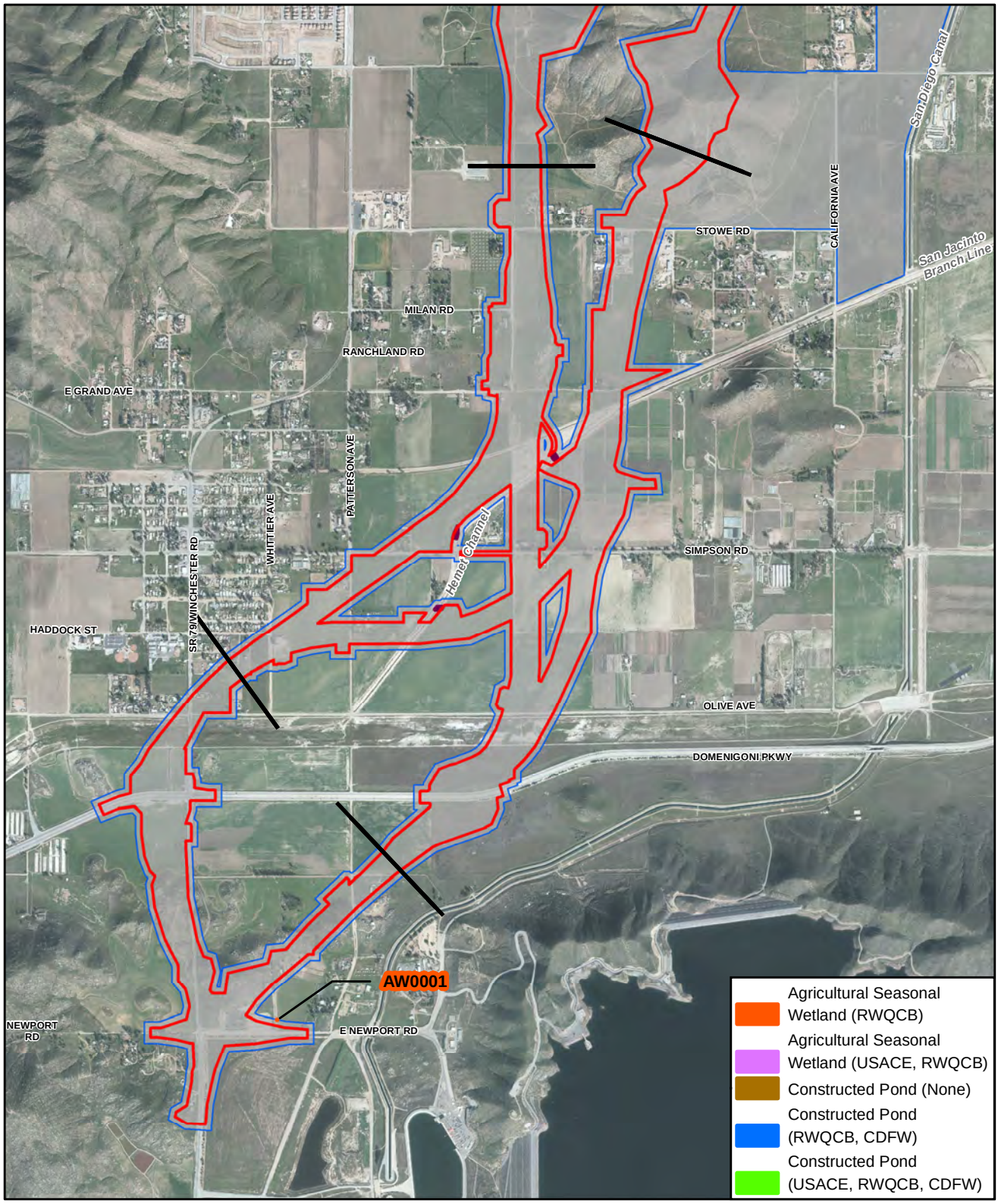
0 1,500 Meters

1:90,000

Source: CR - County of Riverside

Figure 3.3-17
Design Option 2b1 Existing Wildlife Corridor Features with Proposed Bridge and Culvert Locations

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



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

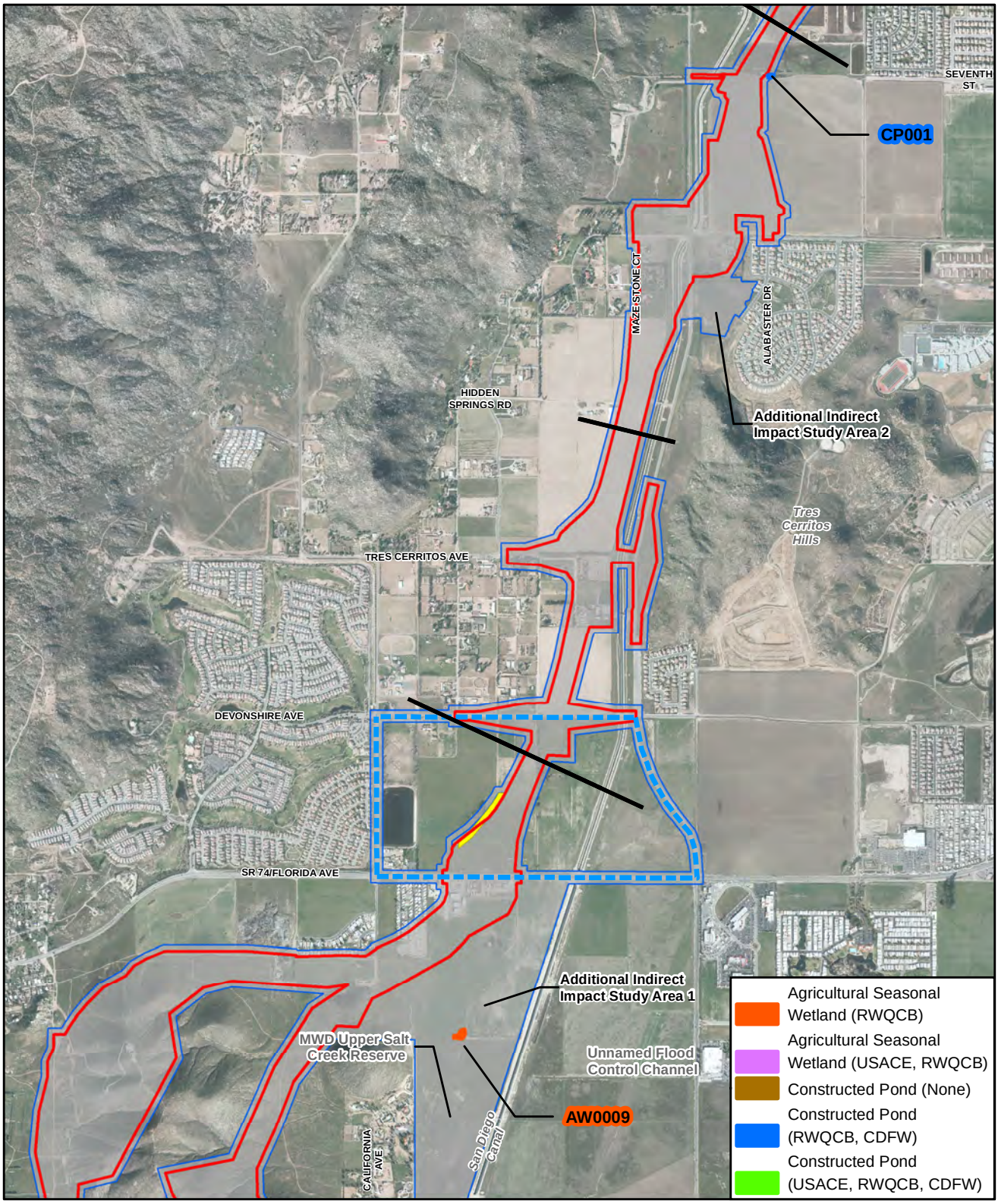
0 2,400 Feet

0 600 Meters

1:28,800

Figure 3.3-18a
Potential Jurisdictional Wetlands and Waters, Agricultural Wetlands and Constructed Ponds

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



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

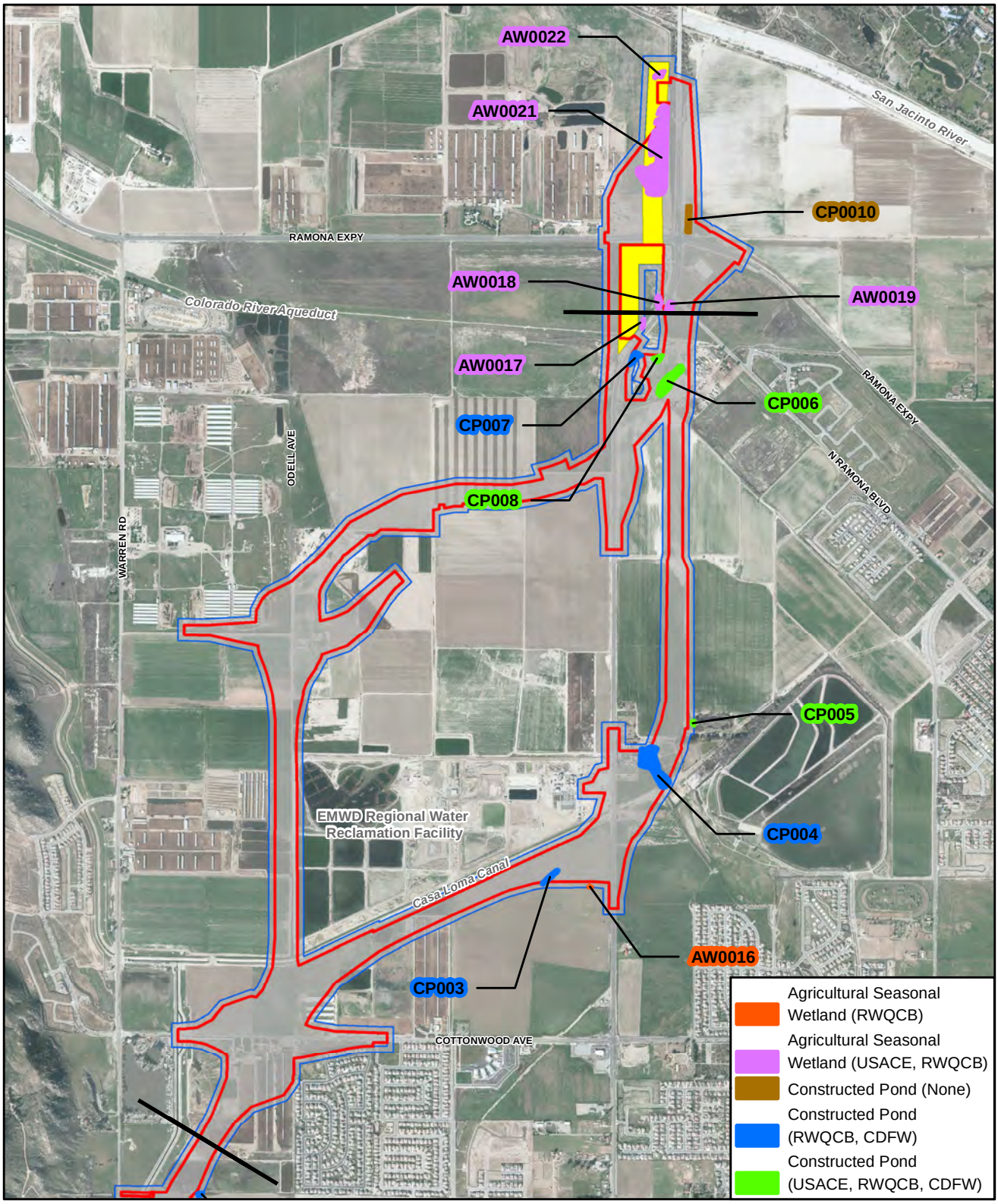
0 2,400 Feet

0 600 Meters

1:28,800

Figure 3.3-18b
Potential Jurisdictional Wetlands and Waters, Agricultural Wetlands and Constructed Ponds

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



Aerial Date: February 2011, Aero-Graphics, Inc

\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_WDR_AG_CP_MB_A.MXD NES_WDR_AG_CP_MB_A.PDF 7/24/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

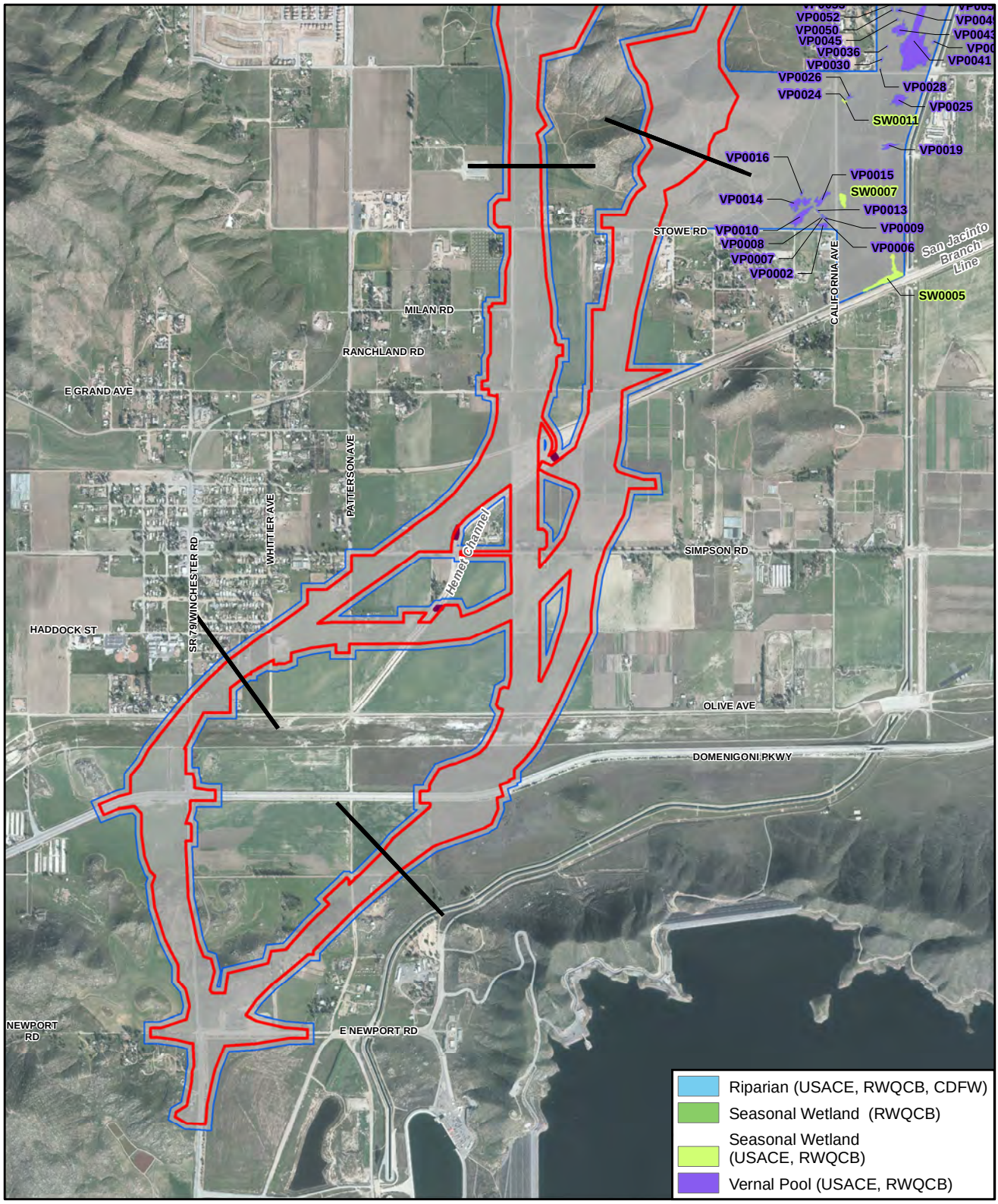
0 2,400 Feet

0 600 Meters

1:28,800

Figure 3.3-18c
Potential Jurisdictional Wetlands and Waters, Agricultural Wetlands and Constructed Ponds

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



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\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_WDR_VP_SW_RW_MB_A.MXD NES_WDR_VP_SW_RW_MB_A.PDF 7/24/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

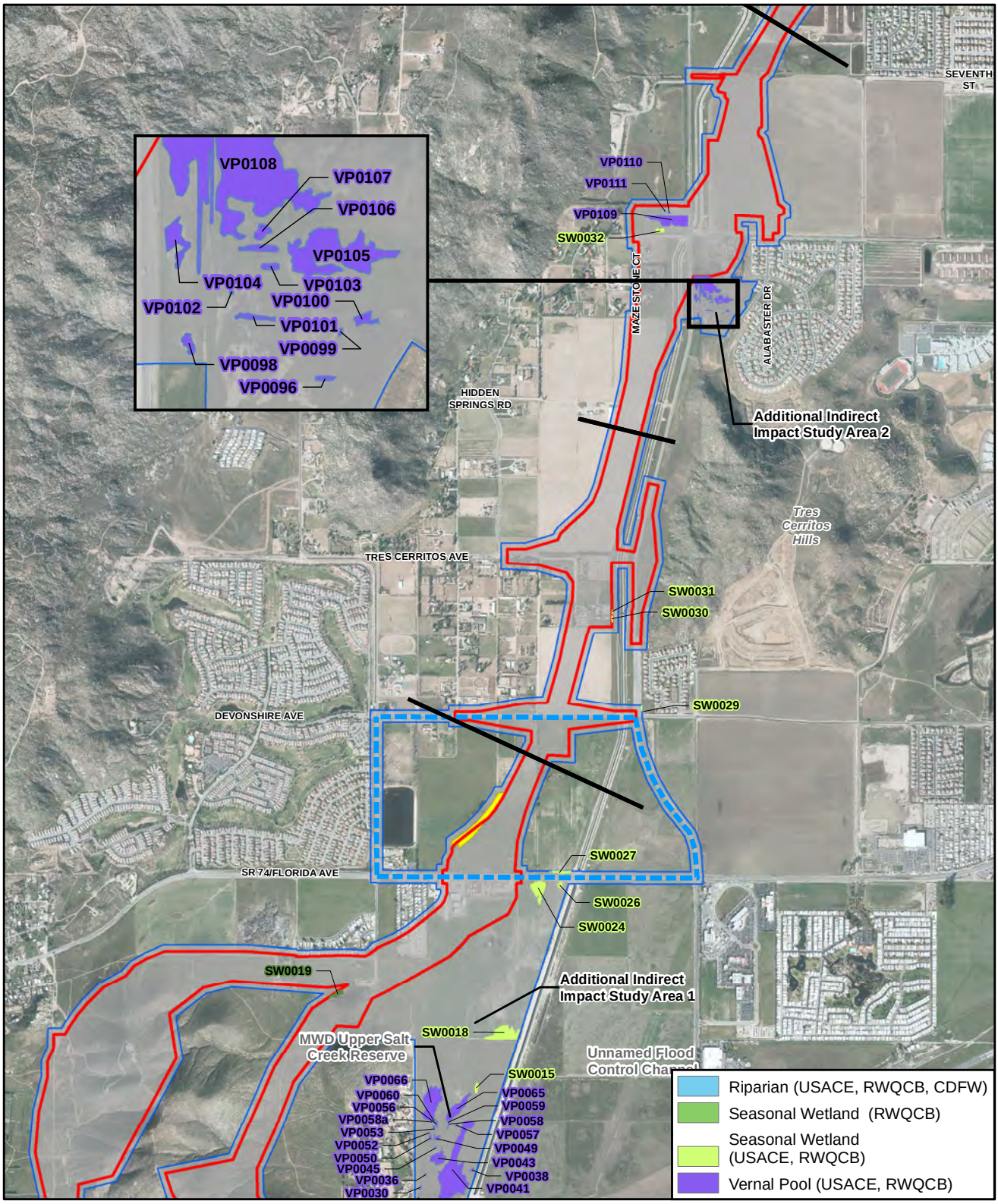
0 2,400 Feet

0 600 Meters

1:28,800

Figure 3.3-19a
Potential Jurisdictional Wetlands, Vernal Pools, Seasonal Wetlands, and Riparian Wetlands

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



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

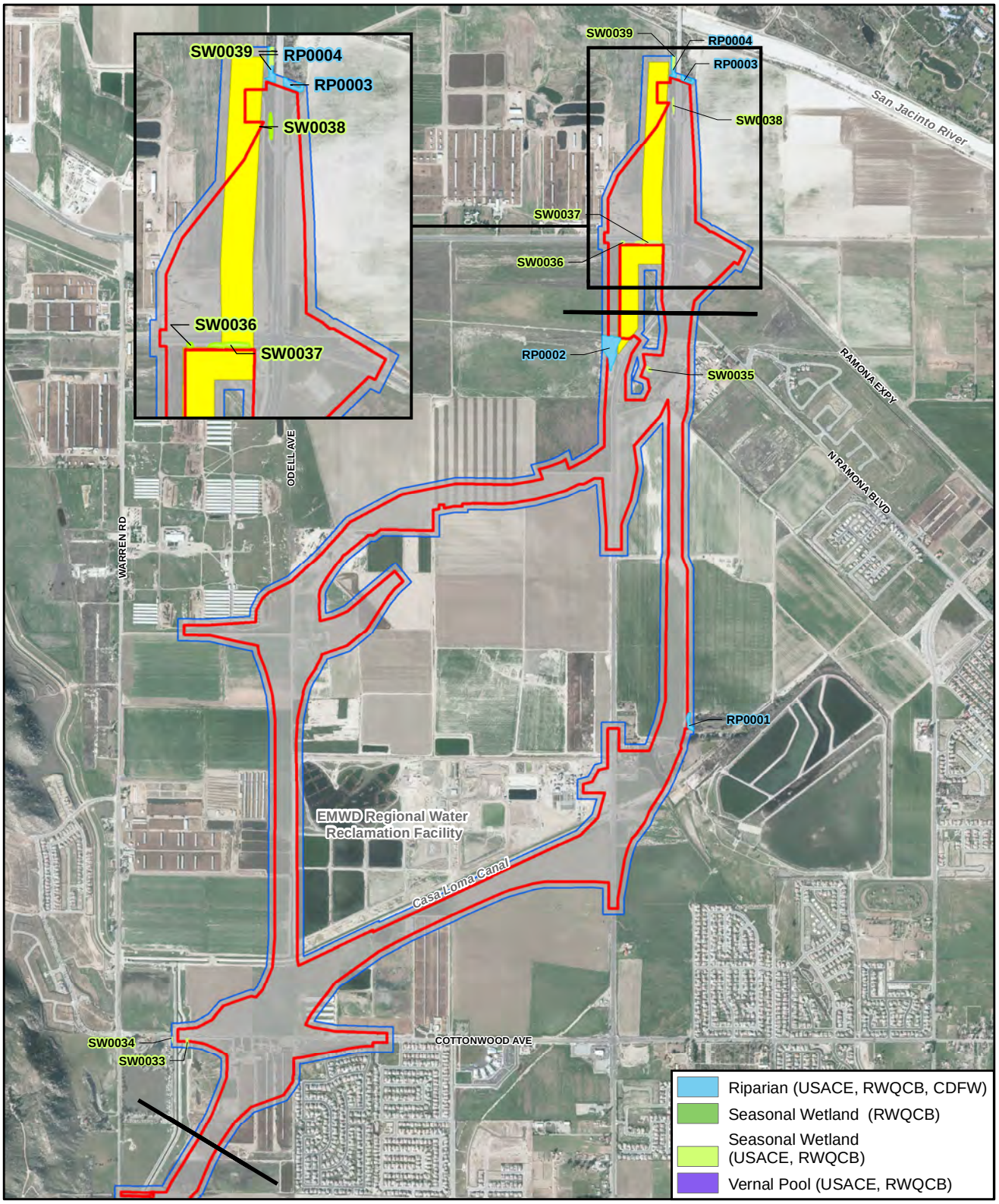
0 2,400 Feet

0 600 Meters

1:28,800

Figure 3.3-19b
Potential Jurisdictional Wetlands, Vernal Pools, Seasonal Wetlands, and Riparian Wetlands

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



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LEGEND

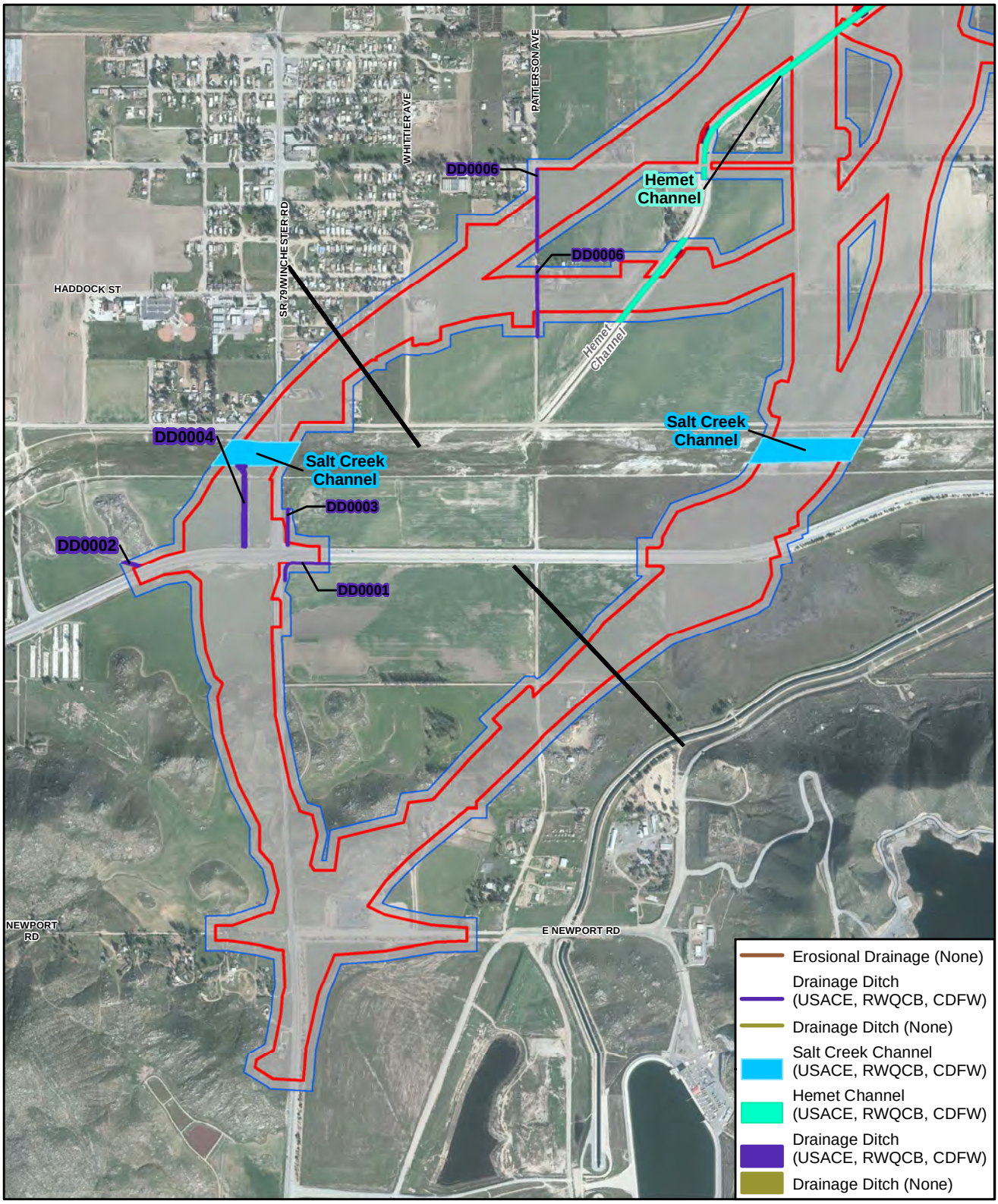
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

0 2,400 Feet

0 600 Meters

1:28,800

Figure 3.3-19c
Potential Jurisdictional Wetlands, Vernal Pools, Seasonal Wetlands, and Riparian Wetlands
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_WDR_C_DF_MB_A.MXD NES_WDR_C_DF_MB_A.PDF 7/24/2016

LEGEND

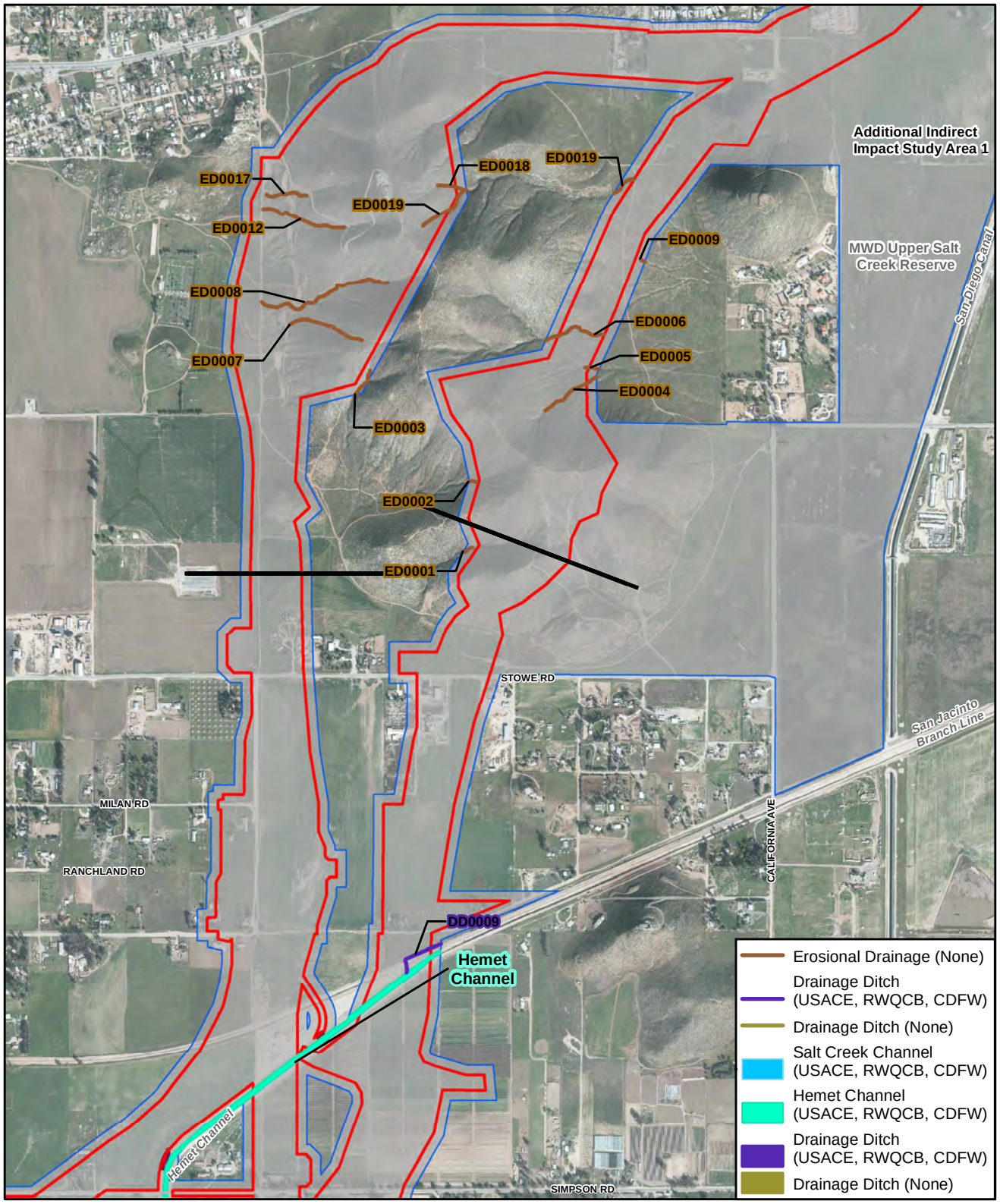
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-20a
Potential Jurisdictional Wetlands and Waters Channels, Drainage Ditches, and Erosional Drainages
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

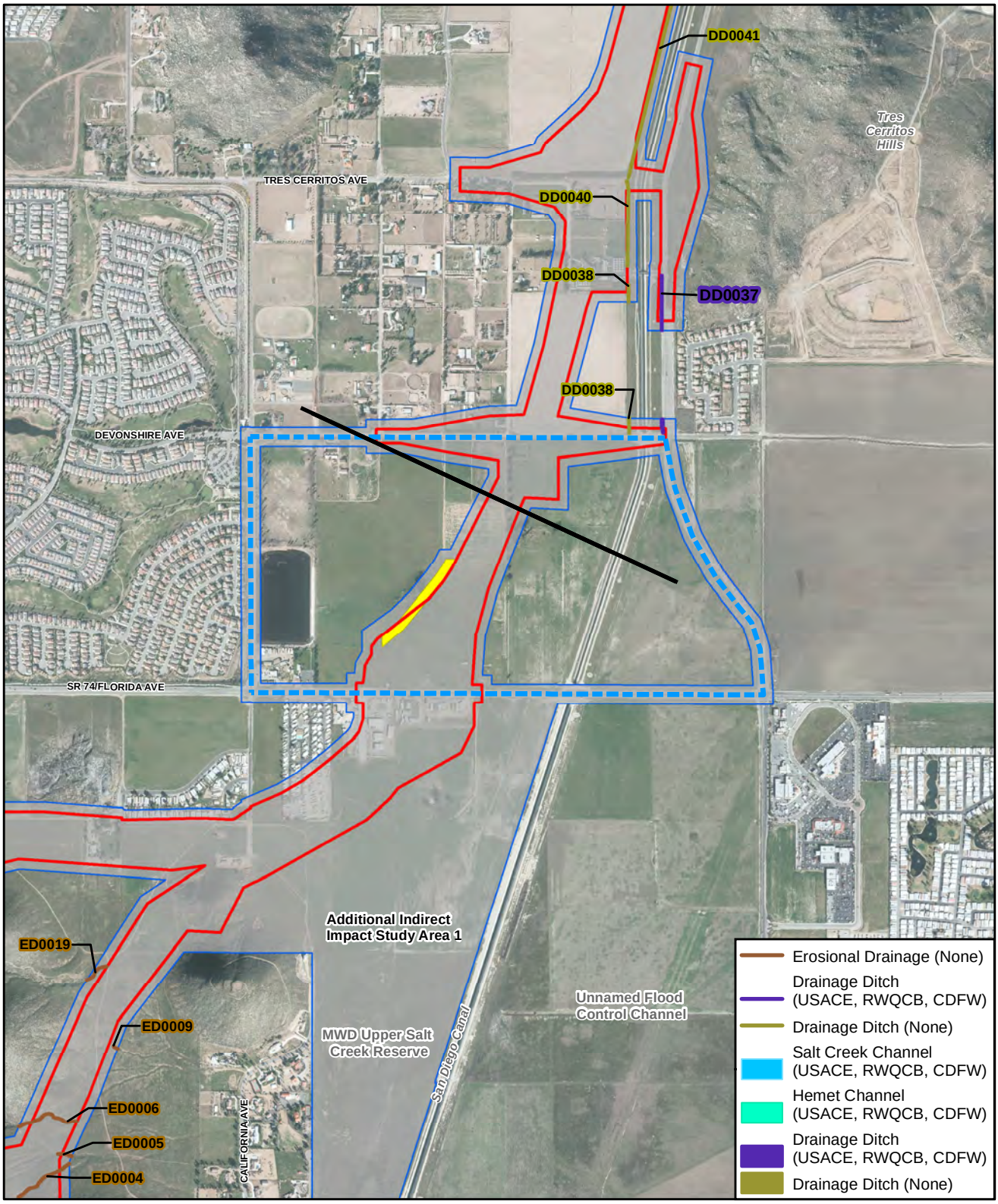
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-20b
Potential Jurisdictional Wetlands and Waters Channels, Drainage Ditches, and Erosional Drainages
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

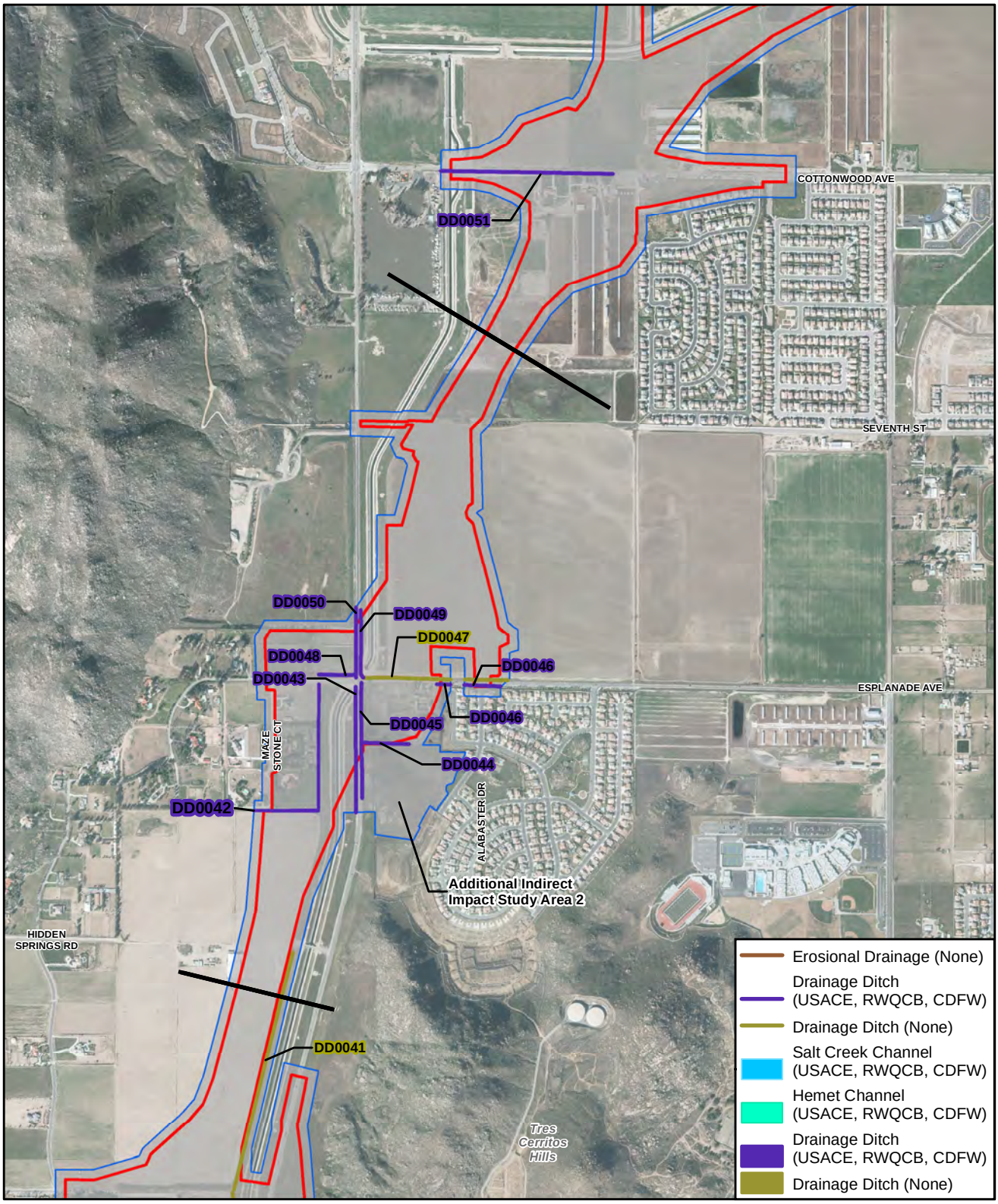
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-20c
Potential Jurisdictional Wetlands and Waters Channels, Drainage Ditches, and Erosional Drainages
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

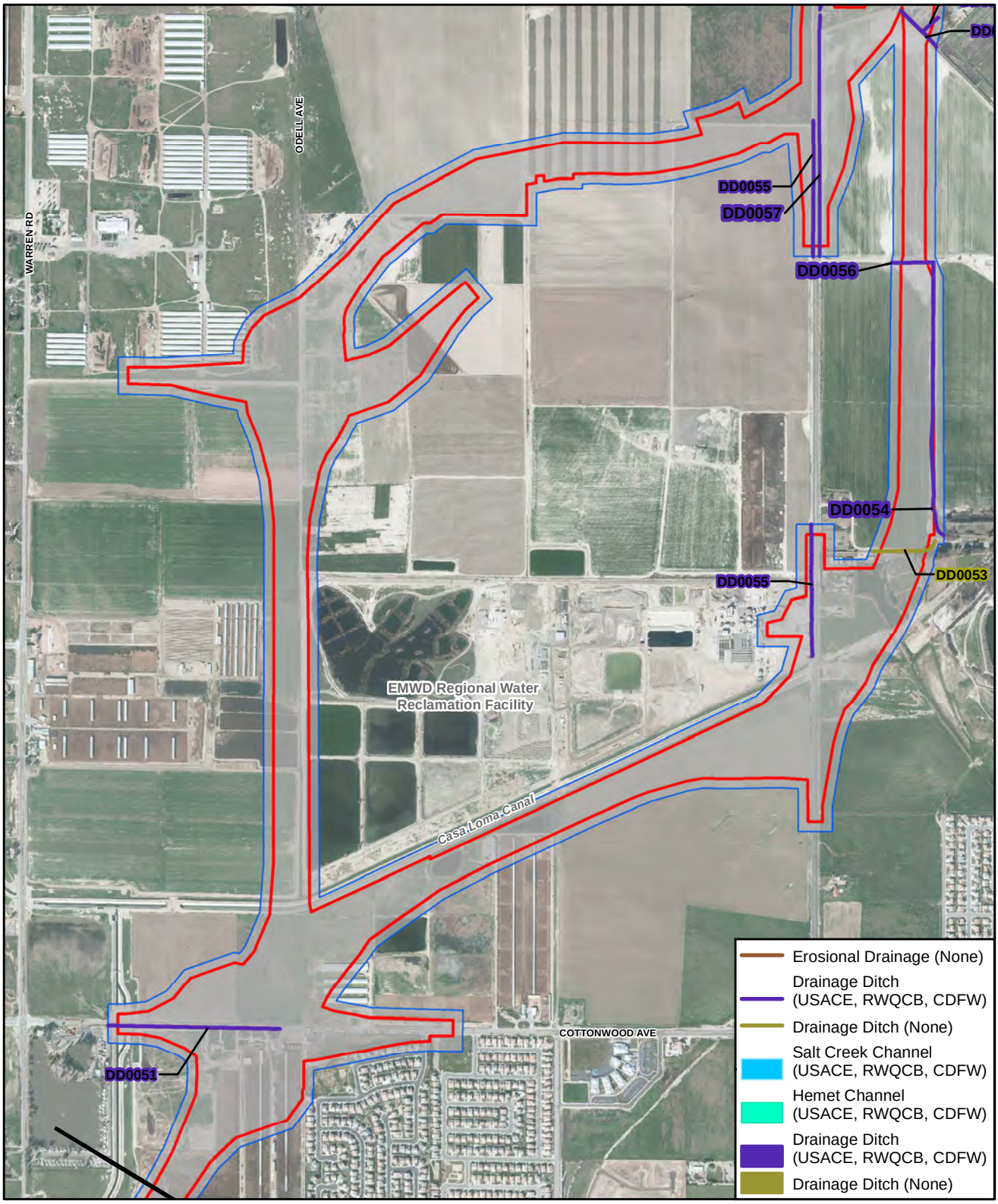
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-20d
Potential Jurisdictional Wetlands and Waters Channels, Drainage Ditches, and Erosional Drainages
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

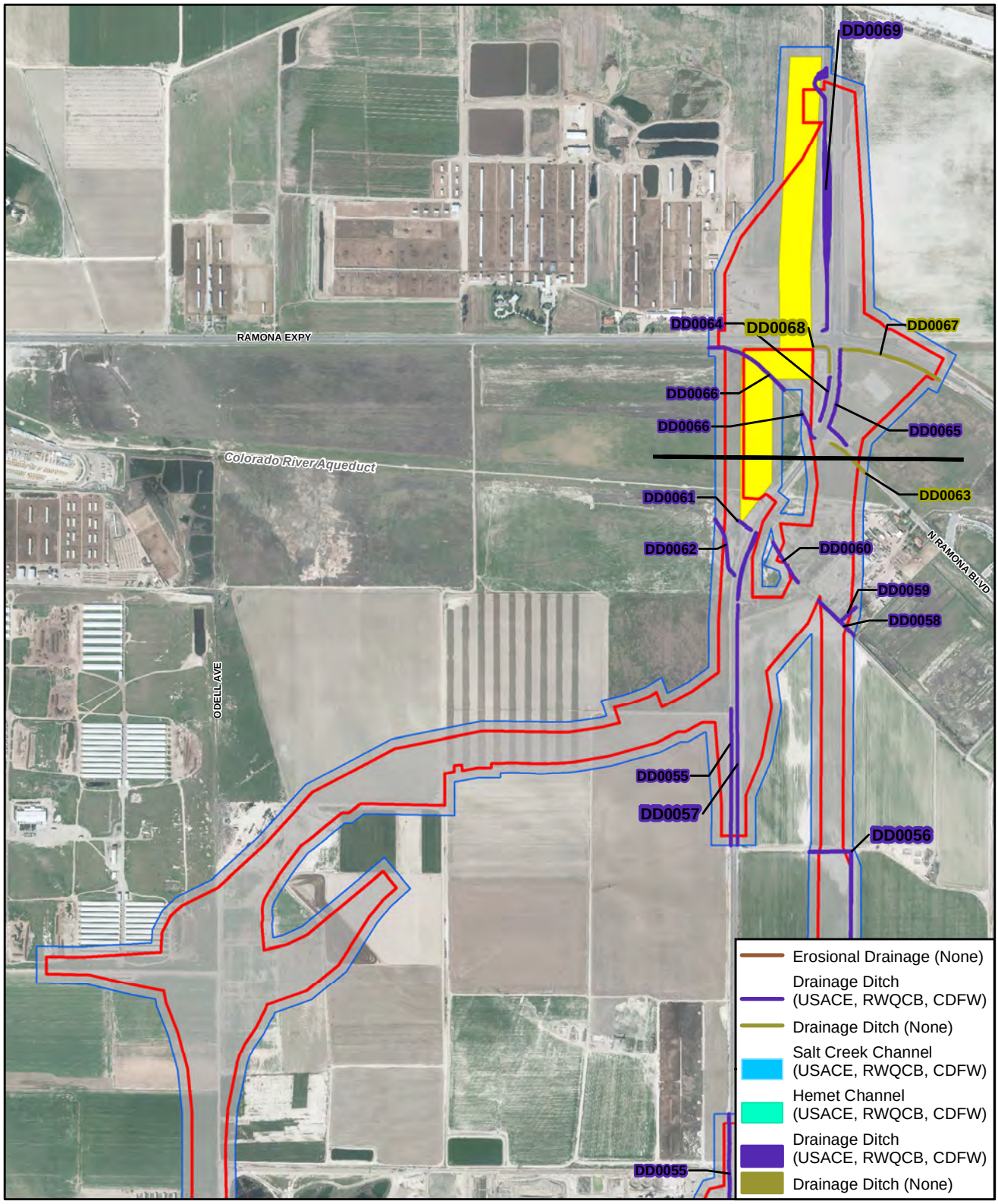
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-20e
Potential Jurisdictional Wetlands and Waters Channels, Drainage Ditches, and Erosional Drainages
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

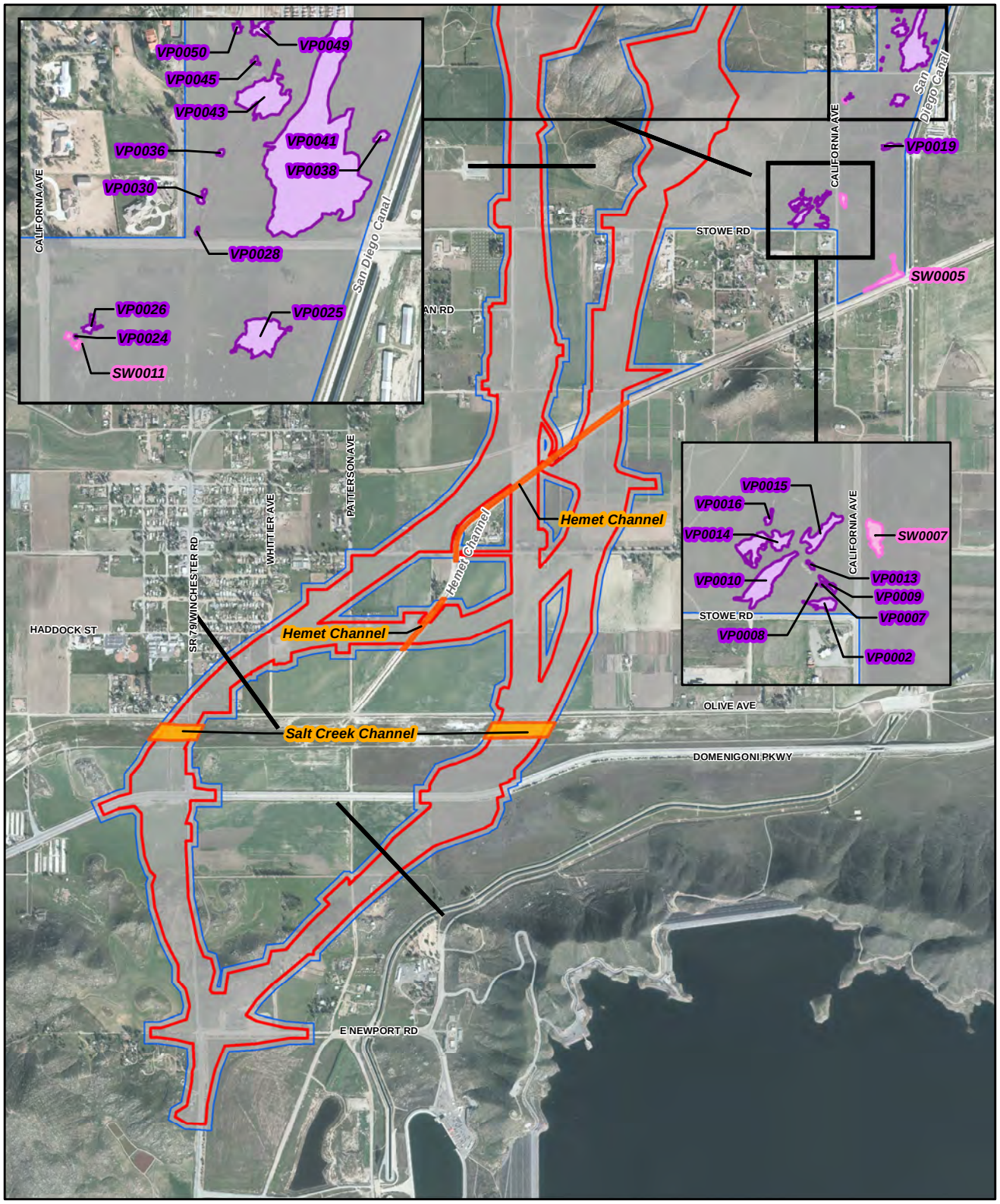
0 1,500 Feet

0 300 Meters

1:18,000

Figure 3.3-20f
Potential Jurisdictional Wetlands and Waters Channels, Drainage Ditches, and Erosional Drainages

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



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LEGEND

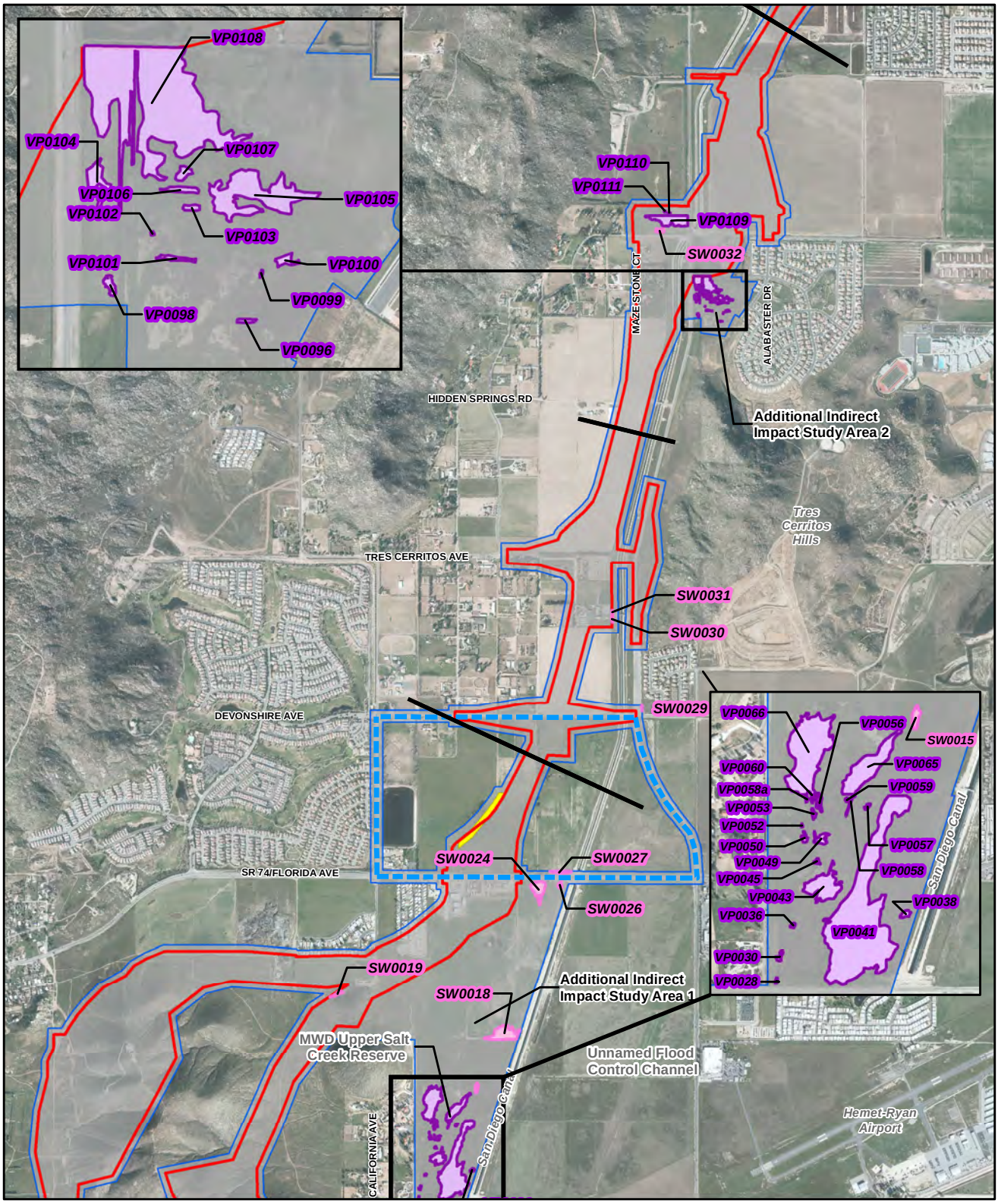
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area
- MSHCP Riverine
- MSHCP Riparian
- MSHCP Vernal Pool

0 2,400 Feet

0 600 Meters

1:28,800

Figure 3.3-21a
MSHCP Riverine and Riparian Areas
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

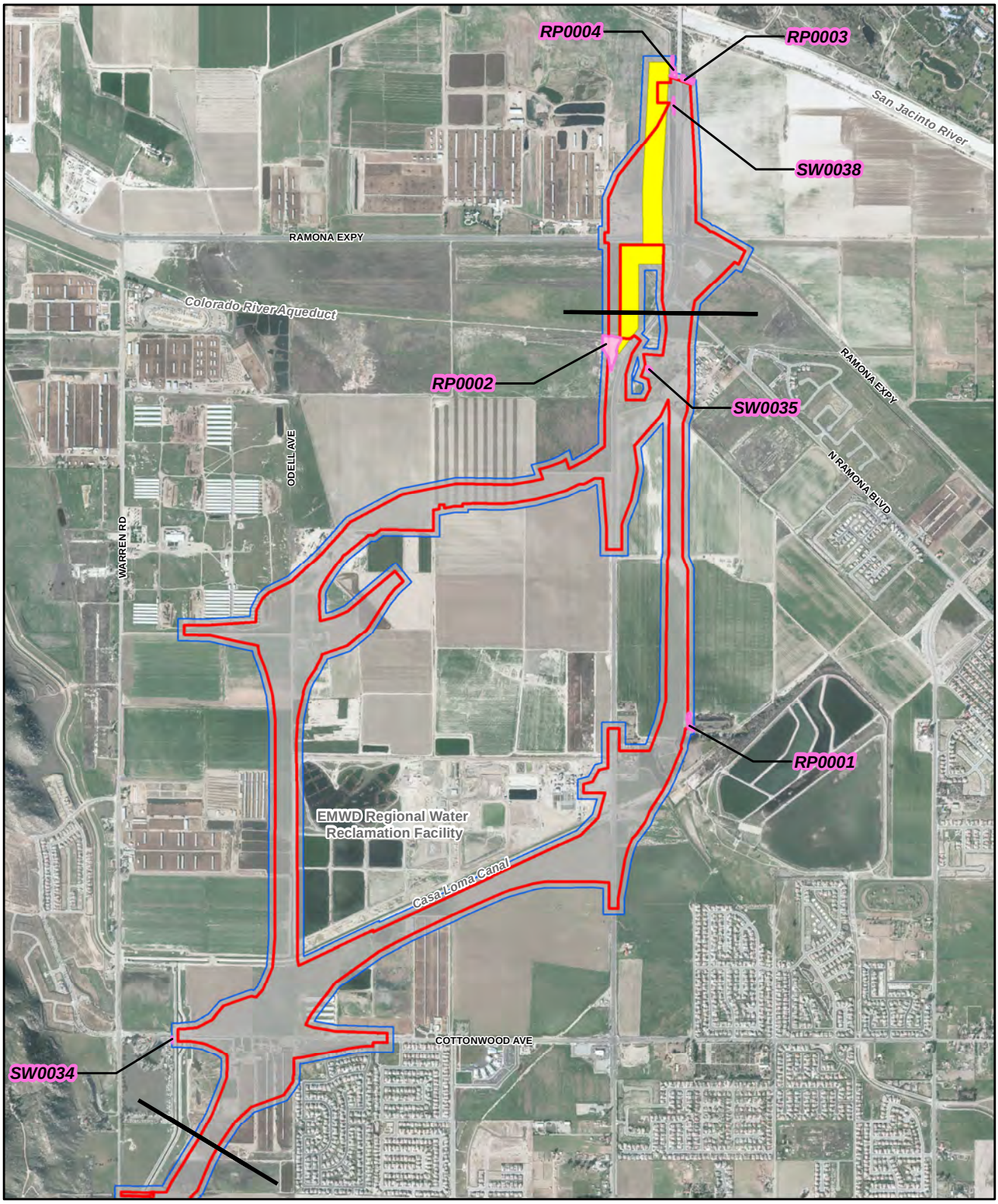
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area
- MSHCP Riverine
- MSHCP Riparian
- MSHCP Vernal Pool

0 2,400 Feet

0 600 Meters

1:28,800

Figure 3.3-21b
MSHCP Riverine and Riparian Areas
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

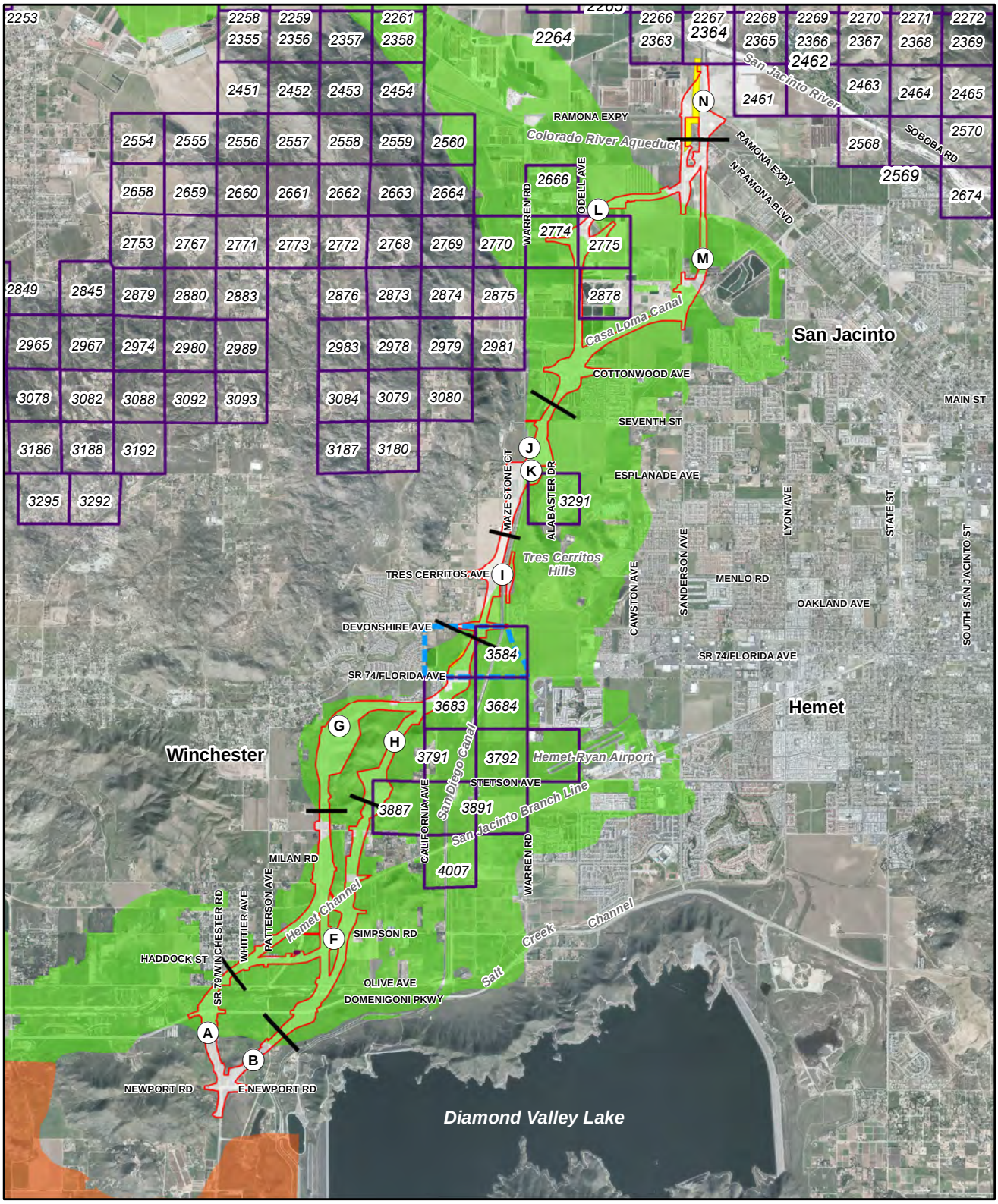
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area
- MSHCP Riverine
- MSHCP Riparian
- MSHCP Vernal Pool

0 2,400 Feet

0 600 Meters

1:28,800

Figure 3.3-21c
MSHCP Riverine and Riparian Areas
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: February 2011, Aero-Graphics, Inc

\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_MSHCP_NEPSSA_A.MXD NES_MSHCP_NEPSSA_A.PDF 7/24/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Criteria Cells[CR]

Narrow Endemic Plant Species Survey Areas[CR]

- Area 3
- Area 4

0 7,500 Feet

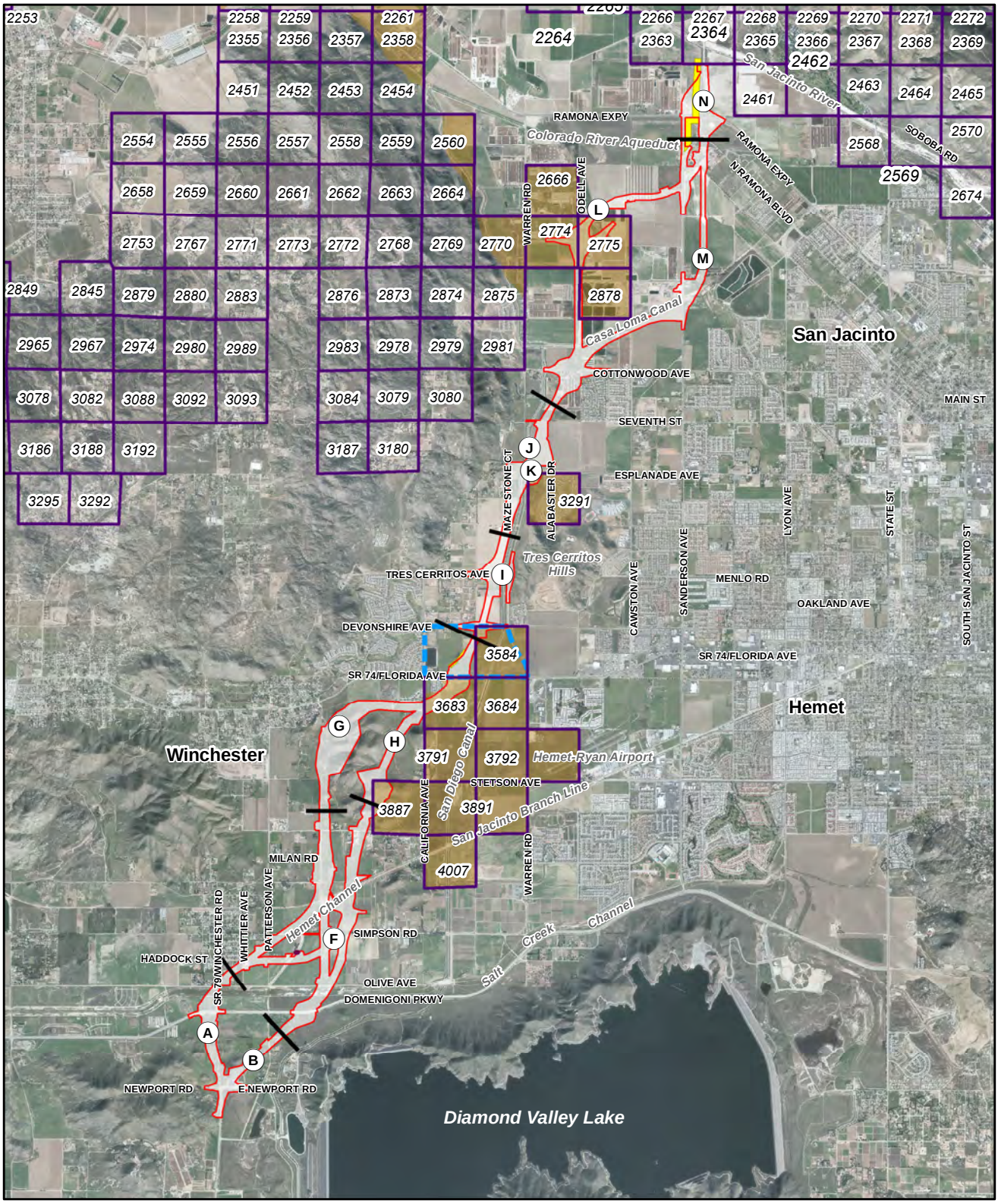
0 1,500 Meters

1:90,000

Source: CR - County of Riverside

Figure 3.3-22
Multiple Species Habitat Conservation Plan Narrow Endemic Plant Species Survey Areas

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



Aerial Date: February 2011, Aero-Graphics, Inc

\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_MSHCP_CASSA_A.MXD NES_MSHCP_CASSA_A.PDF 7/24/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Criteria Cells[CR]
- **Criteria Area Species Survey Area[CR]**
- Area 3

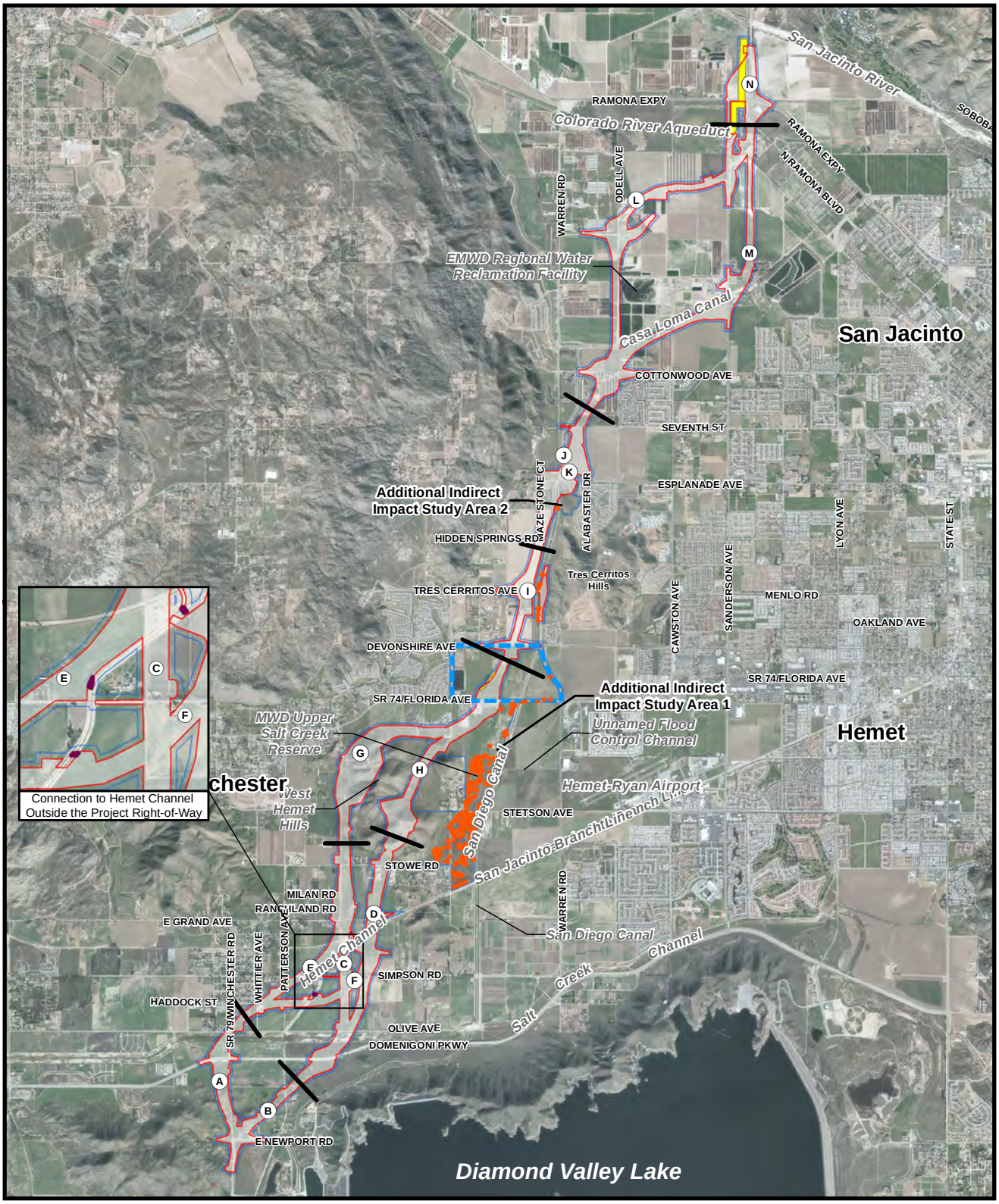
0 7,500 Feet

0 1,500 Meters

1:90,000

Source: CR - County of Riverside

Figure 3.3-23
Multiple Species Habitat Conservation Plan Criteria Area Species Survey Areas
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_RPS_ATCO_A.MXD NES_RPS_ATCO_A.PDF 7/24/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Atriplex coronata* var. *notatior* (San Jacinto Valley crownscale) CA, PS, RRVP, FE

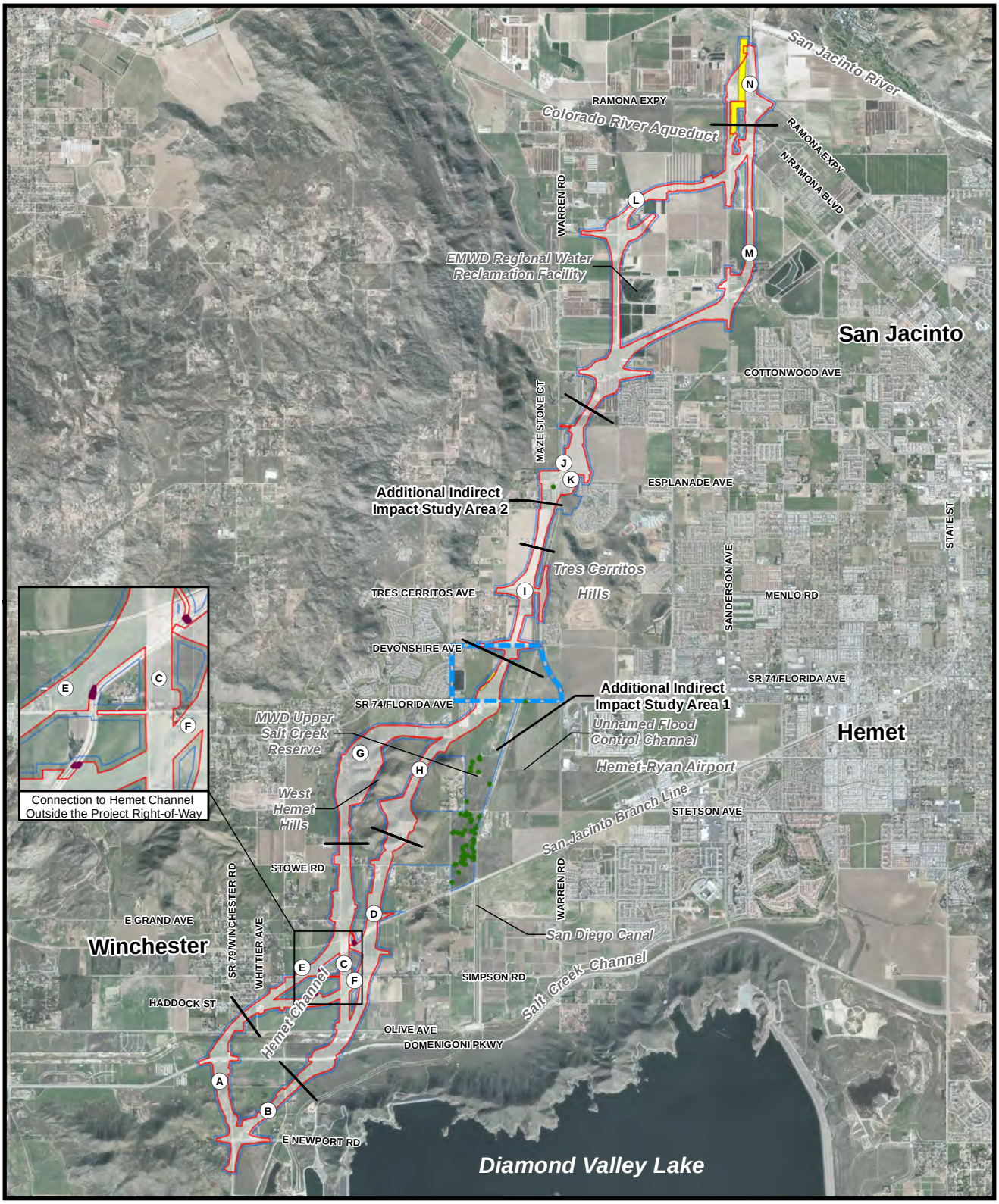
MSHCP Status Codes and Special Conditions: CA - Criteria Area Species; PS - Planning Species; RRVP - Riparian/Riverine and Vernal Pool Species; FE - Federally Endangered

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-24
Location of Rare Plants
Atriplex coronata* var. *notatior
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Atriplex serenana* var. *davidsonii* (Davidson's saltscale)[CA, PS]

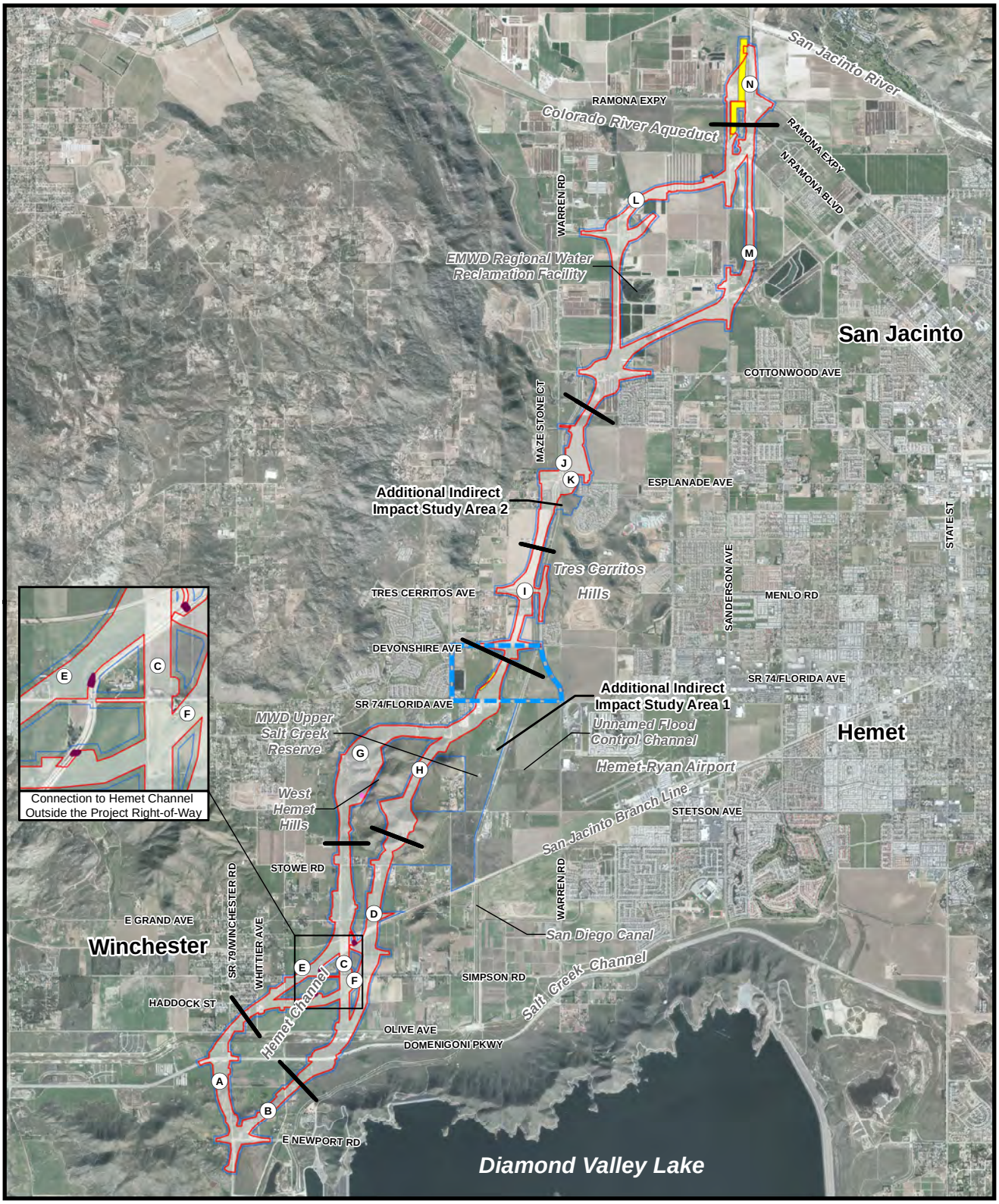
MSHCP Status Codes and Special Conditions:
CA - Criteria Area Species; PS - Planning Species

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-25
Location of Rare Plants
Atriplex serenana
var. *davidsonii*
Final Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Calochortus plummerae* (Plummer's mariposa lily)[CO]

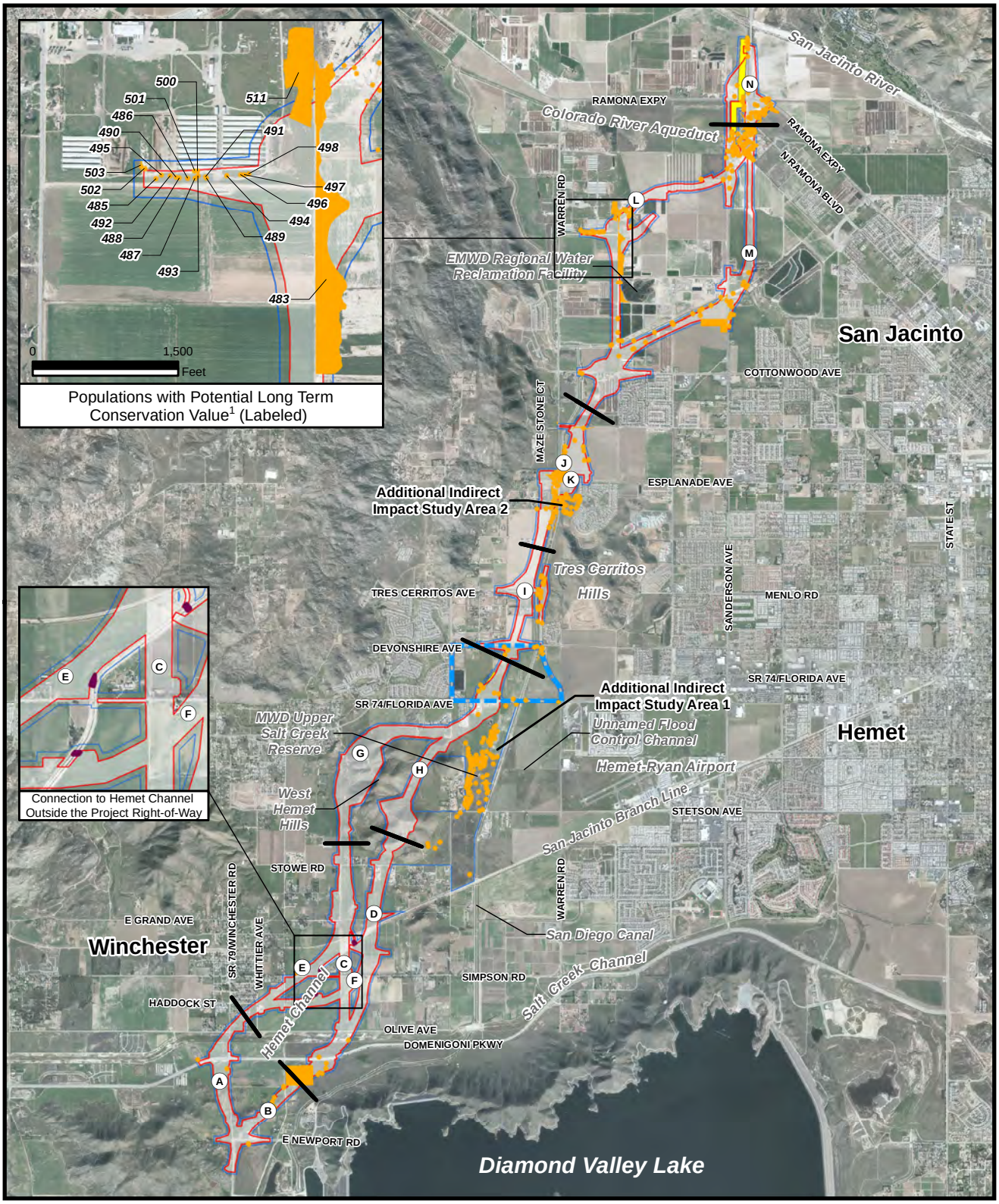
MSHCP Status Codes and Special Conditions: CO - Covered Species Requiring Species-Specific Conservation Objectives

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-26
Location of Rare Plants
Calochortus plummerae
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Centromadia pungens* ssp. *laevis* (smooth tarplant)[CA, PS, RRVP]

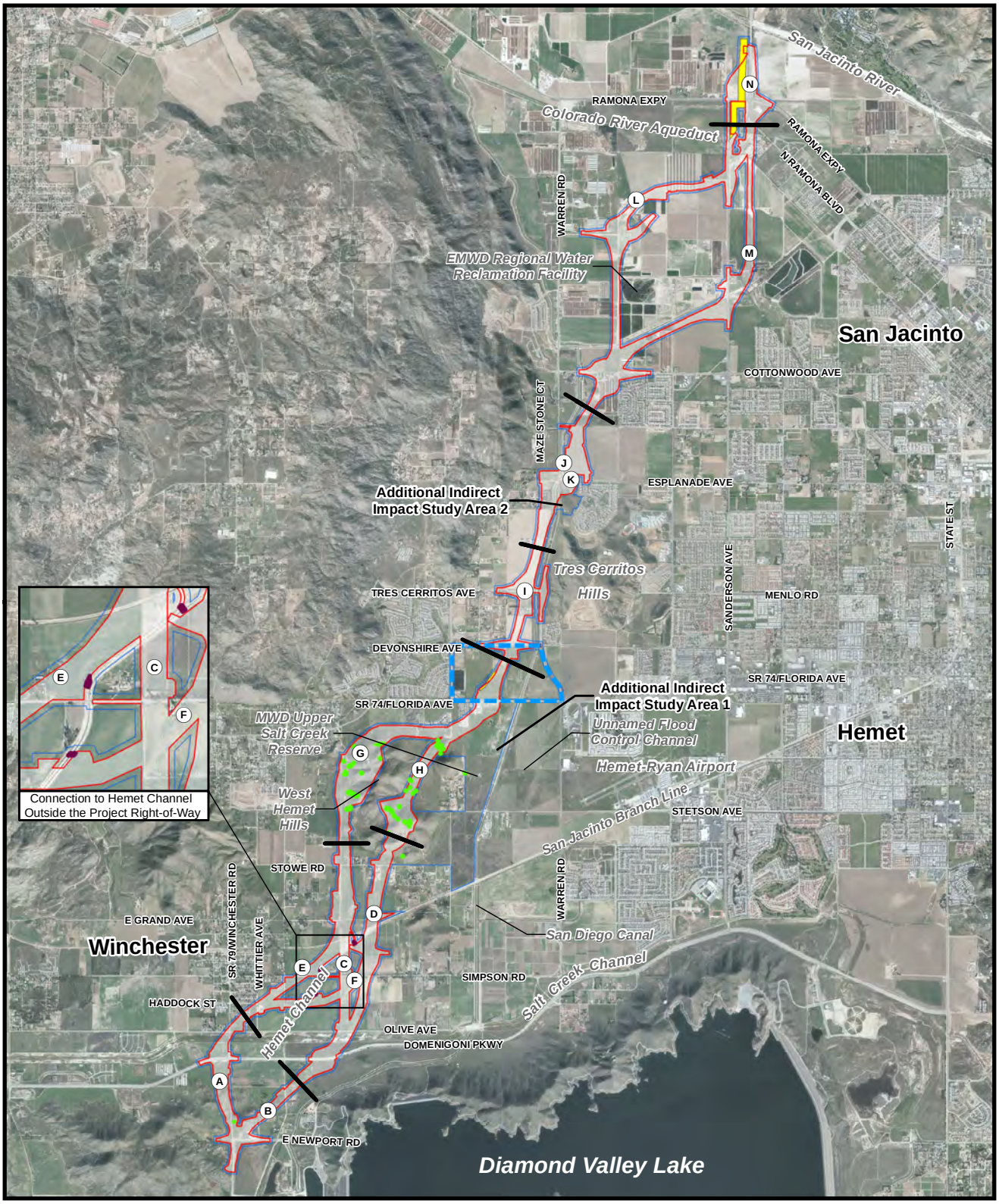
0 7,000 Feet

0 1,000 Meters

1:84,000

Note: 1 - Long term conservation value was assessed only for rare plants located within the Project ROW and the unique design features. **MSHCP Status Codes and Special Conditions:** CA - Criteria Area Species; PS - Planning Species; RRVP - Riparian/Riverine and Vernal Pool Species

Figure 3.3-27
Location of Rare Plants
Centromadia pungens* ssp. *laevis
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Chorizanthe parryi* var. *parryi* (Parry's spineflower)[CO]

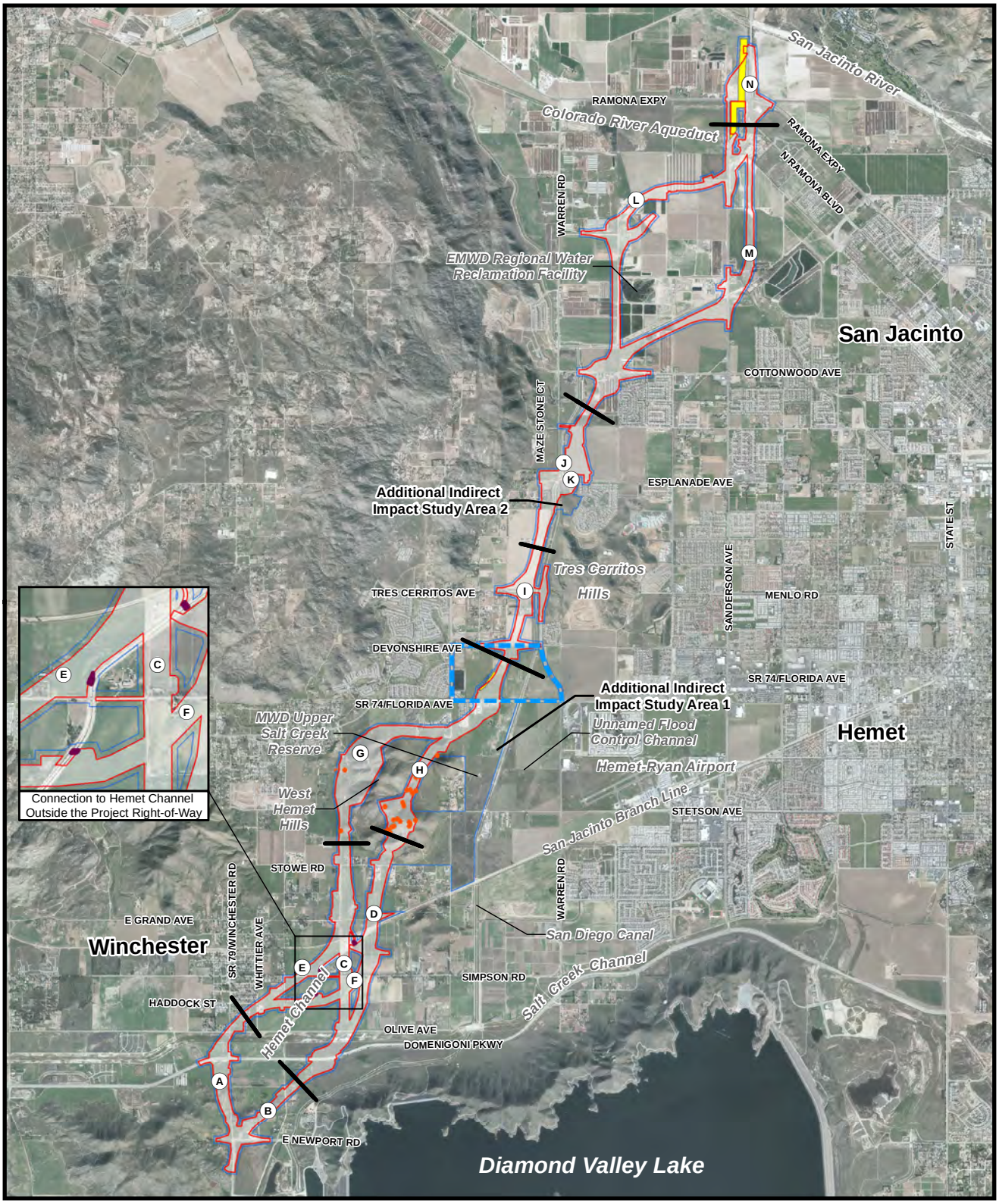
MSHCP Status Codes and Special Conditions: CO - Covered Species Requiring Species-Specific Conservation Objectives

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-28
Location of Rare Plants
Chorizanthe parryi* var. *parryi
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Chorizanthe polygonoides* var. *longispina* (long-spined spineflower)[C]

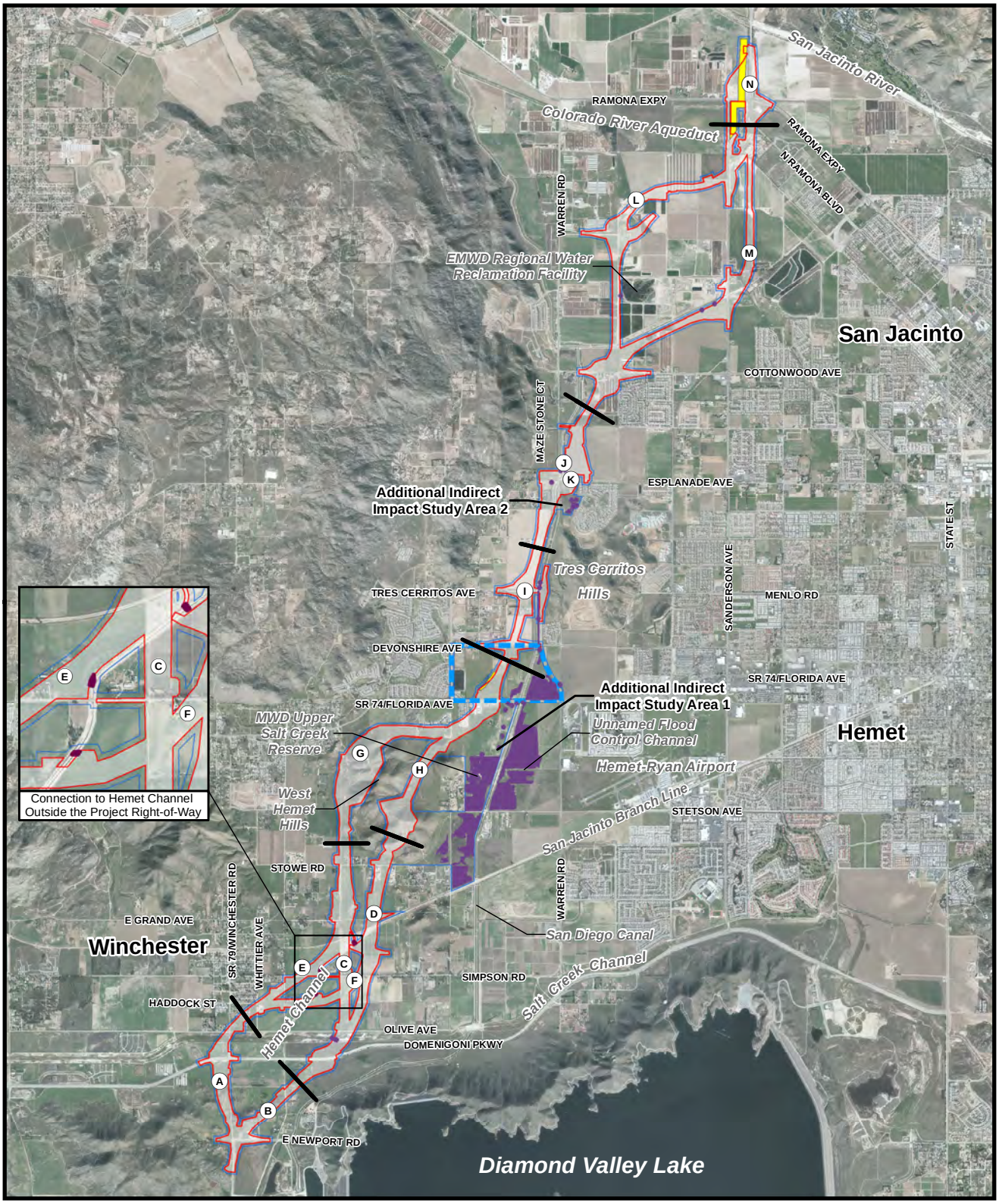
0 7,000 Feet

0 1,000 Meters

1:84,000

MSHCP Status Codes and Special Conditions: C - Covered

Figure 3.3-29
Location of Rare Plants *Chorizanthe polygonoides* var. *longispina*
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Hordeum intercedens* (vernal barley)[PS, RRVP]

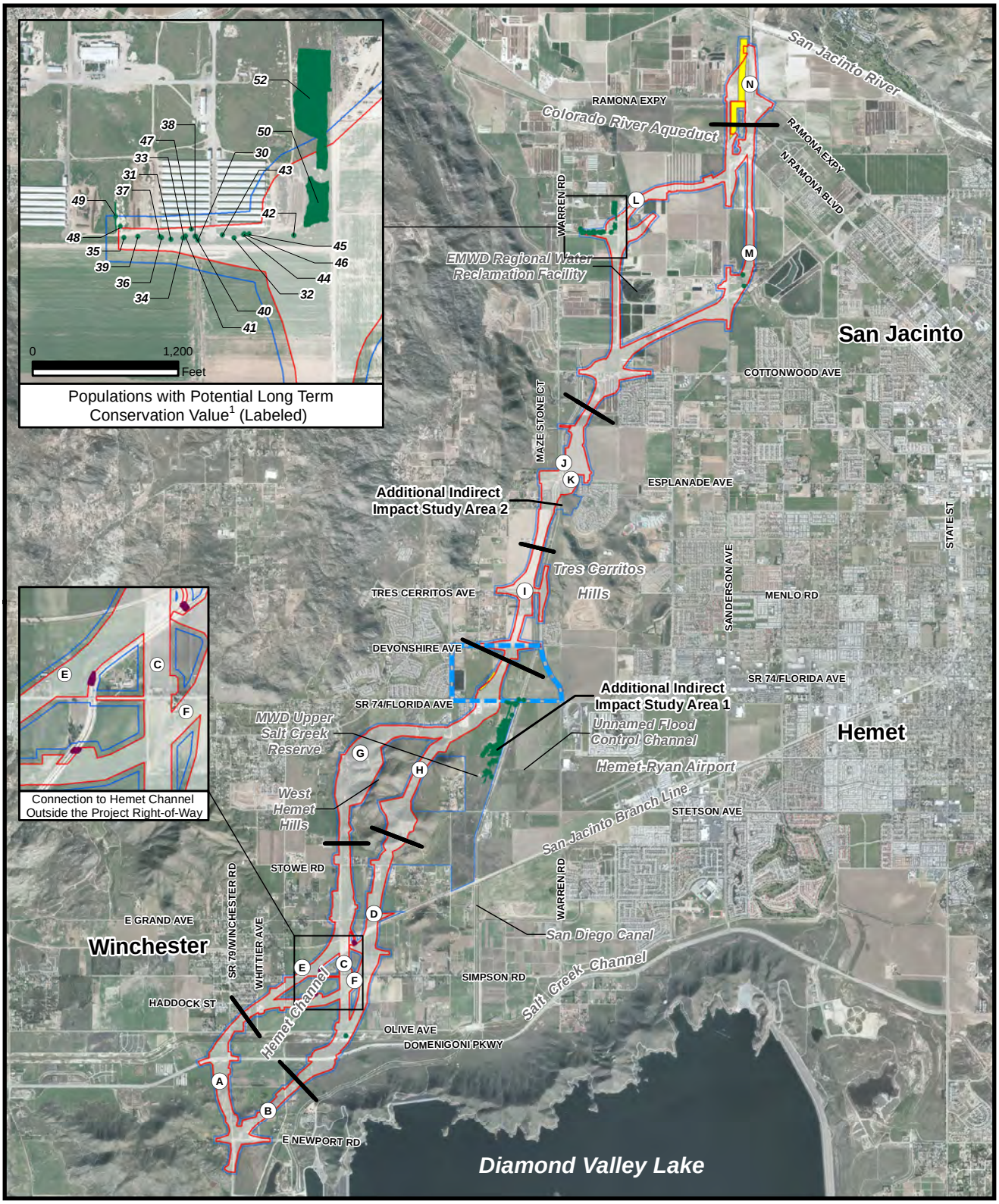
MSHCP Status Codes and Special Conditions: PS - Planning Species; RRVP - Riparian/Riverine and Vernal Pool Species

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-30
Location of Rare Plants
Hordeum intercedens
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Lasthenia glabrata* ssp. *coulteri* (Coulter's goldfields) CA, PS

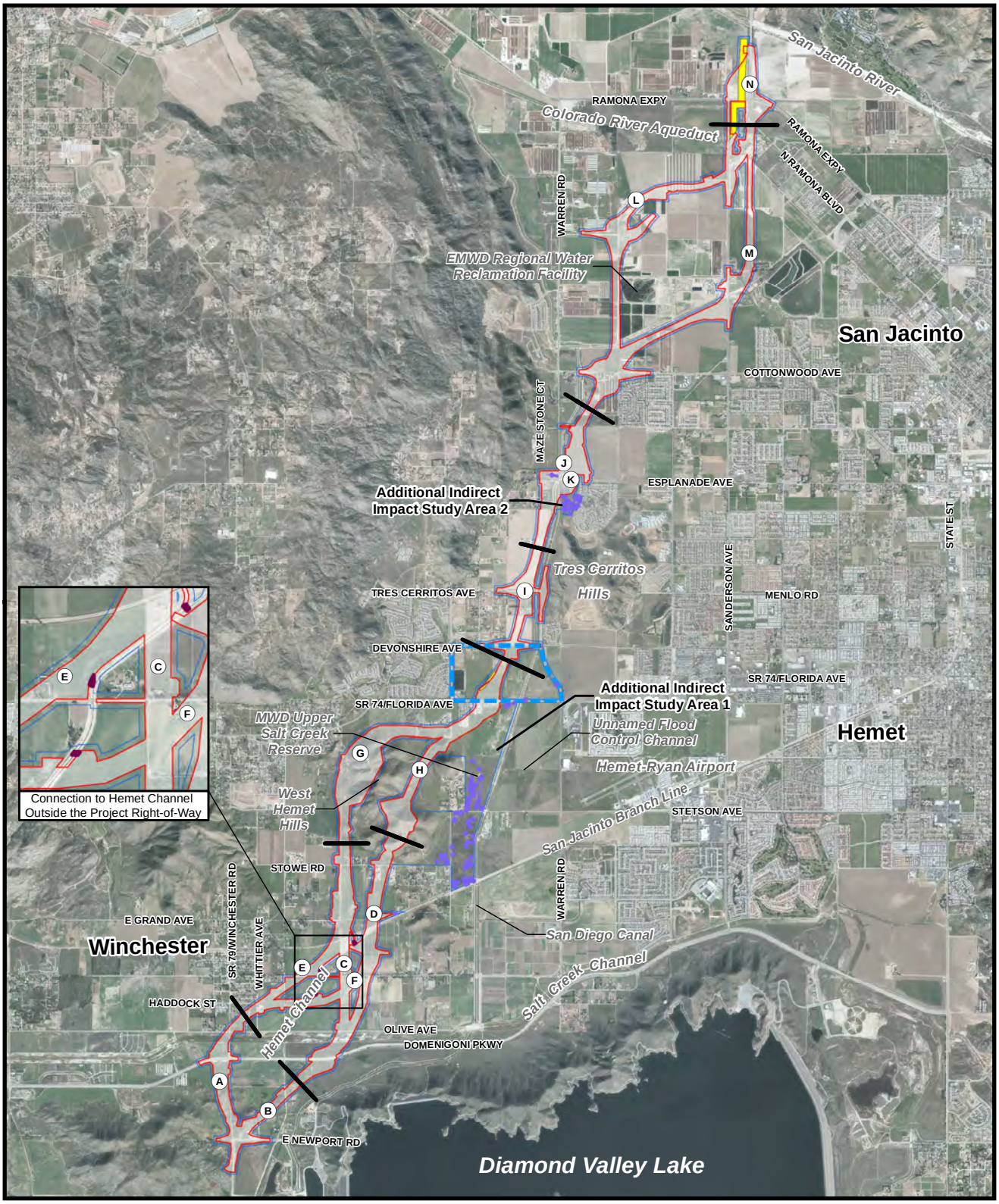
0 7,000 Feet

0 1,000 Meters

1:84,000

Note: 1 - Long term conservation value was assessed only for rare plants located within the Project ROW and the unique design features. **MSHCP Status Codes and Special Conditions:** CA - Criteria Area Species; PS - Planning Species

Figure 3.3-31
Location of Rare Plants *Lasthenia glabrata* ssp. *coulteri*
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Myosurus minimus* ssp. *apus* (little mousetail)[CA, PS]

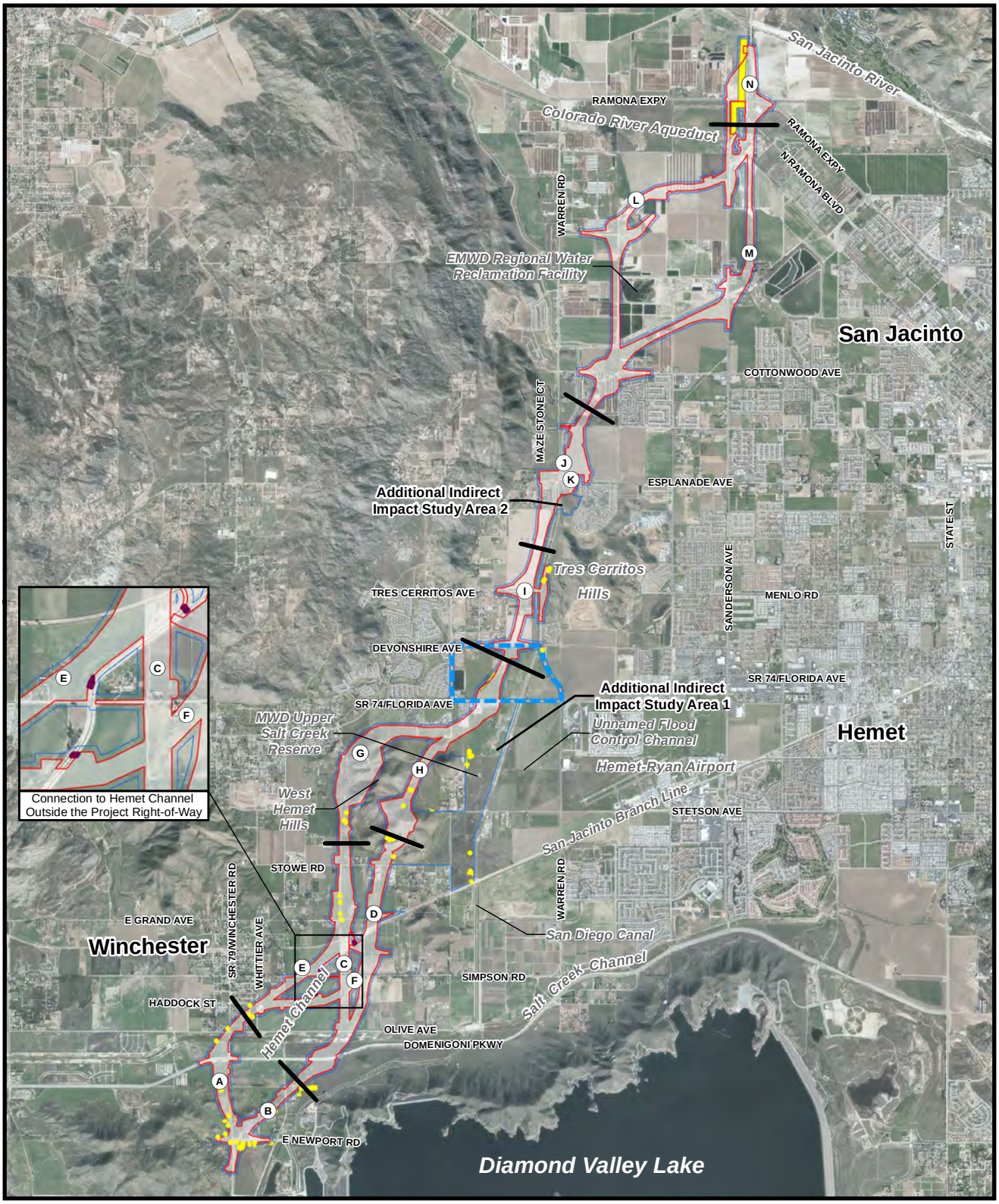
MSHCP Status Codes and Special Conditions:
CA - Criteria Area Species; PS - Planning Species

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-32
Location of Rare Plants *Myosurus minimus* ssp. *apus*
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Deinandra paniculata* (paniculate tarplant)[NI]

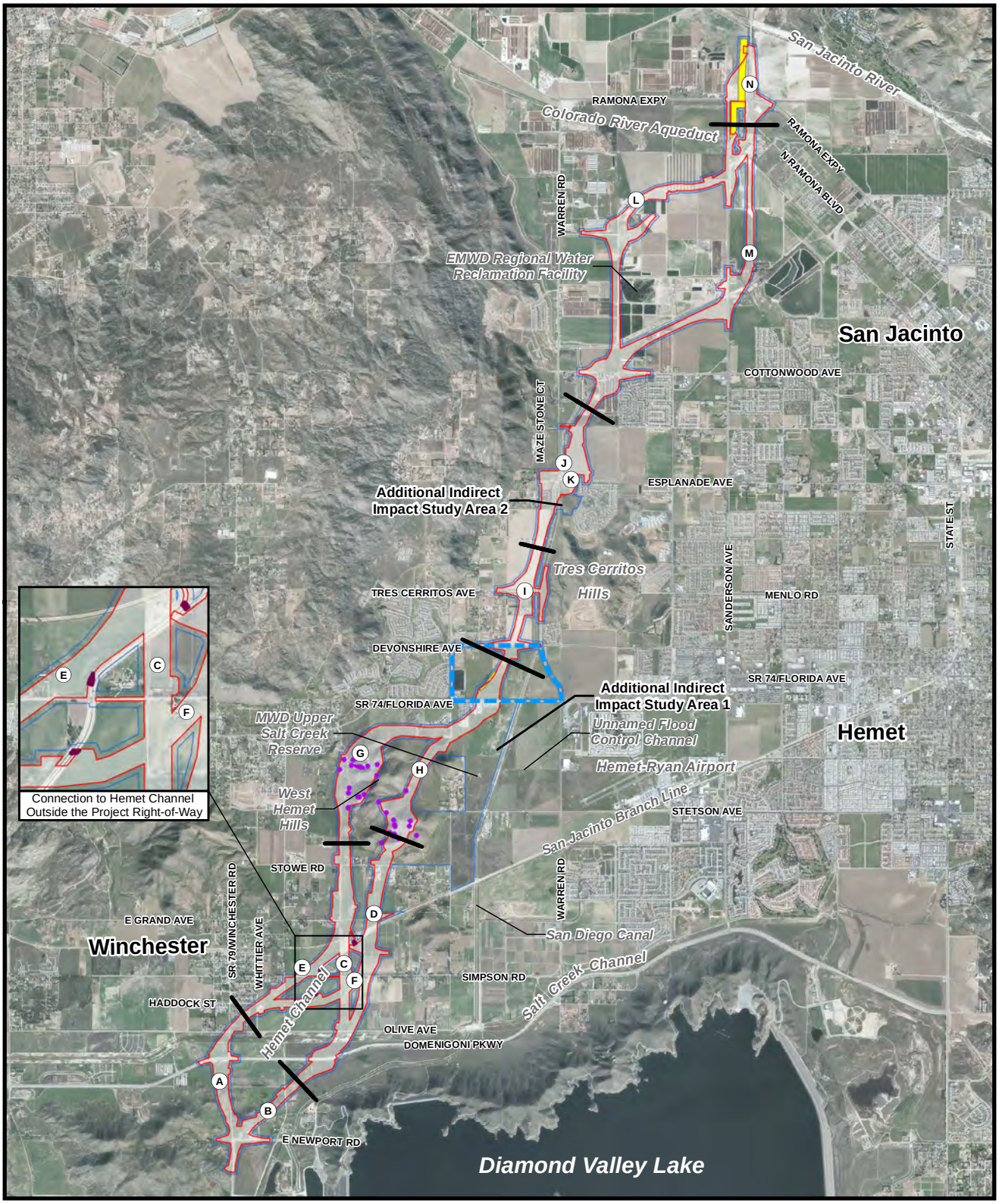
MSHCP Status Codes and Special Conditions: NI - Not Included in MSHCP

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-33
Location of Rare Plants
Deinandra paniculata
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Lepidium virginicum* var. *robinsonii* (Robinson's peppergrass)[NI]

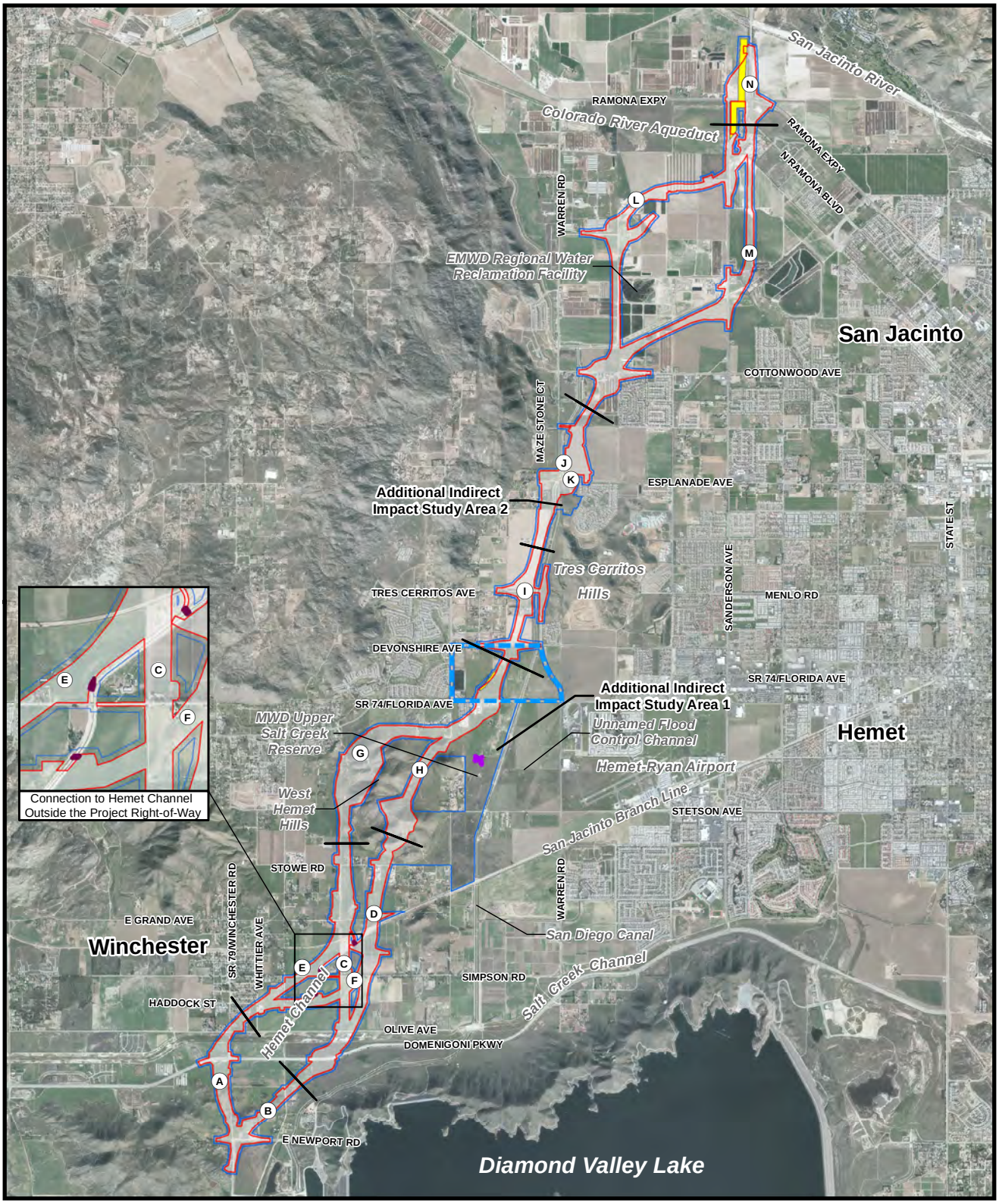
MSHCP Status Codes and Special Conditions: NI - Not Included in MSHCP

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-34
Location of Rare Plants
Lepidium virginicum
var. *robinsonii*
Final Environmental Impact Report/
Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

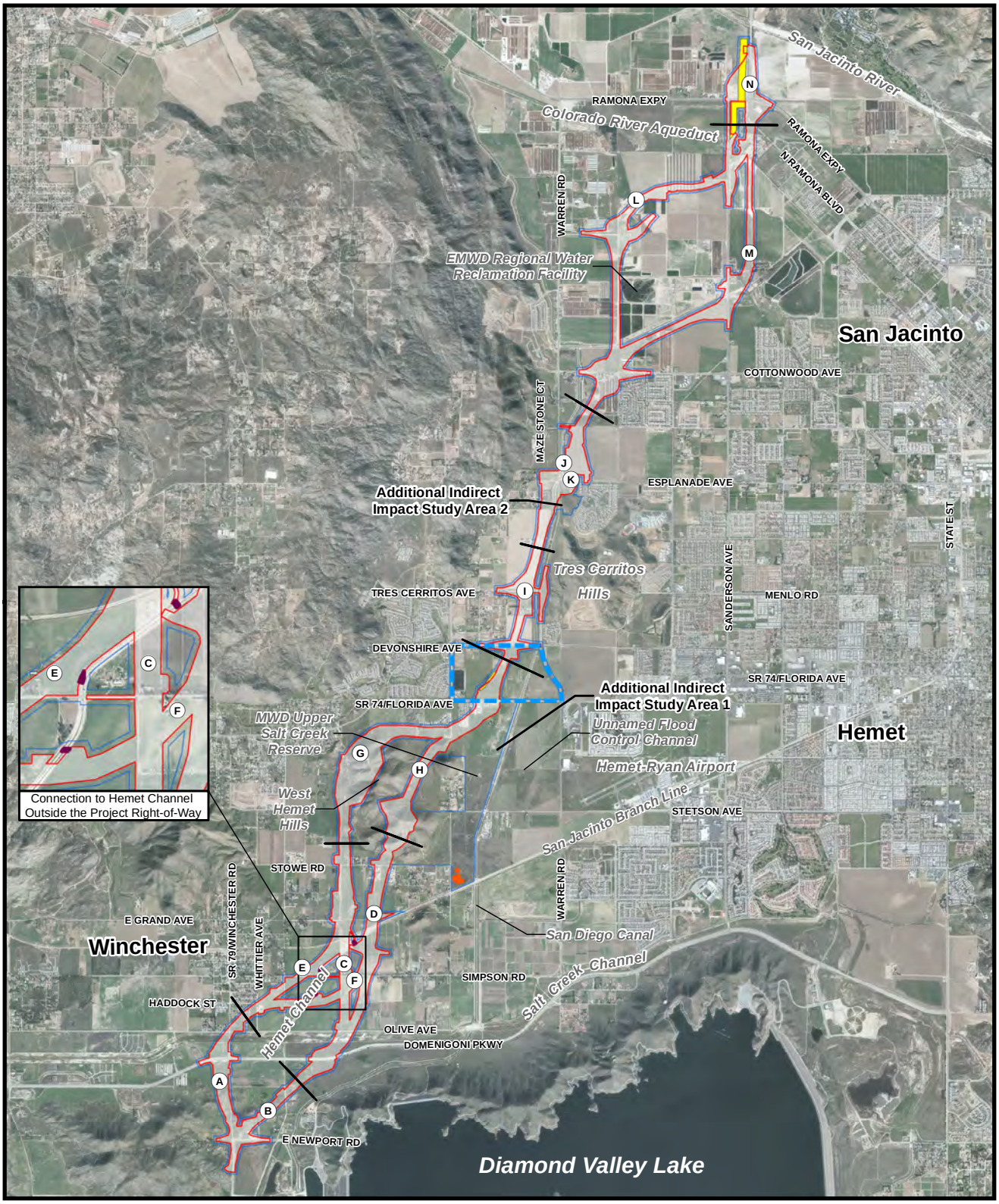
Rare Plant Data

- *Atriplex parishii* (Parish's brittlescale)[CA, PS]

MSHCP Status Codes and Special Conditions:
CA - Criteria Area Species; PS - Planning Species

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

Figure 3.3-35
Location of Rare Plants
Atriplex parishii
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Brodiaea filifolia* (thread-leaved brodiaea) CA, PS, RRVP, SE, FT

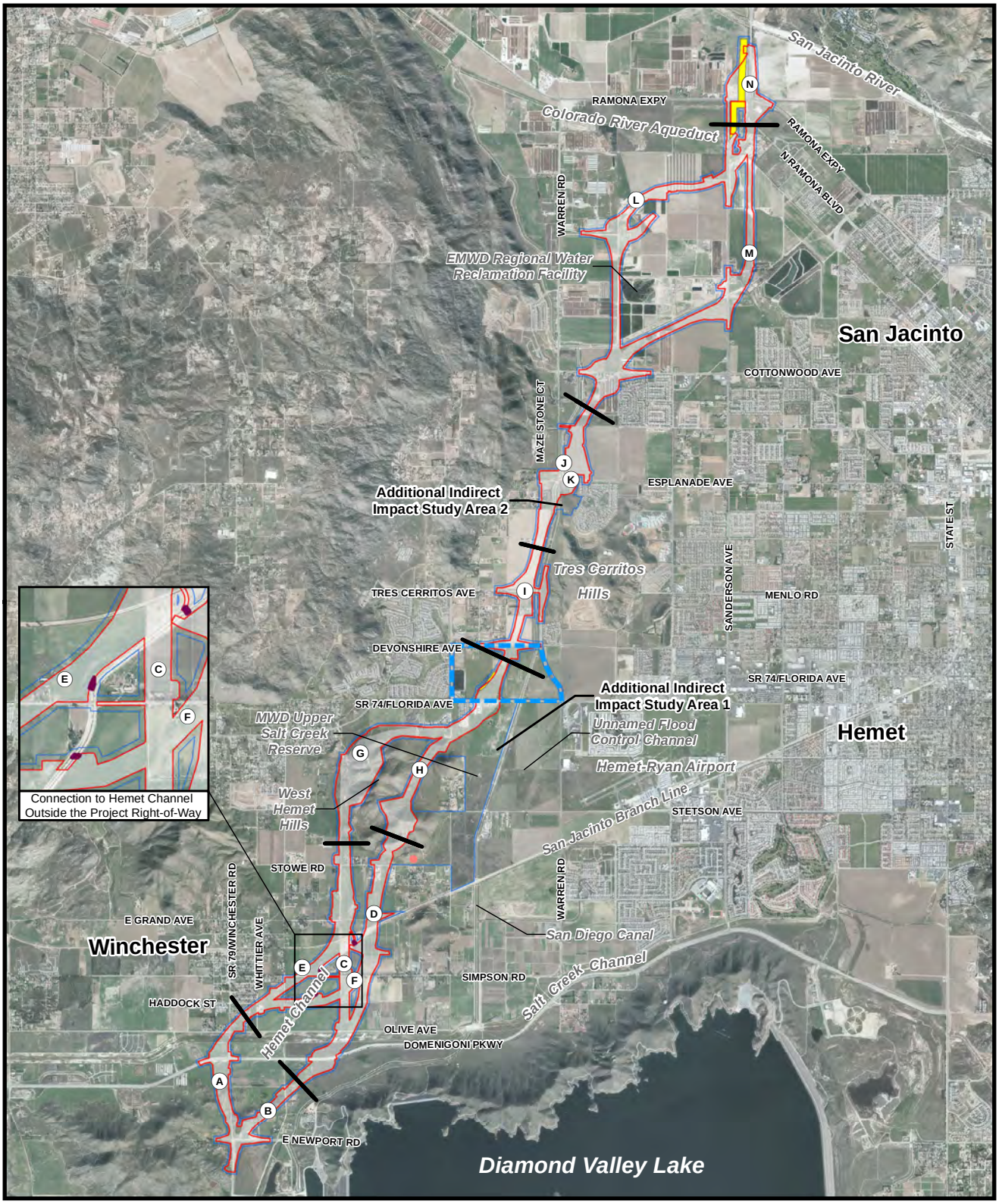
0 7,000 Feet

0 1,000 Meters

1:84,000

MSHCP Status Codes and Special Conditions:
CA - Criteria Area Species; PS - Planning Species; RRVP - Riparian/Riverine and Vernal Pool Species; SE - State Endangered; FT - Federally Threatened

Figure 3.3-36
Location of Rare Plants
Brodiaea filifolia
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Harpagonella palmeri* (Palmer's grapplinghook)[C]

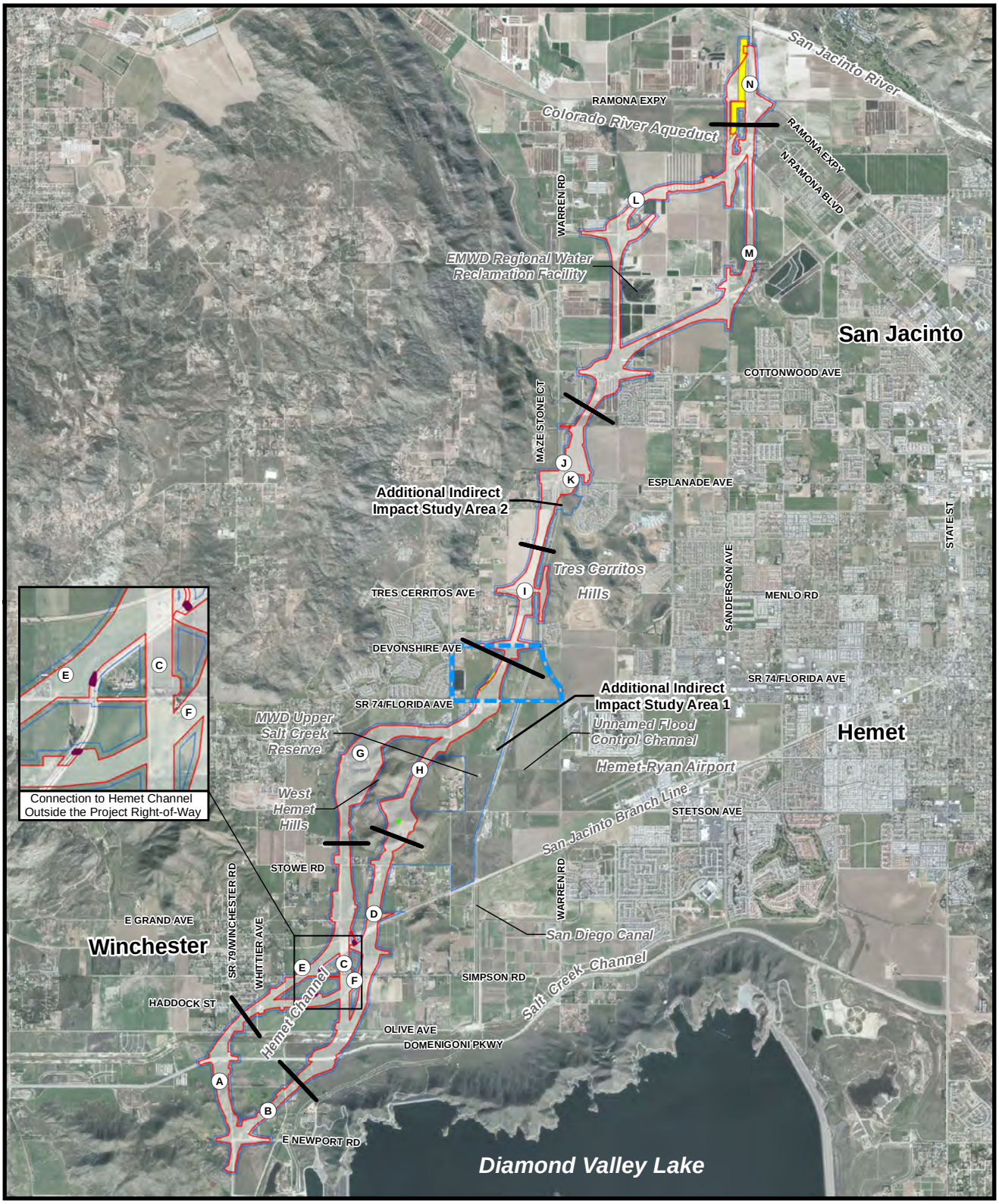
0 7,000 Feet

0 1,000 Meters

1:84,000

MSHCP Status Codes and Special Conditions: C - Covered

Figure 3.3-37
Location of Rare Plants
Harpagonella palmeri
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Microseris douglasii* ssp. *platycarpha* (small-flowered microseris)[CO]

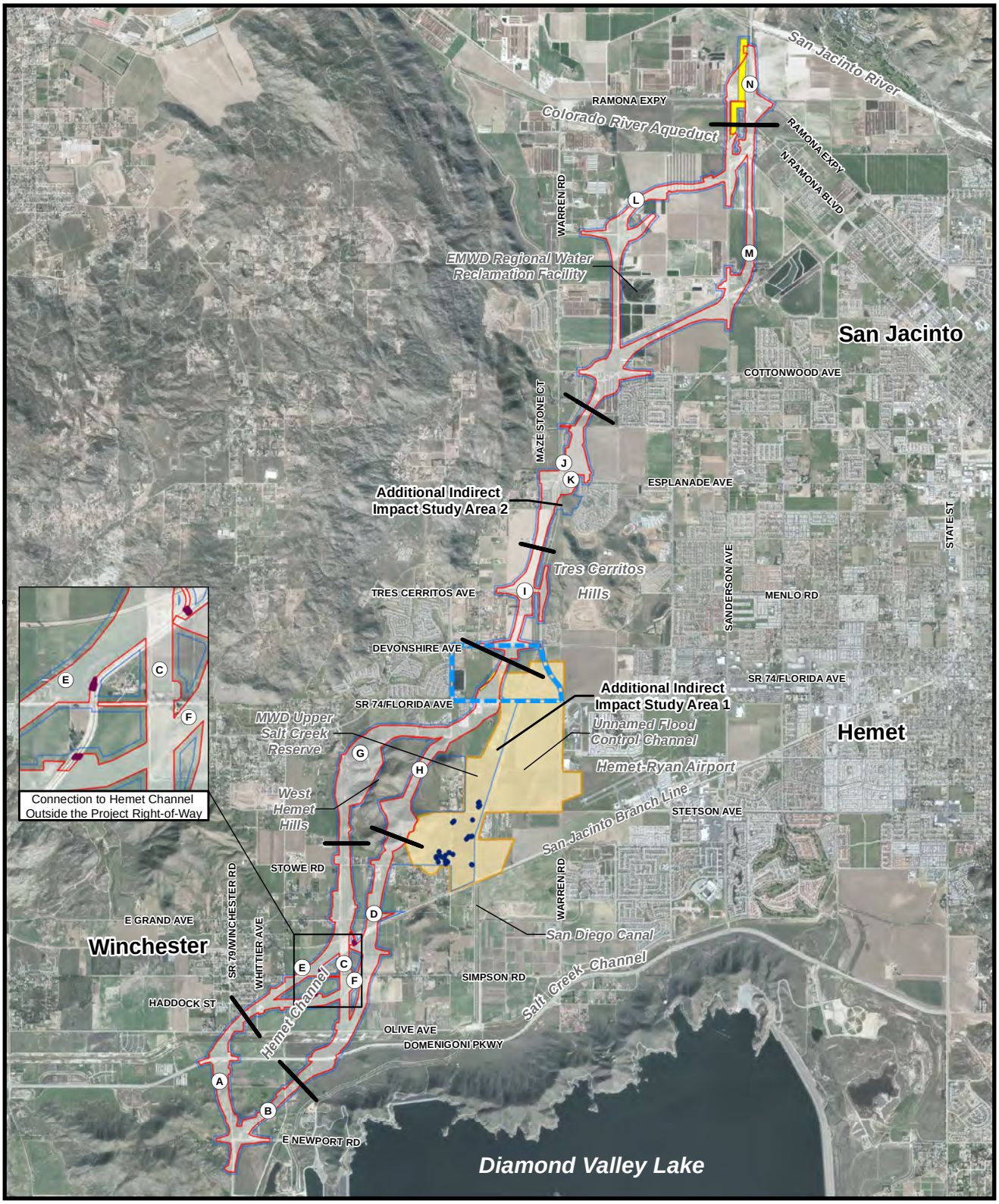
0 7,000 Feet

0 1,000 Meters

1:84,000

MSHCP Status Codes and Special Conditions: CO - Covered Species Requiring Species-Specific Conservation Objectives

Figure 3.3-38
Location of Rare Plants
Microseris douglasii* ssp. *platycarpha
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Spreading Navarretia, Final Critical Habitat November 8, 2010[UF]

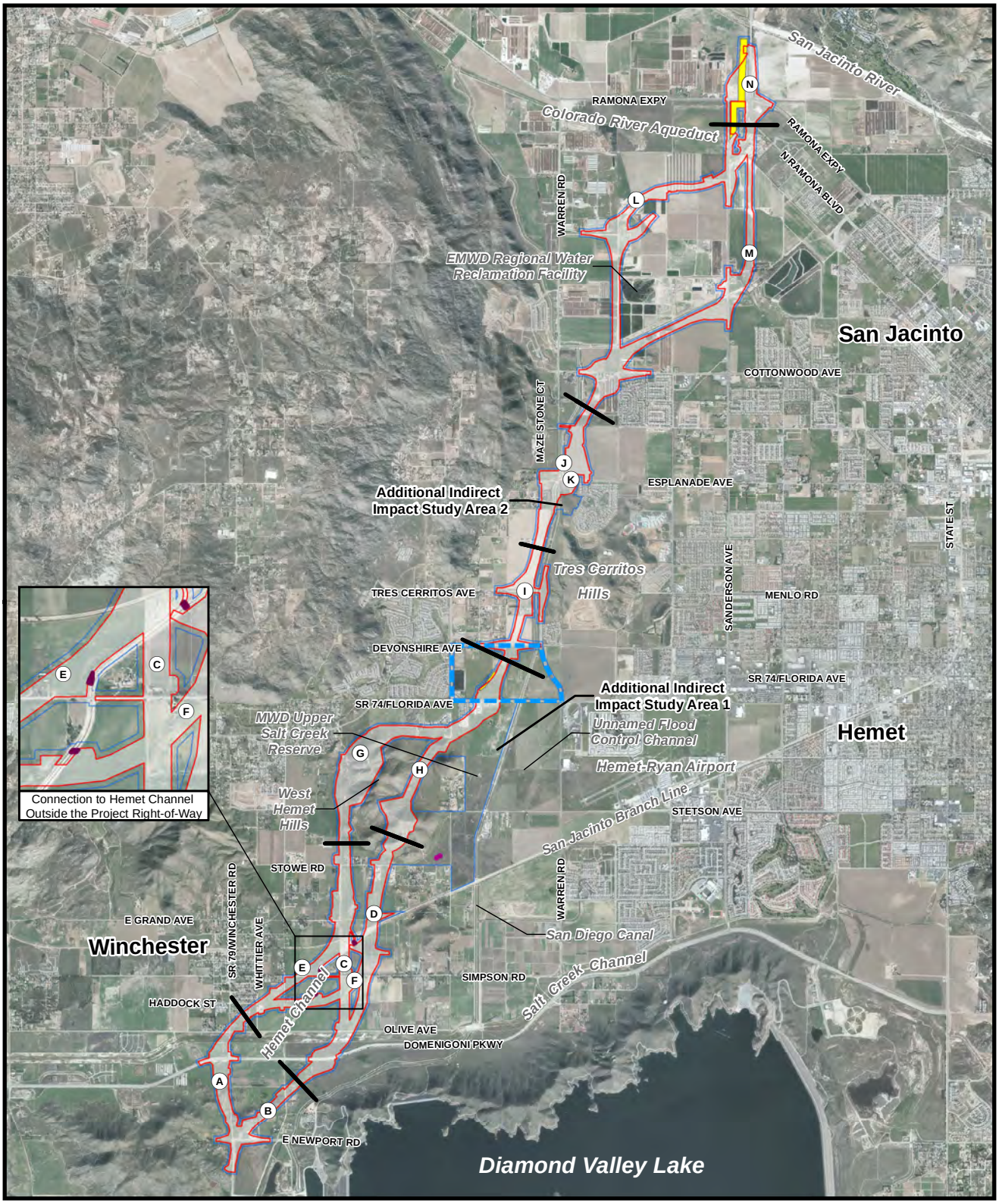
Rare Plant Data

- *Navarretia fossalis* (spreading navarretia)[NE, PS, RRVP, FT]

Source: UF - U.S. Fish and Wildlife Service
MSHCP Status Codes and Special Conditions: NE - Narrow Endemic Species; PS - Planning Species; RRVP - Riparian/Riverine and Vernal Pool Species; FT - Federally Threatened

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

Figure 3.3-39
Location of Rare Plants
Navarretia fossalis
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plants and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plant Data

- *Orcuttia californica* (California orcutt grass) NE, PS, RRVP, SE, FE

MSHCP Status Codes and Special Conditions:
NE - Narrow Endemic Species; PS - Planning Species;
RRVP - Riparian/Riverine and Vernal Pool Species;
SE - State Endangered; FE - Federally Endangered

0 7,000 Feet

0 1,000 Meters

1:84,000

Figure 3.3-40
Location of Rare Plants
Orcuttia californica
Final Environmental Impact Report/
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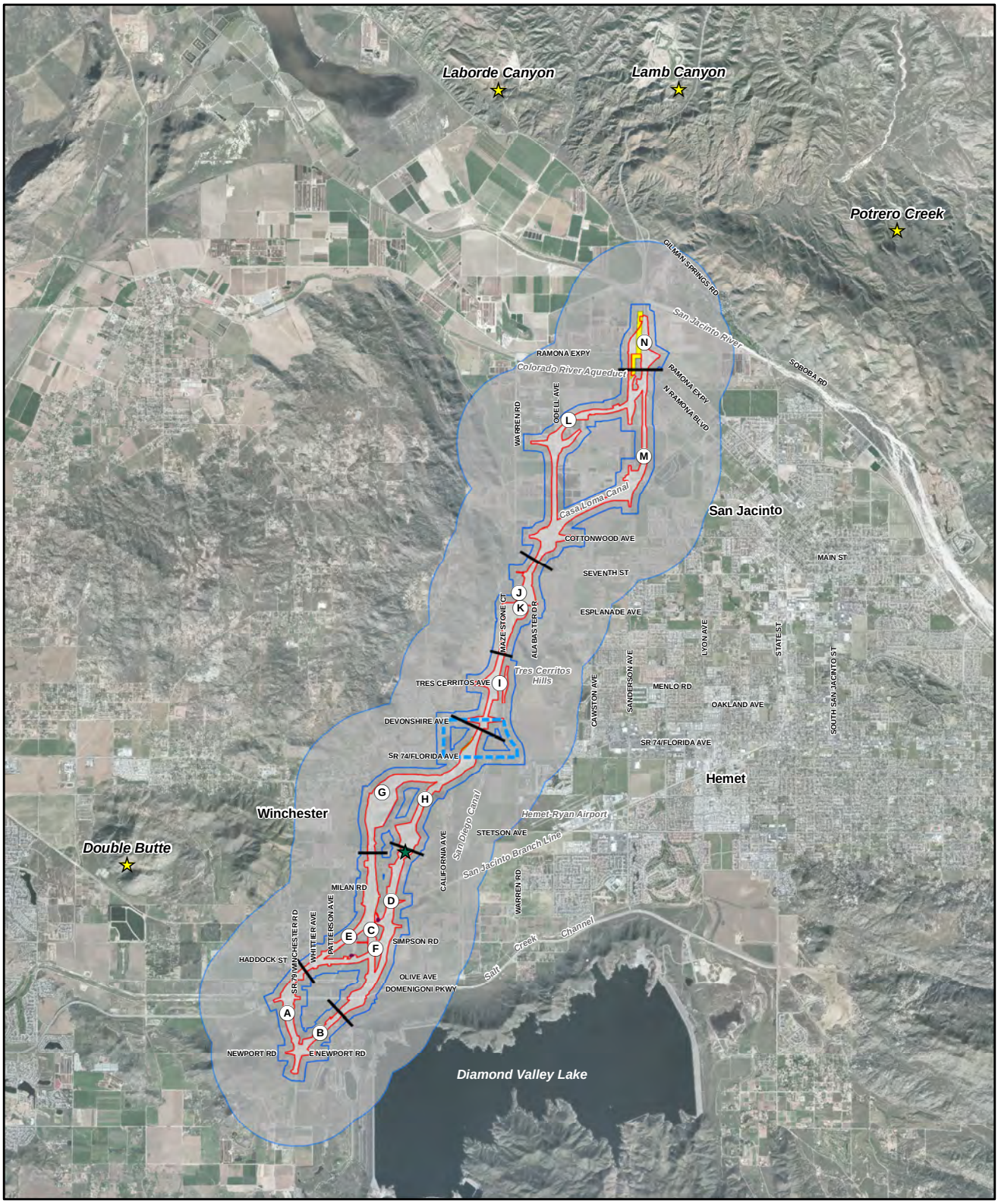
State Route 79 Realignment Project



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LEGEND

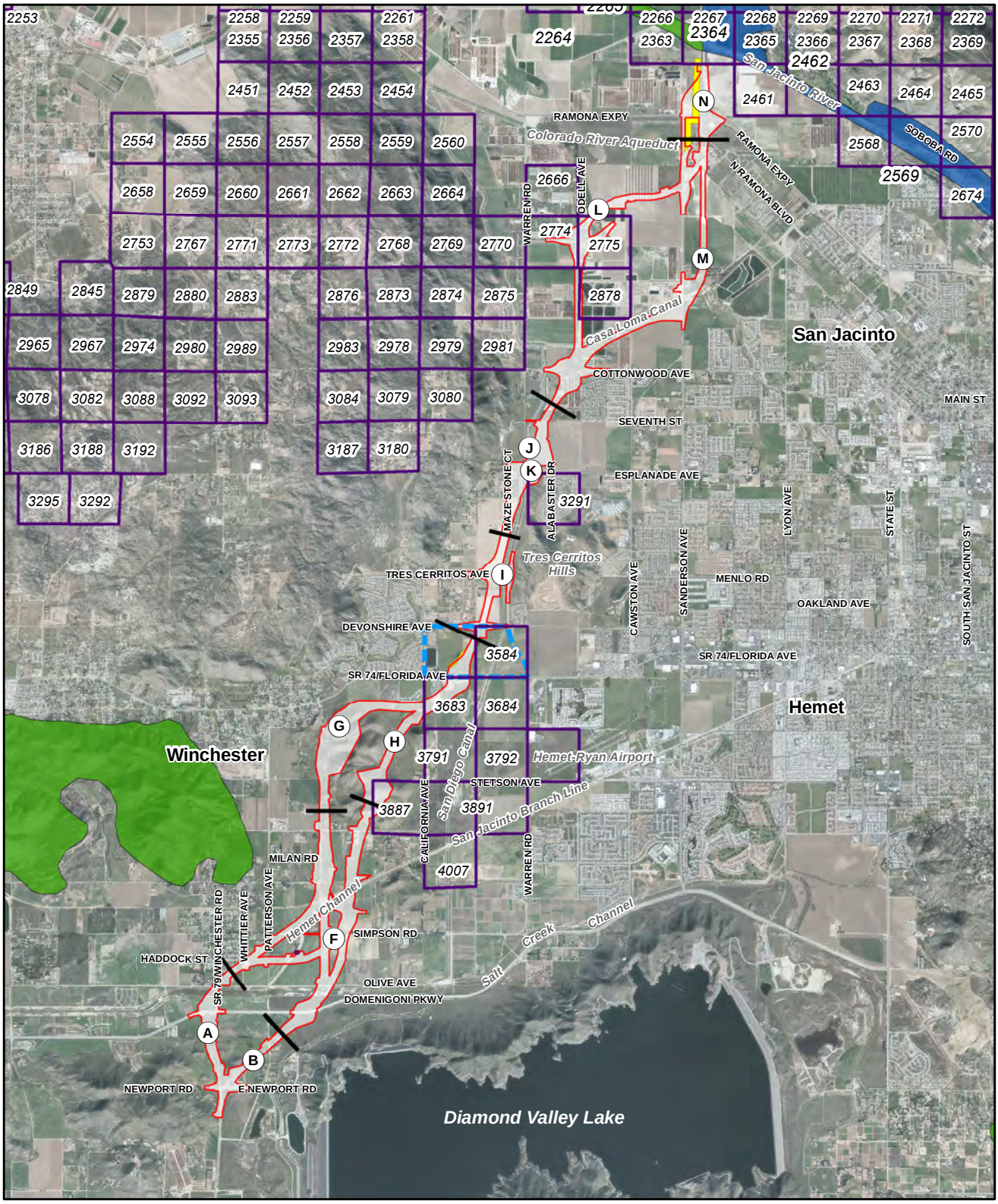
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Golden Eagle Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- 2006 Golden Eagle Observation
- Golden Eagle Nest Site (August 2006)

0 7,500 Feet

0 1,500 Meters

1:125,000

Figure 3.3-41
Location of Golden Eagles and Project Features
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Criteria Cells[CR]

MSHCP Mammal Survey Areas by Species[CR]

- Los Angeles Pocket Mouse Only
- San Bernardino Kangaroo Rat and Los Angeles Pocket Mouse

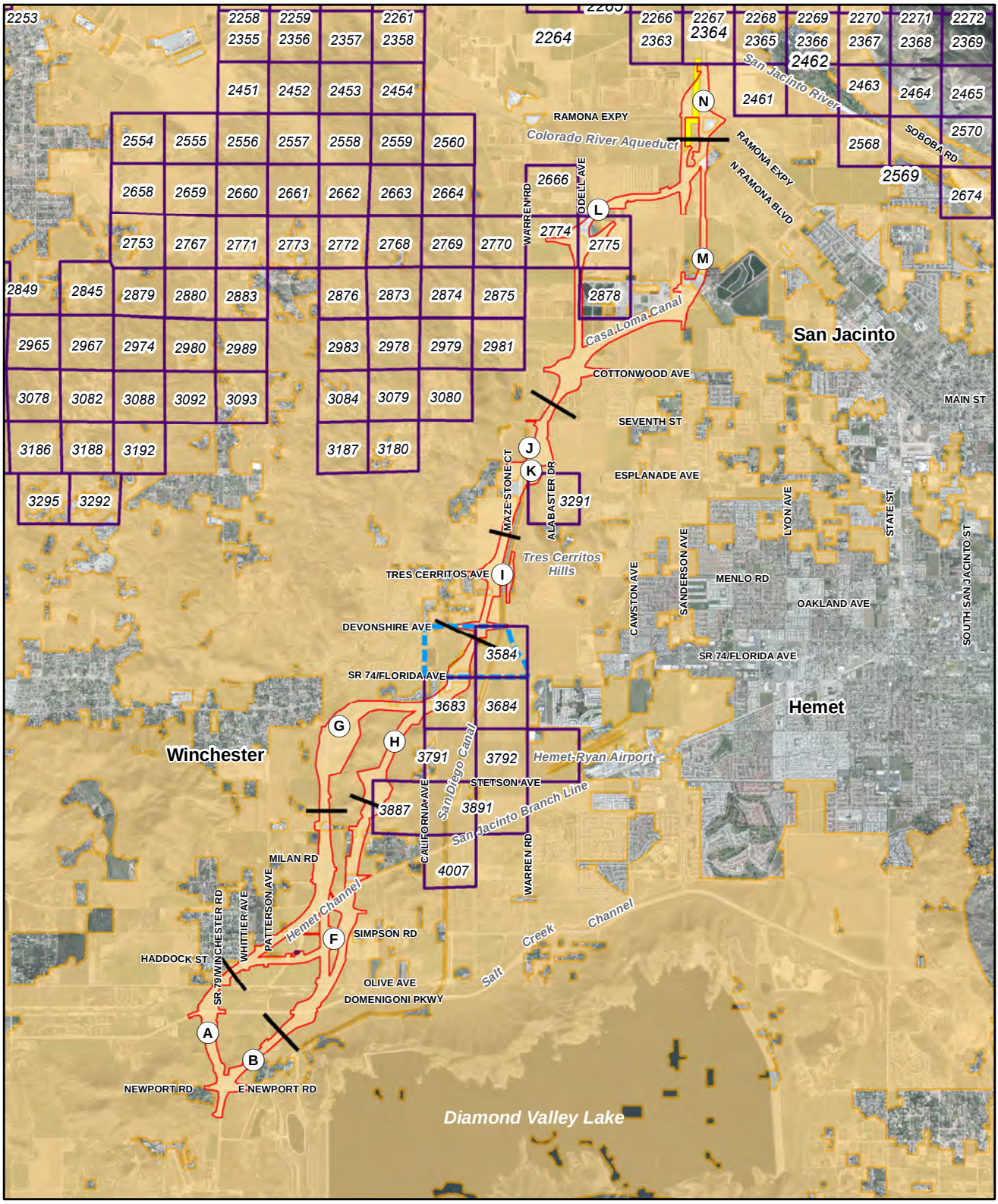
0 7,500 Feet

0 1,500 Meters

1:90,000

Source: CR - County of Riverside

Figure 3.3-42
Multiple Species Habitat Conservation Plan Mammal Survey Areas
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Criteria Cells[CR]
- MSHCP Burrowing Owl Survey Area

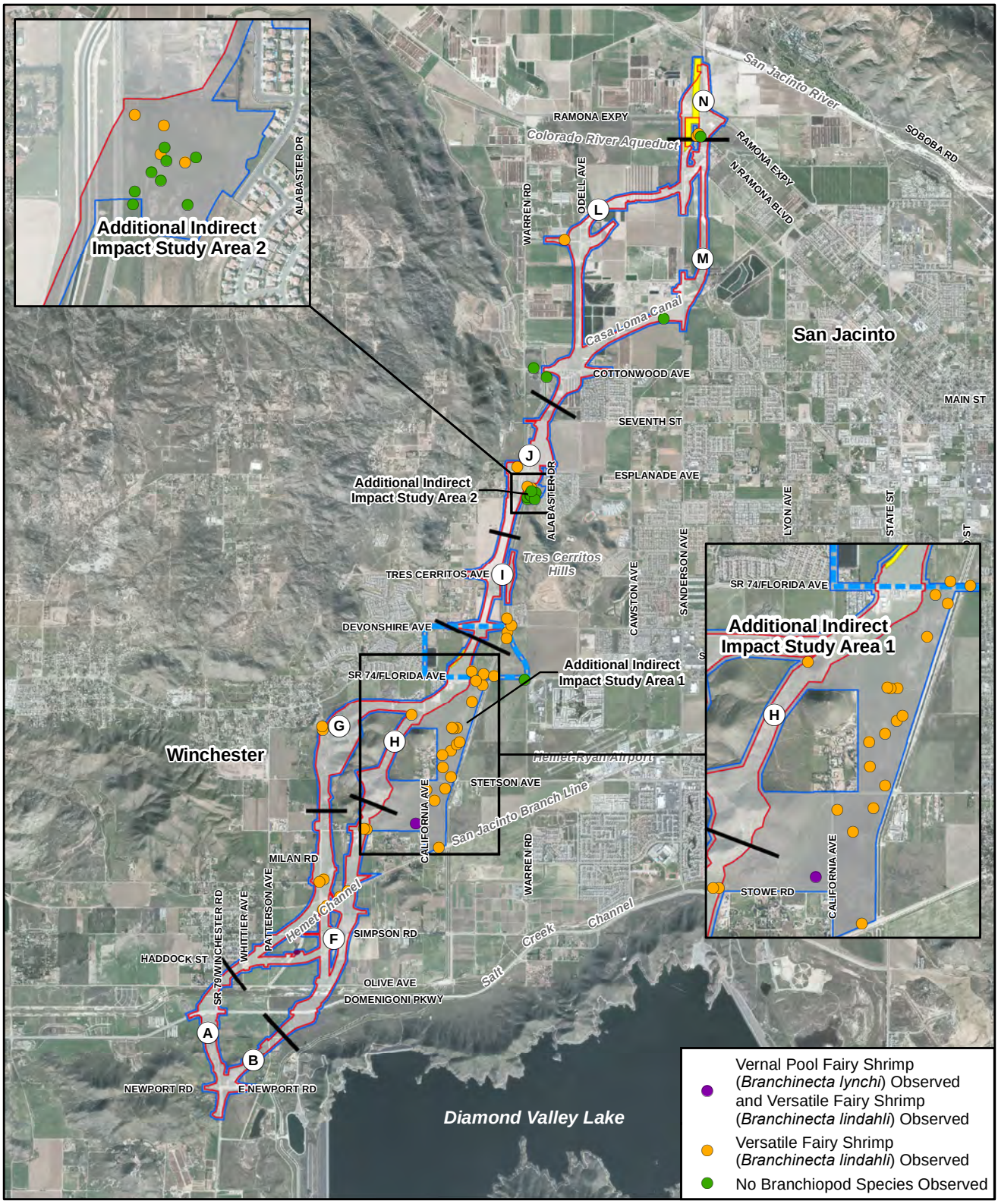
0 7,500 Feet

0 1,500 Meters

1:90,000

Source: CR - County of Riverside

Figure 3.3-43
Multiple Species Habitat Conservation Plan Burrowing Owl Survey Areas
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

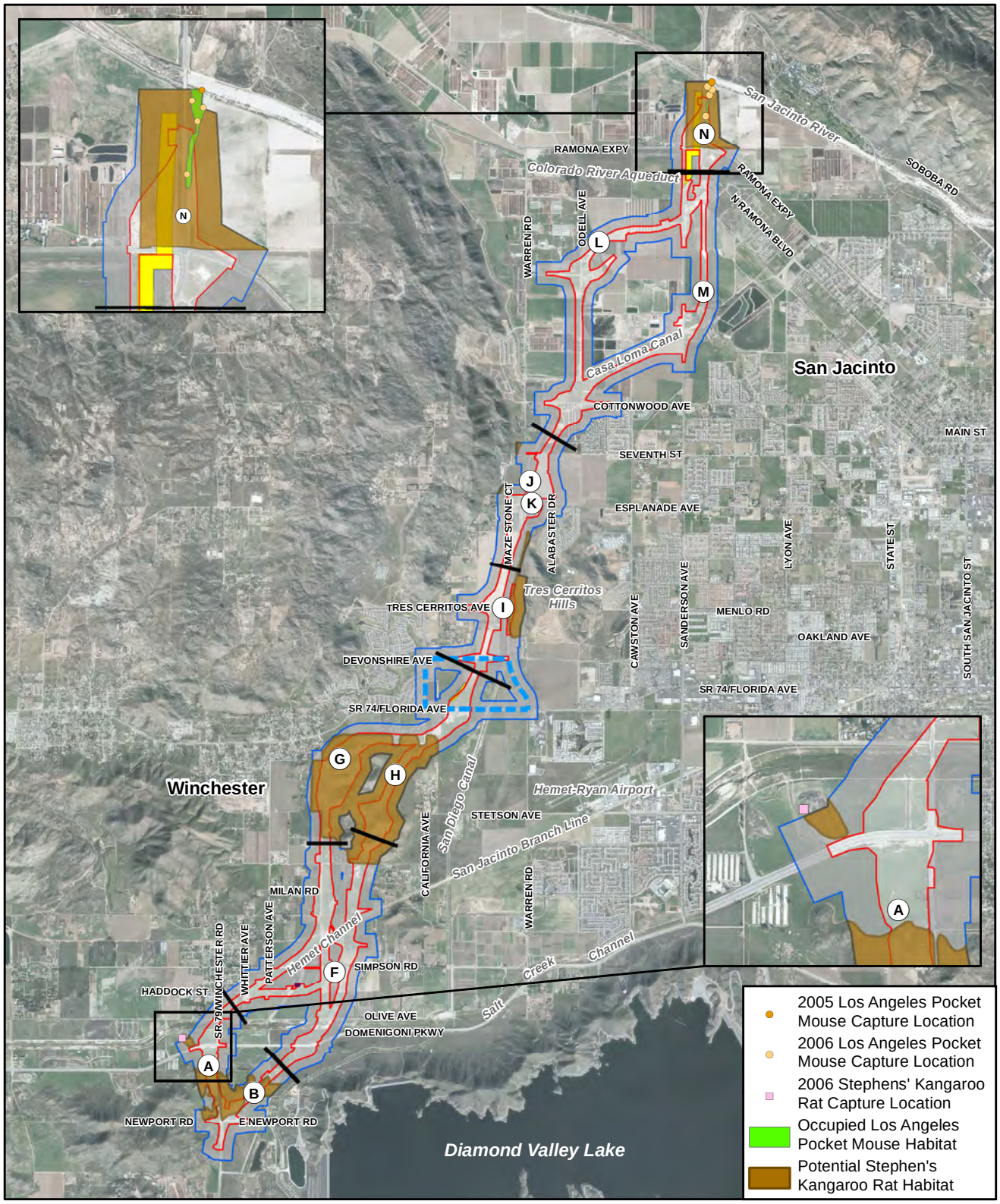
- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Rare Plant and Aquatic Resources Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

0 7,500 Feet

0 1,500 Meters

1:90,000

Figure 3.3-44
Location of Vernal Pool Branchiopods and Project Features
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

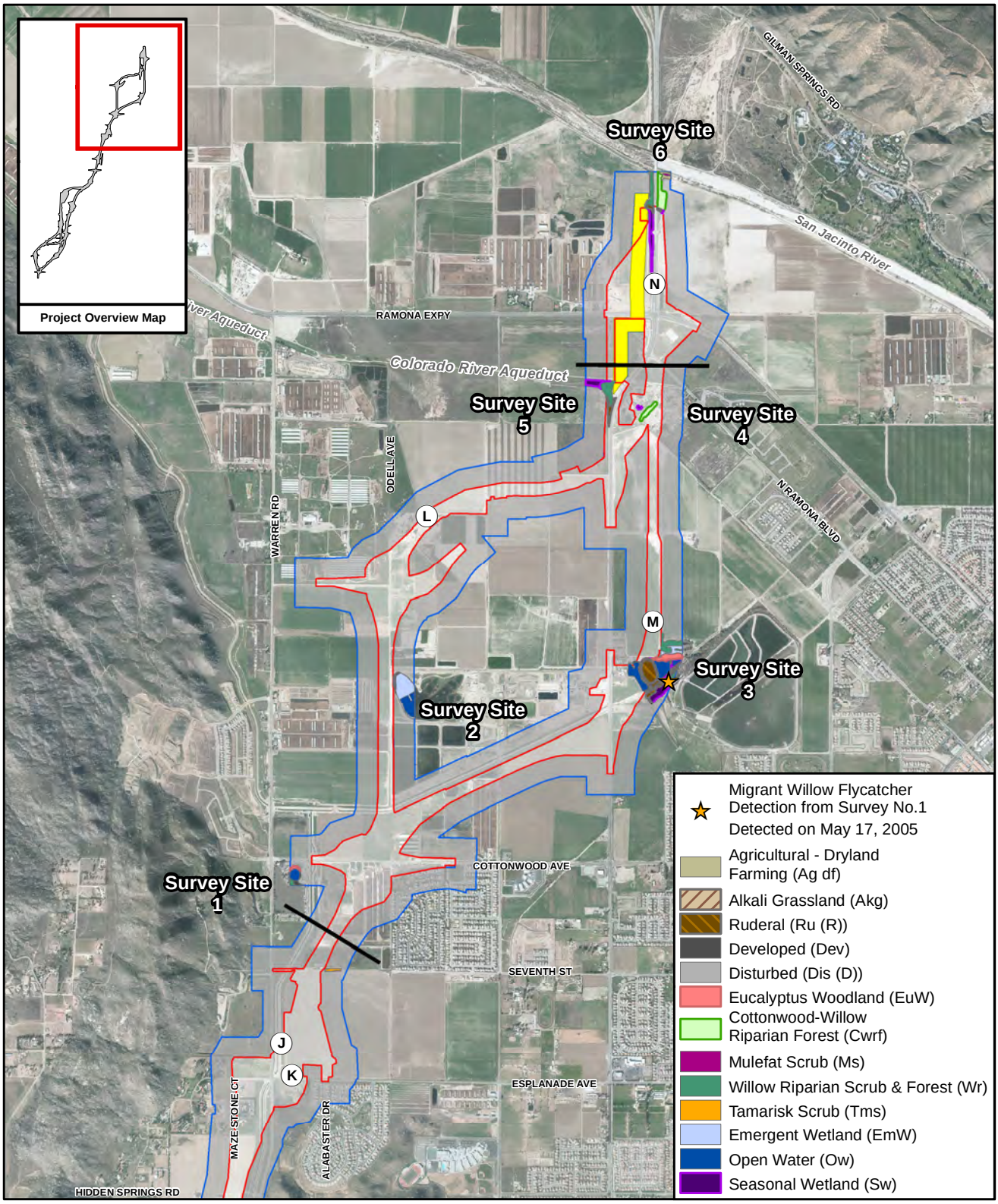
0 7,500 Feet

0 1,500 Meters

1:90,000

Figure 3.3-45
Location of Sensitive Small Mammals and Project Features

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



Aerial Date: February 2011, Aero-Graphics, Inc

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LEGEND

- Roadway Segment Match Line
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area

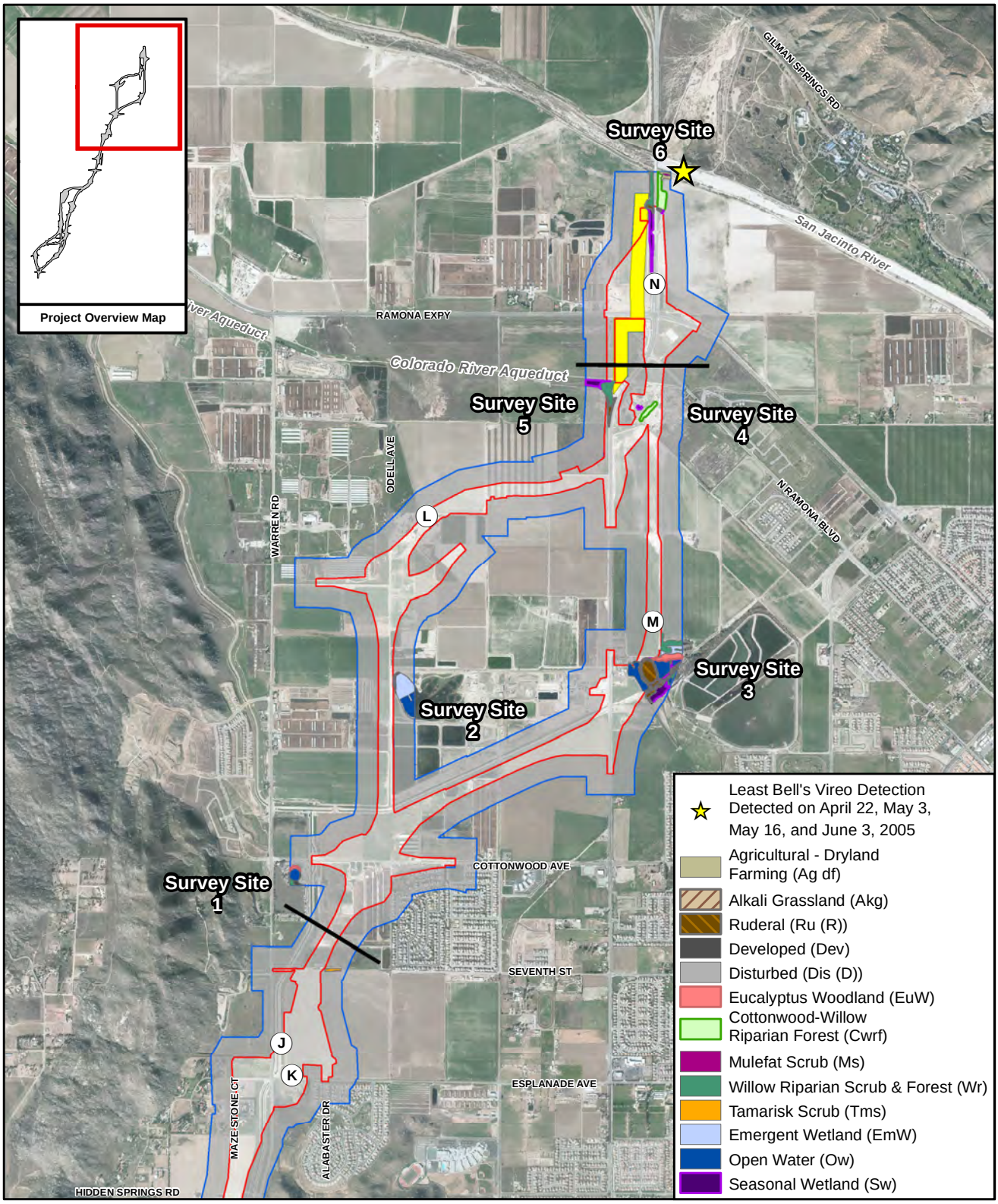
0 3,500 Feet

0 750 Meters

1:42,000

Figure 3.3-46
Location of Southwestern Willow Flycatcher and Project Features

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



Aerial Date: February 2011, Aero-Graphics, Inc

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LEGEND

- Roadway Segment Match Line
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area

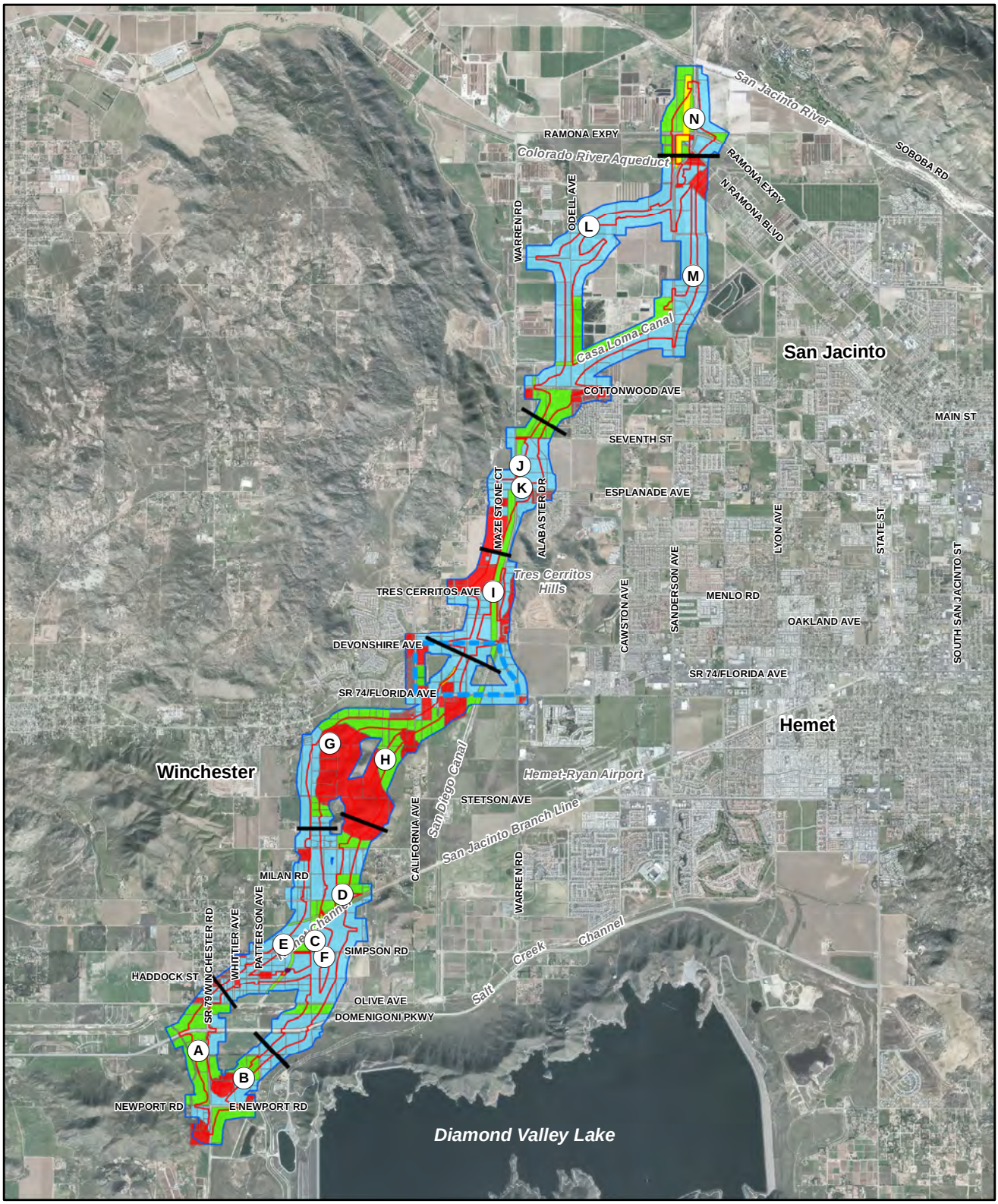
0 3,500 Feet

0 750 Meters

1:42,000

Figure 3.3-47
Location of Least Bell's Vireo and Project Features

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



Aerial Date: February 2011, Aero-Graphics, Inc

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Burrowing Owl Habitat Suitability

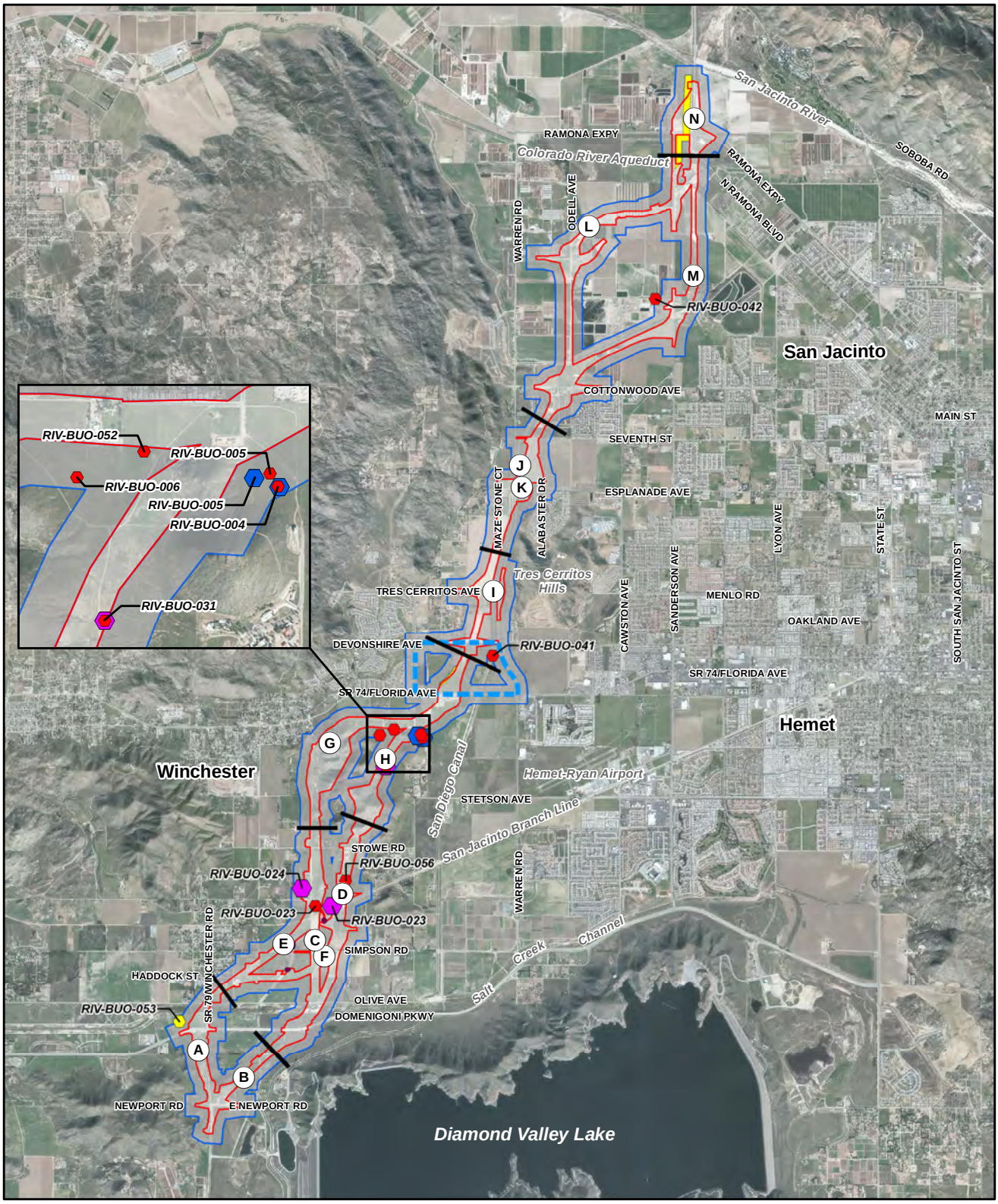
- Excellent
- Suitable
- Excluded

0 7,500 Feet

0 1,500 Meters

1:90,000

Figure 3.3-48
Burrowing Owl Habitat Suitability
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: February 2011, Aero-Graphics, Inc

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area

Breeding Status 2005

- Burrow and Paired Owls
- Burrow, Paired Owls, and Young

Breeding Status 2006

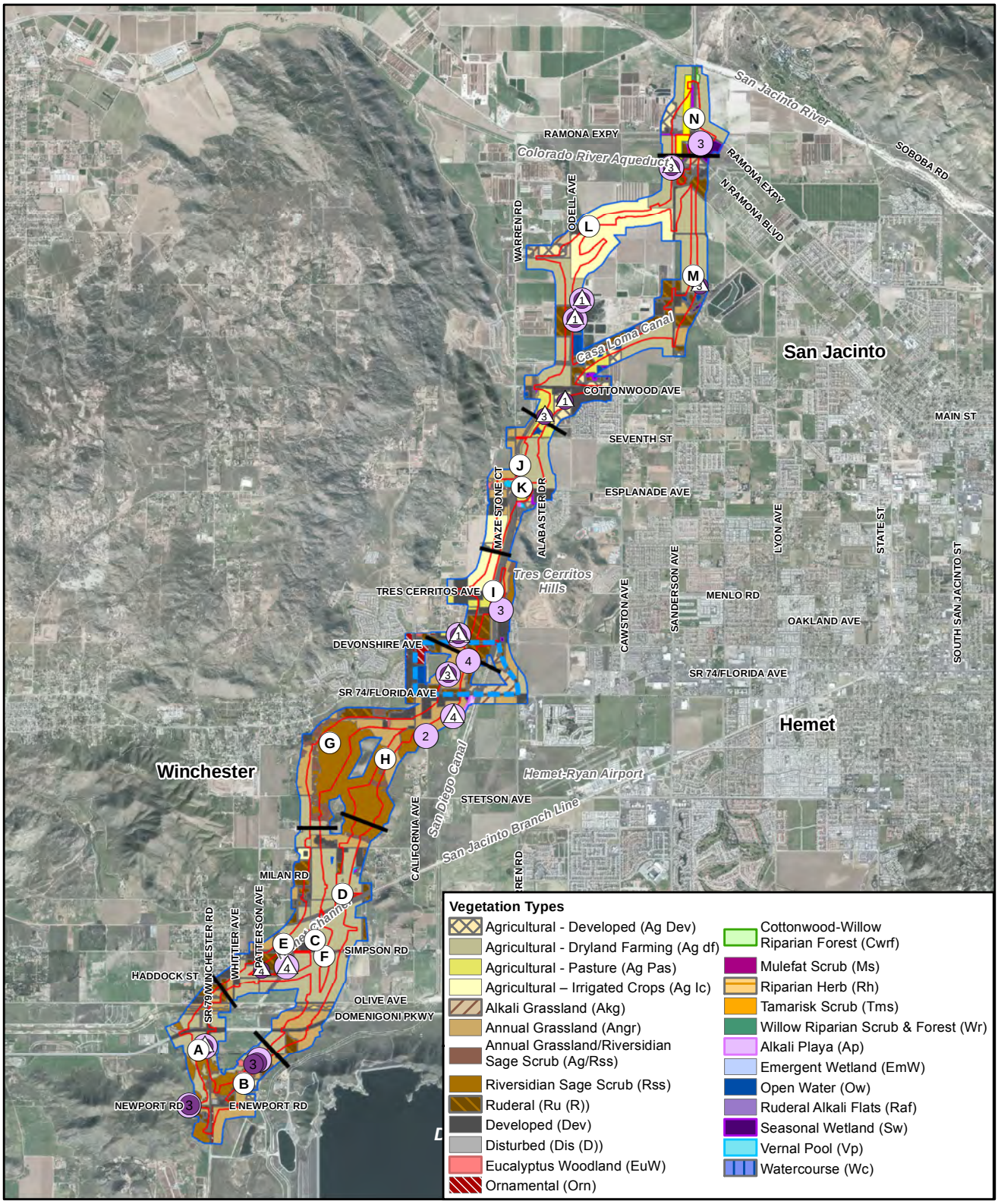
- Burrow and Single Owl
- Burrow, Paired Owls, and Young

0 7,500 Feet

0 1,500 Meters

1:90,000

Figure 3.3-49
Location of Burrowing Owls and Project Features
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: February 2011, Aero-Graphics, Inc

\\GALT\PROJ\RCTC\171146\2016\MAPFILES\EIS\NES_RPT_A.MXD NES_RPT_A.PDF 7/24/2016

LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Utility Relocation Area
- 2005 Nesting Raptor Location
- 2006 Nesting Raptor Location
- Successful Nesting

Nesting Raptor Species

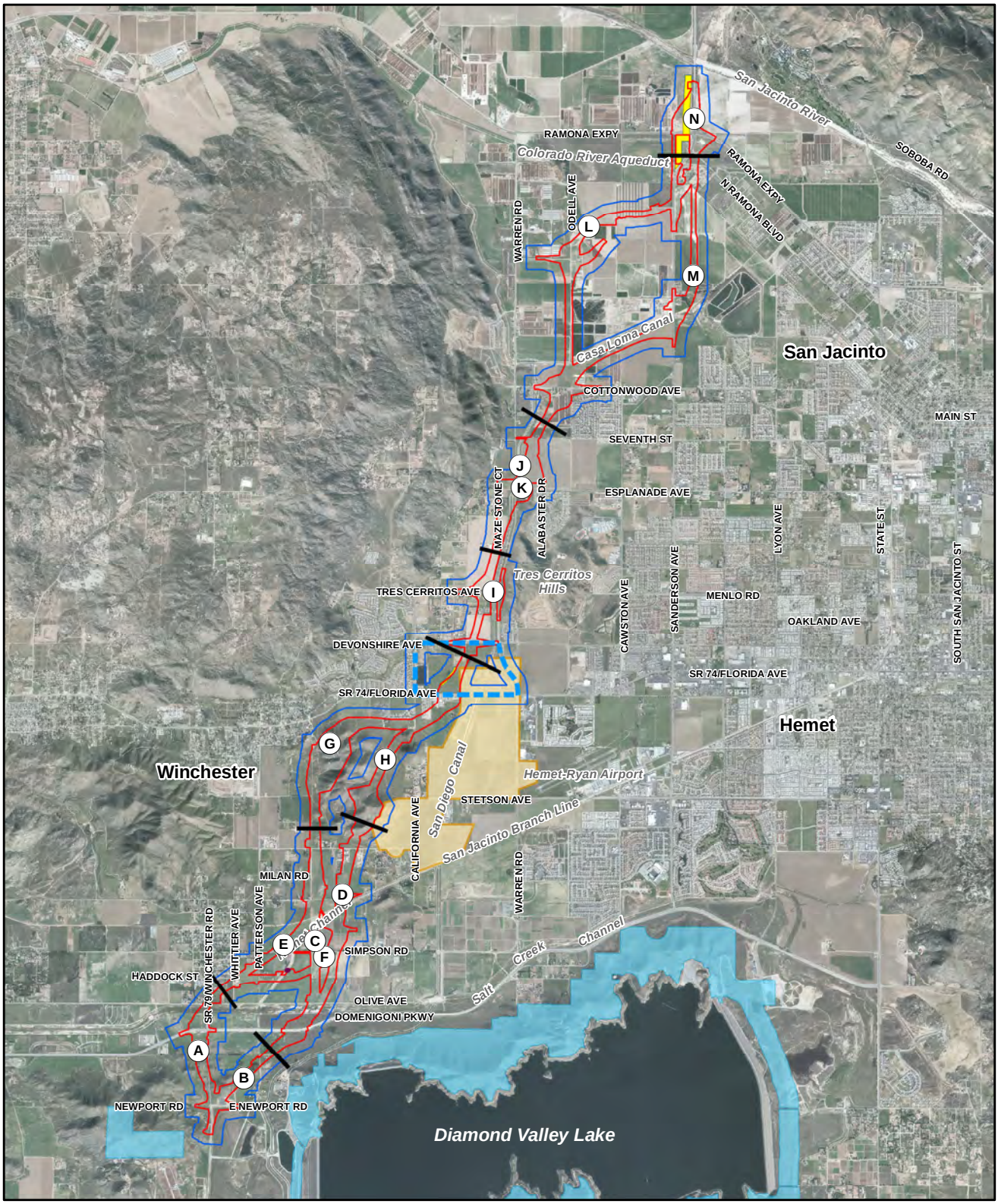
1 Barn owl
2 Cooper's hawk
3 Red-tailed hawk
4 White-tailed hawk

0 7,500 Feet

0 1,500 Meters

1:90,000

Figure 3.3-50
Location of Nesting Raptors and Project Features
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project



Aerial Date: February 2011, Aero-Graphics, Inc

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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Terrestrial Wildlife Study Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- Coastal California Gnatcatcher, Final Revised Critical Habitat December 19, 2007[UF]
- Spreading Navarretia, Final Critical Habitat December 8, 2010[UF]

0 7,500 Feet

0 1,500 Meters

1:90,000

Source: UF - United States Fish and Wildlife Service (USFWS)

Figure 3.3-51
Critical Habitat and Project Features
Final Environmental Impact Report/ Environmental Impact Statement
State Route 79 Realignment Project

3.4 The Relationship between Local Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

3.4.1 Introduction

The Project proposes the long-term enhancement of the regional transportation system. However, it has the potential to result in both short- and long-term social, aesthetic, biological, noise, and land use impacts. The Project is based on state and local comprehensive planning that considers the need for present and future traffic requirements in the context of present and future land use development.

The Project is included in the adopted and approved 2015 SCAG FTIP (through Amendment #15-01) and the 2012 2035 SCAG RTP (through Amendment #2). Inclusion of the Project in the conforming FTIP and RTP demonstrates that the Project was evaluated for regional impacts, meets the planning and regional requirements for demonstration of federal conformity, and is consistent with local air quality planning efforts. The Project is listed in the SCAG 2012-2035 financially constrained RTP, which was found to conform by SCAG on April 4, 2012, and FHWA and the Federal Transit Administration (FTA) made a regional conformity determination on June 4, 2012. The Amendment #2 to the 2013-2035 RTP was approved by the SCAG in September 2014 and the conformity determination was approved by FHWA and FTA on December 15, 2014.

The Project has been a part of ongoing transportation planning for Riverside County and the cities of Hemet and San Jacinto. The San Jacinto General Plan identifies a Locally Preferred Alternative for the SR 79 Project (San Jacinto 2006[22]). The Locally Preferred Alternative is the easternmost alignment proposed to pass through the city, Roadway Segments K, N, and M. The general plans for both Riverside County and the City of Hemet acknowledge a corridor or study area for the roadway facility. Although the Project as currently proposed is not identified in these general plans, coordination with these entities is ongoing to ensure that local transportation goals are achieved by the Project and addressed in this environmental analysis. On May 13, 2008, the Project was addressed in City of Hemet Resolution No. 4216, wherein the City of Hemet identified a Locally Preferred Alternative, based on information received to that date, to replace the now-eliminated Locally Preferred Alternative specified in the 1992 Hemet General Plan. The resolution goes on to direct the Hemet City Manager or his designee to work cooperatively with RCTC as part of its Project Development Team process to continue review of the final two alternative corridors and to present the City's final Preferred Alternative, when appropriate (Hemet 2008). The Locally Preferred Alternative identified by the City of Hemet is represented by one or more of the Build alternatives.

3.4.2 Environmental Consequences

3.4.2.1 No Build Alternative

The No Build Alternative would require no action by RCTC or the federal and state lead agency (Caltrans). Existing and projected capacity and safety needs would not be addressed. Existing SR 79 would not be realigned, ROW would

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

not be acquired, and roadway construction would not occur. The portion of SR 79 proposed for realignment would remain in place and unchanged. The No Build Alternative would not preclude projects that are currently included in the General Plans of Riverside County, the City of Hemet, and the City of San Jacinto or those that may be proposed in the future.

The No Build Alternative would not result in the losses/impacts described in association with the Build alternatives. However, under the No Build Alternative, the existing roadway would continue to operate at reduced or degraded levels of service. It would not provide the benefits to traffic circulation or safety that would result from any of the Build alternatives or design options, as discussed below.

3.4.2.2 Build Alternatives

The general types of short- and long-term impacts and benefits associated with the Project would be similar regardless of the Build alternative or design option that is identified as the Preferred Alternative. Therefore, this discussion is presented for the collective Project, as opposed to a specific Build alternative.

The Build alternatives could cause short-term losses that could result from displacements or relocations, traffic delays and detours, modification of the aesthetic environment, and air quality and noise impacts:

- Reduced economic performance of businesses
- Delayed travel and emergency response
- Impaired access to businesses and community services
- Reduced enjoyment of recreational and other outdoor uses due to changed or blocked viewsheds, dust clouds, or construction noise

A short-term benefit of all the Build alternatives would be the employment of local and regional construction workers for the Project construction period and a potential effect from the additional employment and business activity generated in the regional economy the resulting expenditure of funds for construction materials and labor.

The Build alternatives could also cause long-term loss of resources and could have a permanent impact on aesthetics, air quality, and noise levels. Specific long-term losses include:

- Permanent impacts to open space, plants, wildlife, and their habitat
- Permanent loss of agricultural lands and economic values associated with crop and/or livestock production
- Permanent consumption of materials and energy required for roadway construction and operation
- Changes to community character and cohesion due to blocked or altered viewsheds, impaired air quality, and increased roadway noise

- Permanent removal of residential and commercial uses
- Permanent increases in noise levels along the new alignment
- Permanent impacts to known archaeological resources

Long-term benefits from all of the Build alternatives would be improved traffic flow and increased capacity to facilitate the regional movement of people and goods. Specifically, the Build alternatives would:

- Provide a segment of SR 79 that will facilitate an effective north-south transportation corridor between Domenigoni Parkway and Gilman Springs Road
- Address the east-west and north-south through traffic mix from local traffic attempting to access the numerous businesses in the commercial district in the city of Hemet
- Accommodate Surface Transportation Assistance Act (STAA) National Network for oversize trucks and meet current and future goods movement needs through the cities of San Jacinto and Hemet
- Provide a facility that would not preclude any future multimodal enhancements such as HOT lanes, HOV lanes, a rail system, or a regional bus system.

3.4.2.3 Conclusions

The proposed Project would result in short-term construction-related effects such as air pollutant emissions, noise, and temporary disruption to recreational uses, as well as potential long-term losses of agricultural, biological, cultural, and visual resources. However, these potential adverse environmental impacts should be considered along with the long-term benefits to transportation and safety associated with the Project.

Existing SR 79 serves as a commuter and regional route linking rural areas of San Diego County to the communities in western Riverside County. The portion of SR 79 proposed for realignment also serves regional traffic, connecting Winchester, Hemet, and San Jacinto to Temecula and Murrieta in the south and Beaumont in the north. The use of SR 79 is changing because of widespread and rapid growth in the area. The level of service during certain periods decreases to a point that traffic demand exceeds the capacity of the existing facility. Inadequate control of access has contributed to disorderly and inefficient movement of vehicles (Department 1992, 1999). In addition, injury accident rates on most of SR 79 between Domenigoni Parkway and Gilman Springs Road are higher than the comparable statewide average. The Project would improve traffic conditions in the region by providing a direct and continuous north-south route between Domenigoni Parkway and Gilman Springs Road. This would allow efficient and safe movement of regional traffic between these two locations.

3.5 Irreversible and Irretrievable Commitments of Resources That Would Be Involved in the Proposed Project

Irreversible commitments result from decisions that affect nonrenewable resources. These decisions are considered irreversible because their implementation would affect a resource to the point that renewal can occur only over a long period of time or at great expense or because they would cause the resources to be destroyed or removed. An irretrievable commitment of resources means a loss of production or use of resources as a result of a decision. Irretrievable also refers to the permanent loss of resources, including production, harvest, or use of natural resources. The potential for use or removal of resources associated with the Project is discussed below.

3.5.1 No Build Alternative

The No Build Alternative would require no action by RCTC or the federal and state lead agency (Caltrans). Existing SR 79 would not be realigned, ROW would not be acquired, and roadway construction would not occur. The portion of SR 79 proposed for realignment would remain in place and unchanged. The No Build Alternative would not preclude projects that are currently included in the General Plans of Riverside County, the City of Hemet, and the City of San Jacinto or those that may be proposed in the future. Although impacts from as-yet unidentified projects could occur, they cannot be considered the impacts of the No Build Alternative.

3.5.2 Build Alternatives

Commitments of resources associated with the Project would be similar regardless of the Build alternative or design option that is identified as the Preferred Alternative. Therefore, this discussion is presented for the collective Project, as opposed to a specific Build alternative or design option.

The Build alternatives would result in the commitment of resources throughout the existence of the Project. Project construction would be associated with a substantial expenditure of both state and federal funds, which are not retrievable. Construction materials such as sand, cement, steel, wood, asphalt would be used, and energy (oil, gasoline, diesel fuel) would be expended to build the proposed Project. Additionally, large amounts of labor and natural resources would be used in making these construction materials and generally are not retrievable. Once obtained and/or dedicated to the Project, these resources would not be available to other transportation projects or for any other future use.

The Project would require the commitment of land for the roadway and associated facilities. Agricultural lands, biological habitat, open space, and other land uses that are converted for the Project would be lost. Although the proposed Project would be considered a permanent use, if a greater need arises for use of the land, or if the facility is no longer needed, the land could ultimately be converted to another use. However, this is highly unlikely and, therefore, conversion of existing land uses would be considered an irretrievable commitment of resources.

Project operation would be associated with ongoing expenditures of state and local funds for maintenance and upkeep. As with construction funding, these financial commitments would be considered irretrievable once they are obtained and/or dedicated to the proposed Project.

The Project would require disposal of nonhazardous materials at Lamb Canyon Landfill. Landfill capacity is finite, and once used, available capacity would not be available to other transportation projects or for any other future use. The Project's disposal of excess material in area landfills would be an irretrievable commitment of landfill capacity.

The irreversible and irretrievable commitment of materials, labor, resources, and funds associated with the Build alternatives is offset by the beneficial aspects of an improved transportation system. Associated benefits would consist of improved accessibility, travel, time, and safety for residents, workers, travelers, and others.

3.6 Cumulative Impacts

3.6.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under the National Environmental Policy Act (NEPA), can be found in 40 Code of Federal Regulations (CFR) Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

3.6.2 Methodology

The cumulative impact analysis follows the *Guidance for Preparers of Cumulative Impact Analysis* (Department 2005[23]), as discussed in the following sections.

The following eight steps serve as guidelines for identifying and assessing cumulative impacts for the Project.

1. Identify the resources to consider in the cumulative impact analysis by gathering input from knowledgeable individuals and reliable information sources.

2. Define the geographic boundary or Resource Study Area (RSA) for each resource to be addressed in the cumulative impact analysis.

3. Describe the current health and the historical context of each resource.

4. Identify the direct and indirect impacts of the proposed Project that might contribute to a cumulative impact on the identified resources.

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

5. Identify the set of other current and reasonably foreseeable future actions or projects and their associated environmental impacts to include in the cumulative impact analysis.

6. Assess the potential cumulative impacts.

7. Report the results of the cumulative impact analysis.

8. Assess the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact.

In addition, the cumulative impact analysis relies heavily on the analysis conducted as part of the Riverside County Integrated Project (RCIP) process for both the Riverside County General Plan and the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

3.6.2.1 Resources/Issues to Consider for Cumulative Impacts

Potential direct and indirect impacts to the human, physical, and the natural environment associated with the proposed Project are discussed earlier in this chapter, in Section 3.1, Human Environment (Volume 1), Section 3.2, Physical Environment (Volume 1), and Section 3.3, Biological Environment, in this volume. The resource topics analyzed in these sections are listed in Table 3.6-1. Summary information is provided for each resource topic. This information includes whether the resource would be affected by the Project, its study area (RSA), and a determination of poor or declining health. The two right-hand columns in Table 3.6-1 indicate whether the resource is recommended and included in the cumulative impact analysis. The resource topics carried forward for cumulative impact analysis are listed below.

- Farmlands
- Community
- Visual/Aesthetics
- Cultural Resources
- Paleontological Resources
- Air Quality
- Natural Communities
- Wetlands and Other Waters
- Plant Species
- Animal Species
- Threatened and Endangered Species

Table 3.6-1 Resources Evaluated for Project Cumulative Impact Analysis

Resource Area	Potentially Affected by Project	Comment on Project Impact	Resource Study Area (RSA)	Resources in Poor or Declining Health	Recommendation for Cumulative Impact Analysis	Resource Included in Cumulative Impact Analysis
Land Use Section 3.1.1	Yes	The proposed Project has been closely coordinated with the County of Riverside and the cities of Hemet and San Jacinto and is consistent with the respective general plans and associated land use elements. Many of the undeveloped lands are being developed consistent with the respective local jurisdictions' general plan land use plans, which designate areas for both land development and open space. Because of the consistency with the general plans of the associated jurisdictions, the Project would not result in adverse impacts to land use.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project would not result in adverse impacts to land use, it would not contribute to cumulative adverse effects on this resource. Therefore, this resource is not included in the cumulative impact analysis.	No
Growth Section 3.1.2	Yes	The San Jacinto Valley has been and will continue to transition from an agriculturally based community to an area composed of residential neighborhoods with commercial and light industrial uses. Growth in the Project area has been constant and will continue to occur. The Project may influence the rate of growth (positive or negative) or type and patterns of land use around interchanges on undeveloped land. However, because of the consistency with the general plans of the associated jurisdictions, the Project would not result in adverse impacts to growth.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project would not result in adverse impacts to growth, it would not contribute to cumulative adverse effects on this resource. Therefore, this resource is not included in the cumulative impact analysis.	No
Farmlands Section 3.1.3	Yes	The Project would contribute incrementally to the loss of farmland in the Project vicinity; however, based on the FCIRS for each alternative and the planned farmland conversion in the cumulative impact study area and documented in the respective general plans of each jurisdiction, the contribution of the Project to cumulative impacts on farmlands in Riverside County would be minimal. Therefore, the Project would not result in adverse impacts to farmlands.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	Yes	Although the Project would not result in adverse impacts to farmlands, this resource is in poor and declining health and is included in the cumulative impact analysis.	Yes
Community Section 3.1.4	Yes	The Project would not divide communities or adversely affect community cohesion. In many locations, the Build alternatives would be adjacent to existing linear facilities (canals) and would not divide an existing urban center or sever a substantial number of local roads. Because the Project would also result in the need for property acquisitions and subsequent relocations, the Project could result in an adverse impact to the community.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project could result in an adverse impact and possibly contribute to a cumulative adverse effect on relocations, this resource is included in the cumulative impact analysis.	Yes
Utilities/Emergency Services Section 3.1.5	Yes	Cable television, electricity, natural gas, sewer, telephone, and water utilities could experience occasional disruption during construction of any of the Build alternatives. Both design options would include a near-grade crossing of the San Jacinto Branch Line. This would limit the expansion of rail operations because the near-grade crossing would make the tracks unusable at the crossing. As a result of mitigation measures being proposed to minimize these impacts, the Project would not result in adverse impacts to utilities and emergency services.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto Emergency Services: Project PIA and unique design features, plus an additional 2 mi	No	Because the Project would not result in adverse impacts to utilities and emergency services, it would not contribute to cumulative adverse effects on these resources. Therefore, these resources are not included in the cumulative impact analysis.	No

Table 3.6-1 Resources Evaluated for Project Cumulative Impact Analysis

Resource Area	Potentially Affected by Project	Comment on Project Impact	Resource Study Area (RSA)	Resources in Poor or Declining Health	Recommendation for Cumulative Impact Analysis	Resource Included in Cumulative Impact Analysis
Traffic and Transportation/Pedestrian and Bicycle Facilities Section 3.1.6	Yes	The full build out of the Project in 2040 would benefit the transportation system because it would provide a more efficient north/south regional facility. The Project would not result in adverse impacts to the transportation system, except for short-term disruption of intersecting roadways that require reconstruction or possibly adjacent roads that serve as detour routes.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	The 2040 traffic analysis is a cumulative analysis which includes each of the Build alternatives and the future planned land use. Because the Project would not result in adverse impacts to the transportation system, it would not contribute to cumulative adverse effects on this resource. Therefore, this resource is not included in the cumulative impact analysis.	No
Visual/Aesthetics Section 3.1.7)	Yes	The cumulative Project study area historically has been characterized by rural and agricultural areas. However, ongoing planning as guided by the general plans for Riverside County and the Cities of Hemet and San Jacinto indicates a development movement to support anticipated future growth and change. The Project would contribute to a change in visual character and quality by introducing a major transportation facility into a rural area in which this type of land use did not previously exist.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project would result in an adverse impact and possibly contribute to a cumulative adverse effect on visual/aesthetics, this resource is included in the cumulative impact analysis.	Yes
Cultural Resources Section 3.1.8	Yes	The Project APE contains three cultural resources determined eligible or presumed eligible for the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR). Two would be adversely affected by the Project. It would directly impact the Potential Prehistoric Archaeological District (PPAD) by destroying as many as seven contributing bedrock milling sites and changing the property's current setting, character, prehistoric/ ethnographic use, and physical features, while also introducing visual elements to as many as 23 contributing bedrock milling sites, thus indirectly impacting the PPAD. A TCP identified by the Pechanga Band includes two hills identified as *Chéexayam Pum'wáppivu*, and *'Anó´ Potma*, as well as the intervening valley. The Project would cause physical damage to as many as 142.3 ac of the 2908.3 ac TCP (up to 4.9%) and change the property's current setting, character, prehistoric/ethnographic use, and physical features. The Project would also introduce visual elements that would indirectly impact the TCP. The CBJ Dairy (P-33-15272), is a historical resource because it is associated with events that have made a significant contribution to the development of the San Jacinto Valley dairy industry. Properties representing this resource type are becoming increasingly rare because of residential growth in the area. The Project would only affect the eastern edge of the property and would not have a direct impact on the property in a manner that would compromise its significance or integrity as a historical resource.	The broad, flat San Jacinto Valley in the north and the Pleasant Valley to the south in the Winchester area.	Yes	The PPAD and the TCP are both declining resource types. Further both resources extend well beyond the Project APE into areas that are expected to be affected by several reasonably foreseeable projects in addition to the proposed Project. Therefore, the PPAD and TCP are included in the cumulative impact analysis. The CBJ Dairy is an example of a declining cultural resource type. Because the dairy is expected to be affected by two reasonably foreseeable projects in addition to the proposed Project, this resource is included in the cumulative impact analysis.	Yes
Hydrology and Floodplain Section 3.2.1	Yes	The Project would encroach on floodplains, but roadway design would comply with applicable FEMA regulations and policies to address hydrology and flood risk. Impacts would be addressed through specific design and compliance with applicable regulations and policies specific to hydrology and floodplain. The Project would not result in adverse impacts to hydrology and floodplains.	Santa Ana River Basin and San Diego Basin	No	Because the Project would not result in adverse impacts to hydrology and floodplains, it would not contribute to cumulative adverse effects on these resources. Therefore, these resources are not included in the cumulative impact analysis.	No

Table 3.6-1 Resources Evaluated for Project Cumulative Impact Analysis

Resource Area	Potentially Affected by Project	Comment on Project Impact	Resource Study Area (RSA)	Resources in Poor or Declining Health	Recommendation for Cumulative Impact Analysis	Resource Included in Cumulative Impact Analysis
Water Quality and Storm Water Runoff Section 3.2.2	Yes	The Project would incorporate measures to address water quality and storm flows, resulting in minimal change to the capacity and quality of nearby water courses. Other projects would drain to the same downstream water bodies as the proposed Project. However, these projects would also be required through project-specific design and compliance to comply with the same storm water and water quality regulations and policies that are applicable to the Project. Therefore, the Project would not result in adverse impacts to water quality and storm water runoff.	San Jacinto Watershed, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project would not result in adverse impacts to water quality and storm water runoff, it would not contribute to cumulative adverse effects on these resources. Therefore, these resources are not included in the cumulative impact analysis.	No
Geology/Soils/Seismic/Topography Section 3.2.3	Yes	Potential impacts for the proposed Project include surface fault rupture, ground shaking, liquefaction susceptibility, compressible/ collapsible soils, and expansive soils. The location of the Project study area in relation to known active and potentially active faults indicates that the alignments are not exposed to a greater seismic risk than other sites in the region. The Project study area is located in areas considered moderately to highly susceptible to liquefaction. The hills to the west and east of the Project may be subject to rock fall, rock slides, or other rock slope failure. The Project would use standard engineering practices to deal with these risks and would not result in adverse impacts to geology, soils, seismic, or topography.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project would not result in adverse impacts to geology, soils, seismic, and topography, it would not contribute to cumulative adverse effects on these resources. Therefore, these resources are not included in the cumulative impact analysis.	No
Paleontology Section 3.2.4	Yes	During excavation, the Project could result in loss of fossils, an unrecorded fossil site, loss of associated fossil specimen data and corresponding geologic and geographic site data, or loss of fossil-bearing strata A Paleontological Mitigation Plan (PMP) would be completed and implemented for the Project to avoid this potential loss. The mitigation program would allow for the recovery of scientifically important fossilized remains, if any are encountered by these activities, along with associated fossil specimen data and corresponding geologic and geographic site data, preservation of the specimens in a recognized museum repository, and availability for future study by qualified scientific investigators.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Although the PMP would mitigate adverse impacts to paleontological resources, the Project would have the potential to contribute to cumulative adverse impacts on this resource when combined with other past, present, and future projects. Therefore, this resource is included in the cumulative impact analysis.	Yes
Hazardous Waste/Materials Section 3.2.5	Yes	Potential risks of the proposed Project include impacting agricultural parcels with a low to moderate potential for pesticide residue in soil; buildings constructed prior to the 1980s that pose a low to moderate risk of lead-based paint or asbestos-containing material; and parcels within the current right-of-way of SR 79/Winchester Road, SR 74/Florida Avenue, and Domenigoni Parkway have a low to moderate potential for aerially deposited lead in soil. Appropriate measures will be taken during construction to minimize exposure. The Project would not result in adverse impacts from hazardous waste and materials.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project would not result in adverse impacts from hazardous waste and materials, it would not contribute to cumulative adverse effects from hazardous waste and materials. Therefore, this resource is not included in the cumulative impact analysis.	No
Air Quality Section 3.2.6	Yes	The Project is located in a federal nonattainment area for ozone (O_3), particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$), and particulate matter less than 10 micrometers in diameter (PM_{10}) and a federal maintenance area for carbon monoxide (CO). The Project demonstrates conformity with localized PM_{10} and $PM_{2.5}$ requirements.	South Coast Air Basin	Yes	The Project considers construction activities and traffic emissions generated by planned land uses, including the Project, and other planned transportation improvements. The Project demonstrates conformity with localized PM_{10} and $PM_{2.5}$ requirements. NO_X emissions would have	Yes

Table 3.6-1 Resources Evaluated for Project Cumulative Impact Analysis

Resource Area	Potentially Affected by Project	Comment on Project Impact	Resource Study Area (RSA)	Resources in Poor or Declining Health	Recommendation for Cumulative Impact Analysis	Resource Included in Cumulative Impact Analysis
					an adverse cumulative effect on air quality during construction, and construction of the Project is expected to contribute temporarily to existing violations of the O_3 standards. Therefore, this resource is included in the cumulative impact analysis.	
Noise and Vibration Section 3.2.7	Yes	The Project would impact sensitive receptors with highway noise, but mitigation measures are proposed to minimize the effects of noise and vibration to be consistent with applicable policies and regulations. The noise and vibration study also considered the cumulative noise impacts to each sensitive receptor because the future land uses and corresponding circulation element were included in this analysis. As a result of the mitigation measures being proposed to minimize impacts, the Project would not result in adverse impacts from noise and vibration.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project would not result in adverse impacts from noise and vibration, it would not contribute to cumulative adverse effects from noise and vibration. Therefore, this resource is not included in the cumulative impact analysis.	No
Energy Section 3.2.8	No	The Project would provide a more direct route than the existing SR 79, reduce congestion, and lead to lower vehicle miles traveled. Therefore, the Project would result in lower energy consumption than No Build conditions. The Project is not expected to impact regional energy consumption and, therefore, would not have adverse impacts to energy.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project would not result in adverse impacts to energy, it would not contribute to cumulative adverse effects to this resource. Therefore, this resource is not included in the cumulative impact analysis.	No
Natural Communities Section 3.3.1	Yes	Permanent direct and indirect impacts to nine sensitive natural communities are expected to occur: • Alkali Grassland: between 17.2 ac and 56.6 ac • Alkali Playa: between 0.079 ac and 0.2 ac • Cottonwood Willow Riparian Forest: between 1.7 ac and 2.0 ac • Emergent Wetland: between 0.2 ac and 0.5 ac • Mulefat Scrub: 0.01 ac • Riversidian Sage Scrub: between 83.0 ac and 163.8 ac • Seasonal Wetland: between 12.4 ac and 13.3 ac • Vernal Pool: between 0.74 ac and 5.2 ac • Willow Riparian Scrub and Forest: between 4.0 ac and 4.7 ac Up to eight wildlife corridors are expected to be impacted by the Project: • Existing Constrained Linkage B: Avian, Large Mammals, Small Mammals, Reptile, Amphibian, and Insects • Newport Road Hills to Patton Road: Avian, Large Mammals, Small Mammals, Reptile, Amphibian, and Insects • Hemet Channel: Avian Wildlife, Large Mammals, Small Mammals, Reptile, Amphibian, and Insects • San Jacinto Branch Line: Avian, Large Mammals, Small Mammals, Reptile, and Amphibian • Double Butte to West Hemet Hills: Avian, Large Mammals, Small Mammals, Reptile, and Amphibian • West Hemet Hills to Lakeview Mountains: Avian and Large Mammals	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	Yes	Because this resource is in poor and declining health, it is included in the cumulative impact analysis.	Yes

Table 3.6-1 Resources Evaluated for Project Cumulative Impact Analysis

Resource Area	Potentially Affected by Project	Comment on Project Impact	Resource Study Area (RSA)	Resources in Poor or Declining Health	Recommendation for Cumulative Impact Analysis	Resource Included in Cumulative Impact Analysis
		• Lakeview Mountains to Tres Cerritos Hills: Avian and Large Mammals • Colorado River Aqueduct: Avian, Large Mammals, Small Mammals, Reptile, and Amphibian				
Wetlands and Other Waters Section 3.3.2	Yes	The Project will result in direct loss of 15.29 ac to 24.74 ac of wetlands and other waters	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	Yes	Impacts would be offset through creation, enhancement, and preservation of wetland areas as required by state and federal laws and regulations. Because this resource is in poor and declining health, it is included in the cumulative impact analysis.	Yes
Plant Species Section 3.3.3	Yes	Permanent direct and indirect impacts to two non-MSHCP covered special-status plant species, paniculate tarplant (CNPS List 4) and Robinson's peppergrass (CNPS List 1B), are expected to occur.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	Yes	Because these resources are in poor and declining health and are not included as Covered Species in the MSHCP, they are included in the cumulative impact analysis.	Yes
Animal Species Section 3.3.4	Yes	The Project would permanently impact (either directly or indirectly) up to 10 pairs of nesting raptors (red-tailed hawk) and bat species that are not Covered Species in the MSHCP.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	Yes	Because this resource would be impacted by the Project it is included in the cumulative impact analysis.	Yes
Threatened and Endangered Species Section 3.3.5	Yes	Potential impact to: • Stephens' kangaroo rat habitat: between 494.11 ac and 580.9 ac • Quino checkerspot butterfly habitat: between 562.27 ac and 994.9 ac • Coastal California gnatcatcher habitat: between 111.19 ac and 214.6 ac • Suitable least Bell's vireo habitat: between 27.16 ac and 41.84 ac • Suitable southwestern willow flycatcher habitat: between 27.16 ac and 41.84 ac Potential impact to: • Vernal pool branchiopod habitat: 1.79 ac • San Jacinto Valley crownscale: between 13 populations (6,749 individuals) and 237 populations (64,065 individuals) • Spreading navarretia critical habitat between 2.3 ac and 7.44 ac	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	Yes	Impacts to threatened and endangered species will be handled through a joint MSHCP Consistency Determination/Biological Opinion for the proposed Project. Because this resource is in poor and declining health, it is included in the cumulative impact analysis.	Yes
Invasive Species Section 3.3.6	Yes	Invasive plant species may establish in construction areas and spread outside the right-of-way. Because of the implementation of mitigation measures, the Project would not result in adverse impacts from invasive species.	San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto	No	Because the Project would not result in adverse impacts from invasive species, it would not contribute to cumulative adverse effects from these species. Therefore, this resource is not included in the cumulative impact analysis.	No

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3.6.2.2 Geographic Boundaries for Cumulative Analysis

Generally, the cumulative analysis study area for the Project encompasses the San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto (Figure 3.6-1). Individual RSA boundaries for the cumulative impact analysis of each resource are described below.

- Farmlands, Relocation Impacts, Visual/Aesthetics, and Biological Resources: San Jacinto Valley, which includes portions of unincorporated Riverside County and the cities of Hemet and San Jacinto
- Cultural Resources: San Jacinto Valley in the north and Pleasant Valley in the Winchester area
- Air Quality: South Coast Air Basin

3.6.2.3 Related Projects Contributing to Cumulative Impacts

Cumulative impacts analysis differs from direct and indirect impact analysis in that the cumulative impacts analysis considers the effect of multiple actions on a resource, including historical actions, actions of the proposed Project, and all reasonably foreseeable future actions. Cumulative analysis focuses on the resource rather than on the project.

To address Step 5 of the cumulative impact analysis methodology, the current and reasonably foreseeable actions or projects and their associated environmental impacts were identified so that they could be included in this cumulative impact analysis. Individual projects were identified, as well as the change in land use patterns anticipated based on the release of the updated general plans. Each of the local jurisdictions' (County of Riverside, Cities of Hemet and San Jacinto) general plans project these changes in planned land use. Generally, each of the general plans accounts for a shift in land use from rural, agriculturally based communities to a more developed suburban area composed of residential developments and commercial and light industrial uses. Compared to the existing uses, this shift is drastic because it encompasses a large portion of the valley.

Typically, the time this type of transition will take could be difficult to estimate. This is important because timeframe contributes to establishing the portion of the transition that could be considered reasonably foreseeable and thus be included in the cumulative impact analysis. To clarify this transition in local land use, the proposed projects in the San Jacinto Valley were evaluated by jurisdiction to better define reasonably foreseeable projects. As a result, 480 development projects have been identified and are listed in Appendix H. Development projects consist of commercial, residential, and industrial projects. They are representative of the foreseeable actions for each jurisdiction. Figure 3.6-1 shows the locations of these projects, as well as their development status. This figure provides a comprehensive view of the volume of reasonably foreseeable projects in the San Jacinto Valley. Of the 480 development projects listed in Appendix H, some are operational and some are under construction. The remaining projects are in the planning process. Some have been approved, but are not under construction, and others have application-submitted or pre-application status. The projects shown are in the general plans of the respective agencies with jurisdiction or have been proposed by formal public notices (e.g., Notice of Intent, Notice of Preparation), have pending environmental documents, or are in the regulatory review and approval process. Although any project could be modified, or even abandoned, large-scale development has been occurring in the valley and is planned to continue in the foreseeable future, even if details, including schedules, change.

In addition to the analysis above, a review of infrastructure projects proposed in the San Jacinto Valley was also conducted. This was completed by reviewing the Regional Transportation Plan, the Federal Transportation Improvement Program, and proposed projects of other agencies. Infrastructure projects that are in the San Jacinto Valley and are in a phase of the project development process have been included in this cumulative impacts analysis. Table 3.6-2 contains a list of these infrastructure projects. These projects and the development projects in Appendix H and shown in Figure 3.6-1 are included in the cumulative impact analysis.

Table 3.6-2 Infrastructure Projects Included in the Cumulative Analysis

Project Name	Description	Current Project Status
Mid County Parkway Project	A proposed 25.75-kilometer (16-mile) transportation corridor, primarily along the Ramona Expressway through Riverside County, the City of Perris, and the City of San Jacinto. The corridor will relieve traffic congestion for east-west travel in western Riverside County between the San Jacinto and Perris areas to accommodate current and projected travel demand through 2040.	A Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement is being prepared and is expected to be circulated for public review in summer/fall 2012. Construction to occur in 2014 and beyond.
SR 79 Widening Project: Thompson Road to Domenigoni Parkway	A proposed 7-mile widening of SR 79 from Thompson Road to Domenigoni Parkway to increase the number of lanes from two to four.	Construction to be completed in spring 2013.
Newport Road Extension Project	Completed 6-lane extension from SR 79 to Menifee Road.	Completed.
Hemet-Ryan Airport Runway Extension	Hemet-Ryan Airport Runway Extension.	Long-term planning project from City of Hemet General Plan 2030.
San Jacinto Levee Project	Construct a levee to protect the Ramona Expressway and Sanderson Avenue from flooding, provide access to the city of San Jacinto from the north and the west during flood events, and enable the City to implement the San Jacinto Gateway Specific Plan Project and major drainage facilities.	A draft environmental document is expected to be completed in 2012.
Perris Valley Line	Extend the existing Metrolink 91 Line service from the Downtown Riverside station, 24 miles along the existing San Jacinto Branch Line, terminating in Perris.	Project expected to begin operation in 2014.
Esplanade Avenue	Widen to 4 lanes from State Street to Sanderson Avenue	Currently completing preliminary engineering.
Ramona Expressway	Widen to 4 lanes from Sanderson Avenue to Warren Road	Constructed.
Future Metrolink	Long-term plans call for an extension of the Metrolink to Hemet. The Hemet General Plan shows two Metrolink stations, one in a future business park in west Hemet and one in downtown Hemet.	Long-term planning project from City of Hemet General Plan 2030.
Hemet-Ryan Airport	Improvements to Stetson Avenue and the realigned SR 79 will improve access to the airport. The Hemet General Plan assumes improvements on the airport property, including a runway extension advocated by the Riverside County	Long-term planning project from City of Hemet General Plan 2030.

Table 3.6-2 Infrastructure Projects Included in the Cumulative Analysis

Project Name	Description	Current Project Status
	Economic Development Agency, but no specific plans are programmed.	
Ramona Expressway	Widen to 4 lanes east of State Street and to 6 lanes west of State Street.	City of San Jacinto adopted a Mitigated Negative Declaration and Mitigation Monitoring and Reporting Plan as recommended by the Planning Commission on January 12, 2012.
Stetson Avenue	Initially widen to four lanes from Warren Road to State Street. Eventually, the Hemet General Plan designates Stetson Avenue as a six-lane arterial route west of Sanderson Avenue and proposes a future Metrolink station near the interchange between future Stetson Avenue and future SR 79.	Long-term planning project from City of Hemet General Plan 2030.
Warren Road	Widen to 4 lanes from Domenigoni Parkway to Ramona Expressway. Widen to a 6-lane arterial between Esplanade Avenue and Domenigoni Parkway.	Long-term planning project from City of Hemet General Plan 2030.
Winchester Road	Upgrade to 4-lane Divided Secondary Arterial.	Long-term planning project from City of Hemet General Plan 2030.
Florida Avenue	Widen to 6-lane arterial between Winchester Road and Cawston Avenue.	Long-term planning project from City of Hemet General Plan 2030.

3.6.3 Cumulative Impacts Analysis

3.6.3.1 Farmlands

There are no timberlands in the Cumulative Impacts study area. Therefore, the assessment of cumulative effects will address farmlands only.

Current Health and the Historical Context

The Natural Resources Conservation Service (NRCS) guides private landowners and property managers with programs aimed at protecting natural resources to sustain agricultural productivity and environmental quality while supporting continued economic development, recreation, and scenic beauty. The local jurisdictions guide land use planning and agricultural protection in the Project cumulative impacts study area, consistent with NRCS programs. The general plans for Riverside County and the Cities of Hemet and San Jacinto contain specific goals and policies that acknowledge an area historically characterized by rural and agricultural areas, but also specifically indicate a movement toward development, consistent with the existing and planned growth. The San Jacinto Valley was established in the late 1800s as a ranching, and later agricultural, community. Following World War II, and accelerating in the 1960s, the area began to transition toward becoming a residential community. First, it served as a destination for senior living and later transitioned in the 1990s to a community of younger families. This has resulted in the conversion of open space and agriculture to more urban uses, such as housing developments and commercial centers, and transportation planning to support regional and local circulation (County 2008; Hemet 2012; San Jacinto 2012).

The general plans have specified future land uses in response to development pressure. Farmland conversion in Riverside County is occurring at a rapid rate. According to the California Department of Conservation (CDC), farmland conversion between 2002 and 2004 in Riverside County totaled about 46,719 ac (CDC 2006). From 2000 to 2010, the CDC reports that prime, unique, and other important farmlands in Riverside County have been converted to nonagricultural uses at an average rate of 7,900 ac per year.

Direct and indirect impacts of the proposed Project that might contribute to a cumulative impact

The impacts of the Project to important farmlands (about 778 ac combined, direct and indirect) would be in farmland planned for conversion by their respective jurisdictions. The impacts of the Project on existing farmlands by jurisdiction are summarized in Table 3.6-3. Based on calculations for Project impacts to areas designated to remain farmlands in the general plans or local zoning, each Build alternative would impact a small percentage (less than 0.01 percent) of the farmland in Riverside County and none in the city of Hemet (Table 3.1-15 [Volume 1]). The local jurisdictions recognize the potential for conflicts with the uses of agricultural land in the Project study area. Applicable policies pertaining to agriculture are included in Section 3.1.3.2 (Volume 1).

Assessment of the potential cumulative impacts

Riverside County has designated approximately 86,748 ac of prime, unique, and statewide important farmland for conversion to nonagricultural uses, the City of Hemet has planned 2,166 ac for conversion, and San Jacinto has planned 8,020 ac for conversion. These numbers represent 33 percent, 45 percent, and 100 percent, respectively, of the existing resources in these jurisdictions. The environmental impact reports required for the general plans recognize that these conversions will have significant and unavoidable impacts on agricultural resources. In the San Jacinto Valley portion of Riverside County, there was a total of about 104,500 ac of prime, statewide and other important farmland in 2000. By 2010, there had been a loss of 17,974 ac, or more than 17 percent of prime and other important farmland, in the valley. Conversion has been ongoing and is based on the projects shown in Figure 3.6-1 and listed in Table 3.6-2 and Appendix H.

The areas of important farmlands that would be directly and indirectly affected by the Preferred Alternative (about 778 ac combined) were designated for conversion by these general plans prior to the Project. As such, these parcels represent nonconforming uses based on current land use designations. Therefore, the Project's impacts on important farmlands are accounted for in the environmental impact reports for the general plans. Overall, Project impacts would constitute less than one tenth of one percent of the planned farmland conversions in the area. As a result, the Project would contribute only incrementally to the loss of farmland in the Project vicinity. While the cumulative loss of farmlands in the study area has been determined to be significant and unavoidable based on the environmental documents for the general plans prepared by Riverside County, the City of Hemet, and the City of San Jacinto (County 2008 Hemet 2012, San Jacinto 2012), the contribution of the Project to cumulative impacts on farmlands in the San Jacinto Valley, and therefore Riverside County, would be minimal.

Indirect cumulative effects could result from impacts to access or farm operations or as a result of increased noise or changes in air quality. However, the Project incorporates mitigation to address these impacts, such as commitments to maintain access to farm units, coordination with local service providers to maintain utilities such as water and electricity, and measures to control noise and dust.

Table 3.6-3 Permanent Land Use Impacts for Project Alternatives

Jurisdiction and Planned Land Use (Designation)	Project Alternative					
	No Build Alternative[a]	Build Alternative 1a[b] (Acres)	Build Alternative 1b (including Design Option 1b1)[c, f] (Acres)	Build Alternative 2a[d] (Acres)	Build Alternative 2b (including Design Option 2b1)[e, f] (Acres)	Build Alternative 1b with Refinements[g] (Acres)
Agricultural						
Riverside County (AG)	N/A	54.6 ac	59.9 ac	59.9 ac	54.6 ac	40.1 ac
City of Hemet (A)	N/A	0.0 ac	0.0 ac	0.0 ac	0.0 ac	0.0 ac
City of San Jacinto (no Agricultural designation)	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL	N/A	54.6 ac	59.9 ac	59.9 ac	54.6 ac	40.1 ac
Commercial/Industrial						
Riverside County (CR, CT, LI)	N/A	60.5 ac	59.2 ac OR 60.0 ac	60.8 ac	59.5 ac OR 60.4 ac	72.2 ac
City of Hemet (CC, NC, RC, BP, I)	N/A	9.4 ac	8.3 ac	8.3 ac	9.4 ac	10.1 ac
City of San Jacinto (CC, I)	N/A	57.3 ac	86.0 ac	57.1 ac	86.2 ac	88.5 ac
TOTAL	N/A	127.2 ac	153.5 ac OR 154.3 ac	126.2 ac	155.1 ac OR 156.0 ac	170.8 ac
Designated Open Space						
Riverside County (OS-C, OS-CH, OS-R)	N/A	7.9 ac	37.0 ac	10.3 ac	32.5 ac	38.9 ac
City of Hemet (OS, OP, P)	N/A	0.4 ac	0.4 ac	0.4 ac	0.4 ac	0.4 ac
City of San Jacinto (OS-R, P)	N/A	25.6 ac	0.0 ac	25.4 ac	0.0 ac	0.0 ac
TOTAL	N/A	33.9 ac	37.4 ac	36.1 ac	32.9 ac	39.3 ac
Residential						
Riverside County (LDR, MDR, MHDR, HDR)	N/A	207.9 ac	123.8 ac	169.4 ac	91.3 ac	126.0 ac
City of Hemet (LDR, LMDR, MDR)	N/A	8.2 ac	8.2 ac	8.2 ac	8.2 ac	0.0 ac
City of San Jacinto (LDR, MDR, MHDR, VHDR)	N/A	116.7 ac	106.7 ac	116.7 ac	106.7 ac	107.0 ac
TOTAL	N/A	332.8 ac	238.7 ac	294.3 ac	206.2 ac	233.0 ac
Rural Residential						
Riverside County (RM, RR, RC-EDR, RC-LDR)	N/A	257.3 ac	263.2 ac	237.7 ac	261.1 ac	194.5 ac

Table 3.6-3 Permanent Land Use Impacts for Project Alternatives

Jurisdiction and Planned Land Use (Designation)	Project Alternative					
	No Build Alternative[a]	Build Alternative 1a[b] (Acres)	Build Alternative 1b (including Design Option 1b1)[c, f] (Acres)	Build Alternative 2a[d] (Acres)	Build Alternative 2b (including Design Option 2b1)[e, f] (Acres)	Build Alternative 1b with Refinements[g] (Acres)
City of Hemet (RR, HR)	N/A	0.0 ac	0.0 ac	0.0 ac	0.0 ac	0.0 ac
City of San Jacinto (ER, RR)	N/A	0.0 ac	0.0 ac	0.0 ac	0.0 ac	0.0 ac
TOTAL	N/A	257.3 ac	263.2 ac	237.7 ac	261.1 ac	194.5 ac
Services/Facilities						
Riverside County (PF)	N/A	2.5 ac	27.5 ac	2.5 ac	28.9 ac	28.3 ac
City of Hemet (QP/C, PF)	N/A	0.0 ac	0.0 ac	0.0 ac	0.0 ac	0.0 ac
City of San Jacinto (PI)	N/A	11.6 ac	4.8 ac	7.2 ac	9.2 ac	5.4 ac
TOTAL	N/A	14.1 ac	(32.3 ac	(9.7 ac	38.1 ac	33.7 ac
Mixed Use/Specific Plan						
Riverside County (No Mixed Use/Specific Plan Designation)	N/A	N/A	N/A	N/A	N/A	N/A
City of Hemet (MU-1, MU-2, MU-3)	N/A	43.4 ac	43.4 ac	43.4 ac	43.4 ac	46.0 ac
City of San Jacinto SP 01-02, SP 01-04, SP-G	N/A	220.0 ac	180.7 ac	216.2 ac	184.6 ac	184.4 ac
TOTAL	N/A	263.4 ac	224.1 ac	259.6 ac	228.0 ac	230.4 ha

Source: County 2008a, County 2008b, County 2008c, Hemet 2012, San Jacinto 2012N/A – Not Applicable. See Note [a].

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

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

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

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

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

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

[g] Build Alternative 1b with refinements is composed of Roadway Segments B, C, G, I, J, M, and N, Utility Relocations Areas 1 and 2, and short-term and long-term traffic detours.

Projects that would impact designated farmlands and existing agricultural uses are contemplated in the general plans for the local jurisdictions and would be required to comply with overall goals and policies pertaining to land use and development, as well as protection of important agricultural lands. Applicable policies pertaining to agriculture are included in Section 3.1.3.2 (Volume 1).

Assess the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact

As a land development action, the Project cannot be entirely consistent with preservation of farmland within its direct impact area. However, careful siting of the Build alternatives and involving the local, county, and regional planning agencies has helped to minimize the impacts to prime and other farmlands in a manner consistent with the intent of the general plans.

The vast majority of farmland in the San Jacinto Valley is assumed to be converted to nonagricultural uses over time in the general plans that include the Project area. Despite the consensus that development pressure will ultimately convert these lands, the general plans include measures to minimize impacts to farmlands and encourage the continued agricultural use of these lands. Although some measures can be implemented in review of proposed development plans, many measures are implemented at the discretion of the landowners. These include mitigation measures such as the establishment of setbacks and buffers between development and agricultural areas in San Jacinto (San Jacinto 2006), and the encouragement of compatibility with agricultural policies and programs in Riverside County (County 2008) and the City of Hemet (Hemet 2012). The Project incorporates mitigation to address impacts, such as commitments to maintain access to farm units, coordination with local service providers to maintain utilities such as water and electricity, and measures to control noise and dust.

3.6.3.2 Community

Current Health and the Historical Context

The cumulative impact study area historically has been characterized by rural and agricultural areas, but this has been changing for the last 20 years, and development is expected to continue. Ongoing planning, as guided by the general plans for the local jurisdictions, indicates a development movement to support anticipated future growth and change. Most noticeably, this has resulted in the conversion of open space and agriculture to more urban uses, such as housing developments and commercial centers, thus requiring land acquisitions and relocations.

Any property acquisitions and subsequent relocations associated with the Project would require compliance with the provisions of the applicable federal and state relocation regulations. The Department's Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix D for a summary of the RAP. All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 USC 2000d, et seq.). Please see

Appendix C for a copy of the Department's Title VI Policy Statement. Private projects would require an agreement between buyers and sellers.

According to the Final Relocation Impact Report of November 2014, the housing stock available in neighboring communities would be sufficient for finding comparable replacement dwellings that satisfy the decent, safe, and sanitary standards for relocating the displaced residents from the impacted area.

Direct and indirect impacts of the proposed Project that might contribute to a cumulative impact

A permanent relocation impact would occur if a home or business were displaced by the Project. A displacement would result in residents moving their households to a different location and businesses moving their inventory and customer base to a different location.

The largest number of residential displacements would occur with Build Alternative 1a (42 displacements), while the least would occur with Build Alternative 1br (26 displacements). The number of commercial displacements would be 14 with Build Alternatives 1a and 1b, Design Option 1b1, and Build Alternative 2a, with 13 displacements for Build Alternative 2b and Design Option 2b1, and 19 displacements for Build Alternative 1br.

Permanent relocations would be required as part of right-of-way acquisition for the Project and could result in indirect impacts to property values and property tax revenue. In addition, the Project would require relinquishment of existing SR 79 to the local jurisdictions (Riverside County, City of Hemet, and City of San Jacinto), which could affect their revenue flows.

Assessment of the potential cumulative impacts

Relatively few projects have occurred in the San Jacinto Valley that required acquisitions and displacements. A few of those that have been completed include the Metropolitan Water District Diamond Valley Lake and the San Diego Aqueduct. In addition, local development projects or additional infrastructure projects may have also required acquisitions and displacements.

The Project would require a minimal number of relocations and displacements. Depending on the final Selected Alternative, the Project could result in approximately 29 to 42 residential acquisitions, 13 to 14 commercial acquisitions, 75 to 134 residential displacements, and 86 to 90 employee displacements.

Additional relocations would be expected as a result of the development projects shown in Figure 3.6-1 and listed in Appendix H and the infrastructure projects listed in Table 3.6-2. In the San Jacinto Valley, most of the private development projects are not expected to require substantial relocations. Public infrastructure projects have the greatest potential to result in relocations. Two such projects would be located in the vicinity of the proposed Project, the SR 79 Widening Project in the south and the Mid County Parkway Project in the north. The SR 79 Widening Project requires the purchase of one vacant mobile home and the acquisition of two residential properties already purchased by a developer, and no commercial relocations or displacements. The Mid County Parkway Project, depending on the final Selected Alternative, could result in approximately 36 to 102 residential acquisitions, 81 to 159 nonresidential

acquisitions, 35 to 90 business displacements, 373 to 675 residential displacements, and 188 to 1,148 employee displacements (Epic 2011). When considering the relocations and displacements required for the Project with both the SR 79 Widening Project and the Mid County Parkway Project, the unincorporated area of Winchester and the cities of Hemet and San Jacinto have adequate housing and commercial stock available that would satisfy the decent, safe, and sanitary standards for relocating residents and businesses who are displaced by the Project. The volume of currently available housing and commercial stock would also be expected to satisfy relocation needs of other reasonably foreseeable projects and therefore would not result in an adverse relocation cumulative impact.

Assessment of the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact

For the proposed Project, the Riverside County Transportation Commission (RCTC), as the agency responsible for relocations, will implement and administer, with Department oversight, the California Department of Transportation Relocation Assistance Program to provide relocation assistance or compensation to eligible persons and businesses in accordance with the federal Uniform Relocation Assistance and Property Acquisition Act of 1970, as amended (42 United States Code Sections 4601-4655) and the California Relocation Act (California Government Code, Section 7260 et. seq.). Mitigation beyond this compliance is not required for the Project. It would be expected that other lead agencies would complete their property acquisitions and subsequent relocations in compliance with the provisions of the applicable federal and state relocation regulations.

3.6.3.3 Visual/Aesthetics

Visual character and quality, as guided by the presence of scenic elements in the cumulative impacts study area, were considered for the cumulative analysis of visual/aesthetics.

Current Health and the Historical Context

The landscape of western Riverside County is characterized by terrain that varies from broad valleys with rocky outcrops to foothills and dramatic peaks. The San Jacinto Valley is bounded by localized peaks of the San Jacinto and Santa Rosa Mountains to the east and the Santa Ana Mountains to the west (Lakeview Mountains) and south. The broad valley is marked by prominent hills and rock outcrops and is characterized by rural residences, equestrian estates, mobile home parks, and residential subdivisions. Interspersed among more rural development are industrial and infrastructure elements (such as light industrial and commercial centers, channelized canals, electric transmission towers and lines, the Hemet-Ryan Airport, and the San Jacinto Branch Line railroad tracks). Most concentrated commercial and residential development is east of the Project study area.

The Project cumulative impacts study area historically has been characterized by rural and agricultural areas. However, ongoing planning as guided by the general plans for Riverside County and the cities of Hemet and San Jacinto indicates a development movement to support anticipated future growth and change. Most noticeably, this has resulted, and will continue to result, in the conversion of open space and agriculture to more urban uses, such as housing developments and commercial centers.

Direct and indirect impacts of the proposed Project that might contribute to a cumulative impact

The construction of the proposed Project would result in the substantial removal of existing hillsides and creation of large and visually prominent cut slopes most evident in the West Hemet Hills. In addition, fill slopes would be created on which much of the roadway would be constructed. Along much of the route assumed in each of the Build alternatives, the roadway would be located on berms approximately 5 ft in height. However, in places along all of the Build alternatives, the berms would be considerably higher, rising to heights of 20 ft and more. The higher fill slopes would alter the visual character of rural environments, blocking views toward more distant elements of the landscape, and dominating the views from nearby areas. In addition, major overcrossing structures would be constructed at several locations, both for the Project roadway as it crosses over surface streets and for surface streets that cross over the Project roadway. These structures have the potential to dominate views from nearby areas and to block views toward more distant landscape features. The Project would substantially contribute to the cumulative adverse impact to the visual and aesthetic characteristics of the San Jacinto Valley.

Assessment of the potential cumulative impacts

The San Jacinto Valley has been developed to include a variety land uses, which include agricultural fields, dairy farms, equestrian estates, mobile home parks, and rural residences and subdivisions set against rugged, undeveloped slopes. Infrastructure projects have also been constructed, which include water conveyance and storage facilities (San Diego and Colorado River Aqueducts, Diamond Valley Lake), airports (Hemet-Ryan Airport), wastewater treatment facilities (Eastern Municipal Water District Treatment Facility), and local roads (Florida Avenue, Sanderson Avenue, Warren Road, and others) and expressways (Ramona Expressway, Domenigoni Parkway).

The proposed Project would result in the conversion of open space, rural, and agricultural areas to more urbanized development. The Project would also contribute to a change in the visual character and quality by introducing a new major transportation facility into a rural area in which this type of land use did not previously exist. The various Build alternatives would result in different degrees of exposure from existing viewer groups. Green Acres residents would have close-range views of Build Alternatives 1a, 1b, 1br (which would be lower on the slopes than Build Alternative 1a and 1b), and Design Option 1b1 because those alternatives would require cuts in the northwestern slopes of the West Hemet Hills immediately adjacent to their community. Winchester residents would have mid-range views of all of the Build alternatives, but close range views of Build Alternatives 1a and 2a. With the two design options, Winchester residents would have a mid-range view of Design Option 2b1 but would not have direct views of Design Option 1b1. Hemet and San Jacinto residents would likely have oblique views of Build Alternatives 2a and 2b and Design Option 2b1. All of the Build alternatives would be visible to travelers along State Eligible Scenic Highway SR 74. However, Build Alternatives 1a, 1b 1br, and Design Option 1b1 would be more visible to roadway users as a frontal view than the side view created by Build Alternatives 2a and 2b and by Design Option 2b1. Alternative 1br would have less exposure from the roadway than Build Alternatives 1a, 1b, and Design Option 1b1 because it would be located lower on slopes of the West Hemet Hills than Build Alternative 1a, 1b, and Design Option 1b1.

Other reasonably foreseeable development projects would eliminate much of the remaining rural nature of the area and replace it with residential, commercial, and light industrial uses. This would occur based on the construction of the

proposed development projects shown in Figure 3.6-1, and listed in Appendix H, as well as the infrastructure projects listed in Table 3.6-2. A similar impact to the proposed Project would also occur with the construction of the Mid County Parkway Project in the northern portion of the San Jacinto Valley. The proposed Project would result in a permanent change to the visual character and visual quality of the San Jacinto Valley. This impact can be minimized, but not fully avoided and, therefore, would represent a cumulative adverse effect.

Assessment of the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact

There are no mitigation measures that can completely eliminate the impact of the removal of large segments of the existing hillsides, creation of fill slopes, and the construction of new bridge structures, but measures have been proposed for the Project to minimize this impact. These measures include grading to mimic the natural conditions in the area and the inclusion of site treatments, including embankment development and design, rock weathering, other hardscape and landscape, to improve the visual character and aesthetics of the local setting. The objectives of these measures should be mimicked in other projects, independent of their scale, to ensure that the minimization of visual impacts would collectively occur from all the reasonably foreseeable land and infrastructure projects in the San Jacinto Valley.

3.6.3.4 Cultural Resources

Current Health and the Historical Context

The assessment of cumulative effects to cultural resources (archaeological sites and historical structures or built environment resources) considers the direct and indirect impacts of the Project on qualifying resources and whether they contribute to cultural resources impacts within a broader cumulative impact study area that includes San Jacinto Valley in the north and the Pleasant Valley to the south in the Winchester area. This corridor has seen a general pattern of historical transformation from vacant land to historical farmsteads to commercial agricultural pursuits and now to residential and commercial centers.

The analysis considers impacts only to cultural resources that are eligible for either the National Register of Historic Places (known as historic properties) or the California Register of Historical Resources (known as historical resources). No further management of non-qualifying resources is required under existing laws and regulations, and destruction of those resources is not considered to be a significant impact or effect. The analysis of the Project's contribution to past, present, and future impacts is therefore based on impacts to known archaeological sites, historic properties and historical resources.

Direct and indirect impacts of the proposed Project that might contribute to a cumulative impact and assessment of the potential cumulative impacts

Evaluation of all cultural resources within the APE resulted in the identification of six resources eligible or presumed eligible, for the purposes of the Project, for inclusion in the NRHP and/or CRHR (Section 3.1.8.2). These six resources consist of the CRA [CA-RIV-6726H], the CBJ Dairy (33-15752), a TCP, a PPAD, and archaeological sites CA-RIV-6907/H and CA-RIV-8156/H (prehistoric component). The Project will not impact the CRA. Archaeological sites CA RIV-6907/H and CA-RIV-8156/H (prehistoric component) can be protected in place during Project construction through the establishment of an ESA. The Project has the potential to significantly impact the CBJ Dairy (33-15752), the TCP,

and PPAD. Together, these three historical resources would be directly or indirectly impacted by the Project and are discussed in terms of their potential for contributing to cumulative impacts.

The CBJ Dairy (P-33-15272), located at 2397 Ramona Expressway in San Jacinto, California, is a historical resource for the purposes of CEQA because it is associated with events that have made a significant contribution to the development of the San Jacinto Valley dairy industry. The period of significance is from 1959 to 1965. This resource is located on three contiguous parcels; the resource boundary encompasses all of the parcels. Contributing elements include the barn, three houses, elliptical driveway, landscaping, hay shelter, fields, and other dairy accoutrements that were constructed during the period of significance. The easternmost portion of P-33-15752 is in areas proposed for the construction of roadway segments, a grade-separated interchange, and constructing culverts/drainages where the depth of disturbance should not exceed 10 ft. Only this portion of the property would be inside the PIA. The areas of the property that would be impacted include a vacant agricultural field, trench silos, an equipment storage stockpile area, and hay shed, most of which is modern in appearance (less than 50 years old). However, none of these elements contributes to the eligibility (significance) of the site as a whole.

The Project would also have an indirect impact to the setting of the property; a grade-separated interchange (26 ft high) is proposed immediately adjacent to the property's southeastern corner. The Project in this location requires that these modifications be made to an existing transportation corridor, and with mitigation for visual impacts, the potential indirect impact does not rise to the level of being considered significant. Therefore, it has been determined that the Project would individually have a less than significant impact on this resource (see Section 4.2.2.3).

The cumulative contribution of the indirect Project impact to the CBJ Dairy is considered in the context of a broader study area that includes San Jacinto Valley in the north and Pleasant Valley in the Winchester area. This corridor has seen a general pattern of historical transformation from vacant land to historical farmsteads to commercial agricultural pursuits and now to residential and commercial centers. The impacts of past and foreseeable projects in the San Jacinto Valley and Pleasant Valley are combined with the potential Project impacts to the CBJ Dairy to assess the Project's contribution to significant cumulative impacts. Only within the last decade has this rural area been transformed from small commercial agricultural properties and homesteads to mid- to high-density housing developments and retail commercial facilities. The area has been dominated by agricultural pursuits since the 1890s, when it was characterized by individual farmsteads that supported a variety of agricultural operations, including dry farming, small orchards, beekeeping, poultry raising, dairying, and cattle grazing. More recently, in the middle of the twentieth century, several of these family operations were expanded and commercialized, particularly egg ranches and dairy farms. The CBJ Dairy, in its present form, was a result of new technology that allowed more intensive and cost-effective milk production and transformed the northern end of the study area to a dairy district. This agricultural region was characterized by structures typical of family and small commercial ranches—vernacular, generally simple and functional residences, surrounded by a variety of barns, corrals, coops, storage and processing buildings, dams, ponds, fences, and shelters.

Such structures and landscape features are considered to be cultural resources, which through time (generally 50 years) and distinction or importance, may qualify for listing on the NRHP or CRHR. Many of these farms and ranches in the cumulative impacts study area, which represent an important component of America's cultural heritage, have been impacted or destroyed by ground-disturbing activities associated with development, as well as by changes in the visual

character of the historic setting and other indirect effects. While there are no known agricultural structures in the study area that have been found eligible for the NRHP, there is no easily obtainable record of the number of structures in this broader study area that may qualify as historic properties or historical resources or how many of those have already been destroyed. Although it is impossible to quantify precisely, a substantial number of these ranches and farms in the cumulative impact study area have been affected by direct impacts and indirect impacts. These past impacts to cultural resources have contributed over time to a cumulative loss of cultural resources representing the agricultural history of the valleys.

As described in the introduction to the cumulative impact analysis, there are several other development projects (shown in Figure 3.6-1 and listed in Appendix H) and infrastructure projects (listed in Table 3.6-2) in the planning or construction phases within the cumulative impact study area. Only one of those, the Mid County Parkway (MCP) Project, has documented the potential to impact a CRHR-eligible farm—a different portion of the CBJ Dairy than would be impacted by the Project. The actual numbers and types of resources that might be impacted by the other projects in the study area (Appendix H) are impossible to define precisely with available data, but generally, the resources represent Native American (Luiseño, Cahuilla, and Serrano) occupations of the study region, and later, homesteading and agriculture, with supporting transportation and water conveyance infrastructure associated with Spanish, Mexican, and American occupation. It is likely that additional CRHR-eligible farms or ranches would be impacted by future projects in the broader study area. Together, the cumulative projects could contribute incrementally to the overall decline in the health of historical resources in the cumulative impacts study area.

Two future projects could contribute incrementally to impacts to the CBJ Dairy and thus would contribute to cumulative impacts in the study area, the MCP Project and San Jacinto Gateway Specific Plan. Construction of the proposed MCP, which would intersect the Project at its northern end, would impact open-space portions in the northern and eastern end of the resource (but not elements such as buildings that contribute to the resource's CRHR eligibility) with all proposed alternatives. Only one alternative, the San Jacinto North Design Variation, which would impact the majority of the resource and its structures, would have a direct impact to this historical resource. More importantly, regardless of whether the Project or the MCP is constructed, there is an existing master plan for development of the 512-ac San Jacinto Ranch that would completely destroy the CBJ Dairy.

When considered together, all three projects discussed above (the Project plus the MCP and San Jacinto Ranch) would contribute to a cumulative impact on the CBJ Dairy. Therefore, those projects would contribute to a decline in the overall health of cultural resources. However, the incremental effect of the Project is not "cumulatively considerable." Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past, current projects, and probable future projects.

As discussed above, the Project would only affect the eastern edge of the property and would not have a direct impact on the property in a manner that would compromise its significance or integrity as a historical resource. The Project would directly impact approximately 20 percent of the three-parcel, 231-ac property. The Project impacts would be almost entirely restricted to the easternmost parcel, which does not contain any features that contribute to the significance of the dairy; the contributing features are located on the central 77.5-ac parcel, which would generally remain intact. The Project would also have an indirect impact to the setting of the property due to incorporation of its southeastern corner

into the Project as a result of grading associated with the construction of a grade-separated interchange (26 ft high) immediately adjacent to the property. As noted above, the potential indirect impact does not rise to the level of being considered adverse. The Project in this location requires that these modifications be made to an existing transportation corridor.

The MCP would impact a substantially larger portion of the north-center and eastern edge of the property and possibly (depending on the alternative chosen) would directly impact its structures. Based on review of the MCP APE map prepared for that project, the San Jacinto North Design Variation (preferred alternative identified by the City of San Jacinto) would cut a swath through the center of all three parcels that compose the dairy, thereby separating the northern portion of the property from the southern portion, which is occupied by the historic-period structures. As a result of the MCP San Jacinto North Design Variation, there is a greater impact to the CBJ Dairy. In addition, the MCP encompasses much of the same area of the easternmost parcel as the Project and would contribute to the indirect impacts associated with the grade-separated interchange between SR 79 and the MCP.

As noted above, the San Jacinto Gateway master planned development would likely destroy all of the character-defining elements of this historical resource. The Gateway Specific Plan encompasses the entire dairy and its environs. The San Jacinto Ranch proposes to develop 512 ac, which now comprise the CBJ Dairy, including all of its buildings. This master-planned community -would include single- and multiple-family residences, as well as office, retail, restaurant, and entertainment facilities. The Gateway Plaza would occupy land across Ramona Expressway from the dairy. A 338,400-square-foot shopping center is planned on 35 acres.

When considered together, all three projects discussed above (the Project plus the MCP and San Jacinto Ranch) would contribute to a cumulative impact on the CBJ Dairy. Therefore, those projects would contribute to a decline in the overall health of cultural resources. However, the incremental effect of the Project is not "cumulatively considerable." Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past, current projects, and probable future projects.

The TCP (*Chéexayam Pum'wáppivu, 'Anó´ Potma,* and intervening valley), located northeast of Winchester in an area known historically as Coyote Pass, is a historic property for the purpose of Section 106 of the NHPA and a historical resource for purposes of CEQA, and is therefore evaluated for cumulative impacts/effects under CEQA and NEPA. The TCP is associated with events that have made a significant contribution to broad patterns of our history, as well as significant persons in the history of the Luiseño as well as other local Native American communities, and has the potential to yield information important to history. The period of significance extends from the time of Luiseño creation throughout the protohistoric period. The property encompasses two large hills known as *'Anó´ Potma* and *Chéexayam Pum'wáppivu*, and the intervening valley, all of which are contributing elements to the significance of the TCP. Portions of the TCP at *'Anó´ Potma* and the intervening valley are inside the ADI and would be directly impacted/affected by the Project. In an effort to avoid, mitigate, and minimize impacts to the TCP, measures CR-1 through CR-4 are presented in Section 3.1.8.4 and the Environmental Commitments Record (Appendix D). At a minimum, these would include protection through the establishment of ESAs, archaeological and Native American monitoring, actions to mitigate impacts to the TCP (such as preparation of a National Register nomination), buried site

sensitivity modeling and testing by qualified professionals; and analysis, reporting, and curation (if necessary) to ensure that impacts are reduced or mitigated; after mitigation, impacts would remain significant.

The Project would also have an indirect impact/effect to the setting of the property at *Chéexayam Pum'wáppivu* resulting from the introduction of visible elements. The Project in this location requires construction of new elevated roadway and bridges, and mitigation for visual impacts is proposed that would reduce the indirect impact; nonetheless, impacts cannot be reduced to a level that is less than significant. Therefore, it has been determined that the Project would have a significant impact/effect on this resource (see Sections 3.1.8.3 and 4.2.2.3).

The cumulative contribution of the direct and indirect Project impact/effect to the TCP is considered in the context of a broader study area that includes San Jacinto Valley in the north and Pleasant Valley in the Winchester area. This corridor has seen a general pattern of historical transformation from Native American land, to Mission and Mexican Rancho land, to vacant land, to historical farmsteads, to commercial agricultural pursuits and now to residential and commercial centers. The impacts/effects of past and foreseeable projects in the San Jacinto Valley and Pleasant Valley are combined with the potential Project impacts/effects to the TCP to assess the Project's contribution to significant cumulative impacts. Beginning approximately 240 years ago, this area was transformed from a Native American landscape of village territories characterized by inhabitations, resource procurement and processing locales, natural resources, trails, and ceremonial/religious areas, features, and landmarks, to pastoral lands utilized first by the Spanish Missions, later by the Californios, and continuing after the annexation of California by the United States. During that time many ranches were established as populations began to converge in areas surrounding the modern cities of Hemet and San Jacinto, as well as the community of Winchester. The area continued to be used as pasture for cattle and sheep, an activity that provided employment for many Native Americans. In the early 1880s, the reservation system was established leading to the creation of the Soboba and Pechanga Indian Reservations in San Jacinto and Temecula, respectively, among others (e.g., Mission Creek). Population growth and residential and commercial developments steadily grew around Hemet and San Jacinto in late nineteenth and early twentieth century, although most of the area was dominated by small commercial agricultural properties and homesteads, a pattern that continued until the turn of the twenty-first century when these small agricultural properties were transformed to mid- to high-density housing developments and retail commercial facilities.

TCPs are significant for their association with cultural practices, traditions, and beliefs, and may qualify for listing on the NRHP or CRHR. It is not known how many TCPs that represent the Native American cultural heritage exist in the cumulative impacts study area or have been impacted or destroyed by ground-disturbing activities associated with development, as well as by changes in the visual character of the prehistoric and historic setting and other indirect effects. Although it is impossible to quantify precisely, potential TCPs in the cumulative impact study area have been affected by direct impacts and indirect impacts. These past impacts to TCPs have contributed over time to a cumulative loss of cultural resources representing Native American traditions.

As described in the introduction to the cumulative impact analysis, there are several other development projects (shown in Figure 3.6-1 and listed in Appendix H of the Draft EIR/EIS) and infrastructure projects (listed in Table 3.6-2 of the Draft EIR/EIS]) in the planning or construction phases within the cumulative impact study area. None of these have documented the potential to impact/affect a NRHP/CRHR-eligible TCP, although several development projects in

planning phase have the potential to cause direct and/or indirect impacts/effects to the TCP. The actual numbers and types of resources that might be impacted by the other projects in the study area (Appendix H of the Draft EIR/EIS) are impossible to define precisely with available data, but generally, the resources represent Native American (Luiseño, Cahuilla, and Serrano) occupations of the study region, and later, homesteading and agriculture, with supporting transportation and water conveyance infrastructure associated with Spanish, Mexican, and American occupation. It is likely that additional NRHP/CRHR-eligible TCPs would be impacted by future projects in the broader study area. Together, the cumulative projects could contribute incrementally to the overall decline in the health of historical resources in the cumulative impacts study area.

Two projects are currently under construction, Vesting Tentative Tract Map (VTTM) 28286 and Tract Map (TR) 30351. Seven future projects could contribute incrementally to impacts/effects to the TCP and thus would contribute to cumulative impacts in the study area: General Plan Amendment (GPA) 05-02; GPA 06-01; Tentative Parcel Map (TPM) 32516; Conditional Use Permit (CUP) 03479; Parcel Map (PM) 33564; TR 33117; and TR 33958. Each of these projects is described below and is assessed for its potential to contribute incrementally to cumulative impacts on the TCP.

VTTM 28286, known as Heartland Village, is currently constructing 1,368 residential lots, a commercial site, and golf club northwest of Florida Avenue and California Avenue. The Project impacts open space, developed residential tracts, and partially developed tract portions of the TCP.

TR 30351, located north of Stetson Avenue, East of Green Avenue, and west of Patterson Avenue, is currently constructing 260 residential units and impacting an approximate 73-ac portion of the approximate 1,000-ac intervening valley, a contributing element to the resource's CRHR/NRHP eligibility. The intervening valley now contains approximately 465 ac of open space currently designated for agricultural purposes and approximately 535 ac of developed residential and commercial land.

Future development of GPA 06-01, located southeast of Devonshire Avenue and Los Rancherias Road, would impact open-space portions of the TCP, including a small boulder-laden area in the West Hemet Hills.

TPM 32516, located along McCarron Way, proposes construction of three new single-family residences that would impact a partially developed residential tract along the northern boundary of the TCP.

Construction of CUP 03479, located southeast of Florida Avenue and Patterson Avenue Street, would impact a partially developed tract within the TCP.

Construction of PM 33564, located southwest of Asbury Street and Longfellow Avenue, would impact a partially developed tract of land with open space within the TCP.

TR 33117, known as the Villages of Winchester Project, proposes construction of 469 single-family lots in approximately 135 ac of open space and 30 acres of partially developed land within the intervening valley, a contributing element to the resource's CRHR/NRHP eligibility. This would reduce the open space within the

intervening valley to 330 ac or by approximately 29 percent and would introduce visual elements that would have an indirect impact/effect to the setting of the property.

TM 33598, located north of Grand Avenue and north of Adams Road, proposes construction of 36 residential units that would impact undeveloped open space in the southwestern portion of the TCP.

GPA 05-02, known as Emerald Acres, proposes construction of approximately 320 acres of land that includes approximately 235 ac of the approximate 470.8-ac *'Anó´ Potma*, a contributing element to the resource's CRHR/NRHP eligibility. This would destroy approximately 46 percent of *'Anó´ Potma* and would introduce visual elements that would have an indirect impact/effect to the setting of the property.

These nine current and future projects would incrementally contribute to impacts/effects on the TCP. Emerald Acres and the Villages of Winchester would impact a substantially larger portion of the TCP at *'Anó´ Potma* and the intervening valley than the current Project. As a result, the proposed Emerald Acres and Villages of Winchester would have a greater impact to the TCP than the Project. In addition, the Emerald Acres and the Villages of Winchester would contribute to the indirect impacts associated with the construction of elevated roadway and bridges for the Project.

Nonetheless, when considered together, all nine projects discussed above would contribute to a cumulative impact on the TCP. Therefore, those projects would contribute to a decline in the overall health of cultural resources. Considering the proposed impacts/effects to the TCP proposed by the various build alternatives and design options considered for the Project, the incremental impact/effect of the Project is considered "cumulatively considerable." Cumulatively considerable means that the incremental impacts/effects of an individual project are significant when viewed in connection with the effects of past and current projects and probable future projects.

As discussed above, the Project would result in direct and indirect impacts/effects to the TCP in a manner that would compromise its significance and integrity as a historical resource/historic property. All build alternatives and design options would produce similar indirect impacts/effects on the TCP; however, direct impacts/effects would differ for each of the proposed build alternatives and design option studied, as discussed in Section 3.1.8.3.

Build Alternative 1a: This build alternative proposes construction of new roadway that would result in physical damage to approximately 142.3 ac of the TCP, or 4.9 percent. Direct effects would occur at contributing features *'Anó´ Potma* and the intervening valley. At *'Anó´ Potma*, the proposed cut would extend across the western and northwestern slope where approximately 86.0 ac would be removed, or approximately 18.3 percent of the hill. The impact to *'Anó´ Potma* caused by Build Alternative 1a would significantly change setting, feeling, location, and character of the hill and would diminish its association to the point that it may no longer convey its significance as a contributor to the TCP. Cut and fill would also impact approximately 56.3 ac of the intervening valley (12.1 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 1a would introduce visual elements, such as elevated roadway bridges which would diminish the integrity of the TCP's contributing features.

Build Alternative 1b: This build alternative propose construction of new roadway that would result in physical damage to approximately 142.0 ac of the TCP, or 4.9 percent. Direct effects would occur at contributing features *'Anó´ Potma* and the intervening valley. At *'Anó´ Potma*, the proposed cut would extend across the western and northwestern slope, where approximately 86.0 ac would be removed, or approximately 18.3 percent of the hill. The impact to *'Anó´ Potma* caused by Build Alternative 1a would significantly change setting, feeling, location, and character of the hill and would diminish its association to the point that it may no longer convey its significance as a contributor to the TCP. Cut and fill would also impact approximately 56.0 ac of open space within the intervening valley (12.0 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 1b would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features.

Design Option 1b1: This design option proposes construction of new roadway that would result in physical damage to approximately 119.9 ac of the TCP, or 4.1 percent. Direct effects would occur at contributing features *'Anó´ Potma* and the intervening valley. At *'Anó´ Potma*, the proposed cut would extend across the western and northwestern slope, where approximately 68.7 acres would be removed, or approximately or 14.6 percent of the hill. The impact to *'Anó´ Potma* caused by Build Alternative 1b would significantly change setting, feeling, location, and character of the hill and would diminish its association to the point that it may no longer convey its significance as a contributor to the TCP. Cut and fill would also impact approximately 54.6 ac of the intervening valley (11.7 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 1b1 would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features.

Build Alternative 1br was designed to reduce direct adverse effects to the TCP by minimizing the cut through *'Anó´ Potma*. This build alternative proposes construction of new roadway and an access road to telecommunications facilities that would result in physical damage to approximately 99.7 ac of the TCP, or 3.4 percent. Direct effects would occur at contributing features *'Anó´ Potma* and the intervening valley. At *'Anó´ Potma,* the proposed cut would be limited to the northwestern slope, where approximately 29.7 ac would be removed, equivalent to approximately 6.3 percent of the hill. The impact to *'Anó´ Potma* caused by Build Alternative 1br would significantly change the setting, feeling, and character of the hill, but would not diminish its integrity of its location or association to the point that it no longer contributes to the significance of the TCP. Cut and fill would also impact approximately 70.0 ac of the intervening valley (15.0 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 1br would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features.

Build Alternatives 2a: This Build alternative propose construction of new roadway that would result in physical damage to approximately 110.6 ac of the TCP, or 3.8 percent. Direct effects would occur at contributing features *'Anó´ Potma* and the intervening valley. The proposed cut over the top of the hill would remove 65.3 ac from the heart of *'Anó´ Potma*, equivalent to approximately 13.9 percent of the hill, and would reduce *'Anó´ Potma* to a shadow of its former self. Although the calculated area of direct impact at *'Anó´ Potma* is less than other proposed alternatives (e.g.,

Build Alternatives 1a and 1b), the severity of the impact—that is, the removal of the hilltop—would diminish the integrity of *'Anó´ Potma* and the TCP as a whole, to the point where the TCP may no longer retain sufficient integrity to convey its significance. Cut and fill would also impact approximately 45.3 ac of the intervening valley (9.7 percent). Direct impacts to open space within the intervening valley changes the setting and feeling of the valley but does not diminish its integrity of location, feeling, or association. In addition, Build Alternative 2a would introduce visual elements such as elevated roadway and bridges that would diminish the integrity of the TCP's contributing features.

Build Alternatives 2b: This build alternative propose construction of new roadway that would result in physical damage to approximately 110.6 ac of the TCP, or 3.8 percent. Direct effects would occur at contributing features *'Anó´ Potma* and the intervening valley. The proposed cut over the top of the hill would remove 65.3 ac from the heart of *'Anó´ Potma*, equivalent to approximately 13.9 percent of the hill, and would reduce *'Anó´ Potma* to a shadow of its former self. Although the calculated area of direct impact at *'Anó´ Potma* is less than other proposed alternatives (e.g., Build Alternatives 1a and 1b), the severity of the impact—that is, the removal of the hilltop—would diminish the integrity of *'Anó´ Potma* and the TCP as a whole, to the point where the TCP may no longer retain sufficient integrity to convey its significance. Cut and fill would also impact approximately 45.3 ac of the intervening valley (9.7 percent). Direct impacts to open space within the intervening valley changes the setting and feeling of the valley but does not diminish its integrity of location, feeling, or association. In addition, Build Alternative 2b would introduce visual elements such as elevated roadway and bridges that would diminish the integrity of the TCP's contributing features.

Design Option 2b1: This design option proposes construction of new roadway that would result in physical damage to approximately 97.2 ac of the TCP, or 3.3 percent. Direct effects would occur at contributing features *'Anó´ Potma* and the intervening valley. The proposed cut over the top of the hill would remove 56.0 ac from the heart of *'Anó´ Potma*, equivalent to approximately 11.9 percent, and would reduce *'Anó´ Potma* to a shadow of its former self. Although the calculated area of direct impact at *'Anó´ Potma* is less than other proposed alternatives (e.g., Build Alternatives 1a and 1b), the severity of the impact—that is, the removal of the hilltop—would diminish the integrity of *'Anó´ Potma* and the TCP as a whole, to the point where the TCP may no longer retain sufficient integrity to convey its significance. Cut and fill would also impact approximately 41.2 ac of the intervening valley (8.9 percent). Direct impacts to open space within the intervening valley changes the setting and feeling of the valley but does not diminish its integrity of location, feeling, or association. In addition, Build Alternative 2b1 would introduce visual elements such as elevated roadway and bridges that would diminish the integrity of the TCP's contributing features.

The PPAD, located south, east, and northeast of the community of Winchester, is assumed eligible for listing on the NRHP and is therefore a historic property for the purposes of Section 106. It is also considered a historical resource for the purposes of CEQA. Therefore, the PPAD is evaluated for cumulative impacts/effects under CEQA and NEPA. The PPAD, may extend far beyond the limits of the APE but is composed of 24 bedrock milling components determined not individually eligible for listing on the NRHP/CRHR (CA-RIV-5461, -5462, -5790, -5791, -5829/H, -7885, -7887, -7888, -7891, -7893, -7894/H, -7907, -7908, -8140, -8141, -8142, -8143, 8146, -8147, -8148, -8160, and -8169) or presumed eligible under the Section 106 PA (Stipulation VIII.C.3 [ESA]) [i.e., CA-RIV-6907/H and -8156/H] that contribute to the eligibility of the PPAD. The PPAD is associated with events that have made a significant contribution to broad patterns of our history and has the potential to yield information important to history. The period of significance is

associated with the protohistoric period. The property contains 24 discontiguous areas each representing the boundary of a prehistoric bedrock milling component. Intervening areas between bedrock milling components are not part of the PPAD. The 24 bedrock milling components are contributing elements to the significance of the PPAD. Portions of the PPAD are inside the ADI and would be directly impacted/affected by the Project. In an effort to avoid, mitigate, and minimize impacts to the PPAD, measures CR-1 through CR-4 are presented in Section 3.1.8.4 and the Environmental Commitments Record (ECR) in Appendix D. At a minimum, these would include protection through the establishment of ESAs, archaeological and Native American monitoring, treatment to mitigate impacts to the PPAD (such as additional research and management planning for bedrock milling components), buried site sensitivity modeling and testing by qualified professionals; and analysis, reporting, and curation (if necessary) to ensure that impacts are reduced or mitigated; after mitigation, impacts would remain significant.

The Project would also have an indirect impact/effect to the setting of the property resulting from the introduction of visible elements. The Project in this location requires construction of new elevated roadway and bridges, and mitigation for visual impacts is proposed that would reduce the indirect impact; nonetheless, impacts cannot be reduced to a level that is less than significant. Therefore, it has been determined that the Project would have a significant impact/effect on this resource (see Sections 3.1.8.3 and 4.2.2.3).

The cumulative contribution of the direct and indirect Project impact/effect to the PPAD is considered in the context of a broader study area that includes San Jacinto Valley in the north and Pleasant Valley in the Winchester area. The general pattern of historical transformation for this corridor was previously described in relation to the TCP. The impacts/effects of past and foreseeable projects in the San Jacinto Valley and Pleasant Valley are combined with the potential Project impacts/effects to the PPAD to assess the Project's contribution to significant cumulative impacts. Beginning approximately 240 years ago, this area was transformed from a Native American landscape of village territories characterized by inhabitations, resource procurement and processing locales, natural resources, trails, and ceremonial/religious areas, features, and landmarks, to pastoral lands used first by the Spanish Missions, later by the Californios, and continuing after the annexation of California by the United States. During that time, many ranches were established as populations began to converge in areas surrounding the modern cities of Hemet and San Jacinto, as well as the community of Winchester. The area continued to be used as pasture for cattle and sheep, an activity that provided employment for many Native Americans. In the early 1880s, the reservation system was established leading to the creation of the Soboba and Pechanga Indian Reservations in San Jacinto and Temecula, respectively, among others (e.g., Mission Creek). Population growth and residential and commercial developments steadily grew around Hemet and San Jacinto in late nineteenth and early twentieth century, although most of the area was dominated by small commercial agricultural properties and homesteads, a pattern that continued until the turn of the twenty-first century, when these small agricultural properties were transformed to mid- to high-density housing developments and retail commercial facilities.

Prehistoric archaeological districts may be significant for their association with a broad pattern of events, such as the transition from highly mobile to sedentary settlement practices, for representing a significant and distinguishable entity whose components may lack individual distinction, and for their data potential. The limits of the PPAD could not be adequately defined and it is possible that the PPAD extends far beyond the limits of the APE and cumulative impacts

study area. It is not known if, or how many, other PPADs exist in the cumulative impacts study area or have been impacted or destroyed by ground-disturbing activities associated with development, as well as by changes in the visual character of the prehistoric and historic setting and other indirect effects. Although it is impossible to quantify precisely, other contributing elements of the PPAD in the cumulative impact study area have been affected by direct impacts and indirect impacts. These past impacts to this PPAD or others have contributed over time to a cumulative loss of archaeological resources indicative of Native American use of the region.

As described in the introduction to the cumulative impact analysis, there are several other development projects (shown in Figure 3.6-1 and listed in Appendix H of the Draft EIR/EIS) and infrastructure projects (listed in Table 3.6-2 of the Draft EIR/EIS) in the planning or construction phases within the cumulative impact study area. Several development projects in planning phase have the potential to cause direct and/or indirect impacts/effects to some elements of the PPAD, as defined for this Project, and will affect other bedrock milling components that could contribute to the PPAD should it be defined to include a larger area in the future. The actual numbers and types of resources that might be impacted by the other projects in the study area (Appendix H of the Draft EIR/EIS) are impossible to define precisely with available data, but generally, the resources represent Native American (Luiseño, Cahuilla, and Serrano) occupations of the study region, and later, homesteading and agriculture, with supporting transportation and water conveyance infrastructure associated with Spanish, Mexican, and American occupation. It is likely that additional NRHP/CRHR-eligible PPADs or other portions of this PPAD would be impacted by future projects in the broader study area. Together, the cumulative projects could contribute incrementally to the overall decline in the health of historical resources in the cumulative impacts study area.

One project is currently under construction, VTTM 31146, and four future projects could contribute incrementally to impacts/effects to the PPAD and thus would contribute to cumulative impacts in the study area. These include GPA 05-02 (Emerald Acres); Specific Plan (SP) 06-003; CUP 03421; and SP 288A1. Each of these projects is described below and assessed for its potential to contribute incrementally to cumulative impacts on the PPAD.

VTTM 31146, located northwest of Florida Avenue and Lake Street, is currently constructing 88 single-family units on approximately 25 acres of open-space. The parcel includes the southern portion of bedrock milling component CA-RIV-8169, a contributing element of the PPAD. The project has planned to preserve the contributing component in designated open space, and therefore will have no direct impact on the PPAD, but would introduce visual elements that would have an indirect impact/effect to the setting of the property.

GPA 05-02, known as Emerald Acres, proposes development of approximately 320 ac of open space. Construction could directly impact three bedrock milling components of the PPAD (CA-RIV-7888, CA-RIV-7891, and CA-RIV-7893). This could result in the destruction of approximately 12.5 percent of the PPAD as currently defined and would introduce visual elements that would have an indirect impact/effect to the setting of the property.

SP 06-003, known as Warren Road Village, proposes construction of 174 single-family and 111 Triplex units on Warren Road between Devonshire Avenue and Esplanade Avenue. This project is located in the west end of Tres Cerritos and has the potential to impact a bedrock milling component of the PPAD (CA-RIV-8169). This could result in the

destruction of approximately 4.2 percent of the PPAD as currently defined and would introduce visual elements that would have an indirect impact/effect to the setting of the property.

CUP 03479, located southeast of Florida Avenue and Patterson Avenue, proposes development of approximately 120 acres of undeveloped open space. Construction could directly impact seven bedrock milling components of the PPAD (CA-RIV-8140, CA-RIV-8141, CA-RIV-8142, CA-RIV-8143, CA-RIV-8147, CA-RIV-8160, and CA-RIV-8156/H). This could result in the destruction of approximately 29.2 percent of the PPAD as currently defined and would introduce visual elements that would have an indirect impact/effect to the setting of the property.

SP 288A1, known as the Crossroads in Winchester, proposes construction of residential and commercial units west of Winchester Road between Newport Road and the Salt Creek Channel. The project encompasses approximately 285 acres of undeveloped open space that contains nine bedrock milling components of the PPAD (CA-RIV-5461, CA-RIV-5462, CA-RIV-5790, CA-RIV-5791, CA-RIV-5829/H, CA-RIV-6907/H, CA-RIV-7907, CA-RIV-7908, and CA-RIV-8146). This could result in the destruction of approximately 37.5 percent of the PPAD as currently defined and would introduce visual elements that would have an indirect impact/effect to the setting of the property.

Four future projects would incrementally contribute to impacts/effects on the PPAD. Emerald Acres, Crossroads in Winchester, and CUP 03479, would impact a substantially larger portion of the PPAD (depending on the alternative chosen). As a result, the proposed Emerald Acres, Crossroads in Winchester, and CUP 03479, would have a greater impact to the PPAD than the Project. In addition, Emerald Acres, Crossroads in Winchester, and CUP 03479, would contribute to the indirect impacts associated with the construction of elevated roadway and bridges for the Project. However, when considered together, all five projects discussed above (the Project plus Emerald Acres, the Warren Road Village, the Crossroads in Winchester, and CUP 03479) would contribute to a cumulative impact on the PPAD. Therefore, those projects would contribute to a decline in the overall health of cultural resources. Considering the proposed impacts/effects to the PPAD proposed by the various build alternatives and design options considered for the Project, the incremental impact/effect of the Project is considered "cumulatively considerable." Cumulatively considerable means that the incremental impacts/effects of an individual project are significant when viewed in connection with the effects of past, current projects, and probable future projects.

As discussed above, the Project would result in direct and indirect impacts/effects to the PPAD in a manner that would compromise its significance and integrity as a historical resource. All build alternatives and design options would produce similar indirect impacts/effects on the PPAD; however, direct impacts/effects would differ for each of the proposed build alternatives and design option studied, as discussed in Section 3.1.8.3.

Build Alternatives 1a: this build alternative proposes construction of new roadway that would result in physical destruction of six contributing bedrock milling components (CA-RIV-5790, -5791, -7885, -7887, -7907, and -7908) and physical damage to one contributing bedrock milling component (CA-RIV -8169). Indirect effects may also change the property's current setting, character, prehistoric/ethnographic use, and physical features which also constitutes a significant impact.

Build Alternatives 1b and Design Option 1b1: This build alternative proposes construction of new roadway that would result in physical destruction of three contributing bedrock milling components (CA-RIV-7885, -7887, and -8160) and physical damage to three contributing bedrock milling components (CA-RIV-8141, -8142, and -8169). Indirect effects may also change the property's current setting, character, prehistoric/ethnographic use, and physical features, which also constitute a significant impact.

Build Alternative 1br: This build alternative proposes construction of new roadway that would result in physical destruction of one contributing bedrock milling components (CA-RIV-7885) and physical damage to two contributing bedrock milling components (CA-RIV -8141 and -8142). Indirect effects may also change the property's current setting, character, prehistoric/ethnographic use, and physical features, which also constitute a significant impact.

Build Alternatives 2a: This build alternative proposes construction of new roadway that would result in physical destruction of four contributing bedrock milling components (CA-RIV-5790, -5791, -7894/H, and -7907) and physical damage to three contributing bedrock milling components (CA-RIV-7888, -7908, and -8169). Indirect effects may also change the property's current setting, character, prehistoric/ethnographic use, and physical features, which also constitute a significant impact.

Build Alternatives 2b and Design Option 2b1: This build alternative proposes construction of new roadway that would result in physical destruction of two contributing bedrock milling components (CA-RIV-7894/H and -8160) and physical damage to four contributing bedrock milling components (CA-RIV-7888, -8141, -8142, and -8169). Indirect effects may also change the property's current setting, character, prehistoric/ethnographic use, and physical features, which also constitute a significant impact.

Assessment of the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact

As part of the Section 106/CEQA process, the CBJ Dairy, and the potentially contributing archaeological elements of the PPAD have already been recorded on DPR 523 forms (see the Historical Properties Survey Report of March 2010), which are on file at the California Historical Resources Information System center. Additionally, the TCP has been documented in the AER (SHPSR Attachment D) and was determined NRHP-eligible with SHPO concurrence. Recordation is a typical form of mitigation and is intended to document the existing condition of a historical resource/historic property to establish, for posterity, a record prior to the property's alteration, relocation, or demolition. The level of mitigation documentation can range from minimal photo documentation to a formal and extremely detailed process (e.g., National Park Service Heritage Documentation in the case of the built environment resource, the CBJ Dairy). Existing Project-level recordation for all resources includes photographs, property description, and background information.

Also included as part of the Section 106/CEQA process, a cultural landscape and settlement patterns context was developed that set the theoretical background while also focusing in on Native American named places and areas of cultural and/or religious significance in the Project area. This was accomplished through a combination of background research, coordination with the Native American community, and ArcGIS spatial analysis to assess the distribution of prehistoric sites/components across the landscape and determine how cultural and environmental factors shaped

settlement and subsistence strategies in the Project area. The influence of Native American subsistence practices, seasonality of resource availability and site occupation, site chronology, ethnography/ethnohistory, and technology on the distribution of past human activities was considered in relation to various geographic and environmental variables. The cultural landscape study and settlement patterns context allowed for inferences to be made of potential associations between prehistoric sites/components in the Project APE, leading to the development and identification of the PPAD. Prehistoric sites/components identified within the Project APE were evaluated against NRHP criteria individually and also within this cultural landscape and settlement patterns context. This level of documentation is a form of mitigation and is intended to contribute to the record prior to the property's alteration, relocation, or demolition.

Several mitigation measures for visual impacts have been proposed that would incidentally lessen the indirect impact of the Project on the CBJ Dairy, the TCP, and the PPAD. These include provisions for treating cut slopes and fill slopes (VIS-12, VIS-22), revegetation (VIS-18, VIS-20), and overcrossing design (VIS-25). These measures would reduce the visual/indirect impact of the Project on the CBJ Dairy, the TCP, and the PPAD and would minimize the indirect impact to the remaining portions of each property that contribute to those properties' significance.

In addition to previous documentation of the affected historical resources/historic properties, additional efforts to avoid, mitigate, and minimize impacts to historical resources, measures CR-1 through CR-4 are presented in Section 3.1.8.4 (and the ECR in Appendix D). Adverse effects have been resolved pursuant to Section 106 PA Stipulation XI, and 35 CFR 800.6 through preparation of a MOA in consultation with consulting parties; Caltrans and SHPO signed the MOA on March 25, 2016. Specific measures to resolve adverse effects to historic properties in the Preferred Alternative developed in the MOA are included in this Final EIR/EIS and CEQA Checklist to address significant impacts to historical resources. Nonetheless, the effects of the Project will contribute to cumulative impacts in a manner that cannot be reduced to a level that is less than significant.

3.6.3.5 Paleontological Resources

The assessment of cumulative effects to paleontological resources considers the direct and indirect impacts of the Project on significant resources and whether they contribute to accumulated resource losses within a broader cumulative impact study area, defined as the San Jacinto Valley.

Current Health and the Historical Context

The San Jacinto Valley is predominately underlain by Cretaceous granitic rocks, Mesozoic metamorphic bedrock, and Quaternary surficial deposits, with local exposures of Late Cenozoic sedimentary and volcanic deposits. Older fine-grained Quaternary surficial deposits, as well as Late Cenozoic sedimentary deposits, have proven to yield scientifically significant paleontological resources throughout the cumulative impact study area. Paleontological resources have been especially abundant in the vicinity of Diamond and Domenigoni valleys, where paleontological mitigation efforts during excavations of the Diamond Valley Lake resulted in the recovery of nearly 100,000 identifiable fossils representing over 105 vertebrate, invertebrate, and plant taxa.

Typically, the paleontological resource potential of a given project area is identified as part of the permitting process for individual undertakings, and paleontological resources are discovered during ground disturbing activities relating to

project development. Applicable federal, state, and local laws and regulations, as discussed in Section 3.2.4.1, afford specific protections to discovered paleontological resources.

Direct and indirect impacts of the proposed Project that might contribute to a cumulative impact

Paleontological resources (an undetermined number of fossilized remains and unrecorded fossil sites, associated fossil specimen data and corresponding geologic and geographic site data, and fossil-bearing strata) would be adversely affected by the permanent direct and indirect impacts resulting from earth-moving activities during construction of the Project. Direct impacts on the paleontological resources in the Project area would result mostly from earth-moving activities (particularly excavation) in previously undisturbed strata, making the strata and their resources permanently unavailable for future scientific investigation. The attendant loss of any fossil specimens and site, associated data, and the fossil-bearing strata itself would be a permanent impact. Although not expected as part of the Project, indirect impacts could result from unauthorized fossil collecting by construction personnel, rock hounds, and amateur and commercial fossil collectors who would be afforded easier access to fossil-bearing strata by earth-moving activities. Unauthorized fossil collecting would be temporary, but would also result in the permanent loss of fossils and sites and associated data. The loss of these additional paleontological resources would be another permanent impact. Given the direct and indirect impacts described above, the Project could substantially contribute to the cumulative adverse impact of the known and unknown fossil resources of the San Jacinto Valley.

Assessment of the potential cumulative impacts

Unknown, previously unrecorded paleontological resources could be found at nearly any development site underlain by paleontologically sensitive geologic strata within the San Jacinto Valley. Those projects that directly result in ground disturbances are most likely to adversely impact these paleontological resources. For the cumulative impact study area, all of the projects listed in Table 3.6-2, as well as other yet unknown or unspecified underground utility projects, transmission lines, transportation corridors projects, mining and quarry expansions, and generation projects could result in ground disturbance. The destruction of non-renewable paleontological resources as a result of project-related ground disturbances could cause the permanent loss of scientific information, thus resulting in a significant cumulative impact over time. The actual number and type of paleontological resources that might be adversely affected by these projects cannot be determined without a comprehensive inventory and assessment of the paleontological resource potential of the entire San Jacinto Valley. Such an assessment is beyond the reasonable scope of this EIR. Federal, state, and local laws and regulations, as discussed in Section 3.2.4.1, would likely also apply to these projects and afford specific protections to discovered paleontological resources encountered by them.

Assessment of the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact

In the event paleontological resources are discovered during construction related activities associated with the current and future projects, they would be subject to legal requirements designed to protect them similar to Mitigation Measure PALEO-1, including sub-measures PALEO-1a through PALEO-1h, as presented in Section 3.2.4.4. Therefore, Project impacts, when combined with impacts from past, present, and reasonably foreseeable projects would be less than significant with mitigation incorporated (Class II).

3.6.3.6 Air Quality

Current Health and the Historical Context

The assessment of air quality considers the regional air basin where the cumulative Project study area is, South Coast Air Basin.

The Project is located in a federal nonattainment area for O_3, and $PM_{2.5}$, and a federal maintenance area for CO and PM_{10}. Therefore the project is required to demonstrate regional conformity for these pollutants. The Project is included in the state highways project list of the conforming 2015 SCAG FTIP through Amendment 15-01 and SCAG 2012-2015 RTP though Amendment #2 (Appendix F: RTP Amendment). The 2012-2035 RTP through Amendment #2 and the 2015 FTIP through Amendment 15-01 were approved by FHWA and FTA on December 15, 2014. The design concept and scope of the proposed Project are consistent with the project description in the 2012-2035 RTP through Amendment #2, and the and the 2015 FTIP (through Amendment 15-01), and the "open to traffic" assumptions of the SCAG's regional emissions analysis.

Inclusion in the RTP and FTIP demonstrates that the Project was evaluated for regional impacts, meets the planning and regional requirements for demonstration of federal conformity, and is consistent with local air quality planning efforts.

Direct and indirect impacts of the proposed Project that might contribute to a cumulative impact

Based on the CO hot spot analysis performed for the project and the conclusion of TCWG that the project is not a project of air quality concern under the PM2.5/PM10 hot spot analysis. Therefore, the project is not expected to cause or contribute to any new localized CO, PM_{10} or $PM_{2.5}$ violations, and would not increase the frequency or severity of any existing violations of the CO, PM_{10} or $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS), and would not delay timely attainment of the CO, PM_{10} or $PM_{2.5}$ NAAQS. Regional MSAT emissions will improve by 2035 because of United States Environmental Protection Agency (USEPA) national control programs.

The air quality analysis of cumulative effects considers construction activities and traffic emissions generated by planned land uses, including the Project, and other planned transportation improvements. For construction, because ozone is a regional pollutant and has short-term air quality standards (e.g., 8 hours), ozone precursors (nitrogen oxides [NO_X] and reactive organic gases [ROG]) were considered for cumulative effects. According to the Southern California Air Quality Management District (SCAQMD) white paper, "Potential Control Strategies to Address Cumulative Impacts from Air Pollution, Appendix D Cumulative Impact Analysis Requirements Pursuant to CEQA" (SCAQMD 2003), projects that do not exceed the SCAQMD's project-specific standards are generally not considered by SCAQMD to be cumulatively significant. Conversely, projects that exceed the SCAQMD's project-specific standards are considered cumulatively considerable by SCAQMD. The Department does not adopt thresholds of significance for projects. However, based on the analysis in the SCAQMD white paper, these levels are justified for this Project. Therefore, based on the assessment in Section 3.2.6, ROG emissions would not have a cumulative impact on air quality because the emissions are below the levels of concern to SCAQMD. However, NO_X emissions during construction with implementation of the minimization measures would exceed the SCAQMD level of concern of 100 pounds per day.

NO_X emissions would be expected to contribute to a temporary adverse cumulative effect on air quality during the project construction phase.

Assessment of the potential cumulative impacts

The proposed Project is located in an area designated as nonattainment of the California ozone air quality standards.

Construction of the Project would result in elevated NO_X emissions exceeding SCAQMD's level of concern, even with minimization measures. Construction emissions of NO_X would contribute to a cumulative adverse effect on air quality. Therefore, construction of the Project is expected to contribute to existing violations of the ozone standards. This impact would be temporary because it would only occur during construction. However, the proposed construction schedule of the Project is expected to require several years. The Project would incorporate both standard practices and mitigation measures during construction to lessen the impact on air quality.

During this timeframe, it is expected that other reasonably foreseeable projects would also be constructed in the San Jacinto Valley. Based on the size and number of the development projects (commercial, residential, and industrial) shown in Figure 3.6-1 and listed in Appendix H and the infrastructure projects listed in Table 3.6 2 of the Draft EIR/EIS, February 2013), several of them could be in construction at the same time as the Project and also be contributing to this cumulative impact. When considering the other large infrastructure projects, based on the anticipated schedule, only the Mid County Parkway Project may overlap in construction schedules in the vicinity of the proposed Project. If these circumstances were to occur, the NOx emission impacts of all these projects when combined would result in an adverse cumulative impact to air quality.

Assessment of the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact

The Project would incorporate minimization measures during construction to lessen the effect of NO_X emissions from construction activities. Key measures include, to the extent feasible, suspending all construction equipment operations during second-stage smog alerts, using electricity from power poles rather than temporary diesel- or gasoline-powered generators, minimizing traffic interference on local streets and maintaining smooth traffic flow on and near construction site, rerouting construction trucks from congested streets or sensitive receptor areas, and limiting vehicle idling time (see AQ-1 through AQ-14 in Section 3.2.6.4 for details).

Other projects proposed in the San Jacinto Valley would be expected also to incorporate minimization measures during construction to lessen the effect of NO_X emissions from their construction activities due to the ozone nonattainment designation of the region.

3.6.3.7 Biological Environment

The Project cumulative impact analysis for the biological environment recognizes and incorporates the results of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP is a Habitat Conservation Plan and Natural Communities Conservation Plan for western Riverside County that mitigates for the direct, indirect, and cumulative impact to 146 Covered Species and their associated habitats (RCIP 2003).

Implementation of the MSHCP supports the land use changes and projects adopted in the Riverside County General Plan and the Cities of Hemet and San Jacinto General Plans. Those changes or projects included in these general plans are considered Covered Projects, which includes the proposed Project, with conditions. Future projects are also shown in Figure 3.6-2 and listed in Table 3.6-2 and Appendix H. Figure 7-1 in the MSHCP shows Covered Projects in the MSHCP Criteria Area. These are circulation element roads, which include a composite of County and City General Plan Circulation Elements. As such, the analysis provided below recognizes and incorporates, by reference, the analysis and agreements completed for the MSHCP. These previous actions benefit the proposed Project because cumulative impacts for Covered Species that would be impacted by the Project have already been analyzed and addressed. Because of this, the following analysis is divided into two sections, MSCHP Covered Species/Resources and Other Species Not Covered by the MSCHP. This latter section includes impacts to species not included in the analysis completed for the MSHCP. A section on Wetlands and Other Waters is also included.

MSHCP Covered Species/Resources

The MSHCP is a comprehensive, multijurisdictional habitat conservation plan focusing on the conservation of species and their associated habitats in western Riverside County (see Section 3.3.1.3 for a complete description). This plan is one of several large, multijurisdictional habitat planning efforts in Southern California with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region. The MSHCP allows for the Permittees to manage and implement local land use decisions while addressing the requirements of the state and federal Endangered Species Acts.

The MSHCP includes a cumulative impact analysis of biological resources covered in the plan, including species, vegetation communities, wildlife movement, and habitat conservation plans and natural community conservation plans. That analysis was designed to cover, and is applicable to, projects such as the proposed Project.

The result of the cumulative impacts analysis completed for the MSHCP determined that Covered Projects would not result in a cumulative adverse effect, either directly or through habitat modifications, on any of the 146 Covered Species.

According to the MSHCP cumulative analysis,

> *Implementation of the MSHCP and Covered Projects will not result in a cumulative adverse effect, either directly or through habitat modifications, on any of the Covered Species, including the 31 species that are currently listed as threatened or endangered and the one species that is currently proposed for listing. Implementation of the MSHCP will benefit the Covered Species by preserving habitat to address their life cycle needs* (RCIP 2003).

Other Species Not Covered by the MSHCP

Plant Species

Current Health and the Historical Context

Two plant species are included in this analysis because they would be impacted by the Project and are not MSHCP Covered Species—paniculate tarplant and Robinson's peppergrass.

Paniculate tarplant is a California Native Plant Society (CNPS) List 4 species, with 21 to 80 documented occurrences representing 3,000 to 10,000 individuals over 10,000 to 50,000 acres (CNPS 2012) in California. It is limited in its distribution to coastal scrub, valley and foothill grassland, and vernal pools. It occurs in southwestern Riverside county (e.g., around Murrieta and Menifee north and east to the Hemet area). It is currently threatened by development.

Robinson's peppergrass is a CNPS List 1B species that is uncommon to locally common on dry soils and shrubland habitats in Southern California from Santa Barbara County to Baja California, Mexico, including the Channel Islands (Consortium 2007). The California Natural Diversity Database (CNDDB) (2007) includes 53 occurrences. The Consortium (2007) includes an additional 44 locations. Of the 97 total occurrences, Robinson's pepper-grass is believed to be at about 75 (or 80 percent) of them. In Riverside County, it occurs near the Shipley Reserve/Lake Skinner area, North of Domenigoni Hills, and in the eastern portions of Diamond Valley.

Direct and indirect impacts of the proposed Project that might contribute to a cumulative impact

All areas that support sensitive natural plant communities and special-status plants in the PIA were considered in this analysis to be directly and permanently lost as a result of construction and operation of the roadway. Permanent indirect impacts could occur within the 100 ft indirect impact area adjacent to each Build alternative or in Additional Indirect Impact Study Area 1.

Permanent direct and indirect impacts are expected to paniculate tarplant (CNPS List 4) and Robinson's peppergrass (CNPS List 1B). Neither is an MSHCP Covered Species.

Paniculate Tarplant

Depending on the Build alternative, between 14 and 20 populations of paniculate tarplant would be permanently and directly impacted, and an additional 14 to 19 populations would be permanently and indirectly impacted. More than 100 populations of paniculate tarplant were identified within the study area. This species is a CNPS List 4 plant (California Native Plant Society watch list species), and although several populations occur in the Project study area, it is not expected that permanent impacts to paniculate tarplant would be substantial. Therefore, the Project is not expected to contribute to cumulative impacts to paniculate tarplant.

Robinson's peppergrass

Surveys identified between 6 and 16 populations of Robinson's peppergrass that could be permanently and directly impacted within the right-of-way and another 2 or 3 populations that could be permanently and indirectly impacted, depending on the alternative selected. The largest concentration of Robinson's peppergrass known in western Riverside County is located within the right-of-way for Roadway Segment G, which is a component of Build Alternatives 1a, 1b, and the Preferred Alternative. However, permanent impacts to Robinson's peppergrass due to construction of Build Alternative 2a or 2b would also be substantial. It is important to note that the footprint of Roadway Segment G within the Preferred Alternative is smaller than Build Alternatives 1a and 1b. Therefore, permanent and direct impacts as well as cumulative impacts to Robinson's peppergrass due to the Preferred Alternative are considerably smaller than Build Alternatives 1a, 1b, or any of the other Build Alternatives. The populations in the West Hemet Hills are the largest population complex currently known in western Riverside County, and this location represents the easternmost known

distribution of the species. However, this species is taxonomically difficult, and the geographic distribution of this species may be incomplete.

Assessment of the potential cumulative impacts

Paniculate Tarplant

Although the Project is not expected to substantially contribute to a cumulative impact to paniculate tarplant, one could occur if the other projects in the San Jacinto Valley are implemented. The distribution of this species is shown in reference to the Project and the proposed development projects in Figure 3.6-2. Development and infrastructure projects are also listed in Appendix H and Table 3.6-2, respectively.

Robinson's peppergrass

In western Riverside County, Robinson's peppergrass occurs on rocky slopes or among shrubs in the Santa Ana Mountains, Box Springs Mountains, Perris Basin, Sedco Hills, Gavilan Hills, Diamond Valley, Lake Skinner region, north Domenigoni Hills, the vicinity of Vail Lake, and the foothills of the Agua Tibia Mountains (Consortium 2007, Roberts et al. 2004).As documented in the Rare Plant Survey Report 2007, Robinson's peppergrass observed within the study area is the largest population complex currently known from western Riverside County. Population sizes are not well documented, however; it is possible that other documented localities could also have similarly large population sizes.

The West Hemet Hills location currently represents the easternmost known population complex. This species is taxonomically difficult, and the geographic distribution of this species may be incomplete. It potentially could also occur in the Lakeview Mountains and Badlands regions, to the east.

Because the populations in the PIA are of regional significance (largest population complex currently known and representing its easternmost distribution), the contribution of the Project-related impacts in combination with the potential impacts from other projects planned in the area (although the presence of populations is not known) could be cumulatively considerable with Build Alternatives 1a or 1b. However, the limits of Roadway Segment G within the Preferred Alternative are smaller than Build Alternatives 1a and 1b and therefore, the contribution to cumulative impacts to Robinson's peppergrass from the Preferred Alternative would be less because it only has direct impacts to three of the eight populations of Robinson's peppergrass, which consists of 9,056 plants, observed in the study area for the preferred alternative. Almost 114,000 plants were recorded in 86 populations, mainly in the West Hemet Hills. Because direct impacts are noticibly less than the overall plants recorded within this complex, cumulative impacts are not considered to be substantial. In addition, impacts to Robinson's peppergrass would be reduced through mitigation measure BIO-36. In the West Hemet Hills, other development projects (primarily residential) are proposed, as shown in Figure 3.6-1, Map 3. The distribution of this important population is shown in reference to the Project and the proposed development projects in Figure 3.6-2.

Assessment of the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact

No mitigation is proposed for cumulative impacts since the Preferred Alternative would not have a substantial cumulative impact on Paniculate Tarplant or Robinson's Peppergrass.

Animal Species

Two animal species, red-tailed hawk and bats, are included in this analysis because they would be impacted by the Project and are not MSHCP Covered Species.

Red-Tailed Hawk

Current Health and the Historical Context

The red-tailed hawk is one of the more common raptors that occur in Riverside County. However, as land uses change with the increase in residential and commercial development, habitat for the red-tailed hawk would be expected to decline.

Direct and indirect impacts of the proposed Project that might contribute to a cumulative impact

The Build alternatives have the potential to permanently impact (either directly or indirectly) up to 10 pairs of red-tailed hawks), as described in Section 3.3.4.3. The observed locations of the red-tailed hawk nesting sites are shown in Figure 3.3-50. Specifically, four pairs would be directly impacted by construction activities, and up to six pairs may be indirectly impacted by operational noise, habitat fragmentation, and increased mortality from collisions with vehicles. Direct, permanent impacts to occupied raptor habitat, including the red-tailed hawk, could range from 264.42 ac to 351.70 ac, depending on which Build alternative is selected.

Assessment of the potential cumulative impacts

In addition to the Project, other development or infrastructure projects could also impact the red-tailed hawk pairs. The locations of these developments in relation to the known nesting sites are shown in Figure 3.6-2.

Because the Project will incorporate measures to minimize impacts to the red-tailed hawk, such as preconstruction surveys and nest exclusion, the Project would have only a small contribution to the cumulative impact on the red-tailed hawk nesting populations and reproductive success in the region.

Assessment of the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact

Applicable mitigation will be determined through coordination with the resource agencies once the Preferred Alternative has been identified. Mitigation Measure BIO-43, conducting preconstruction surveys for nesting raptors and implementing nest exclusion as appropriate, has been proposed for the Project for nesting raptors, and will be applied to the red-tailed hawk.

Other projects with the potential to impact the red-tailed hawk in the San Jacinto Valley would also be expected to comply with the pertinent regulations and identify and implement appropriate mitigation measures with the applicable resource agencies as warranted.

Bats

Current Health and the Historical Context

No federally listed bat species are in the Project study area, but several bats listed as California Species of Special Concern could be present. Consequently, bat surveys were conducted to determine the presence of these Species of Special Concern.

Although some bat species were considered during the initial wildlife status review for the MSHCP in March 1999, they were removed from the list of species that were initially considered for conservation because of insufficient data. The amount of data available about bat species was not adequate for conservation planning (RCIP 2003). Therefore, no bats are designated as Covered Species in the MSHCP.

Direct and indirect impacts of the proposed Project that might contribute to a cumulative impact

Habitat suitability assessments and visual (presence evidence, outflights) or acoustic surveys for bats were conducted in the Project study area. Bat habitat was classified by type, location, and qualitative value as they relate to roosting and foraging potential. Roosting habitat in the study area includes bridges, buildings, and other man-made structures, as well as trees, cliffs, rocks, and boulder outcrops. High-quality foraging areas include open space with natural vegetation that created habitat edges (or ecotones), open water areas with some emergent vegetation, and other riparian habitat.

Several bat species can be found in the study area, as summarized in Table 3.3-11. Potential bat roost habitat in the study area is summarized in Table 3.3-12.

Removal of rock outcrops would permanently reduce available roosting habitat for bat species dependent on this limited resource in the Project vicinity. Additional permanent impacts to roosting habitat could also include removal of mature trees that may offer roosts for sensitive bat species (e.g., trees that contain cavities, exfoliating bark, suitable foliage, or well-developed frond skirts). Additionally, established building roosts may be permanently lost with demolition of building structures.

Temporary impacts to bats as a result of construction may include disturbance to roost sites and disruptions of foraging areas due to increased vehicular traffic, night illumination, pile driving for bridges, tree cutting, building demolition, grubbing, and other construction-related noise in all Build alternatives, as well as blasting, drilling, rock hammering, and grading in roadway segments containing rock outcrops or hills. Bats may abandon roost sites as a result of local disturbances and would alter their foraging behavior near lights, which could benefit them by attracting insects or repel them from an area as a result of predator avoidance.

Assessment of the potential cumulative impacts

The proposed Project, infrastructure projects listed in Table 3.6-2, and the development projects identified in Appendix H would contribute collectively to the cumulative impacts to bat species in this region, including loss of foraging and roosting habitat. However, with the minimization measures incorporated into the Project (see below), the contribution of the Project to any cumulative impacts to bat species is considered minimal.

Assessment of the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact

Applicable mitigation will be determined through coordination with the resource agencies once the Preferred Alternative has been identified. Mitigation Measures BIO-45, 46, and 47 have been proposed for the Project. These measures call for inspection of potential roosting sites for roosting bats prior to demolition, installation of a bat-friendly gate on a mine adit entrance adjacent to Roadway Segments A, B, and C, and consideration of planting mature native deciduous trees to provide suitable habitat for vegetation roosting bats.

Other projects with the potential to impact bats in the San Jacinto Valley would also be expected comply with the pertinent regulations and identify and implement appropriate mitigation measures with the applicable resource agencies as warranted.

Wetlands and Other Waters

Potential cumulative impacts to wetlands and other waters include hydrologic alteration, fragmentation, and habitat loss. It is estimated that approximately 95 percent of the historical vernal pools and seasonal wetlands in Southern California have been lost or significantly degraded as a result of these types of impacts (USFWS 1998, 2003).

The Project could result in direct loss of 11.69 ac to 12.73 ac of wetlands and 7.64 ac to 8.03 ac of other waters, depending on the selected Build alternative. Additional impacts would occur from bridge piles in Salt Creek Channel, which is not considered a wetland. However, these impacts would be offset through replacement, creation, enhancement, and preservation of wetlands or other areas deemed suitable by the permitting agencies, as required by state and federal laws and regulations.

In addition, the Project has been planned to avoid and minimize impacts to wetlands and other water resources as much as possible by determining a reasonable range of alternatives that would avoid areas with high concentrations of vernal pool and seasonal wetland habitats, such as those found east of the San Diego Canal. Project engineering controls and best management practices, such as culvert design and placement and erosion control measures (silt fencing, for example), would be implemented during construction and operation to minimize potential impacts from altered hydrology and roadway runoff. Although the impacts from the Project have been minimized, these impacts would be expected to contribute to the cumulative effect on wetlands and other waters. However, with regard to federal wetlands, the Department is required to completely offset the loss of wetlands functions and values caused by the Project through mitigation, following the “no net loss” policies of the United States Army Corps of Engineers (USACE). Therefore, with mitigation, the Department’s wetlands impacts are not considered a considerable contribution to any wetlands cumulative impact that may occur.

Furthermore, under Section 404 of the Clean Water Act (USACE), Section 401 of the Clean Water Act (RWQCB), and CDFW 1602 permit programs, mitigation for impacts to other waters of the United States/State would offset Project impacts. Therefore, with mitigation, the Department's impacts to other waters (non-federal wetlands) are not considered a considerable contribution to any cumulative impact that may occur. Additionally, the USACE would regulate any potential loss of wetlands that could be impacted by other reasonably foreseeable projects. Each of these projects would be required to comply with the USACE's "no net loss" policies and other permitting laws regulated by RWQCB and CDFW.

Other development and infrastructure projects, as shown in Figure 3.6-1, would be expected to have similar impacts to wetlands and other waters as they are implemented. The most critical (rare) wetland/water resource in the San Jacinto Valley is the vernal pool complex in the City of Hemet. Potential impacts could occur in that area as the development projects that are shown in Figure 3.6-1, Map 3, are approved. The vernal pool complex is located in the MSCHP Criteria Cells shown on Map 3. However, it is expected that this regulatory requirement would be applied to maintain the health of this system.

The future health of this resource is dependent on the choices and actions of land use practices, the outcome of future reasonably foreseeable projects, and regulatory decisions made by the USACE.

3.6.4 Summary

In summary, the Project would not contribute considerably to cumulative adverse impacts related to farmlands, relocations, MSHCP Covered Species/Resources, or wetlands and other waters. The Project would incorporate measures to minimize and mitigate Project-related impacts and to fully offset the potential cumulative effects to these resources.

The Project would contribute to a cumulative loss of visual resources/aesthetics, air quality, cultural resources, and some species not covered by the MSHCP when combined with the effects of the reasonably foreseeable projects in the cumulative impact study area. The Project would incorporate measures to minimize and mitigate Project-related impacts and to lessen the potential cumulative effects to these resources. These conclusions are discussed in more detail below.

3.6.4.1 Visual/Aesthetics

The Project would incorporate specific components into the Project design to lessen the effect of the Project on its surroundings, including grading to mimic the natural conditions in the area and the inclusion of site treatments, including embankment development and design, rock weathering, other hardscape and landscape, to improve the visual character and aesthetics of the local setting. However, due to the ongoing change to visual character in the San Jacinto Valley, the Project would contribute to the cumulative effect of declining rural and agricultural aesthetic values in the San Jacinto Valley, which are directly associated with the visual character and quality of the area.

3.6.4.2 Air Quality

The Project would incorporate minimization measures during construction to lessen the effect of NO_X emissions from construction activities. However, due to the ozone nonattainment designation of the region and short-term elevated NO_X emissions, Project construction would temporarily result in the cumulative effect of contributing to ozone formation.

3.6.4.3 Cultural Resources

The Project would incorporate mitigation and minimization measures to lessen the effect of the Project on historical resources/historic properties. However, these measures would not reduce Project impacts/effects to the TCP and PPAD to a level less than significant; therefore, the Project would contribute to the cumulative effect of the declining health of cultural resources.

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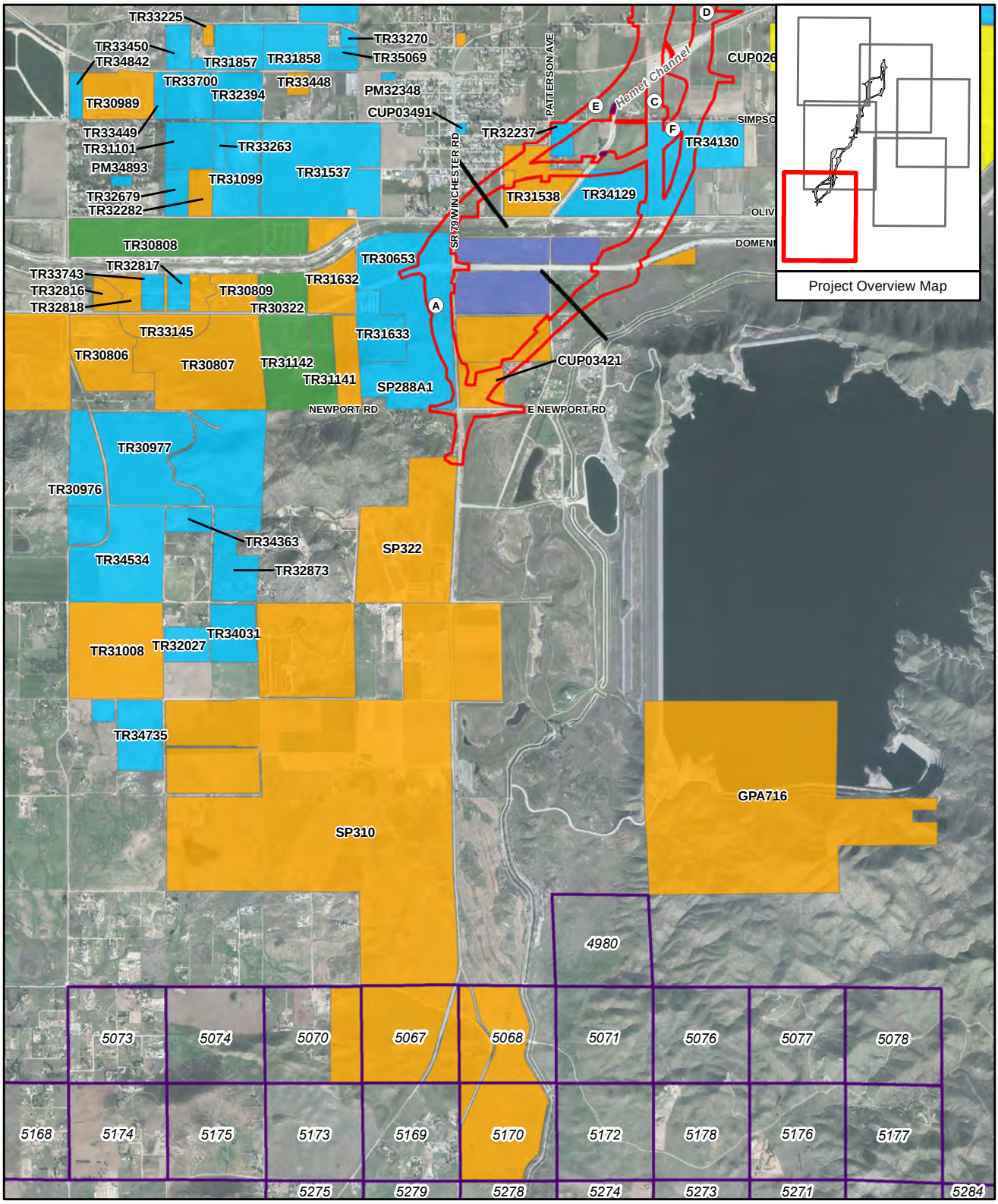
Figures
Section 3.6



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way
- City of Hemet[CR]
- City of San Jacinto[CR]

Development Status

- Pre-Application[CR, HT, SJ]
- Application Submitted[CR, HT, SJ]
- Project Approved[CR, HT, SJ]
- Under Construction[CR, HT, SJ]
- Operational[CR, HT, SJ]
- Criteria Cells[CR]
- Pechanga Band of Luiseño Mission Indians

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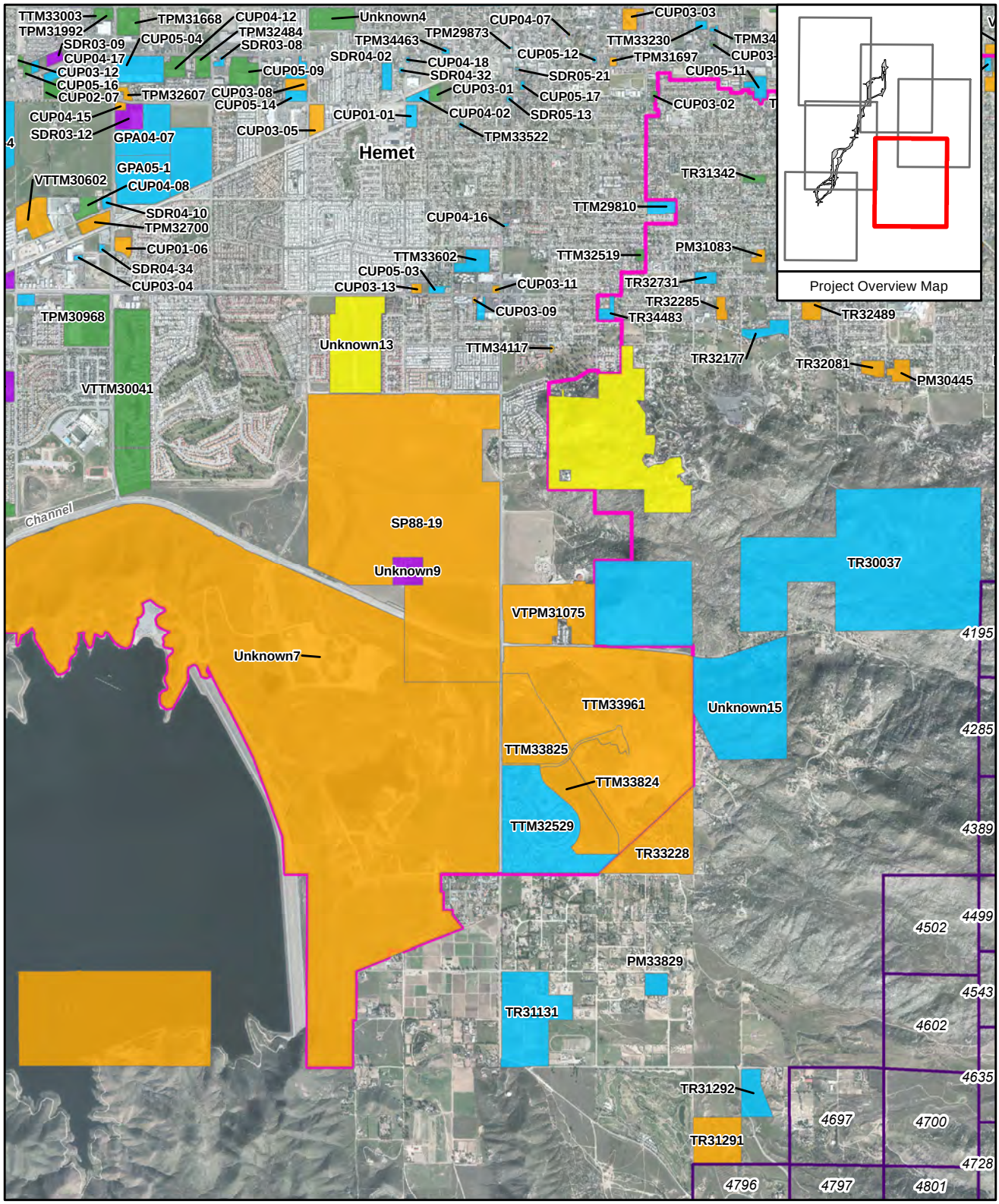
Sources: CR - County of Riverside, 2007; HT - City of Hemet, 2007; SJ - City of San Jacinto, 2007

Figure 3.6-1 Map 1 of 6 Status of Developments Considered in Cumulative Impact Analysis

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



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LEGEND

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Figure 3.6-1 Map 2 of 6 Status of Developments Considered in Cumulative Impact Analysis

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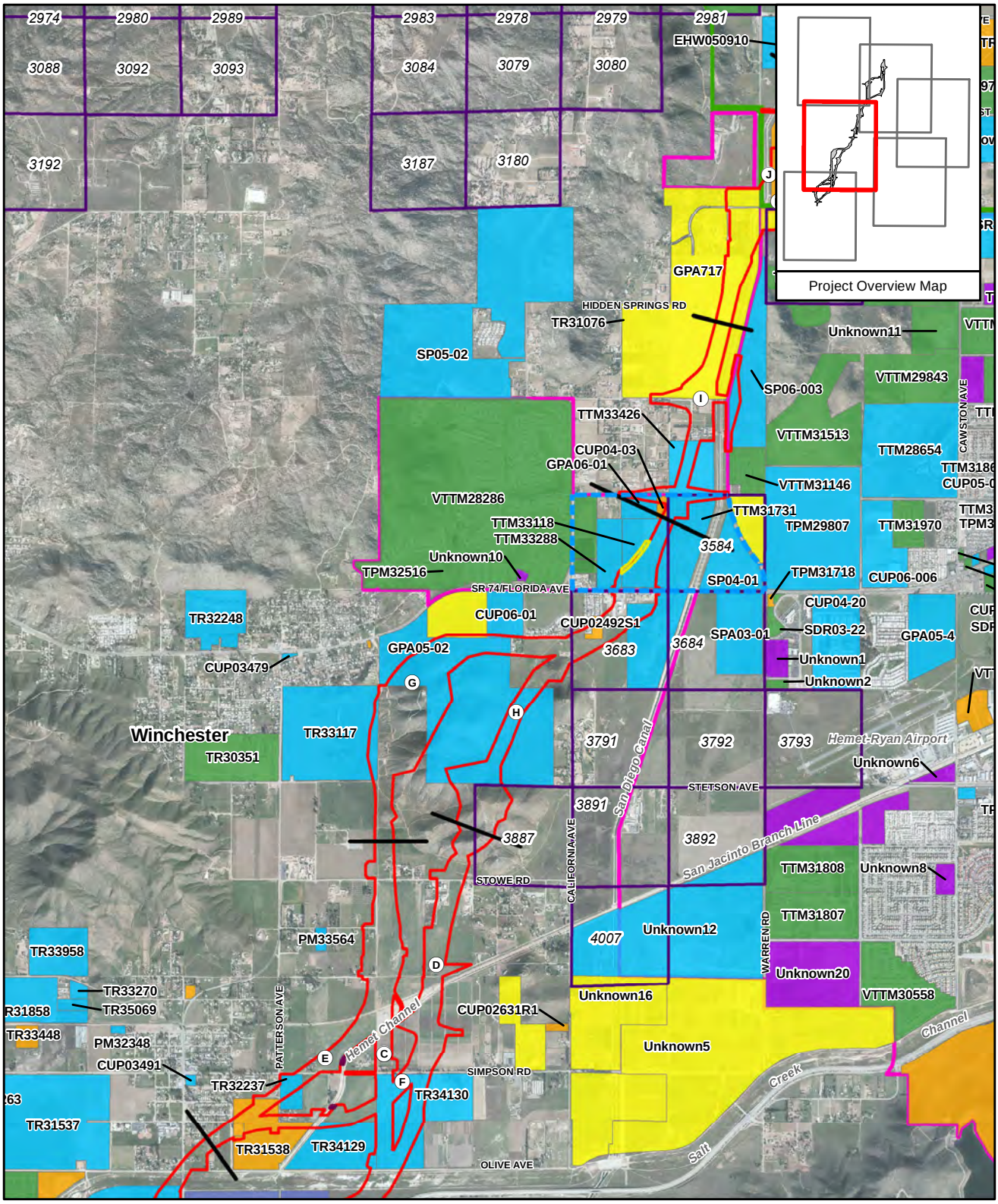
State Route 79 Realignment Project



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LEGEND

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Figure 3.6-1 Map 3 of 6
Status of Developments Considered in Cumulative Impact Analysis

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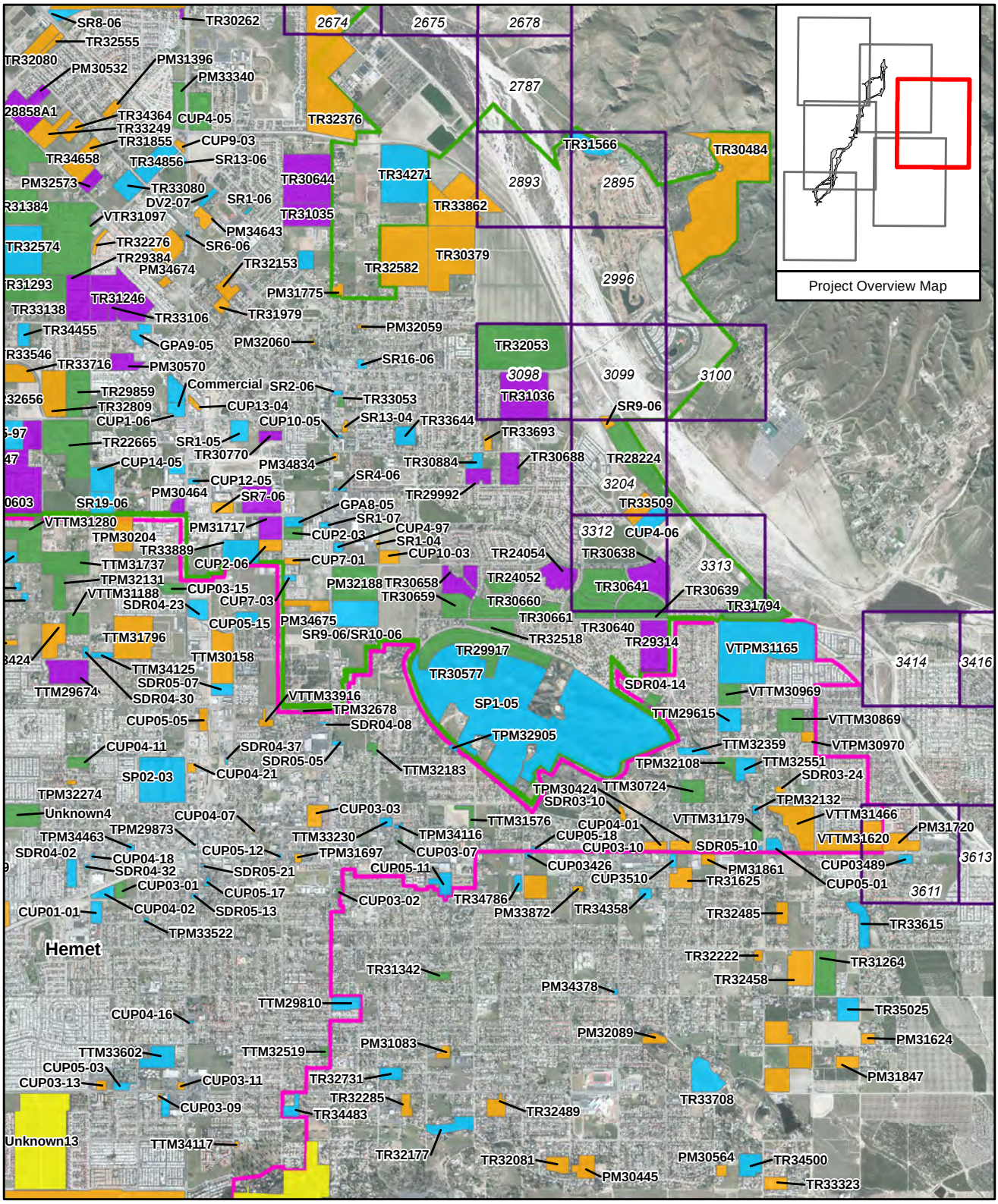
State Route 79 Realignment Project



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LEGEND

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Figure 3.6-1 Map 4 of 6 Status of Developments Considered in Cumulative Impact Analysis

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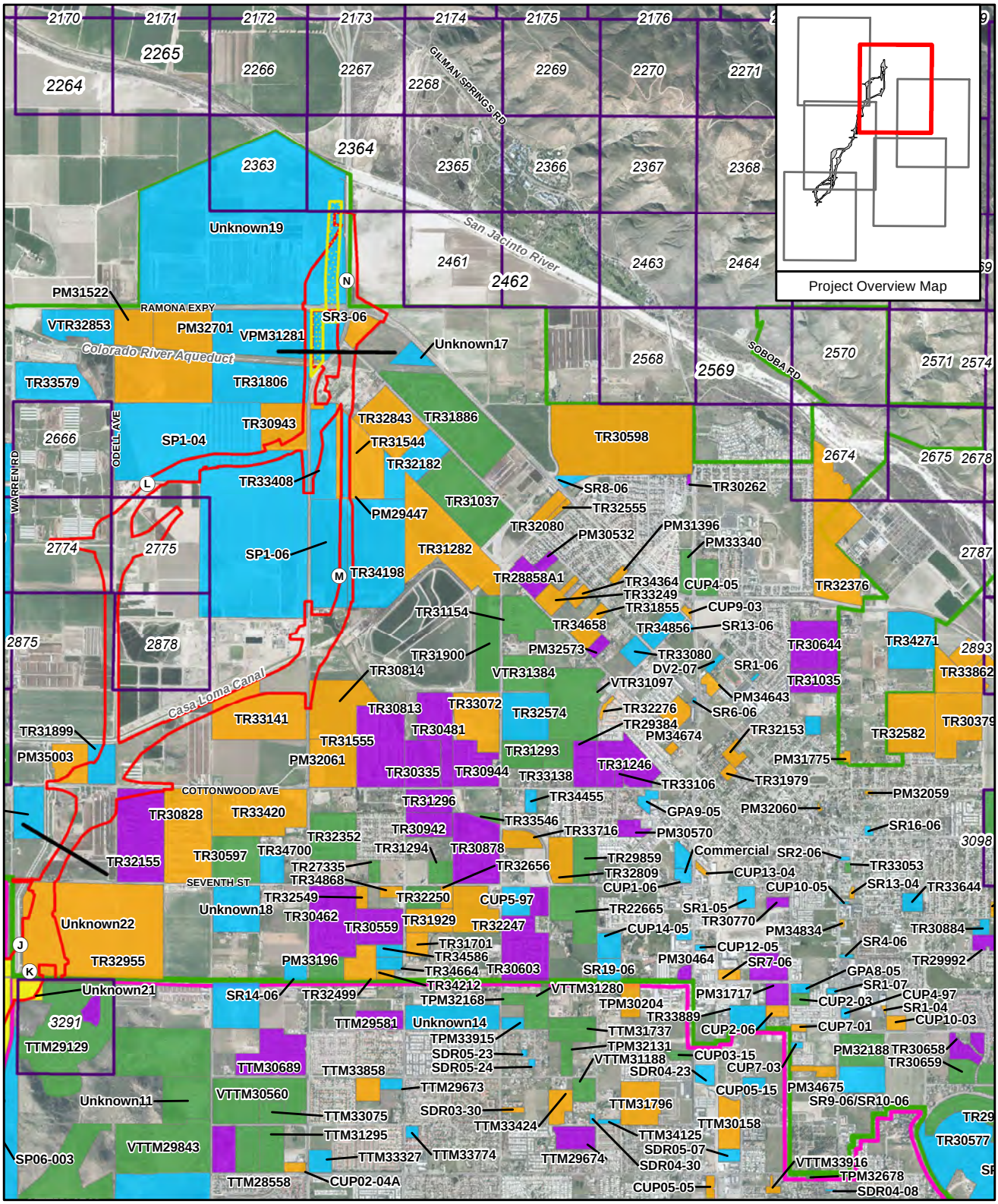
State Route 79 Realignment Project



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LEGEND

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- Operational[CR, HT, SJ]
- Criteria Cells[CR]
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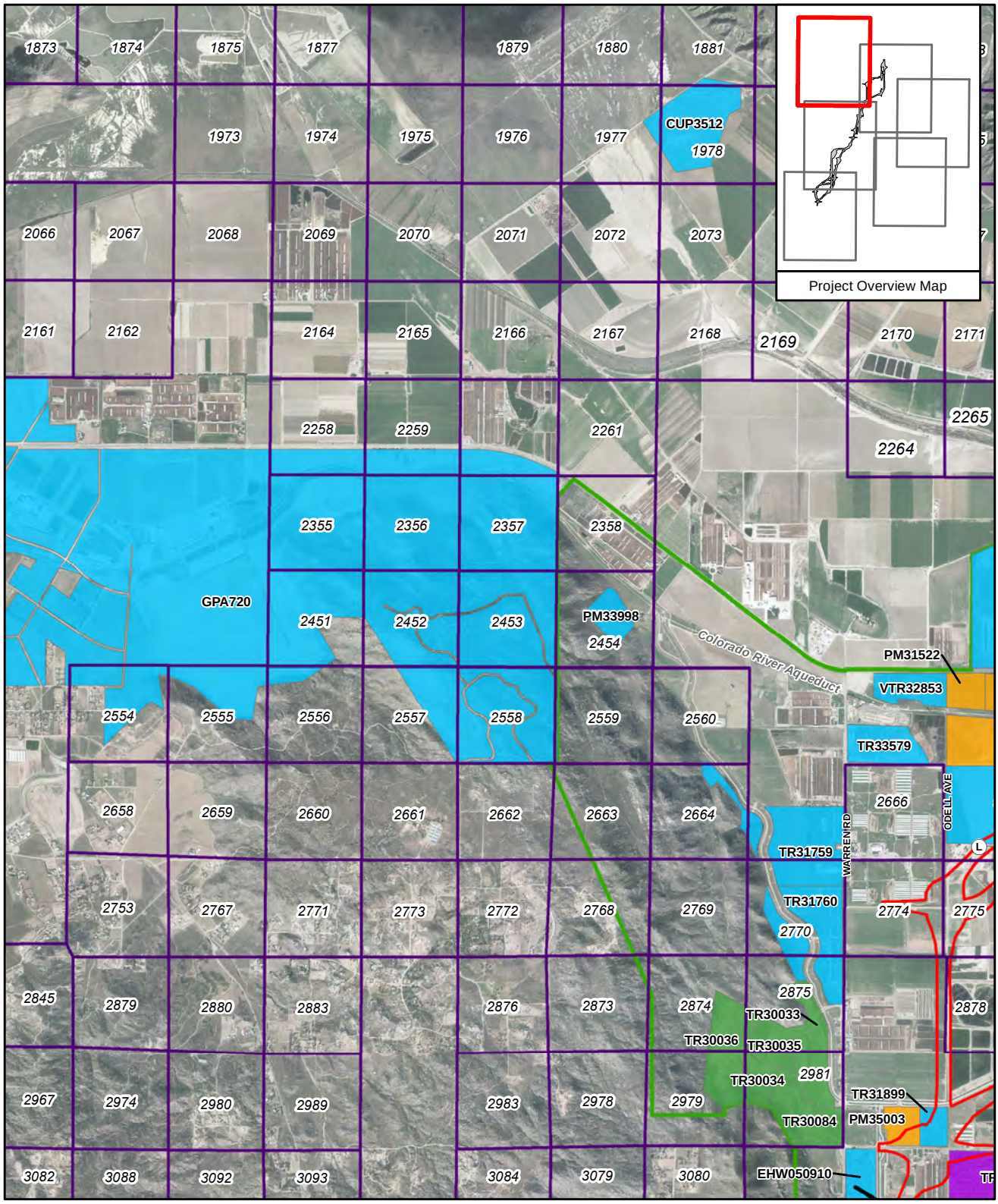
Sources: CR - County of Riverside, 2007; HT - City of Hemet, 2007; SJ - City of San Jacinto, 2007

Figure 3.6-1 Map 5 of 6
Status of Developments Considered in Cumulative Impact Analysis

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



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LEGEND

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- City of Hemet[CR]
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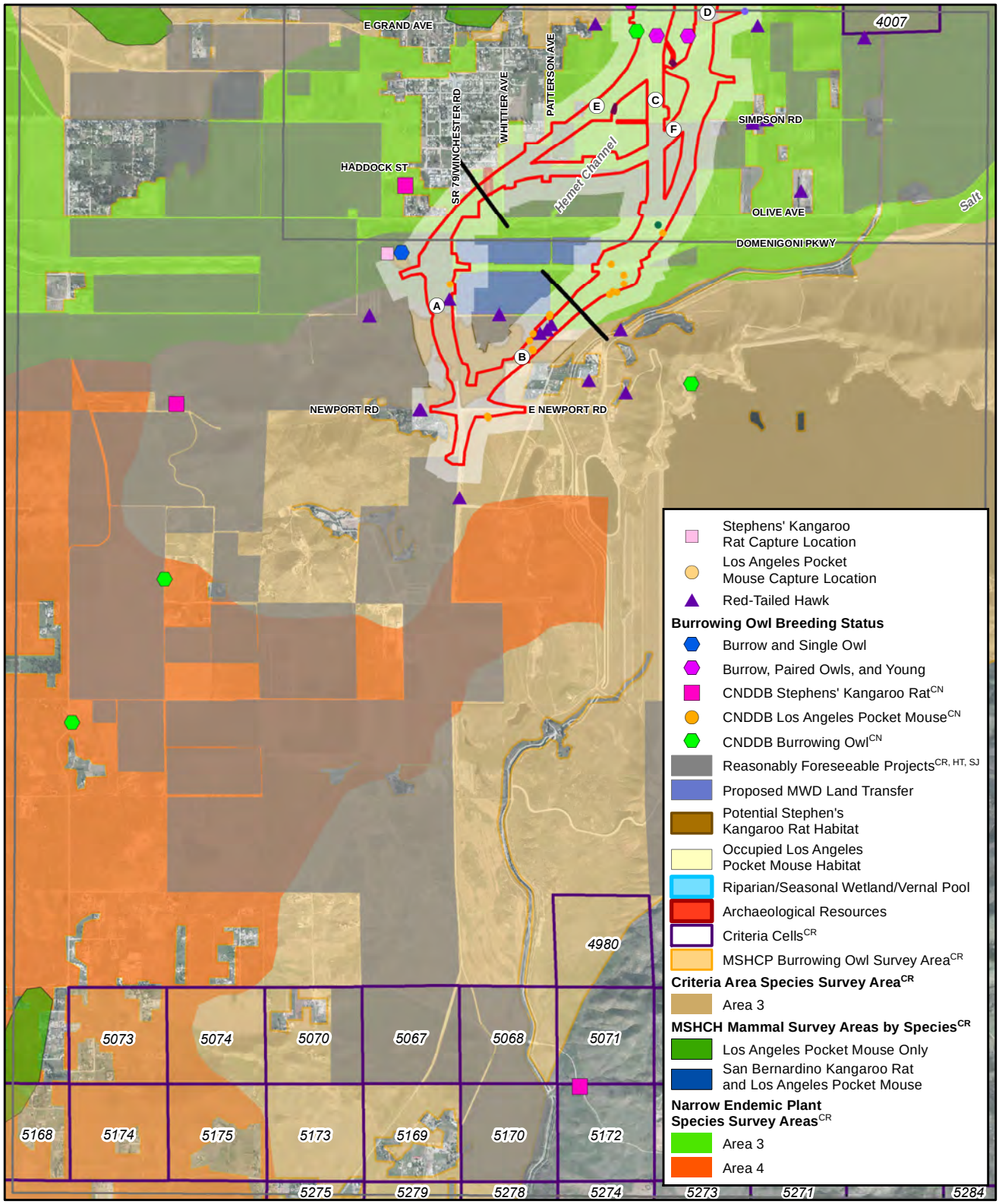
Figure 3.6-1 Map 6 of 6
Status of Developments Considered in Cumulative Impact Analysis

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



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LEGEND

- Roadway Segment Match Line
- Long-Term Traffic Detour
- Project Impact Area
- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plants

- Atriplex coronata var. notatior
- Atriplex parishii
- Atriplex serenana var. davidsonii
- Brodiaea filifolia
- Centromadia pungens ssp. laveis
- Lasthenia glabrata ssp. coulteri
- Lepidium virginicum var. robinsonii
- Myosurus minimus ssp. apus
- Navarretia fossalis
- Orcuttia californica

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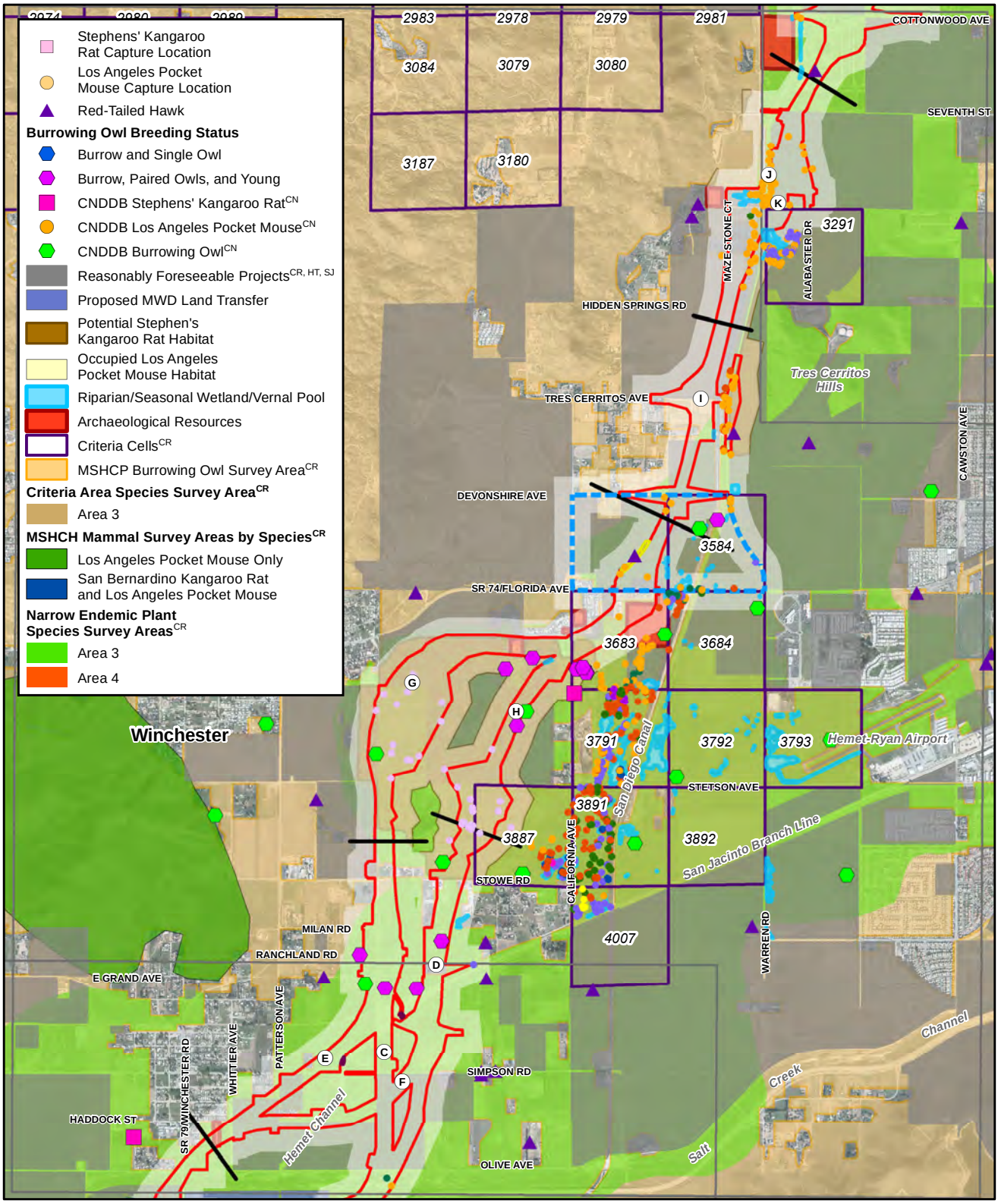
Sources: CN - CNDDB, January 2012; CR - County of Riverside, 2007; HT - City of Hemet, 2007; SJ - City of San Jacinto, 2007

Figure 3.6-2 Map 1 of 3
Status of Developments Considered in Cumulative Impact Analysis

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



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LEGEND

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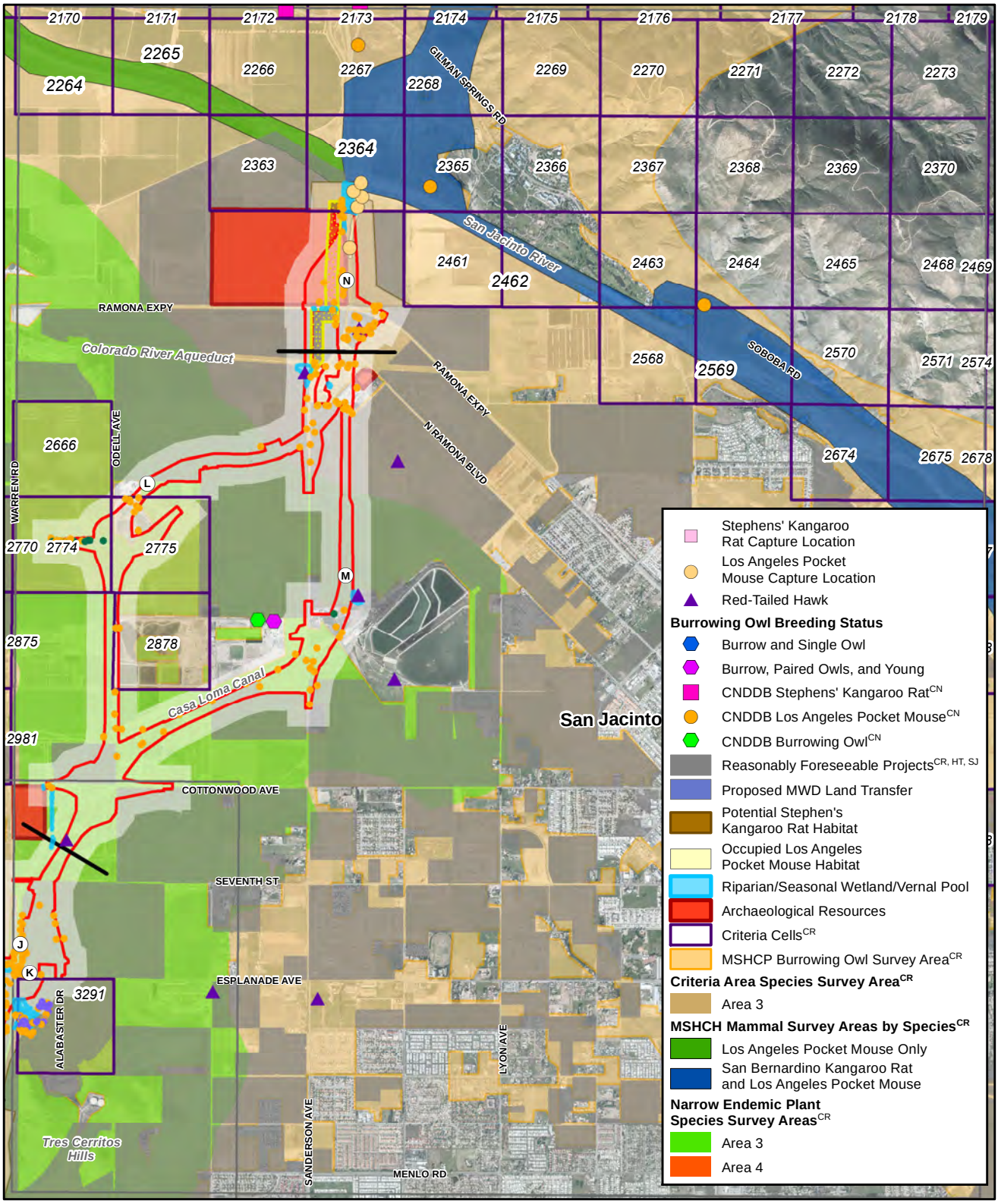
Figure 3.6-2 Map 2 of 3
Status of Developments Considered in Cumulative Impact Analysis

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



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LEGEND

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- Utility Relocation Area
- Connection to Hemet Channel Outside the Project Right-of-Way

Rare Plants

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Figure 3.6-2 Map 3 of 3
Status of Developments Considered in Cumulative Impact Analysis

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

Chapter 4

Chapter 4 California Environmental Quality Act Evaluation

4.1 Determining Significance under CEQA

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

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or some lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) as a *whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require the Department to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

4.2 Discussion of Significance of Impacts

The significance of the potential impacts of the proposed Build alternatives under CEQA was assessed based on the information and conclusions drawn in the CEQA Checklist in Appendix A, as supported by the analysis of Project impacts presented in Chapter 3. The questions, as provided in the CEQA Checklist, are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance. The conclusions of the impact analysis conducted for the Project are summarized in the following sections, specific to the level of significance determined under CEQA.

Because the evaluation of impacts to cultural resources under CEQA is being conducted in conjunction with the Section 106 process under the National Historic Preservation Act, Thus, findings for cultural resources presented in the CEQA Checklist (Appendix A).

No impacts to mineral resources would occur in association with the Project because it is not located within the boundaries of a mineral resource zone (CEQA Checklist Questions XI.A and XI.B). Therefore, mineral resources are not discussed further. Additionally, it was determined that no impacts would occur in response to CEQA Checklist Questions II.C, II.D, III.A, V.D, VI.B, VIII.F, IX.G, IX.I, IX.J, XII.B, XII.E, XII.F, XIII.A, XV.A, XV.B, XVI.C, XVII.A, XVII.B, XVII.E, and XVII.G.

The following effects have been identified in the EIR as resulting from the project.

4.2.1 Less than Significant Effects of the Proposed Project

4.2.1.1 AESTHETICS (CEQA CHECKLIST QUESTIONS I.D)

Glare associated with windshields and reflective construction equipment and materials would be present during Project construction. However, this impact would be temporary in nature and would be limited to the local Project area.

In the Build Alternatives, traffic light fixtures installed along the elevated freeway would add increased night lighting to some surrounding neighborhoods. The effects of this new light would be reduced based on the use of light control appliances on the light fixtures. Glare from the elevated freeway Alternatives would be minimized by the distance of the viewer from the vehicles and through the implementation of various screening and the use of light shields on the new light fixtures. As per Riverside County Ordinance 655, which regulates night light pollution up to 45 miles from the Palomar Observatory, Project operational lighting will comply with this ordinance.

With the headlights of automobiles traveling at a horizontal line of sight, it is anticipated that the vehicle light from the Freeway would slightly impact the surrounding land uses. New light fixtures in the Build Alternatives would be placed at a far enough distance from the surrounding neighborhoods that they would result in no impacts. Therefore, vehicle headlight glare would be minimal. In addition, light fixtures will be designed to direct light onto the freeway facilities and away from adjacent land uses.

For the reasons discussed above, the impacts of the Build Alternatives related to light and glare would be less than significant and no mitigation is required.

4.2.1.2 AGRICULTURE RESOURCES (CEQA CHECKLIST QUESTIONS II.A, II.B, AND II.E)

Conclusions for CEQA questions II.a, II.b, and II.e are "less than significant" and are explained in detail below. In response to CEQA Questions III.c & III.c, the project would not affect forest land or timberland because they don't exist withing the project limits. Table 3.1-15 includes a summary of impacts to all farmland types.

Question II.a

The direct impacts to prime farmlands, unique farmlands, farmlands of statewide importance and farmlands of local importance would vary modestly among the Build alternatives (Table 3.1-15). Direct impacts to prime farmlands would range from about 66 to 86 acres (ac). Direct impacts to unique farmlands would range from 5 to 54 ac; farmlands of statewide importance, 87 to 148 ac; and farmlands of local importance, 495 to 542 ac. The Preferred Alternative would have the least direct impact, at about 690 ac.

Potential indirect impacts would be relatively small compared to direct impacts and would not vary greatly from one Build alternative to another. A large proportion of the farmlands that would be affected by the Project are croplands. Primarily, the indirect impact to croplands adjacent to a new highway is loss of access caused by the project. Modifications to driveways and farm lanes made in cooperation with the landowners would facilitate access to remaining parcels and would minimize indirect impacts. The same would be true with most livestock operations, where the impacts to the parcels would be peripheral and would not affect the use of the remainder of the property.

The combined direct and indirect impacts from each of the Build alternatives or design options would amount to less than 1 percent of the combined important farmlands in Riverside County (Table 3.1-16). Assuming that indirect impacts would be minimized, the Build alternatives would affect less than 0.2 percent of the total important farmlands in the county.

The Project would have a minor effect on prime, unique, and other important farmlands on parcels that are zoned to remain agricultural (Table 3.1-13). The Build alternatives and design options would have impacts ranging from 40 to 60 ac on zoned agricultural lands, less than 0.01percent of the total prime, unique, and important farmland in Riverside County (which totals about 426,230 ac).

Given the relatively small amount of farmland that would be affected by the Project, this potential conversion of farmland to non-agricultural uses is considered to be a less than significant impact.

Question II.b

Zoning

All Build alternatives are located among the different jurisdictions of the City of Hemet, the City of San Jacinto, and the County of Riverside. The Project has been sited to minimize impacts to lands zoned or planned to remain as agricultural in each jurisdiction.

In City of Hemet jurisdiction, the Build alternatives would impact no zoned farmlands. According to the *City of Hemet General Plan 2030* (Hemet 2012) there are no lands set aside for agriculture in the Project area. The Project is also included in the Transportation Element of the *City of Hemet General Plan 2030* (Hemet 2012).

The City of San Jacinto does not contain zoned farmlands in its current general plan (San Jacinto 2012a).

In Riverside County jurisdiction, Roadway Segments I, J, and K would permanently impact 55 to 60 ac of zoned farmlands. The total amount of zoned farmlands in the county is 180,178 ac. Therefore, the amount of zoned farmlands impacted by the Project represents less than 0.01 percent of the total zoned farmland in Riverside County. Additionally, the Project is included in the Circulation Element of the Riverside County General Plan (County 2008).

While the County and City general plans and zoning recognize the transition of agricultural lands to more urbanized uses, they include policies that encourage conservation of productive farmlands and minimize the impact of adjacent land uses on agricultural operations beyond those lands specified as agricultural (discussed in Section 3.1.3.4). Most of these policies are implemented at the owner's discretion. Consistent with these policies, the Project has been designed to minimize the footprint and minimize impacts to farm buildings. On properties affected by the Project,

access will be maintained or modified so that the remainder of the property can continue to be used for agriculture. The City of Hemet, City of San Jacinto, and Riverside County will continue to be involved in reviewing the design of the Project for opportunities to minimize impacts to farmlands.

Because of the relatively small area of zoned farmlands that would be affected and design efforts to minimize direct and indirect impacts to all farmlands consistent with local and regional land use policies, the impact to zoned agricultural land is less than significant.

Williamson Act

Some Build alternatives would impact Williamson Act lands, as shown in Tables 3.1-14, 3.1-15, and 3.1-17. A full discussion of the impacts to Williamson Act lands is provided in Section 3.1.3.3.

The Draft EIR/EIS reported several parcels along Roadway Segment M (Build Alternatives 1b, 2b and the Preferred Alternative) that were non-renewal status (meaning that the Williamson Act contract was in the process of being terminated). As discussed in Section 3.1.3.2, those non-renewals expired in 2015. Therefore, Build Alternatives 1b, 2b and the Preferred Alternative would affect no Williamson Act lands. All of the Williamson Act parcels within the Agricultural Study Area (ASA) are zoned by the City of San Jacinto for nonagricultural purposes. Farmland parcels zoned for nonagricultural uses will be converted to a nonagricultural use in the future regardless of the impacts of the Project (Figure 3.1-9). It is not known when these lands will be converted from farmlands to their zoned use. These are private properties, and the timing in which these lands will be developed is at the discretion of each landowner.

Additionally, because the Project would be a new alignment, it must comply with the requirements of California Government Code (CGC) Section 51292, which states,

> *...no public agency or person shall locate a public improvement within an agricultural preserve unless the following findings are made:*
>
> *(a) The location is not based primarily on a consideration of the lower cost of acquiring land in an agricultural preserve.*
>
> *(b) If the land is agricultural land covered under a contract pursuant to this chapter for any public improvement, that there is no other land within or outside the preserve on which it is reasonably feasible to locate the public improvement.*

Several Project alternatives have been analyzed to minimize the effects on the environment, including effects on all types of farmlands. Build Alternative 1a or 2a would impact, to some degree, parcels that are currently under a Williamson Act contract. Preferred Alternative 1br and Alternatives 1b and 2b would impact no Williamson Act lands (see Table 3.1-17). The CEQA Guidelines consider cancellation of contracts for parcels exceeding 100 ac to be of statewide significance. Build Alternative 1a and 2a would partially affect one Williamson Act parcel that is larger than 100 ac, but neither of them would affect the entire parcel. None of the alternatives would completely cancel contracts for any of the Williamson Act parcels.

The impact to Williamson Act lands would therefore be less than significant, and no mitigation is proposed. However, measure AG-3 would be implemented to ensure that the Project adheres to all applicable government codes regarding acquisition of Williamson Act lands.

Question II.e

The Project would realign and widen the existing SR 79 from two to four lanes, which would increase capacity and facilitate planned development. Additionally, some existing farmlands would be bisected by the Project, which could impact the viability of the individual farm and indirectly cause conversion of these farmlands to nonagricultural use. However, as a general rule, the agricultural use of remaining lands will be maintained by providing access as part of the Project. Therefore, the Project impact is considered to be less than significant.

4.2.1.3 AIR QUALITY (CEQA CHECKLIST QUESTIONS III.D AND III.E)

Construction of the proposed Project may expose sensitive receptors in the vicinity of the Project area to short term elevated diesel particulate matter DMP levels. However, the DPM concentrations would be considered less than significant because the risk posed by DPM is based on long-term exposure (70 years). SCAQMD performs the Multiple Air Toxics Exposure Study (MATES), which is a monitoring and risk evaluation study conducted periodically in the SCAB. The MATES study included a monitoring program, an updated emissions inventory of toxic air contaminants (TACs), and a modeling effort to characterize risk across the Basin. The final MATES III report was published in 2008 (SCAQMD, 2008). In October 2014, SCAQMD released a draft MATES IV report for public review, MATES studies have shown a trend of health risk decrease of the region over the years. The population-weighted risk from the MATES IV study period of 2012 was about 57 percent lower compared to the MATES III period of 2005 in SCAB (SCAQMD, 2014). In addition, vehicle emissions are expected to decrease over time in compliance with United States Environmental Protection Agency (USEPA) and California Air Resources Board (ARB) regulations for cleaner fuels and cleaner engines (FHWA 2012). For these reasons, pollutant concentrations would be expected to be lower in the future than the existing condition. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations during construction or operation of the proposed Project.

During Project construction, objectionable odors could occur due to diesel-powered equipment and road-building activities, such as paving and asphalting. Such odors, however, would be short term and limited to the immediate vicinity of the activity. As much as possible, construction equipment and trucks would be located or rerouted away from local neighborhoods or sensitive receptor areas. Therefore, odor impacts during construction would be temporary and less than significant. During Project operation, odorous emissions from vehicle travel would decrease from existing conditions because cleaner engines and cleaner fuels would be used in the future. Therefore, air quality impacts associated with odors during Project operation would be less than significant.

4.2.1.4 BIOLOGICAL RESOURCES (CEQA CHECKLIST QUESTIONS IV.E AND IV.F)

Two local tree preservation policies are in effect in the Project study area. The first policy is discussed in Section 3.3.1.3, Natural Communities, and refers to the Riverside County Oak Tree Ordinance that protects native oak trees with diameters greater than 2 inches at breast height.

The second policy is from the Biological Resources component of the City of Hemet General Plan (Hemet 2012[1]), which contains onsite construction guidelines that specify "mature trees of 6 inches diameter or greater shall be protected from indiscriminate cutting or removal."

These policies do not apply to the Project (a state project) because there were no existing native oak trees within the project limits; however, RCTC will consider the requirements of the policies during final design of the Project should one exist.

MSHCP

The Project study area is within the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and the Stephens' Kangaroo Rat Habitat Conservation Plan (HCP). The Project's consistency with these plans would be similar regardless of the Build alternative or design option that is identified as the Preferred Alternative. A detailed discussion of the Project's consistency with these plans is provided in Section 3.3. Because the Project would be consistent with the criteria in these HCPs, the impact would be less than significant.

4.2.1.5 CULTURAL RESOURCES (CEQA CHECKLIST QUESTIONS V.A)

Forty-five cultural resources were evaluated for the Project for NHPA (Section 106) and CEQA purposes. These include a Traditional Cultural Property (TCP), a Potential Prehistoric Archaeological District (PPAD), 12 built-environment resources, and 31 archaeological resources (21 prehistoric sites, 5 historic sites, and 5 mixed-component sites).

Caltrans determined that the Colorado River Aqueduct (CRA) (CA RIV-6726H) and TCP are eligible for the NRHP, and thus the CRHR, and three additional cultural resources (CA-RIV-6907/H, CA-RIV-8156/H and the PPAD). Although not individually eligible for the NRHP/CRHR, 24 prehistoric components/sites within the APE contribute to the presumed eligibility of the PPAD. Additionally, the CBJ Dairy (33-15752) was determined to be a historical resource under CEQA (but is not eligible for the NRHP). As a result, the Project is known to contain six historical resources for the purposes of CEQA: the CRA, the CBJ Dairy, the TCP, the PPAD, and archaeological sites CA-RIV-6907/H and CA-RIV-8156/H). The remaining 39 cultural resources (10 built environment resources and 29 archaeological resources) were determined ineligible for listing on the NRHP and CRHR and are not discussed further in this section.

According to CEQA guidelines 15064.5(b), a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. Substantial adverse change in the significance of an historical resource, also defined in PRC 5020.1(q), means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired. The significance of a historical resource is materially impaired when a project would result in the destruction of a historical resource's characteristics when those characteristics justify the historical resource for inclusion in, or eligibility for, the CRHR, inclusion in a local

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

register (if designated under local ordinance or resolution), or identification as significant in a local survey that meets California State Office of Historic Preservation (OHP) standards.

Caltrans has determined that the Project would have a less than significant impact on two of the historical resources, the CRA and the CBJ Dairy; they are discussed below. Project impacts on two historical resources (CA-RIV-6907/H and CA-RIV-8156/H) will be less than significant with mitigation incorporated; as discussed in Section 4.2.2. The Project would result in a substantial adverse change in the significance of two historical resources, the TCP and PPAD; those resources are discussed in Section 4.2.3.

The Colorado River Aqueduct (CRA) (P-33-15752; CA-RIV-6726H)

Portions of the CRA that lie within the APE for this Project were evaluated in the HRER (Beedle et al. 2010) and determined to be contributing elements of the system should that resource ever be found eligible for inclusion in the NRHP in its entirety (as discussed in Section 3.1.8.2) and will be considered a historical resource for the purposes of CEQA. The CRA, owned and operated by the MWD, brings water from the Colorado River on the eastern border of California to the Los Angeles area through a series of canals, covered conduits, tunnels, and siphons. Portions of the first and second barrels of the Casa Loma Siphon and the Casa Loma Canal are the only elements of the CRA system that are within the APE. The Casa Loma siphons and canal are important contributing elements of the historical resource as a whole under Criterion A, as a driving and enabling force for the economic development of Southern California, and as such, under Criterion 1 for the CRHR. The CRA is also eligible under Criterion C as a marvel of civil engineering, where the period of significance is 1923 to 1960; therefore, the resource is also eligible under Criterion 3 for the CRHR. The CRA has also been previously documented for the Historic American Engineering Record (Gruen 1998).

None of the proposed build alternatives or design options will result in the physical destruction or damage to the CRA, nor will there be a change of the historical resource's use or physical features. The various build alternatives would all cross the CRA at various locations, including the Casa Loma Canal at Odell Avenue, and the CRA (Casa Loma Siphon – Barrel 1) at two locations along Sanderson Avenue, which is the eastern end of the Casa Loma Canal. The crossings will be a visual impact to the historical resource. However, with the exception of the Casa Loma Canal, the CRA west of the San Jacinto Mountains is entirely underground, and the setting of the underground segment is not a crucial element in the integrity evaluation of the CRA. The aboveground Casa Loma Canal contributes to the significance of the CRA under Criterion 1 as a necessary part of the aqueduct, in that it allows the aqueduct to function at its full capacity. As such, its setting does not contribute to the significance of the resource. Therefore, the undertaking would not introduce visual, atmospheric, or audible elements that would diminish the integrity of the historical resources' setting. Caltrans has determined that the Project would not result in a substantial adverse change to the extent that the resource's historical value is materially impaired or lost; the Project will have a less than significant impact on the historical resource.

The CBJ Dairy (P-33-15752)

The CBJ Dairy (P-33-15752), a late 1950s residence and dairy, appears to meet the OHP standards and will be considered a historical resource for the purposes of CEQA pursuant to Section 15064(a)(2)-(3) of the CEQA guidelines and 14 CCR 4852. The resource is associated with events that have made a significant contribution to the development of the San Jacinto Valley Dairy industry in the early 1960s, and is therefore eligible under Criterion 1

for the CRHR. The resource also meets 14 CCR 4852(d) (2) regarding special considerations for historical resources achieving significance within the past 50 years because the period of significance extends from 1959 to 1965.

The CBJ Dairy is located on three contiguous parcels. Contributing features, those elements of the resource that contribute to its significance, include the barn, three houses, elliptical driveway, landscaping, hay shelter, fields, and other ancillary dairy structures constructed during the period of significance. Most of these structures are located in the west-center of the resource. The easternmost portion of the resource would be in the ADI. The easternmost portion of the resource is in areas proposed for the construction of roadway segments, a grade-separated interchange, and construction culverts/drainages where the depth of disturbance should not exceed 10 ft. The portion of the resource potentially impacted includes predominantly vacant agricultural fields, trench silos, storage stockpile areas, and a hay shed. Because none of these minor elements contribute to the eligibility of the historical resource as a whole, the Project will not have a direct impact on the resource that would constitute a substantial adverse change. The Project would have an impact to the setting of the resource (i.e., its immediate surroundings) due to incorporation of its eastern edge into the Project as well as due to the construction of a grade-separated interchange (27 ft. high). Because the resource is important for its association with important events and not for its architecture, such changes to the setting of the resource would not constitute a substantial impairment of the integrity of the historical resource that would be considered adverse. Therefore, Caltrans has determined that the Project would have a less than significant impact on the historical resource.

4.2.1.6 GEOLOGY AND SOILS (CEQA CHECKLIST QUESTION VI.E)

The proposed Project would not construct septic tanks, and the use of existing septic tanks during construction is not anticipated. Waste produced by the Project during construction would be collected by qualified contractors and disposed of in accordance with all applicable regulations and codes. Therefore, the Project would have a less than significant impact on alternative wastewater disposal systems.

4.2.1.7 HAZARDS AND HAZARDOUS MATERIALS (CEQA CHECKLIST QUESTIONS VIII.A AND VIII.E)

Potential short-term hazards associated with the proposed Project involve the transportation of fuels, lubricating fluids, solvents, aerially deposited lead removal, potential removal of total petroleum hydrocarbons from the former Mobil gasoline station, and other potentially hazardous materials during construction. However, construction would not involve handling significant amounts of these substances beyond what is typically required for a project of this nature. Additionally, all storage, handling, and disposal of hazardous materials is regulated by the USEPA, California Department of Toxic Substances Control (DTSC), Occupational Safety and Health Administration (OSHA), and county and city fire departments. As such, all chemicals used during construction of the proposed Project would be used, transported, and stored in compliance with applicable requirements. Therefore, impacts to the public through transport, use, or disposal of hazardous materials would be less than significant.

The Project is located within the Hemet-Ryan Airport Influence Area and, therefore, is subject to regulations governing issues such as development intensity, density, height of structures, and noise. SR 79 and the airport already exist, and the proposed Project would not result in any additional safety hazards for people residing or working in the area.

The design of the Project would ensure that no structures would be in conflict with safety zones in the Hemet-Ryan Airport Influence Area. Therefore, the impact is less than significant.

4.2.1.8 HYDROLOGY AND WATER QUALITY (CEQA CHECKLIST QUESTIONS IX.B, IX.D, IX.F, AND IX.H)

Construction of the proposed Project would not result in a depletion of groundwater supplies, and the proposed Project would not interfere with groundwater recharge. Even though the Project proposes to increase impervious surface area, the amount of impervious surface area compared to the area of the groundwater basin results in a negligible impact to groundwater recharge. Therefore, impacts to groundwater supplies would be less than significant.

The proposed Project would not substantially alter the existing drainage pattern of the site or area. Storm water conveyance facilities are required as part of the Project to ensure proper onsite drainage for the Project and maintain existing offsite water flows in the Project area. The existing drainage patterns would be maintained by the storm water conveyance facilities. Therefore, the proposed Project is not expected to have a significant impact associated with altering the existing drainage pattern of the area and would not result in substantial erosion, siltation, or flooding onsite or offsite.

While existing roadside ditches already flood during current conditions, the proposed Project will be designed to maintain existing drainage patterns and flows. Detention basins and overflow risers would be designed such that pre-Project flow conditions would be maintained, and therefore, the proposed Project would not increase the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

To prevent any temporary water quality impacts, construction Best Management Practices (BMPs) in compliance with the Construction General Permit Order 2012-0006-DWQ (NPDES No. CAS000002) will be implemented. The contractor will use a combination of BMPs that are acceptable and approved by the Santa Ana Regional Water Quality Control Board to minimize impacts associated with runoff and polluted water during construction. To prevent any permanent water quality impacts, the Project will incorporate treatment BMPs in compliance with the Caltrans NPDES Permit Order No. 2012-0011-DWQ (NPDES No. CAS000003) and the Santa Ana River Watershed within Riverside County Order No. R8-2010-0033 (NPDES No. CAS618033). The treatment BMPs will reduce any potential pollutant load associated with storm water runoff during the roadway operation.

The proposed Project would include the construction of a new roadway alignment within a 100-year floodplain, but the existing flow would be maintained by the proposed drainage conveyance facilities. The proposed Project would not substantially alter the existing drainage pattern of the site or area. Storm water conveyance facilities are required as part of the Project to ensure proper onsite drainage for the Project and maintain existing offsite water flows in the Project area. The existing drainage patterns would be maintained by the storm water conveyance facilities. Therefore, the proposed Project is not expected to have a significant impact associated with impeding or redirecting flood flows within a 100-year flood hazard area.

4.2.1.9 LAND USE AND PLANNING (CEQA CHECKLIST QUESTION X.C)

The proposed Project would be within the boundaries of the MSHCP and the SKR HCP. These plans are described in Section 3.1.1.2, and a discussion of the Project's consistency with these plans is provided in Section 3.3. Because the Project would be consistent with the criteria in these HCPs, the impact would be less than significant.

4.2.1.10 NOISE AND VIBRATION (CEQA CHECKLIST QUESTIONS XII.B, XII.E AND XII.F)

Checklist Question XII.b (exposure to excessive groundborne noise or vibration) – Highway operations are typically not major sources of groundborne noise or vibration. However, vibration generated by construction equipment has the potential for vibration impacts. The project has concluded that the proposed construction vibration impacts will occur at a distance beyond what should be expected to affect existing or proposed land uses.

Checklist Question XII.e (project located within an airport landuse plan) – The SR 79 Realignment Project is not located within an airport land use plan. The nearest airport is the Hemet-Ryan Airport (at the intersection of Warren Road and Stetson Avenue) approximately 1.3 miles away. The Hemet-Ryan Airport is a general use airport owned by the County of Riverside. The project will not result in a noise problem for persons using the airport or for persons residing or working in the vicinity of the airport.

Checklist Question XII.f (project in vicinity of a private airstrip) - The SR 79 Realignment Project is not located in the vicinity of a private airstrip.

4.2.1.11 GROWTH-INDUCING IMPACTS (CEQA CHECKLIST QUESTION XIII.A)

Growth is addressed in Section 3.1.2. A summary of that discussion follows.

From 1990 to 2010, Hemet's population grew more than 50 percent, and San Jacinto's population grew 130 percent. Forecasts show this rate of growth continuing until at least 2035 (Riverside 2010), primarily due to the demand for affordable housing. The growth is not confined to the San Jacinto Valley. Over the next 20 years, Riverside County is forecast to grow at an average annual rate of 3.4 percent compared to the 1.25-percent average in Southern California (Riverside 2010).

Because of the distribution of forecast growth throughout the county, a series of unprecedented planning activities were initiated in the late 1990s at a county level to manage decision making for land use, transportation, and the conservation of biological habitats. The result was the Riverside County Integrated Project (RCIP) and each of its elements—the Riverside County General Plan (led by the County of Riverside), the Community and Environmental Transportation Acceptability Process (CETAP) (led by RCTC), and the MSHCP (led by the County of Riverside).

The "integrated" plan established a collective goal so that implementation of each component, even at a local scale, would result in a compatible outcome for the county as a whole. After the approval of each of the plans in 2003, their implementation has progressed and has supported the subsequent updates to city general plans in a manner consistent with the Riverside County General Plan.

For each of the general plans, the responsible jurisdiction completed an environmental impact report that analyzed the potential for growth-inducing impacts. The environmental impact report for each jurisdiction concluded that

growth was induced because a "…General Plan is inherently growth inducing…" (Riverside County 2003). However, the intent of the general plan was to "…provide a framework by which public officials will be guided on making decisions relative to development…" (Riverside County 2003) and "…define the limits of such development and act as a mechanism to accommodate and control future development…" (San Jacinto 2006). Thus, although growth was recognized as being induced, it was also intended to be managed. In addition, the environmental impact report for Riverside County evaluated the potential for growth inducement from the construction of infrastructure needs. As stated in Section 5.3 of the Final Environmental Impact Report for the County General Plan (2003), "…providing these infrastructure needs (such as roads) in response to substantial increases in development that would occur through build out of the General Plan, would accommodate, but not induce or cause, the growth projected by the County General Plan." Based on these conclusions in the environmental impact reports of the general plans for Riverside County, San Jacinto, and Hemet, the baseline for the Project (the No Build Alternative) recognizes that growth is occurring in Riverside County that has been induced by the adoption of the updated general plans, but such growth is not attributable to the Project.

Although Riverside County determined that meeting infrastructure needs would not induce growth, the project type, a limited-access expressway, would focus the most potential for changes in growth on the areas adjacent to proposed interchanges. Most of these locations are protected, developed, or at some stage in the development-entitlement process (e.g., Specific Plan, Application Submitted, Project Approved) that is compatible with their general plan designation. Because this development is largely set, the Project location has minimal influence on the development of undeveloped parcels adjacent to the proposed Project interchanges.

With the Project, there would be either no, or a negligible, change in the amount of expected growth.

4.2.1.12 TRANSPORTATION/TRAFFIC (CEQA CHECKLIST QUESTIONS XVI.A, XVI.B, XVI.C, XVI.D, AND XVI.F

Appendix A in the Draft EIR/EIS (Section XVI. TRANSPORTATION/TRAFFIC), includes the CEQA Checklist items for Transportation/Traffic. Discussion on these items is included in this section, and in Section 4.2.2.4.

Transportation/Traffic (CEQA Checklist Questions XVI.a)

Except on some portions of local roads and the current SR 79 alignment, existing roadways in the Project study area operate at Level of Service (LOS) C or better. The highest traffic volumes in the area are on Florida Avenue between Winchester Road and San Jacinto Street (where SR 79 and SR 74 are collocated). Other roadways with high daily traffic volume include portions of Sanderson Avenue, State Street, and Domenigoni Parkway. See Section 3.1.6.2 for a discussion of existing conditions on local roads.

Intersections in the Project study area were analyzed under current traffic conditions. Of the 30 intersections analyzed, 6 intersections have LOS D or worse during either the morning or afternoon peak hours, or both. The remaining 24 intersections have LOS C or better in both peak hours. Impacts to traffic load and capacity during construction would be less than significant, and the Project would result in beneficial improvements. A discussion of traffic volumes and the results of intersection analyses are provided is provided in Section 3.1.6.2 for the 2040 Build Alternative.

In general, the Project will result in positive impacts on traffic. Project implementation would improve and increase capacity on SR 79 to facilitate regional movement of people and goods. Therefore, the Project would not conflict with any established measure of effectiveness for the circulation system and the impact would be considered less than significant.

Transportation/Traffic (CEQA Checklist Questions XVI.b,)

Impacts to existing LOS during construction would be less than significant, and implementation of the Project would result in beneficial improvements to LOS and overall traffic congestion. A discussion of LOS is provided below for the proposed Build Alternative.

Build Alternatives Segment LOS

Construction of the Build Alternative would improve 12 of the 17 deficient segments from unacceptable LOS (D, E, or F) to LOS C or better. The following roadway segments will operate at LOS D or worse under the 2040 Build Alternative conditions:

- Florida Avenue between Sanderson Avenue and State Street
- Florida Avenue between State Street and San Jacinto Street
- Florida Avenue between San Jacinto Street and Columbia Street
- San Jacinto Street between Menlo Avenue and Esplanade Avenue
- Sanderson Avenue between Ramona Expressway and Gilman Springs Road

In general, the Project will result in positive impacts on traffic. Project implementation would improve LOS in the Project area. Without implementation of the Project, the Project area will operate at LOS D or worse with the projected daily volumes under the 2040 predicted volume. The traffic analysis shows that construction of the Project will improve operations on SR 79 by relieving congestion and improving intersection operations. Therefore, impacts to LOS and overall congestion from Project implementation would be less than significant.

Transportation/Traffic (CEQA Checklist Question XVI.c)

The Project would not constitute a new obstruction to navigable air space and would not create potentially significant air traffic-related impacts.

Transportation/Traffic (CEQA Checklist Question XVI.d)

Design features identified for the Project are not expected to increase hazards, and all are compatible with current highway standards. The proposed Project is a limited access highway facility that would not result in incompatible uses.

During construction, the work area will be delineated with lane closure devices approved by Department traffic standards or other approved traffic control standards following the governing agency request, using such guidance as necessary from the *Manual of Uniform Traffic Control Devices* and *Work Area Traffic Control Handbook.*

As the Project would not increase hazards or incompatible uses, this impact would be considered less than significant.

Transportation/Traffic (CEQA Checklist Question XVI.e)

The Project would bisect the service areas for Hemet Fire Department (HFD) and Riverside County Fire Department (RCFD). Because California Department of Forestry and Fire operations at Ryan Air Attack Base are aerial based, the Project would not interfere with these emergency operations. The Project also would bisect the service areas for the California Highway Patrol (CHP), Hemet Police Department (HPD), and Riverside County Sheriff's Department (RCSD). In addition, the CHP would be responsible for primary patrol of realigned SR 79.

Project construction could temporarily disrupt circulation patterns and affect the ability of fire and police to respond to emergency calls. Fire protection that is provided by the Hemet Fire Department (HFD) and Riverside County Fire Department (RCFD) has the potential to be temporarily impacted. Because California Department of Forestry and Fire Protection operations at Ryan Air Attack Base are aerial rather than ground based, the Project would not interfere with these emergency operations.

No police stations are in the Project study area. However, police protection provided by the CHP, HPD, and RCSD has the potential to be impacted if patrol routes are affected by traffic delays and detours during Project construction. Mitigation measure SERV-2 will ensure that potential Project impacts to emergency response are less than significant by informing the emergency responders in the area of any temporary detours or closures so that response routes can be temporarily modified.

The Project would improve the geometry and efficiency of SR 79, enhancing the capability for emergency response and evacuation. Thus, the impact will be less than significant. Additionally, measure SERV-1 will further ensure that any potential permanent Project impacts to emergency response are minimized.

Transportation/Traffic (CEQA Checklist Question XVI.f)

The Project would be constructed as a limited access expressway with a State Route designation. Alternative transportation facilities typical of local roadways such as bus routes, turnouts, and bicycle racks would not be associated with the Project. In addition, Project crossings of existing transportation routes that support alternative transportation would be designed and constructed so as not to conflict with continued operation of these facilities. Therefore, the Project would not conflict with any policy, plan or program regarding public transit, bicycle or pedestrian facility and so the impacts would be considered less than significant.

4.2.1.13 Utilities and Service Systems (CEQA Checklist Question XVII.d)

Limited quantities of water are anticipated to be needed for dust control during construction and for irrigation during operation. Sufficient water supplies are expected to be available for these activities. Potable water is not required for irrigation or dust control activities, and several sources of gray water (nonpotable) are available in the Project vicinity, such as from the Eastern Municipal Water District facilities. The Project would not require a permanent, municipal water supply and would not require new or expanded water entitlements. Therefore, impacts to water supplies would be less than significant.

4.2.2 Significant Environmental Effects of the Proposed Project

Most of the significant environmental effects of the proposed Project can be avoided, minimized, and/or mitigated to below a level of significance based on the measures identified throughout Chapter 3. Those measures are itemized in the Environmental Commitments Record (ECR) in Appendix E. Specific avoidance, minimization, and mitigation measures are discussed briefly in this section and in Section 4.3. This section presents impacts that are less than significant with mitigation incorporated. Significant adverse impacts that cannot be mitigated to below a level of significance are discussed in Section 4.2.3.

4.2.2.1 BIOLOGICAL RESOURCES (CEQA CHECKLIST QUESTION IV.B)

Sensitive Natural Communities and Critical Habitat

Permanent Impacts

The Project would result in permanent direct and indirect impacts to nine sensitive natural community types—alkali grassland, alkali playa, cottonwood-willow riparian forest, emergent wetland, mulefat scrub, Riversidian sage scrub, seasonal wetland, vernal pool, and willow riparian scrub and forest. Sensitive natural plant communities are limited within the PIA. Sensitive natural plant communities are infrequent in the 100-ft indirect impact area, but they are present in Additional Indirect Impact Study Area 1, which includes the Metropolitan Water District of Southern California (MWD) Upper Salt Creek Reserve and the Stowe Road Vernal Pool Complex, as well as Additional Indirect Impact Study Area 2, a portion of which falls within Cell 3291.

For this analysis, all areas that support natural communities inside the PIA were considered to be permanently lost as a result of building and operating the roadway. Direct impacts to natural communities, such as permanent loss of habitat, are those impacts that can be expected from the removal and disturbance of the land that are associated with construction and operation. Indirect impacts would result from the Project, be reasonably foreseeable, and could occur later or would be farther away from the Project than direct impacts. For this analysis, permanent indirect impacts could include alteration of wetland hydrology or the establishment or encroachment of invasive plants that eventually outcompete native species or degrade habitat quality. Permanent indirect impacts could occur within the 100-ft indirect impact area adjacent to the PIA or within Additional Indirect Impact Study Areas 1 and 2.

In general, the amount of sensitive natural communities impacted by Build Alternatives 2a and 2b would be larger than the same types of impacts associated with Build Alternatives 1a, 1b, and the Preferred Alternative because Build Alternatives 2a and 2b include Additional Indirect Impact Study Area 1, which encompass the Stowe Road Vernal Pool Complex.

Final revised critical habitat for spreading navarretia (*Navarretia fossalis*) was issued by the USFWS on November 8, 2010. The boundary of the critical habitat encompasses portions of the Project. The proposed Project would result in permanent direct and indirect impacts to spreading navarretia critical habitat (Figure 3.3-50 [Section 3.3]).

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

Build Alternative 1a would cause permanent impacts, both direct and indirect, to nine types of sensitive natural communities. Permanent direct impacts to alkali grassland from Build Alternative 1a would total 24.3 ac. Another 12.0 ac of alkali grassland in the 100 ft indirect impact area adjacent to the PIA could also be affected.

Permanent direct impacts to natural communities that are typically found in mesic areas (areas characterized by a moderate amount of moisture) would include 0.01 ac of alkali playa, 7.2 ac of seasonal wetland, and 2.0 ac of vernal pool. Another 0.07 ac of alkali playa, 5.2 ac of seasonal wetlands, and 0.6 ac of vernal pool in the 100-ft indirect impact area could be permanently affected. Permanent indirect impacts could also occur to 0.5 ac of emergent wetland vegetation just west of the EMWD Regional Water Reclamation Facility.

Riparian plant communities (willow riparian scrub and forest, cottonwood-willow riparian forest, and mulefat scrub) would be limited to the northern extent of the Build alternative, near North Ramona Boulevard and south of the San Jacinto River. In this area, permanent direct impacts could occur to 1.3 ac of cottonwood-willow riparian forest, 0.01 ac of mulefat scrub, and 2.4 ac of willow riparian habitat. Another 0.6 ac of cottonwood-willow riparian forest and 1.4 ac of willow riparian habitat could be permanently, indirectly impacted by Build Alternative 1a. A total of 124.8 ac of Riversidian sage scrub in the hills south of Domenigoni Parkway, the West Hemet Hills, and along the base of the Tres Cerritos Hills could be permanently and directly impacted. Another 22.7 ac of Riversidian sage scrub in these areas could be permanently, indirectly impacted as well.

Permanent, direct impacts to spreading navarretia critical habitat in USFWS Unit 6: Riverside Management Area, Subunit 6B, Salt Creek Seasonally Flooded Alkali Plain, would total 2.3 ac, and indirect impacts would total 2.4 ac from Build Alternative 1a. As described in Section 3.3.5.2, the spreading navarretia critical habitat in the impact area of Build Alternative 1a does contain primary constituent elements as defined in the Federal Register. However, the portion of critical habitat in Build Alternative 1a is unoccupied. Based on the absence of spreading navarretia, the functions and values of this portion of critical habitat is low.

Build Alternative 1b and Design Option 1b1

Build Alternative 1b (and Design Option 1b1) would have permanent direct impacts to seven sensitive natural community types and permanent indirect impacts to nine sensitive natural community types. Permanent direct impacts to the alkali grassland natural community would total 16.1 ac. Permanent indirect impacts could occur to another 8.8 ac of alkali grassland in the 100 ft indirect impact area. Because the design option would differ only in impacts to nonsensitive communities (annual grassland, developed, and ruderal), those impacts are presented in Table 3.3-3.

A total of 0.01 ac of alkali playa, 8.2 ac of seasonal wetland, and 0.01 ac of vernal pool could be permanently and directly impacted by this Build alternative. Permanent indirect impacts could occur to another 0.2 ac of alkali playa, 4.8 ac of seasonal wetlands, and 0.8 ac of vernal pool in the 100-ft indirect impact area. Permanent indirect impacts to 0.2 ac of emergent wetland vegetation could occur in the 100-ft indirect impact area east of Sanderson Avenue and north and south of Scott Street.

Riparian habitats would be present in the northern part of this Build alternative. Permanent direct impacts to 1.2 ac of cottonwood willow riparian forest and 2.4 ac of willow riparian habitat would occur from construction. Another 0.7 ac of cottonwood willow riparian forest, 0.01 ac of mulefat scrub, and 2.2 ac of willow riparian habitat could be permanently and indirectly impacted.

Large stands of Riversidian sage scrub are present in the hills south of Domenigoni Parkway, West Hemet Hills, and along the base of Tres Cerritos Hills. Permanent direct impacts to 118.3 ac of Riversidian sage scrub and permanent indirect impacts to 22.9 ac could occur in these areas.

Permanent, direct and indirect impacts to spreading navarretia critical habitat would be the same for Build Alternative 1b (and Design Option 1b1) as shown for Build Alternative 1a.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative (Build Alternative 1br) would have permanent direct impacts to seven sensitive natural community types and permanent indirect impacts to nine sensitive natural community types. Permanent direct impacts to the alkali grassland natural community would total 13.3 ac. Permanent indirect impacts could occur to an additional 3.9 ac of alkali grassland in the 100-ft indirect impact area.

A total of 0.002 ac of alkali playa, 8.6 ac of seasonal wetland, and 2.0 ac of vernal pool could be permanently and directly impacted by this Build alternative. Permanent indirect impacts could occur to an additional 0.2 ac of alkali playa, 4.7 ac of seasonal wetlands, and 0.8 ac of vernal pool in the 100-ft indirect impact area. Permanent indirect impacts to 0.2 ac of emergent wetland vegetation could occur in the 100-ft indirect impact area east of Sanderson Avenue and north and south of Scott Street.

Riparian habitats are present in the northern part of the Preferred Alternative. Permanent direct and indirect impacts to riparian habitats (cottonwood willow riparian forest, mulefat scrub, and willow riparian) from construction of the Preferred Alternative would be the same as described above for Build Alternative 1b (and Design Option 1b1).

Large stands of Riversidian sage scrub are present in the hills south of Domenigoni Parkway and in the West Hemet Hills. Permanent direct impacts to 52.4 ac of Riversidian sage scrub and permanent indirect impacts to 30.6 ac could occur in these areas.

The Project impacts to these sensitive natural communities identified above are considered potentially significant because they constitute substantial modifications to habitat for many rare plant and animal species. Measures BIO-1 through BIO-10 will minimize the Project's impacts to these sensitive natural communities by ensure that disruptive activities do not occur in sensitive areas, to the extent practicable. Additionally, 234 acres of highly valuable habitat that is currently threatened by urbanizing development will be purchased and protected. With these measures, the Project's impacts would be reduced to a level below significant as the Project would result in the preservation of substantially more habitat than is being disturbed.

Build Alternative 1br would directly impact 2.97 ac of spreading navarretia critical habitat in Subunit 6B, Salt Creek Seasonally Flooded Alkali Plain. Indirect impacts would equal 4.47 ac. As described in Section 3.3.5.2, the spreading navarretia critical habitat located within the impact area of Build Alternative 1br does contain primary

constituent elements as defined in the Federal Register. However, the portion of critical habitat in Build Alternative 1br is unoccupied. Based on the absence of spreading navarretia, the functions and values of this portion of critical habitat is determined to be low; therefore, Build Alternative 1br would not adversely modify spreading navarretia critical habitat and the impact would be considered less than significant. Measure BIO-27, discussed below, which requires the installation of ESA fencing would further reduce the Project's impacts.

Build Alternative 2a

Build Alternative 2a would have direct and indirect impacts to nine types of sensitive natural communities. Permanent direct impacts to alkali grassland from Build Alternative 2a would total 24.7 ac. Another 31.8 ac of alkali grassland in the 100-ft indirect impact area and in Additional Indirect Impact Study Area 1 could be permanently and indirectly impacted as well.

A total of 0.01 ac of alkali playa, 7.3 ac of seasonal wetland, and 0.01 ac of vernal pool could be permanently and directly impacted by construction. Permanent indirect impacts to another 0.2 ac of alkali playa, 5.0 ac of seasonal wetlands, and 3.3 ac of vernal pool in the 100-ft indirect impact area and in Additional Indirect Impact Study Area 1 could occur if supporting wetland hydrology is altered from existing conditions. Permanent indirect impacts to 0.5 ac of emergent wetland vegetation could also occur in the 100-ft indirect impact area, just west of the EMWD Regional Water Reclamation Facility.

Riparian plant communities that would be permanently, directly impacted include 1.3 ac of cottonwood-willow riparian forest, 0.01 ac of mulefat scrub, and 2.4 ac of willow riparian habitat. Another 0.6 ac of cottonwood-willow riparian forest habitat and 1.4 ac of willow riparian vegetation could be permanently, indirectly impacted.

Riversidian sage scrub is present in the hills south of Domenigoni Parkway, West Hemet Hills, and along the base of Tres Cerritos Hills. A total of 101.0 ac of Riversidian sage scrub in these areas would be permanently and directly impacted, and 62.7 ac could be permanently and indirectly impacted.

Permanent, direct impacts to spreading navarretia critical habitat in Subunit 6B. Salt Creek Seasonally Flooded Alkali Plain would total 2.4 ac, and permanent, indirect impacts would be 331.3 ac from Build Alternative 2a. As described in Section 3.3.5.2, the spreading navarretia critical habitat located in the impact area of Build Alternative 2a does contain primary constituent elements as defined in the Federal Register. The critical habitat in Additional Indirect Impact Area 1 of Build Alternative 2a is occupied (see Figure 3.3-38 [Section 3.3]) and, therefore, has high value. Consequently, Build Alternative 2a could significantly affect spreading navarretia critical habitat through indirect impacts to existing hydrology. However, these indirect impacts to the spreading navarretia populations would be mitigated by measure BIO-33, which would maintain hydrology in the critical habitat area.

Build Alternative 2b and Design Option 2b1

Build Alternative 2b (and Design Option 2b1) would have permanent impacts, both direct and indirect, to nine sensitive natural community types. Build Alternative 2b would result in slightly fewer impacts to alkali grassland habitat than Build Alternative 2a. Aside from that difference, the amount of sensitive natural habitat permanently directly and indirectly impacted by Build Alternative 2b would be similar to Build Alternative 2a. A total of 15.8 ac of alkali grassland would be permanently and directly impacted, and another 27.6 ac of alkali grassland could be

permanently and indirectly impacted by this Build alternative. Because the design option would differ only in impacts to nonsensitive communities (annual grassland, developed, and ruderal), those impacts are presented in Table 3.3-3.

A total of 0.01 ac of alkali playa, 8.4 ac of seasonal wetland, and 2.0 ac of vernal pool could be permanently and directly impacted by construction. Another 0.07 ac of alkali playa, 5.0 ac of seasonal wetlands, and 3.2 ac of vernal pool in the 100-ft indirect impact area and in Additional Indirect Impact Study Area 1 could be permanently and indirectly impacted if the supporting wetland hydrology is altered from the existing condition. Permanent indirect impacts to a small amount (0.2 ac) of emergent wetland vegetation could also occur.

Riversidian sage scrub is present in the hills south of Domenigoni Parkway, north of Stowe Road on the lower and upper slopes of the West Hemet Hills, and along the base of the Tres Cerritos Hills. A total of 94.5 ac of Riversidian sage scrub in these areas would be permanently and directly impacted, and 62.9 ac could be permanently and indirectly impacted.

Riparian plant communities that would be permanently, directly impacted include 1.2 ac of cottonwood-willow riparian forest and 2.4 ac of willow riparian habitat. Another 0.7 ac of cottonwood-willow riparian forest, 0.01 ac of mulefat scrub habitat, and 2.2 ac of willow riparian vegetation could be permanently, indirectly impacted as well.

Permanent, direct and indirect impacts to spreading navarretia critical habitat would be the same with Build Alternative 2b (and Design Option 2b1) as Build Alternative 2a.

Temporary Impacts

Potential temporary impacts to sensitive natural communities would be the same for all Build alternatives and design options. These temporary impacts could include hydrologic alternations, erosion, or sedimentation. Invasive plant species could also establish in the construction area and spread into sensitive areas outside the PIA. Best management practices (BMPs) would be implemented during construction to minimize the potential impacts to offsite natural plant communities. BMPs would include monitoring by qualified biologists during construction, as described in Section 3.3.1.4.

Avoidance, Minimization, and Mitigation Measures

The following measures will be incorporated into the Project for impacts to sensitive natural communities and critical habitat for spreading navarretia.

Avoidance Measures

Avoidance measure BIO-27, for special-status plant species and the federally listed vernal pool branchiopod, would also apply to spreading navarretia critical habitat. A contractor-supplied biological monitor with knowledge of wetland ecology and rare plants will demark the location of the ESA fence in the field and on construction drawings and plans and will supervise the ESA fence installation. The biological monitor will also inspect the ESA fencing regularly during construction and will coordinate with the Resident Engineer if fence repairs should be required.

Minimization Measures

All Build alternatives will incorporate measures BIO-1 through BIO-10 which will minimize impacts to sensitive natural communities within or adjacent to the MSHCP Conservation Area.

Mitigation Measures

To mitigate for significant impacts to alkali habitats, vernal pools, seasonal wetlands, riparian habitats, and Riversidian sage scrub as described above, mitigation for the Project includes the purchase of 234 acres of highly valuable habitat as described in detail in Section 3.3.2.4, Wetlands and Other Waters, Avoidance, Minimization and/or Mitigation Measures. In particular, the mitigation areas are:

- Sites that contain relatively intact vernal pools, alkali grasslands, and alkali playas
- Sites that are part of a larger vernal pool landscape
- Sites adjacent to existing preserved areas to create contiguous sections of protected habitat
- Areas identified as MSHCP criteria cells and core linkage areas
- Areas designated as critical habitat for spreading navarretia
- Sites that provide habitat for large populations of threatened and endangered species
- Sites that are currently unprotected and threatened by urban development

The mitigation strategy for impacts is focused on the preservation of a large area of rare, high-value habitats that are currently threatened by urban developments which would offset impacts to fragmented habitats within the Project impact area. With the preservation of 234 acres of valuable habitat, the impacts to sensitive natural communities would be less than significant.

4.2.2.2 Cultural Resources (CEQA Checklist Questions V.b and V.c)

Caltrans determined that significant effects may occur on four historical resources (the TCP, PPAD, CA-RIV-6907/H, and CA-RIV-8156/H are determined eligible for the NRHP/CRHR for the purposes of the Project). The Project would result in a substantial adverse change to the TCP and PPAD by removing portions of those resources during construction, and creating adverse visual impacts to the remaining portions of those resources; that cannot be reduced to a level that is less than significant; the TCP and PPAD are discussed in Section 4.2.3. Project impacts to CA-RIV-6907/H and CA-RIV-8156/H would be less than significant after implementation of mitigation measure CR-3, which establishes an ESA and requires monitoring during Project construction. This mitigation will result in avoidance and complete protection of both resources during construction. Site CA-RIV-6907/H and CA-RIV-8156/H are discussed further in Section 3.1.8.

Paleontological resources

The potential impacts of earth-moving activities on the paleontological resources of each rock unit exposed in the Project area were assessed in Section 3.2.4.3. All potential impacts to paleontological resources resulting from earth-moving activities in fine-grained strata at depths greater than 1.2 m (4.0 ft) would be unavoidable. Paleotological resources are an important scientific resource. They can be used to document the evolution of a particular group of organisms, reconstruct the environment in which the organisms lived, and determine the age of the rock unit where they were found, as well as learning more about the geologic events that created the rock units themselves. The loss

of a fossil, site, fossil-bearing strata, or associated specimen or site data would be a permanent impact. This potential impact, however, will be addressed by implementation of mitigation measure PALEO-1 and PALEO-1a through PALEO-1h. The measures ensure that appropriate monitoring will provide a method for the recovery and subsequent treatment (preparation, identification, curation, and cataloging) of fossils that have been exposed by earth-moving and other construction activities, for recording fossil specimen and site data, and for permanently storing the remains and archiving associated data

4.2.2.3 GEOLOGY AND SOILS (CEQA CHECKLIST QUESTIONS VI.A., VIB, VI.C AND VI.D)

The hills to the west and east of the Project may be subject to rock fall, rock slides, or other rock slope failures. **:** The Project is located in a seismically active area, as is the majority of Southern California. In addition to the San Jacinto Fault Zone crossing the northern portion of the Project study area, the Project study area is situated between two other major active fault zones—the Elsinore Fault Zone to the southwest and the San Andreas Fault Zone to the northeast. Numerous other active and potentially active faults and fault zones are located within the general region. The California Geological Survey (CGS) has designated Earthquake Fault Zones (formerly known as Alquist-Priolo Special Studies Zones) for the San Jacinto, Elsinore, and San Andreas Fault zones located within or near the study area. The Project in relation to known active and potentially active faults indicates that the Project would not be exposed to a greater seismic risk than other sites in the region. The northern portion of the Build alternatives (specifically, Roadway Segments L and M) crosses an active splay of the San Jacinto Fault Zone known as the Casa Loma Fault. The Casa Loma Fault has been zoned as an Earthquake Fault, and estimates suggest that the fault zone could produce a maximum moment magnitude (M_{MAX}) 6.9 earthquake.

Moderate to severe seimic shaking may occur in the project area during the life of the improvements under the Build Alternatives. The portential to experience substantial seimic ground shaking is a common hazard for every project in Southern California, and the hazard cannot be avoided. In general, the Build Alternatives can be designed to accommodate the ground accelerations expected to occur along each segment alignment through complicance with the applicable Caltrans, FHWA, and/or local jurisdiction seimic design standards for construction and operation of the Build Alternatives. Standard measure GEO-1 addresses surface fault rupture and ensures that the design and construction of any of the Build Alternatives take into account the potential for liquefaction, seismic shaking, surface fault rupure, slope instability, and erosion. As a result, the potential for sturtural damage would be less than significant. No mitigation is required.

Most of the Project study area is located in areas considered moderately to highly susceptible to liquefaction. These areas are considered very highly susceptible to liquefaction and are mapped near the northern and southern ends of the Project. However, similar to control of excessive seismic ground shaking, compliance with applicable building and seismic design standards, combined with the implementation of standard measure GEO-3, would address seismic-related ground failure, including liquefaction that would prevent significant impacts. No mitigation is required.

The hills to the west and east of the Project are composed of resistant crystalline granitic bedrock. These materials are not typically prone to landslides, but may be subject to rock fall, rock slides, or other rock slope failures. However, similar to control of excessive seismic ground shaking, compliance with applicable building and seismic

design standards, combined with the implementation of standard measure GEO-6, would address seismic-related ground failure, including liquefaction that would prevent significant impacts. No mitigation is required.

As discussed above, most of the Project study area is mapped within areas considered moderately to highly susceptible to liquefaction. The potential damaging effects of liquefaction include lateral spreading and subsidence, leading to loss of ground support for foundations, ground cracking, and heaving and cracking of pavement and structure slabs. However, similar to control of excessive seismic ground shaking, compliance with applicable building and seismic design standards, combined with the implementation of standarf measures GEO-5 and GEO-6, would prevent significant impacts related to unstable soils or geologic units. No mitigation is required.

4.2.2.4 Hazards and Hazardous Materials (CEQA Checklist Questions VIII.b, VIII.d, VIII.g, and VIII.h)

The Project vicinity contains areas of recognized environmental conditions that would be encountered. These sites include but are not limited to:

- Former Mobil gasoline station site located at 2070 North Sanderson Avenue
- Various agricultural areas
- Lands contaminated with aerially deposited lead
- Buildings identified for demolition that are constructed with asbestos-containing material or lead-based paint
- Lands with unknown or previously unidentified hazardous materials
- Areas of contaminated groundwater

As discussed in Section 3.2.5, Hazardous Waste/Materials, during construction, there is the potential to encounter hazardous materials in the soils and existing road materials. The build Alternatives would involve disturbance of soils and demolition of existing buildings and structures; therefore, hazardous soil contaminates (such as aerilly deposited lead (ADL) and structural materials (e.g. polychorlinated biphenyls (PCBs), creosote and other wood treated chemicals, lead chromate, lead base paont, asbestos containing materials and farm use pesticides may be encountered during construction. In addition soil and/or groundwater impacted with petroleum haydrocarbbons, halogenated compounds, or other hazardous materials could be encountered at the properties that would be partially or fully aquuired for the Build Alternatives. A search of hazardous materials facility databases showed that the Project area contains a limited number of listed sites that handle, use, or dispose of hazardous materials or sites that have experienced a hazardous materials incident (FirstSearch™ 2007, 2008) (Environmental Data Resources, Inc. (EDR), 2015). The potential for worker and public exposure to these sites is considered a less than significant impact. Measures HAZMAT-1 through HAZMAT-5 list standard practices that are governed by federal, state, and local laws and regulations. Implementation of these standard measures also prevent any potentially significant impact related to a potential encounter with hazardous materials.

The Project would be located within the Hemet-Ryan Airport Influence Area and, therefore, is subject to regulations governing issues such as development intensity, density, height of structures, and noise. SR 79 and the airport already exist, and the proposed Project would not result in any additional safety hazards for people residing or working in the area.

The design of the Project would ensure that no structures would be in conflict with safety zones in the Hemet-Ryan Airport Influence Area. Therefore, the impact would be less than significant.

The Project would intersect the service areas for the California Highway Patrol (CHP), Hemet Police Department (HPD), and Riverside County Sheriff's Department (RCSD). In addition, the CHP would be responsible for primary patrol of the realigned SR 79.

Project construction could temporarily disrupt circulation patterns and affect the ability of fire and police to respond to emergency calls. Fire protection that is provided by the Hemet Fire Department (HFD) and Riverside County Fire Department (RCFD) has the potential to be temporarily impacted. Because California Department of Forestry and Fire Protection operations at Ryan Air Attack Base are aerial rather than ground based, the Project would not interfere with these emergency operations.

No police stations are in the Project study area. However, police protection provided by the CHP, HPD, and RCSD has the potential to be impacted if patrol routes are affected by traffic delays and detours during Project construction. Mitigation measure SERV-2 will ensure that potential Project impacts to emergency response are less than significant by informing the emergency responders in the area of any temporary detours or closures so that response routes can be temporarily modified.

The Project would improve the geometry and efficiency of SR 79, enhancing the capability for emergency response and evacuation. Thus, the impact will be less than significant. Additionally, measure SERV-1 will further ensure that any potential permanent Project impacts to emergency response are minimized.

The Project is located in a region surrounded by residences intermixed with naturally vegetated areas. Although not expected as part of the Project, the Project may create a remote risk of exposing people or structures to loss, injury, or death involving wildland fires because portions of the new roadway would be constructed in undeveloped areas adjacent to wildlands, where environmental conditions might present a high fire hazard. Additionally, the Project has incorporated measure BIO-7 into the Project to comply with the MSHCP Guidelines. Because of the remoteness of the risk and the implementation of BIO-7, this impact is considered less than significant.

4.2.2.5 Hydrology and Water Quality (CEQA Checklist Questions IX.a, IX.c, and IX.e)

Although temporary impacts have the potential to occur during construction of the proposed Project associated with storm water quality, compliance with permit conditions, standard best management practices, MSHCP requirements, and other legal requirements ensure that the Project will not result in significant impacts to water quality. The potential impacts include the potential for increased sediment and pollutant loading to surface waters and groundwater from storm water surface runoff. Disturbance of soil from site grading, excavation, and modification to the landscape could increase the potential that storm water runoff could contribute sediments into receiving waters. As summarized in WQ-1, best management practices will be implemented in compliance with the Construction General Permit to stabilize the disturbed soil, minimize erosion, and capture and remove sediment suspended in runoff before it leaves the Project site. These best management practices will prevent any significant impacts.

Although not expected or part of the proposed Project, pollutant loading into receiving waters also could occur from accidental discharge of waste products during construction, such as petroleum byproducts from vehicles and equipment. WQ-1 also includes best managment practices related to spill prevention and control that would ensure the risk associated with accidental spills is minimal. Therefore, these potential temporary impacts would be considered less than significant.

Due primarily to the increase in impervious ground cover, potential permanent water quality impacts include increased concentrations of any of the following types of pollutants entering surface waters or groundwater: total suspended solids, nutrients (nitrogen/phosphorus), pesticides, metals, pathogens, trash, biochemical oxygen demand, and total dissolved solids. Similar to the temporary impacts, however, implementation of the best management practices summarized in WQ-1 through WQ-4 would protect water quality and ensure that concentrations are either below existing concentrations or below the objectives established in the Basin Plan. Therefore these impacts would be considered less than significant.

The Project would not substantially alter the existing drainage pattern of the site or area. Storm water conveyance facilities are required as part of the Project to ensure proper onsite drainage for the Project and maintain existing offsite water flows in the Project area. The existing drainage patterns would be maintained by the storm water conveyance facilities. Additionally, measures WQ-1 through WQ-4 would further limit the movement of sediment onsite or offsite. Therefore, the proposed Project would have a less than significant impact associated with altering the existing drainage pattern of the area and would not result in substantial erosion or siltation onsite or offsite.

Runoff water could exceed the capacity of existing roadside ditches in the area. Even though existing roadside ditches already flood during current conditions, the Project could increase that flow even more. To mitigate potential runoff flow to less than significant, measure WQ-4 (Treatment BMPs) would be implemented. Specifically, project features such as detention basins and overflow risers would be designed and incorporated such that pre-Project flow conditions would be maintained.

4.2.2.6 Land Use (CEQA Checklist Questions X.a and X.b)

CEQA Checklist Question X.a

The Build Alternative improvments would result in minor changes in access and circulation; however, they would also provide the traveling public with improvements in mobility and increase the efficiency of the existing circulation sytem without dividing the communities in which they are located. The proposed SR 79 would be located in and adjacent to a number of communities defined for the Project: Winchester, Rural Winchester, Green Acres, Emerging Hemet, Tres Cerritos, Emerging San Jacinto, Emerging Sunrise, and Gateway Specific Plan/River. Therefore, impacts related to dividing an established community would be less than significant.

Winchester Community

Build Alternatives would be located in agricultural, commercial/industrial, residential, rural residential, and services/facilities areas in the southeastern corner of the Winchester Community. Either of these Build alternatives would place a major transportation corridor in a small, rural community, but the roadway would be located along the eastern edge of residential development in the community. Therefore, the Project would not divide one part of the Winchester Community from another, and no impacts to community cohesion would occur.

Rural Winchester Community

The Build alternatives would traverse the central portion of the Rural Winchester Community, passing through agricultural, commercial/industrial, residential, rural residential, services/ facilities, and undeveloped areas. The Build Alternatives would require that access be terminated along SR 79/Winchester Road, north and south of Domenigoni Parkway. Build Alternative 1a would require that Connections 1 and 2 to Hemet Channel outside the Project ROW be established, and Build Alternative 2a would require that Connection 3 to Hemet Channel outside the Project ROW be established. All of the Build alternatives would require that access be terminated along East Grand Avenue and Milan Road, west of Stueber Lane. The Build alternatives would divide the community of Rural Winchester. However, the Project would not block any existing roadways that provide east-to-west vehicular access. In addition, to enhance nonvehicular community interaction, mitigation measure COM-1 would be implemented for Design Option 1b1 or 2b1. Therefore, impacts would be less than significant.

Green Acres Community

All of the Build alternatives and design options would be located in the West Hemet Hills of Rural Winchester, which are east of the Green Acres Community. Therefore, none of the Build alternatives or design options would divide one part of the community from another, and no impacts would occur.

Emerging Hemet Community

The Build alternatives and design options would be located in the rural residential development of the Emerging Hemet Community, but along the edges of these existing developments. These residential areas are bordered on the east by existing geographic barriers to social interaction (Warren Road and the San Diego Canal). The Build alternatives would require the realignment of Warren Road and Tres Cerritos Avenue and modified local access from Warren Road to Maze Stone Court. They would also require Utility Relocation Area 1 to be established. However, the local street improvements would not impede access or mobility within the community. The utility relocations would occur in an area that is currently undeveloped and is geographically separated from residential development. Therefore, none of the Build alternatives or design options would divide one part of the community from another, and no impacts would occur.

Tres Cerritos Hills Community

The Build alternatives and design options would be located in a small area of agricultural land at the northwestern corner of the Tres Cerritos Hills Community and in undeveloped land along the western edge of the community. The Build alternatives would require the realignment of Warren Road and modified local access at Alabaster Drive/Esplanade Avenue. However, these local street improvements would not impede access or mobility within the community. In addition, none of the Build alternatives would be built in residential neighborhoods, but along the western edge of the community, which is surrounded by existing geographic barriers to social interaction, including Warren Road, Esplanade Avenue, and the Tres Cerritos Hills. Therefore, none of the Build alternatives or design options would divide one part of the community from another, and no impacts would occur.

Emerging San Jacinto Community

The Build alternatives would be located in a small area of agricultural land at the southeast corner of the Emerging San Jacinto Community. Immediately to the east, the Project would traverse the flat agricultural areas of the Emerging Sunrise Community and would be readily visible from the commercial area of Reflection Lake

Recreational Vehicle Resort. Existing local access in the community would not be modified. Therefore, the Build alternatives would not divide one part of the community from another, and no impacts would occur.

Emerging Sunrise Community

Build Alternatives 1a and 2a would traverse the western portion of this community, and Build Alternatives 1b and 2b (including both design options) would traverse the eastern portion. The Build alternatives would require that access be modified at Alabaster Drive/Esplanade Avenue, the Casa Loma Canal, and Sanderson Avenue. However, these modifications would not impede access or mobility within the community. The Project would divide the community of Emerging Sunrise, but commercial and residential development, which is the most sensitive to the effects of dividing a community, is occurring away from the proposed alignments, east along Sanderson Avenue and south along Cottonwood Avenue. The closest residential development would be located immediately east of the Project, along Cottonwood Avenue, and is surrounded by agricultural lands that serve as barriers to social interaction with other residential parts of the Emerging Sunrise Community. Therefore, no significant impacts would occur.

Gateway Specific Plan/River Community

The Build alternatives would traverse the central portion of the Gateway Specific Plan/River Community in a north-to-south direction, through agricultural and undeveloped areas. The Project would require realignment of Sanderson Avenue and establishment of Utility Relocation Area 2.

The Build alternatives would divide the Gateway Specific Plan/River Community, but the new roadway would occur on an alignment similar to existing Sanderson Avenue, which serves as a barrier to community interaction. Rather than create a new barrier, the Project would effectively extend the width of existing Sanderson Avenue, which is currently over capacity and has only two travel lanes (one lane in each direction). Therefore, impacts would be less than significant.

CEQA Checklist Question X.b

Applicable land use plans include SCAG Regional Comprehensive Plan and Guide, SCAG Regional Transportation Plan, Riverside County General Plan, City of Hemet General Plan, and the City of San Jacinto General Plan.

California law requires that all of a jurisdiction's General Plan elements be consistent with one another and that the jurisdiction's implementation tools, such as zoning and Specific Plans, be overall consistent with the General Plan. At the time of the Final EIR, SR 79 Realignment is in conflict with specific aspects of the land use plans for City of Hemet and the City of San Jacinto.

Alternative 1br, specifically with roadway segments C, D, G and H would be inconsistent with specific segments of the Locally Preferred Alternative (LPA) in the City of Hemet 2030 General Plan. The alignments of Build Alternatives 1a, 1b, 1b1 and 2a would also be inconsistent. The alignments of Build Alternatives 1a and 2a would be inconsistent with the City of San Jacinto's General Plan. Both Hemet and San Jacinto, however, anticipated changes in the proposed alignments when their General Plan amendments occurred in 2012 and language was included in their general plans that they would revise their general plans at the appropriate time, which demonstrates that the Project objectives are consistent with the general plans, overall, even though the specific alignments may not

be the same. Measures LU-1 through LU-5 will be required to bring the build alternatives and design options into concurrence with applicable plans and policies and into consistency with the goals in the General Plans.

Riverside County includes all potential alignments in their General Plan so any Build alternative would be consistent with the General Plan, and no measures are proposed.

This approach by all three affected jurisdictions means that the Project, including the alignment ultimately selected, will be consistent with the General Plans of the jurisdictions; although, it will be necessary for the City of Hemet or the City of San Jacinto to carry out their commitments to amend their plans.

The selection of Build Alternative 1b or Build Alternative 1br would be generally consistent with the goals and policies of the City's/County's General Plan, which promotes provision of a transportation system to support planned land use within the city. However, Alternative 1b and 1br are inconsistent with the designated roadways and land uses (residential, commercial, and industrial). As noted above, if necessary, Hemet intends to revise their General Plan to be consistent with the proposed project. Even if that does not occur, this alternative would still be consistent with overall policies and goals of the general plans, and so the discrepancy with the alignment would not be considered a significant impact.

Design Option 2b1 would include cul-de-sacs on Olive Avenue and Simpson Road. The access modifications to Olive Avenue and Simpson Road would permanently sever a County-designated "Collector" and "Major Roadway," respectively. Although this would be a substantive conflict with the general plan, the alternative would still improve traffic flow in the area and access to adjacent neighborhoods and businesses and so it would still be consistent with the overall goals and policies of the general plan. Therefore, this would not be considered a significant impact. To address the conflict regarding Olive Avenue and Simpson Road, if Design Option 2b1 had been identified as the Preferred Alternative, the County would be required to amend its general plan Land Use and Circulation elements to reflect the Project along this alignment. This action would require coordination with Riverside County to assess appropriate actions related to the classification (or reclassification) of these roadways as part of the County's approved circulation system.

Implementation of measure LU-7 (General Plan Consistency) the SR 79 Realignment Project Manager will request that the County of Riverside, the City of San Jacinto, and community of Hemet amend their respective General Plans to reflect the final SR 79 realignment, interchange locations, and modification of land use designations for property that will be acquired for the project and there the overall policies and goals of the general plan would be consistent.

4.2.2.7 Noise and Vibration (CEQA Checklist Questions XII.a, XII.c, and XII.d)

All Project alternatives would realign SR 79 through corridors where there is currently no highway noise source. Consequently, both traffic noise impacts and construction noise impacts were analyzed per Caltrans Noise protocol.

CEQA Traffic Noise Analysis

Under CEQA, the assessment entails evaluating the setting of the noise impact, then estimating how large or perceptible any noise increase would be in the area. Key considerations include the uniqueness of the setting, the

sensitive nature of the noise receivers, the magnitude of the noise increase, the number of residences affected, and the absolute noise level. As expected, the addition of a new highway would result in increases in ambient noise levels at many of the noise-sensitive locations along the Build alternatives.

The most effective noise abatement technique for this Project is the construction of noise barriers. Using the Caltrans Traffic Noise Analysis Protocol, noise barriers were studied at the sensitive receivers that would approach or exceed the NAC or would experience substantial increases above existing noise levels due to the Project impacts. For abatement measures to be incorporated into the Project, they must be both feasible and reasonable. Feasibility of noise abatement is an engineering concern. A minimum 5-dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety. Once a modeled noise barrier was shown to be feasible (that it would achieve the minimum 5-dBA reduction at a given receiver), the reasonableness of that barrier was also determined. To determine whether a noise barrier would be reasonable, the total cost allowance is calculated and then compared to the total estimated cost of the barrier.

The preliminary noise abatement recommendations are based on the NSR, the NADR, the NSR TRAM, the Supplemental Noise Study Report and Noise Abatement Decision Report (February 2015). The NSR investigated existing conditions, the potential for noise impacts, the appropriate type of mitigation for this Project, the potential for acoustically feasible mitigation, and the reasonable allowance for mitigation. To develop noise barrier recommendations, the NADR was produced. The noise abatement decisions in the NADR were based on the NSR, the cost estimates for the NSR barriers, and the optimization of those barriers with NSR reasonable allowances and cost estimates that could be modified to create a feasible and reasonable barrier. The optimization process refers to evaluating barrier heights and lengths to achieve the most practical barrier possible. Following the completion of the studies for the NSR/NADR, additional design options were developed. These design options were evaluated in the NSR TRAM. Using this process, 22 barriers were recommended for further consideration:

- Noise Barriers 1A-E1 and 2A-F1
- Noise Barriers 1A-G1/1B-G2 and 2A-H1/2B-H1
- Noise Barriers 1A-L3/2A-L3
- Noise Barriers 1A-J2/2B-J2 and 1B-K3/2A-K3
- Noise Barriers 1B-M3/2B-M3 and 1A-L2/2A-L2
- Noise Barriers 1B-M4/2B-M4
- Noise Barriers 1B-N1/2B-N1
- Noise Barriers 1B-N2/2B-N2

The CEQA noise analysis is independent of the Caltrans Traffic Noise Analysis Protocol. The appropriate CEQA noise threshold is the Caltrans definition for "substantial" – an increase in noise levels of 12 A-weighted decibels (dBA) or more above existing noise levels. Whether the substantial increase would result in a significant adverse effect is determined based on the context and intensity of the substantial noise increase, by comparing the existing noise level to the predicted noise level with the Project.

Overall, the increases in traffic noise levels associated with the Build alternatives are considered to be substantial and would, therefore, result in significant permanent noise impacts. For mitigation under CEQA, each group of sensitive receivers was evaluated to determine whether mitigation is warranted. If a substantial increase in noise level (12 dBA above existing noise levels) was predicted, mitigation was considered. If any of the following metrics were present, CEQA-specific mitigation was not considered to be reasonable:

- A noise barrier is recommended for further consideration under the Caltrans Traffic Noise Analysis Protocol.
- Proposed planned residential developments.
- One or two affected dwelling units exist in the area.
- The affected dwelling units are in commercial or agricultural areas.
- The affected dwelling units are exposed to other substantial traffic noise sources.

Based on the CEQA evaluation, the only additional noise barrier recommended is for the area associated with the private campground located in the southwestern quadrant of the Cottonwood Avenue/Warren Road intersection. Known as Reflection Lake or Cottonwood Lake, this is a private campground with recreational-vehicle storage and day-use picnic areas. Tent campers and recreational vehicles surround a small pond. Long-term residency may occur. Using the Caltrans Traffic Noise Analysis Protocol, a feasible and reasonable noise barrier could not be proposed at this location. CEQA is not constrained by the Caltrans cost-effectiveness criteria. Under CEQA, the barriers at this location (Noise Barriers 1A-JL1, 1B-M2, 2A-L1, and 2B-M2) warrant further consideration. A noise barrier at Reflection/Cottonwood Lake meet the metrics for CEQA-specific mitigation. The setting is a unique recreational facility. The campers are considered sensitive noise receptors. The magnitude of the noise increase is large and the number of affected users is substantial.

The rest of the impacted areas under CEQA either have a Caltrans Traffic Noise Analysis Protocol-recommended noise barrier or would not satisfy one or more of the CEQA criteria. For example, with Build Alternative 1a, several of the areas evaluated would not be expected to result in noise level increases of 12 dBA or more (1A-SCH1, 1A-G1, 1A-I2, and 1A-L2). Several of these areas have very few dwelling units (1A-SCH2, 1A-E2, 1A-E3, 1A-I1, 1A-J1, and 1A-J3). CEQA provides for the consideration of insulation of dwelling units where a low density of units makes a barrier unreasonable. This evaluation will be considered at the Preferred Alternative stage. Some areas would not be exceptionally sensitive because the current setting is commercial or agricultural (1A-E2, 1A-E3, and 1A-I1). Finally, several do not currently exist. They are in the planning stages and could be modified to mitigate noise within their own development plans (1A-J2, 1A-J3, and 1A-L3). The other Build alternatives and design options have similar outcomes. Table 4.2-1 summarizes this analysis.

Table 4.2-1 Summary of CEQA Noise Analysis

Sensitive Receiver Area/ Noise Barrier	Critical Receiver	Total Number of Dwelling Units	Location	Existing Noise Level Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level with Project Minus Existing Conditions Leq(h), dBA	CEQA Impact ?	Is the CEQA Mitigation Criteria Satisfied?	Rationale for CEQA Mitigation Reasonableness Determination
1A-SCH-1	1A-SCH.1*	1	Winchester Elementary School	67	73	6	No	–	–
1A-SCH-2	1A-SCH.2*	1	Private Daycare in Winchester	53	68	15	**Yes**	No	Few Affected Dwelling Units
1A-E1	1A-E3*	75	Winchester	50	71	21	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
1A-E2	1A-E2.6*	7	Milan Road and Grand Avenue	40	68	28	**Yes**	No	Few Affected Dwelling Units/Commercial or Agricultural Setting
1A-E3	1A-E3.1*	2	Stowe Road	48	66	18	**Yes**	No	Few Affected Dwelling Units/Commercial or Agricultural Setting
1A-G1	1A-G1.9*	66	Roseland Mobile Home Estates at SR 74	76	77	1	No	–	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
1A-I1	1A-I1.1*	4	Hyatt Avenue	41	71	30	**Yes**	No	Few Affected Dwelling Units/Commercial or Agricultural Setting
1A-I2	1A-I2.2*	21	Warren Road	62	65	3	No	No	Developer-built wall, added since NSR, reduces noise impacts
1A-J1	1A-J1.1*	3	Maze Stone Court	44	70	26	**Yes**	No	Few Affected Dwelling Units
1A-J2	1A-J2.1*	64	Seventh Street	44	71	27	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/ Development in Planning Stage (nonexistent)

Table 4.2-1 Summary of CEQA Noise Analysis

Sensitive Receiver Area/ Noise Barrier	Critical Receiver	Total Number of Dwelling Units	Location	Existing Noise Level Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level with Project Minus Existing Conditions Leq(h), dBA	CEQA Impact ?	Is the CEQA Mitigation Criteria Satisfied?	Rationale for CEQA Mitigation Reasonableness Determination
1A-J3	1A-J3.1*	8	Esplanade Avenue	55	69	14	**Yes**	No	Few Affected Dwelling Units/Development in Planning Stage (nonexistent)
1A-JL1	1A-JL1.3*	23	Campground at Cottonwood Avenue	48	68	20	**Yes**	**Yes**	**Consideration of a Barrier under CEQA is Recommended for this Campground**
1A-L2	1A-L2.3*	43	Cottonwood Avenue	58	69	11	No	–	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
1A-L3	1A-L3.8*	59	Ramona Boulevard	52	67	15	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/ Development in Planning Stage (nonexistent)
1B-B1	1B-B1.5*	6	Patterson Avenue	46	73	27	**Yes**	No	Few Affected Dwelling Units
1B-B2	1B-B2.2*	2	Winchester Road	72	76	4	No	–	–
1B-C1	1B-C1.5*	6	Milan Avenue	41	67	26	**Yes**	No	Few Affected Dwelling Units
1B-C2	1B-C2.1*	2	Stowe Road	48	66	18	**Yes**	No	Few Affected Dwelling Units
1B-G2	1B-G2.9*	66	Roseland Mobile Home Estates at SR 74	76	77	1	No	–	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
1B-I1	1B-I1.1*	4	Hyatt Avenue	41	71	30	**Yes**	No	Few Affected Dwelling Units
1B-I2	1B-I2.2*	21	Warren Road	62	65	3	No	No	Developer-built wall, added since NSR, reduces noise impacts
1B-K2	1B-K2.4*	5	Maze Stone Court	49	68	19	**Yes**	No	Few Affected Dwelling Units

Table 4.2-1 Summary of CEQA Noise Analysis

Sensitive Receiver Area/ Noise Barrier	Critical Receiver	Total Number of Dwelling Units	Location	Existing Noise Level Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level with Project Minus Existing Conditions Leq(h), dBA	CEQA Impact ?	Is the CEQA Mitigation Criteria Satisfied?	Rationale for CEQA Mitigation Reasonableness Determination
1B-K3	1B-K3.12*	64	Seventh Street	61	68	7	No	–	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
1B-K4	1B-K4.1*	8	Esplanade Avenue	53	69	16	**Yes**	No	Few Affected Dwelling Units
1B-M2	1B-M2.3*	23	Campground at Cottonwood Avenue	48	68	20	**Yes**	**Yes**	**Consideration of a Barrier under CEQA is Recommended for this Campground**
1B-M3	1B-M3.3*	43	Cottonwood Avenue	58	69	11	No	–	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
1B-M4	1B-M4.2*	84	Cawston Avenue	38	73	35	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/Development in Planning Stage (nonexistent)
1B-M5	1B-M5.6*	18	Sanderson Avenue	66	74	8	No	–	–
1B-N1	1B-N1.6*	52	Ramona Boulevard	43	75	32	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/ Development in Planning Stage (nonexistent)
1B-N2	1B-N2.5*	60	Sanderson Avenue	46	75	29	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/ Development in Planning Stage (nonexistent)
2A-A3	2A-A3.1*	2	Winchester Road	72	75	3	No	–	–
2A-F1	2A-F1.8*	80	City of Winchester	50	69	19	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation

Table 4.2-1 Summary of CEQA Noise Analysis

Sensitive Receiver Area/ Noise Barrier	Critical Receiver	Total Number of Dwelling Units	Location	Existing Noise Level Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level with Project Minus Existing Conditions Leq(h), dBA	CEQA Impact ?	Is the CEQA Mitigation Criteria Satisfied?	Rationale for CEQA Mitigation Reasonableness Determination
2A-SCH-1	2A-SCH.1*	1	Winchester Elementary School	67	73	6	No	–	–
2A-SCH-2	2A-SCH.2*	1	Private Daycare in Winchester	52	69	17	**Yes**	No	Few Affected Dwelling Units
2A-H1	2A-H1.9*	70	Roseland Mobile Home Estates at SR 74	76	77	1	No	–	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
2A-I1	2A-I1.1*	4	Hyatt Avenue	41	71	30	**Yes**	No	Few Affected Dwelling Units
2A-I2	2A-I2.2*	21	Warren Road	62	65	3	No	–	Developer-built wall, added since NSR, reduces noise impacts
2A-J3	2A-J3.1*	8	Esplanade Avenue	55	70	15	**Yes**	No	Few Affected Dwelling Units
2A-K2	2A-K2.4*	5	Maze Stone Court	49	68	19	**Yes**	No	Few Affected Dwelling Units
2A-K3	2A-K3.2*	64	Seventh Street	43	65	22	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
2A-L1	2A-L1.3*	23	Campground at Cottonwood Avenue	54	61	13	**Yes**	**Yes**	**Consideration of a Barrier under CEQA is Recommended for this Campground**
2A-L2	2A-L2.3*	43	Cottonwood Avenue	58	69	11	No	–	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
2A-L3	2A-L3.8*	59	DeAnza Avenue	52	67	15	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/Development in Planning Stage (nonexistent)
2B-B1	2B-B1.5*	6	Patterson Avenue	48	73	25	**Yes**	No	Few Affected Dwelling Units

Table 4.2-1 Summary of CEQA Noise Analysis

Sensitive Receiver Area/ Noise Barrier	Critical Receiver	Total Number of Dwelling Units	Location	Existing Noise Level Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level with Project Minus Existing Conditions Leq(h), dBA	CEQA Impact ?	Is the CEQA Mitigation Criteria Satisfied?	Rationale for CEQA Mitigation Reasonableness Determination
2B-B2	2B-B2.2*	2	Winchester Road	72	76	4	No	–	–
2B-D2	2B-D2.1*	1	Simpson Road	59	68	9	No	–	–
2B-D4	2B-D4.1*	1	Simpson Road	67	70	3	No	–	–
2B-H1	2B-H1.9*	70	Roseland Mobile Home Estates at SR 74	76	77	1	No	–	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation
2B-I1	2B-I1.1*	4	Hyatt Avenue	41	71	30	**Yes**	No	Few Affected Dwelling Units
2B-I2	2B-I2.2*	21	Warren Road	62	65	3	No	–	Developer-built wall, added since NSR, reduces noise impacts
2B-J1	2B-J1.1*	3	Maze Stone Court	45	71	26	**Yes**	No	Few Affected Dwelling Units
2B-J2	2B-J2.1*	64	Seventh Avenue	43	71	28	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/ Development in Planning Stage (nonexistent)
2B-J3	2B-J3.1*	8	Esplanade Avenue	55	70	15	**Yes**	No	Few Affected Dwelling Units
2B-M2	2B-M2.3*	23	Campground at Cottonwood Avenue	48	68	20	**Yes**	**Yes**	**Consideration of a Barrier under CEQA is Recommended for this Campground**
2B-M3	2B-M3.7*	37	Cottonwood Avenue	58	69	11	No	–	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation

Table 4.2-1 Summary of CEQA Noise Analysis

Sensitive Receiver Area/ Noise Barrier	Critical Receiver	Total Number of Dwelling Units	Location	Existing Noise Level Leq(h), dBA	Design Year Noise Level with Project Leq(h), dBA	Design Year Noise Level with Project Minus Existing Conditions Leq(h), dBA	CEQA Impact ?	Is the CEQA Mitigation Criteria Satisfied?	Rationale for CEQA Mitigation Reasonableness Determination
2B-M4	2B-M4.2*	84	Cawston Avenue	38	73	35	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/Development in Planning Stage (nonexistent)
2B-M5	2B-M5.6*	18	Sanderson Avenue	66	74	8	No	–	–
2B-N1	2B-N1.10*	52	Ramona Avenue	45	75	30	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/ Development in Planning Stage (nonexistent)
2B-N2	2B-N2.5*	60	Sanderson Avenue	46	75	29	**Yes**	No	Caltrans Traffic Noise Analysis Protocol Barrier Recommendation/ Development in Planning Stage (nonexistent)

Source: Noise Study Report, July 2010

Note: NSR = Noise Study Report

CEQA Construction Noise Analysis

The appropriate CEQA threshold for construction noise is the limit established by the Caltrans Standard Specifications provision. Caltrans Standard Specifications, Section 14-8.02, Noise Control, establishes a noise level limit of 86 dBA at 50 feet from construction activities from 9:00 p.m. to 6:00 a.m. Other standards exist. For example, there are provisions established by Riverside County, Hemet, and San Jacinto. These other construction noise provisions are similar to the Caltrans provision. For consistency, the Caltrans Standard Specifications provision is the appropriate threshold.

Noise levels generated by construction activities and machinery during the construction phases of the Project would be expected to exceed the 86-dBA significance threshold.

These impacts are expected to be intermittent and temporary. Adherence to standard construction procedures will minimize impacts to the extent possible. The CEQA analysis of these increases is summarized below.

Two types of construction noise impacts are expected during construction. First, construction crews will move equipment and materials to the construction site. This would incrementally increase noise levels on roads leading to the site. A relatively high level of exposure can be expected (i.e., up to 87 maximum sound level [L_{max}] dBA at 50 feet) from passing trucks. The second type of construction noise is generated during excavation, grading, and building operations. Construction involves a variety of equipment and, consequently, a variety of noise characteristics. Typical noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because of the prevalence of earthmoving equipment. The highest volumes will be intermittent because the typical operating cycle for this type of equipment involves full-power operation followed by periods of lower power operation.

Compliance with existing noise control ordinances would reduce construction noise impacts. The noise control policies for the Project's construction activities include:

- Minimization of high-noise construction equipment adjacent to sensitive land uses
- Establishment of hours of operation
- Use of current noise suppression technology and equipment
- Location of noise equipment away from sensitive receptors
- Use of temporary noise attenuation fences, when applicable
- Route construction traffic to minimize disruption to residences and existing operations
- Construction scheduling limitations should depend on the sensitivity of the affected receptors

4.2.2.8 POPULATION AND HOUSING (CEQA CHECKLIST QUESTIONS XIII.B AND XIII.C)

The Project could displace some residences and businesses, as shown in Table A-4 (Appendix A, page 82) and summarized in Table 4.2-2. However, sufficient resources would be available to provide satisfactory replacements for Project-related residential and business relocations (Department 2006). The Project would be located on the periphery of established communities, along the eastern boundary of Winchester and the western boundaries of the

cities of Hemet and San Jacinto. It is recognized that any relocation would be a momentous event in the life of any family or business that was required to move as a result of being within the Project right-of-way. Based on the locations of the Project alignments, the projected number of relocations, and implementation of the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 as amended, as discussed in RELOC-1, the impacts of the Project as a whole would be considered less than significant. Construction of replacement housing would not be required (Department 2006).

Table 4.2-2 Summary of Displacements by Build Alternative

Affected Environment	Build Alternative 1a	Build Alternative 1b (including Design Option 1b1)	Build Alternative 1br	Build Alternative 2a	Build Alternative 2b (including Design Option 2b1)
Residential Units					
Total Residential Units	42	37	26	39	29
Number of Residents	134	106	115	107	75
Commercial Units					
Total Commercial Units	14	14	19	14	13
Number of Employees	89	90	105	89	86
Total Units Displaced	56	51	45	53	42
Total Persons Displaced[a]	223	196	220	196	161

Source: Draft Relocation Impact Report July 2010, Final Relocation Impact Report, November 2014

[a] Some of these persons also may be residential displacements.

A goal of the Project is to reduce congestion and improve traffic flow. This will involve removal of some traffic from the principal commercial thoroughfares in Hemet and San Jacinto. This will improve conditions for pedestrians and local traffic, but may reduce the pass-by traffic on which some businesses depend. For businesses that do not depend on pass-by traffic, improved traffic conditions may increase patronage in local shops resulting in a net benefit. Also, the size of the Hemet and San Jacinto area would limit the potential for negative impacts on local businesses. The large commercial base will continue to draw people to the area to purchase goods and services. Substantial traffic will remain on Florida Avenue and San Jacinto Street that will provide a customer base for businesses that depend on pass-by traffic. Impacts of the Project considered as a whole are less than significant.

4.2.2.9 Public Services (CEQA Checklist Question XIV.a)

The Project would intersect the service areas for the California Highway Patrol (CHP), Hemet Police Department (HPD), and Riverside County Sheriff's Department (RCSD). In addition, the CHP would be responsible for primary patrol of the realigned SR 79.

Project construction could temporarily disrupt circulation patterns and affect the ability of fire and police to respond to emergency calls. Fire protection that is provided by the Hemet Fire Department (HFD) and Riverside

County Fire Department (RCFD) has the potential to be temporarily impacted. Because California Department of Forestry and Fire Protection operations at Ryan Air Attack Base are aerial rather than ground based, the Project would not interfere with these emergency operations.

No police stations are in the Project study area. However, police protection provided by the CHP, HPD, and RCSD has the potential to be impacted if patrol routes are affected by traffic delays and detours during Project construction. Mitigation measure SERV-2 will ensure that potential Project impacts to emergency response are less than significant by informing the emergency responders in the area of any temporary detours or closures so that response routes can be temporarily modified.

The Project would improve the geometry and efficiency of SR 79, enhancing the capability for emergency response and evacuation. Thus, the impact will be less than significant. Additionally, measure SERV-1 will further ensure that any potential permanent Project impacts to emergency response are minimized.

A detailed discussion on schools in the Project area is presented in Section 3.1.4.1. The Project would bisect school attendance areas and could disrupt routes to and from local schools. Modifications to school routes commonly occurs and so this is not considered a significant impact. Implementation of measures COM-2 and COM-3 would minimize potential impacts by identifying detour routes that maintain adequate access and communicating that information to the schools and community.

The Project does not propose the construction of residences or other facilities that would result in an increased number of students. Therefore, no permanent impacts would occur to overall school enrollment.

The Project would be immediately west of a neighborhood park located along Cherry Laurel Lane (Tamarisk Park) and another adjacent to Cottonwood Avenue (Ambassador Street Sports Field). However, access to these resources would be maintained throughout construction and recreational activities, features, or attributes of the Ambassador Street Sports Field and Tamarisk Park would not be affected nor would any qualifying aspects of the resource be substantially impaired. Also, the Project would not encroach onto the park property and would not impact the continued use of the parks during construction or operation. In addition, another neighborhood park is available within the same residential area, less than 984 ft away from Ambassador Street Sports Field. This impact is considered less than significant. Additionally, implementation of minimization measure COM-2 would further reduce temporary access impacts. RCTC and Caltrans would coordinate with the affected neighborhood to avoid disruption of access, as well as implement a Traffic Management Plan for Access. The Traffic Management Plan will identify traffic control measures and detour routes to maintain adequate access.

As detailed in Section 3.1.1.3, there are no existing bike paths or trails in the study area. Some trails and bike paths have been designated in various planning documents, but none have been built nor are there any plans to build them. This was confirmed in a series of meetings with the responsible officials (meeting summaries are in Appendix I). There would be no impact to existing bike paths or trails. At a minimum a five-foot sidewalk will be constructed on at least one side of the bridge which would result in no impact.

Project construction could temporarily disrupt traffic circulation patterns and adversely affect routes to schools, daycares, retirement/assisted living centers, hospitals, public service facilities, and waste disposal facilities presented in Section 3.1.4. Routes to these locations are commonly modified and so the impact is considered less than significant. However, implementation of measure COM-3 (Traffic Management Plan) would further reduce these potential impacts.

4.2.2.10 RECREATION (CEQA CHECKLIST QUESTION XV.A)

Based on the nature of the Project, it would not introduce substantial numbers of new residents to the area that would increase the use of existing parks or recreation facilities. Therefore, there would be no impact to recreational facilities.

4.2.2.11 TRANSPORTATION/TRAFFIC (CEQA CHECKLIST QUESTION XVI.E)

The Project would bisect the service areas for the Hemet Fire Department and Riverside County Fire Department. Because California Department of Forestry and Fire Protection (CAL FIRE) operations at Ryan Air Attack Base are aerial, the Project would not interfere with these emergency operations. The Project also would bisect the service areas for the California Highway Patrol (CHP), Hemet Police Department, and Riverside County Sheriff's Department. The CHP would be responsible for primary patrol of the realigned SR 79.

Project construction could temporarily disrupt circulation patterns and affect the ability of fire and police to respond to emergency calls. Fire protection that is provided by the Hemet Fire Department (HFD) and Riverside County Fire Department (RCFD) has the potential to be temporarily impacted. Because California Department of Forestry and Fire Protection operations at Ryan Air Attack Base are aerial rather than ground based, the Project would not interfere with these emergency operations.

No police stations are in the Project study area. However, police protection provided by the CHP, HPD, and RCSD has the potential to be impacted if patrol routes are affected by traffic delays and detours during Project construction. Mitigation measure SERV-2 will ensure that potential Project impacts to emergency response are less than significant by informing the emergency responders in the area of any temporary detours or closures so that response routes can be temporarily modified.

The Project would improve the geometry and efficiency of SR 79, enhancing the capability for emergency response and evacuation. Thus, the impact will be less than significant. Additionally, measure SERV-1 will further ensure that any potential permanent Project impacts to emergency response are minimized.

4.2.2.12 UTILITIES AND SERVICE SYSTEMS (CEQA CHECKLIST QUESTIONS XVII.C AND XVII.F)

Storm water conveyance facilities are required as part of the Project to ensure proper drainage and maintain existing offsite water flows. The storm water conveyance facilities will maintain existing drainage patterns and prevent erosion, siltation, and flooding. The build alterntaives include modifications to existing storm water drainage facilities as well as new storm water management freatures to accommodate increase stoom water flows. These facities would not result in substantial impacts related to the human and natural environmental because they would not result in the need for expanded or new storm water facities beyond what is proposed. Because

construction of these facilities will be conducted in accordance with applicable Regional Water Quality Control Board (RWQCB) requirements, including the implementation of best management practices, as summarized in WQ-1, the impacts are considered less than significant.

4.2.2.13 Mandatory Findings of Significance (CEQA Checklist Questions XVIII.a and XVIII.c)

The Project would have direct and indirect effects. It would be associated with short-term construction related effects such as air pollutant emissions, noise, and temporary disruption to recreational uses, as well as potential long-term impacts to agricultural, biological, community cohesion, cultural, paleontological, and visual resources. However, as described earlier in Section 4.2.1.4 and 4.2.2.1, Biological Resources, the Build Alternatives have the potential to result in adverse impacts on habitats and natural communities; threatened, endangered, and special-status species; and protected waters. These potential impacts would be substantially avoided, minimized, or mitigated to below a level of significance under CEQA based on implementation of the avoidance, minimization, and mitigation measures described in Section 4.3 of this CEQA chapter and in detail in Sections 3.3.1 through 3.3.6 of this EIR/EIS.

As discussed in Section 3.1.8, Cultural Resources, the sediments in the study area have a high sensitivity for the presence of cultural resources. Therefore, Alternative 1br may impact cultural resources during construction. During excavation and grading for the Alternative 1br, cultural resources would be able to be recovered. To reduce impacts to cultural resources that may be present in the areas proposed for grading and excavation for Alternative 1br, Measure CR-1 in Section 3.1.8.3, With implementation of Measure CR-1 through CR - 7, impacts to cultural resources from construction of the Build Alternatives would be reduced to a less than significant level..

4.2.3 Unavoidable Significant Environmental Effects

As previously discussed, most of the significant adverse effects associated with the Project would be sufficiently avoided, minimized, and/or mitigated to a less than significant level, based on the measures identified in the Environmental Commitments Record in Appendix E. However, some environmental effects cannot be reduced to a less than significant level. This section discusses those environmental effects that would remain significant even after mitigation measures are implemented.

4.2.3.1 Aesthetics (CEQA Checklist Questions I.a, I.b, and I.c)

The County of Riverside, City of Hemet, and City of San Jacinto have established policy goals to preserve natural ridgelines, the scenic quality of hills, and to avoid slope scarring. The proposed Project would alter the natural ridgelines and cause scarring and would require substantial removal of existing hillsides and the creation of visually prominent cut slopes, especially in the West Hemet Hills.

The various Build alternatives would result in different degrees of exposure to existing viewer groups and from SR 74. All five Build alternatives would be visible to travelers heading towards SR 79 along State Eligible Scenic Highway SR 74. However, changes to the west and north sides of the West Hemet Hills associated with Build Alternatives 1a, 1b, and 1br would be more visible to people driving east on SR 74 than changes to the east side of the West Hemet Hills associated with Alternatives 2a and 2b would be. This would be the case because changes to

the west and north sides of the West Hemet Hills would be seen at closer distances from SR 74 than changes to the east side of the West Hemet Hills would be.

Build Alternative 2b would result in the least overall exposure of the five alternatives to the communities of Winchester and Green Acres because it would not be located near either community. Green Acres residents in Green Acres would have close-range views of Build Alternatives 1a and 1b, 1br because those alternatives would require cuts along the west and north sides of the West Hemet Hills immediately adjacent to the Green Acres community. Winchester residents would have midrange views of all five Build alternatives, but close-range views of Build Alternatives 1a and 2a.

All of the Build alternatives and both design options would alter natural ridgelines and cause scarring. Build Alternatives 1a and 1b would cause more visible scarring but less ridgeline alteration than Build Alternatives 1br, 2a and 2b. All of these changes would be considered adverse. Design Options 1b1 and 2b1 would also result in high levels of adverse change in visual quality. However, because they would require less road cutting through the West Hemet Hills than Build alternatives 1a, 1b, 2a, and 2b, they would cause the least amount of adverse change in the southern part of the Project of all the alternatives except for Alternative 1br.

Alternatives 1a, 1b, and 1br, would cause scarring along the north and west slopes of the West Hemet Hills. Alternative 1br would cause less scarring, because it would be shifted farther west (at a lower elevation) around the West Hemet Hills compared to Alternatives 1a and 1b. Design Option 1b1 would also cause scaring, but less scarring on the west slope than Alternatives 1a and 1b. Like Build Alternatives 2a and 2b, Design Option 2b1 would require removal of a substantial portion of the southern peak of the West Hemet Hills, but would require less material removal. The difference in changes to visual quality between Design Options 1b1 and 2b1 would be marginal.

Although Design Option 1b1 would be visible from Green Acres, it would be the least visible design option or Build alternative from Winchester, Hemet, and San Jacinto. Design Option 2b1 would not be visible from Green Acres, but it would be visible from parts of Winchester and would likely also be visible from parts of Hemet and San Jacinto. Note that the design options would change their respective Build alternatives only in the southern part of the Project. North of Devonshire Avenue, Design Option 1b1 would be the same as Build Alternative 1b and Design Option 2b1 would be the same as Build Alternative 2b, so visual impacts would be the same as well.

Design Options 1b1 and 2b1 would also result in high levels of adverse change in visual quality. However, because they would require less road cutting through the West Hemet Hills than the Build alternatives, they would cause the least amount of adverse change in the southern part of the Project. Like Build Alternatives 1a, and 1b, and 1br, Design Option 1b1 would cause scarring along the north and west slopes of the West Hemet Hills, but it would cause less scarring on the west slope than the Build alternatives 1a and 1b. Like Build Alternatives 2a and 2b, Design Option 2b1 would require removal of a substantial portion of the southern peak of the West Hemet Hills, but would require less material removal. The difference in visual quality between Design Options 1b1 and 2b1 would be marginal.

Noise barriers have been proposed as abatement for noise impacts generated by the Project and were found to have the potential to create substantial visual impacts. Most Project noise barriers would exceed 0.5 mile (mi) in length and 10 feet (ft.) in height. Where the addition of these barriers would contribute to making the Project substantially higher than surrounding buildings, the character and quality of views in the area could be substantially altered. Noise barriers on elevated roadways also have the potential to eliminate panoramic views that would otherwise be available to motorists.

No mitigation measures would fully reduce the impacts of the removal of large portions of the existing hillsides and ridges seen from the communities of Winchester and Green Acres and SR 74 (eligible State Scenic Highway). Therefore, despite mitigation and minimization commitments VIS-12 through VIS-29, the impacts to visual character and visual impacts associated with removal of large segments of existing hillsides (particularly the West Hemet Hills), as viewed from Eligible State Scenic Highway SR 74, and the Project's impact on views from Clayton A. Record, Jr. Viewpoint and the North Hills Trail would remain potentially significant.

4.2.3.2 AIR QUALITY (CEQA CHECKLIST QUESTIONS III.B AND III.C)

The proposed Project would create short-term potentially significant air quality impacts from construction-related activities. Project construction would result in temporary emissions of carbon monoxide (CO), oxides of nitrogen (NO_X), reactive organic gas (ROG), and particulate matter with aerodynamic diameters of less than 2.5 micrometers ($PM_{2.5}$) and less than 10 micrometers (PM_{10}). These emissions would come from stationary or mobile-powered onsite construction equipment such as signal boards, excavators, backhoes, and graders. Construction activities are expected to occur during a 39 to 40-month period for 5 days per week and up to 24 hours per day for some activities. This intensive construction schedule, in addition to the hauling requirements, would be expected to result in elevated emissions of ozone (O_3) precursors (NO_X and ROG), PM_{10}, and $PM_{2.5}$. As discussed in Section 3.2.6, minimization measures would be implemented to reduce PM_{10} and $PM_{2.5}$ emissions to a less than significant level. However, NO_X emissions would remain elevated after implementation of minimization measures. Therefore, the air quality impacts from construction NO_X emissions would be expected to be potentially significant.

Construction of the Project and other projects would occur in the area at the same time. According to the CEQA guidelines (California Code of Regulations Title 14, Chapter 3, Article 20, Section 15355), a cumulative impact is "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." For example, it would be expected that Project construction would overlap with construction activities of the Mid County Parkway Project. For construction, because ozone is a regional pollutant and has short-term air quality standards (e.g., 8 hours), ozone precursors (NO_X and ROG) were considered for cumulative impacts. Because NO_X emissions from Project construction would be expected to result in a potentially significant impact to air quality, when considered with construction of the Mid County Parkway project, the SR 79 Realignment Project would be expected to have a short-term potentially significant cumulative impact to air quality. NO_X emissions from construction of the Project may cause or contribute substantially to an exceedance of an air quality standard and may result in a short-term cumulatively substantial net increase in emissions of a nonattainment pollutant (ozone).

Minimization measures AQ-1 through AQ-9 would address reducing construction equipment exhaust emissions. However, after implementation of the minimization measures, impacts from construction NO_X emissions would be expected to remain temporarily adverse due to the magnitude of the construction duration and activities of the Project.

4.2.3.3 BIOLOGICAL RESOURCES (CEQA CHECKLIST QUESTIONS IV.A, IV.C, AND IV.D)

The Project would impact special-status plant and animal species and/or their habitat. Plant species are presented first, followed by animal species. The impact would be potentially significant; however, measures are proposed to offset the impacts.

CEQA Checklist Question IV.a

Plant Species

Permanent Impacts

All Build alternatives would permanently impact sensitive plant species covered by the Riverside County Multiple Species Habitat Conservation Plan (MSHCP), as well as sensitive plant species not covered by the MSHCP. Details about the MSHCP are in Section 3.3.1.3. This discussion about plant species presents these impacts and provides an assessment of long-term conservation value (LTCV) as defined in the MSHCP. LTCV populations are Narrow Endemic and Criteria Area plants that are located in Criteria Area Cells or required survey areas and that can contribute toward MSHCP conservation objectives and reserve assembly.

Build Alternatives 1a and 1b

Permanent direct or permanent indirect impacts to 11 special-status plant species would occur as a result of Build Alternatives 1a or 1b. Nine of these 11 species are MSHCP Covered Species, one of which, the San Jacinto Valley crownscale, is federally listed as endangered. Three of the nine Covered Species would have populations with LTCV in Build Alternative 1a, and two of these would also have LTCV in Build Alternative 1b.

Two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

The 11 special-status plant species that would be impacted by Build Alternatives 1a and 1b are listed below, followed by an assessment of their LTCV if applicable. Specific impacts to these plant populations and individuals are summarized in Table 3.3-3.

- San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*) – Federally listed as endangered, California Native Plant Society (CNPS) List 1B.1
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) – CNPS List 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) – CNPS List 1B.2
- Smooth tarplant (*Centromadia pungens* ssp. *laevis*) – CNPS List 1B.1
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) – CNPS List 3.2
- Long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*) – CNPS List 1B.2

- Paniculate tarplant (*Deinandra paniculata*) – CNPS List 4.2
- Vernal barley (*Hordeum intercedens*) – CNPS List 3.2
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) – CNPS List 1B.1
- Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*) – CNPS List 1B.2
- Little mousetail (*Myosurus minimus* ssp. *apus*) – CNPS List 3.1

Assessment of LTCV Populations in Build Alternative 1a

Some populations that would be impacted by Build Alternative 1a, including San Jacinto Valley crownscale, Davidson's saltscale, Plummer's mariposa lily, smooth tarplant, Parry's spineflower, long-spined spineflower, vernal barley, and little mousetail (the one population at the northwest corner of Warren Road and Esplanade Avenue), do not have LTCV. These populations would not require mitigation to comply with the MSHCP.

Permanent indirect impacts to the little mousetail and smooth tarplant LTCV populations in the indirect impact area and Additional Indirect Impact Study Area 2 could exceed the 90-percent avoidance threshold. If this occurs, it would be a substantial impact, but is not likely. Rainfall is the most important source of water for the little mousetail populations, but shallow seasonal surface runoff may also contribute to the local hydrology. This part of the Project area is relatively flat, and the populations would be up slope and southeast of the PIA. Runoff in this area flows principally from the south during storms, so it is unlikely that the hydrology within Additional Indirect Impact Study Area 2 or the Build Alternative 1a indirect impact area would be affected by construction. Therefore, permanent indirect impacts associated with changes in hydrology are not expected to the LTCV populations of little mousetail in the Roadway Segment J portion of the Build Alternative 1a indirect impact area or to the little mousetail and smooth tarplant populations with LTCV in Additional Indirect Impact Study Area 2. The 90-percent LTCV population avoidance threshold can be attained by using minimization measures (see Section 3.3.3.4).

Direct impacts to the 20 LTCV populations of Coulter's goldfields and 18 LTCV populations of smooth tarplant in the PIA of Build Alternative 1a could not be avoided if this Build alternative is identified as the Preferred Alternative. Impacts (e.g., hydrologic alteration, introduction of noxious weeds) to the 3 Coulter's goldfields and 2 smooth tarplant LTCV populations in the indirect impact area would be avoided or minimized during construction (see Section 3.3.3.4).

With Build Alternative 1a, permanent direct and indirect impacts to these populations of Coulter's goldfields and smooth tarplant would exceed the 90-percent LTCV avoidance threshold. This would be a substantial impact. A Determination of Biological Equivalent or Superior Preservation (DBESP) and appropriate compensation would be required to comply with the MSHCP.

Assessment of LTCV Populations in Build Alternative 1b

Some of the populations that would be impacted by Build Alternative 1b, including San Jacinto Valley crownscale, Davidson's saltscale, Plummer's mariposa lily, smooth tarplant, Parry's spineflower, long-spined spineflower, and vernal barley, do not have LTCV. These populations would not require mitigation to comply with the MSHCP.

The little mousetail and smooth tarplant LTCV populations in the indirect impact area and Additional Indirect Impact Study Area 2 in Cell 3291 would be the same as Build Alternative 1a. Although the two Build alternatives would differ in this location, the LTCV assessment would be the same.

Design Option 1b

The impacts associated with Design Option 1b1 would be the same as those presented for Build Alternative 1b (Table 3.3-3).

Preferred Alternative (Build Alternative 1b with Refinements)

Permanent direct or permanent indirect impacts to nine special-status plant species would occur as a result of the Preferred Alternative. Seven of these nine are MSHCP Covered Species. Smooth tarplant is the only plant species with populations with LTCV that would be impacted by the Preferred Alternative.

Two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

The nine special-status plant species that would be impacted by the Preferred Alternative are listed below, followed by an assessment of their LTCV if applicable. Specific impacts to plant populations and individuals with LTCV are summarized in Table 3.3-3.

- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) – CNPS List 1B.2
- Smooth tarplant (*Centromadia pungens* ssp. *laevis*) – CNPS List 1B.1
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) – CNPS List 3.2
- Long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*) – CNPS List 1B.2
- Paniculate tarplant (*Deinandra paniculata*) – CNPS List 4.2
- Vernal barley (*Hordeum intercedens*) – CNPS List 3.2
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) – CNPS List 1B.1
- Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*) – CNPS List 1B.2
- Little mousetail (*Myosurus minimus* ssp. *apus*) – CNPS List 3.1

Assessment of LTCV Populations in the Preferred Alternative

Some of the populations that would be impacted by the Preferred Alternative, including Davidson's saltscale, smooth tarplant, Parry's spineflower, long-spined spineflower, vernal barley, Coulter's goldfields and little mousetail do not have LTCV. These populations would not require mitigation to comply with the MSHCP.

A portion of the Preferred Alternative is located within the northwest portion of Cell 3291, which is a component of Noncontiguous Habitat Block 7. Grassland habitat containing vernal pools and little mousetail populations with LTCV are located within this Cell, adjacent to the PIA. However, indirect impacts to hydrology that may impact these resources would not occur based on the topography and observations of conditions in this location during the wet season, which indicated that site drainage is from the south to the north. No Project activity (direct impacts) would occur in the areas with vernal pools and LTCV little mousetail populations, which are located upgradient

from the PIA and work areas. As a result, construction activities associated with the Preferred Alternative are not expected to affect the local hydrology that would affect the little mousetail populations with LTCV.

Smooth tarplant is the only CASSA 3 species that would be permanently and directly impacted by the Preferred Alternative. The impacts to CASSA 3 plants suitable for long-term conservation value (LTCV) are limited to Criteria Cells 3683, 3584, and 3291. Within Criteria Cell 3683, there is 1 population consisting of 1,000 plants, within Criteria Cell 3584 there are 4 populations consisting of 884 plants, and within Criteria Cell 3291, there is 1 population with 60 plants (Figure 3.3-26). In addition to the direct impacts within Criteria Cell 3291, there are a total of 2 populations consisting of 50 plants that could be indirectly impacted. Because these populations were identified within criteria cells within CASSA 3, they have LTCV. A DBESP for smooth tarplant was prepared and approved to address and evaluate impacts and is included as Appendix M.

Build Alternatives 2a and 2b

Permanent direct or permanent indirect impacts to 16 special-status plant species would result from Build Alternatives 2a and 2b. Fourteen of these 16 species are MSHCP Covered Species, four of which are listed as threatened or endangered. Eight of the 14 Covered Species have populations with LTCV.

Two special-status plants, paniculate tarplant and Robinson's peppergrass, are not included in the MSHCP.

The special-status plant species that would be impacted by Build Alternatives 2a and 2b are listed below, followed by an assessment of their LTCV if applicable. Specific impacts to these plant populations and individuals are summarized in Table 3.3-3.

- San Jacinto Valley crownscale – Federally listed as endangered, CNPS List 1B.1
- Parish's brittlescale (*Atriplex parishii*) – CNPS List 1B.1
- Davidson's saltscale – CNPS List 1B.2
- Smooth tarplant – CNPS List 1B.1
- Parry's spineflower – CNPS List 3.2
- Long-spined spineflower – CNPS List 1B.2
- Paniculate tarplant – CNPS List 4.2
- Palmer's grapplinghook (*Harpagonella palmeri*) – CNPS List 4.2
- Vernal barley – CNPS List 3.2
- Coulter's goldfields – CNPS List 1B.1
- Robinson's peppergrass – CNPS List 1B.2
- Small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*) – CNPS List 4.2
- Little mousetail – CNPS List 3.1
- Spreading navarretia (*Navarretia fossalis*) – Federally listed as threatened, CNPS List 1B.1

- California Orcutt grass (*Orcuttia californica*) – Federally and state listed as endangered, CNPS List 1B.1
- Thread-leaved brodiaea (*Brodiaea filifolia*) – Federally listed as threatened and state listed as endangered, CNPS List 1B.1

Assessment of LTCV Populations in Build Alternative 2a

Criteria Area Cells 3683, 3684, 3791, 3887, 3791, 3891, 4007, 3584, 3291, 2774, 2775, 2878, and 2364 would be in the impact areas of Build Alternatives 2a and 2b. Eight special-status plant species with LTCV would be permanently directly or indirectly impacted by the construction of these build alternatives—San Jacinto Valley crownscale, Parish's brittlescale, Davidson's saltscale, smooth tarplant, Coulter's goldfields, little mousetail, spreading navarretia, and California Orcutt grass.

A portion of a little mousetail population complex (9,886 plants) would extend into the indirect impact area within Additional Indirect Impact Study Area 2. These populations have LTCV. They could be permanently and indirectly impacted by Build Alternative 2a.

Fifty-nine populations of Davidson's saltscale with 12,136 plants were identified in Additional Indirect Impact Study Area 1 (Table 3.3-5 and Figure 3.3-24 [Section 3.3]). The majority of the populations were observed east of California Avenue and south of Stetson Avenue, but a few populations were identified at the MWD Upper Salt Creek Reserve, north of Stetson Road (Figure 3.3-24 [Section 3.3]). These populations represent the core for the population complex within the study area, and the viability of the populations in this area is essential for the survival of this species. The populations in this area could substantially contribute toward reserve assembly and have very high LTCV. Only one small population (with six plants) was found outside Additional Indirect Impact Study Area 1, northwest of the Additional Indirect Impact Study Area 2. This small population is not in a Criteria Area Cell, so it does not have LTCV.

Permanent indirect impacts to the LTCV little mousetail and smooth tarplant populations in the indirect impact area and in Additional Indirect Impact Study Area 2 would be the same as Build Alternative 1a. Impacts to the 20 populations of Coulter's goldfields and 18 populations of smooth tarplant with LTCV in the PIA and indirect impact area would be the same as Build Alternative 1a.

Build Alternative 2a could cause permanent indirect impacts to the LTCV populations of San Jacinto Valley crownscale, Parish's brittlescale, smooth tarplant, little mousetail, spreading navarretia, and California Orcutt grass in Additional Indirect Impact Study Area 1. These impacts could exceed the 90-percent avoidance threshold for these species. If the threshold were exceeded for any of these species, that would be substantial impact. However, measures were taken during the Project development and siting phase to avoid impacts to these populations as much as possible and to maintain the existing hydrologic conditions after construction, as described in Section 3.3.3.4. Also described in Section 3.3.3.4, measures would be implemented to avoid and minimize permanent indirect impacts during construction. In particular, potentially occurring permanent indirect impacts to spreading navarretia and California Orcutt grass at the Stowe Road Vernal Pool Complex will be avoided. With these measures, permanent indirect impacts to these LTCV populations could be avoided, and the 90-percent LTCV population avoidance threshold could be attained.

Assessment of LTCV Populations in Build Alternative 2b

Impacts to the little mousetail and smooth tarplant LTCV populations from Build Alternative 2b would be the same as Build Alternative 1a. Both Build alternatives include Roadway Segment J. Impacts to the LTCV populations of San Jacinto Valley crownscale, Parish's brittlescale, smooth tarplant, little mousetail, spreading navarretia, and California Orcutt grass in Additional Indirect Impact Study Area 1 would be the same as Build Alternative 2a.

Design Option 2b1

The impacts associated with Design Option 2b1 would be the same as those presented for Build Alternative 2b (Table 3.3-3).

Avoidance, Minimization, and Mitigation Measures

Impacts to special-status plant species are anticipated to be potentially significant unless the following measures are incorporated.

Avoidance Measures

The Build alternatives for the Project will incorporate avoidance measures BIO-27 and BIO-34 for plants. Of these two avoidance measures, only BIO-34 (ESA fencing at edge of Roadway Segment J to protect little mousetail) is applicable to the Preferred Alternative because BIO-27 applies to Roadway Segments D and H and the Stowe Road Vernal Pool Complex located in Additional Indirect Impact Study Area 1, which are not a part of the Preferred Alternative.

Minimization Measures

Build alternatives will incorporate measures BIO-35 through BIO-37 as described to comply with all MSHCP guidelines related to minimizing impacts to plant species within or adjacent to the MSHCP Conservation Area.

Animal Species

Permanent Impacts

The Build alternatives would permanently impact threatened and/or endangered animal species, MSHCP Covered Species, and special-status animal species not covered by the MSHCP.

For this analysis, permanent direct impacts to animal species can include direct take of habitat or individuals in the PIA or the direct impact areas of the unique design features. Indirect impacts can include increased noise from roadway operation, degraded habitat due to fragmentation and the resulting reduction in numbers of prey and foraging area, and more potential for being struck by vehicles due to increased traffic. Habitat fragmentation results not only in isolated populations, but encourages invasive animal species that degrade habitat quality and availability. Indirect impacts also include alteration of hydrology in the indirect impact area and Additional Indirect Impact Study Areas 1 and 2.

This section is presented using the following subtopics: MSHCP Covered Species and/or Planning Species (not threatened or endangered), Species Not Covered by the MSHCP, and Threatened and Endangered Species.

Build Alternative 1a

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Build Alternative 1a will potentially permanently impact 4.8 ac of habitat occupied by the Los Angeles pocket mouse just east of the existing SR 79 alignment, north of Ramona Expressway and south of the San Jacinto River. This Los Angeles pocket mouse population is part of the regionally important core population within and near the San Jacinto River and Massacre Canyon wash. Permanent impacts would include direct impacts to 2.6 ac and indirect impacts to 2.2 ac of occupied habitat.

Build Alternative 1a could also have permanent direct and indirect impacts to the Los Angeles pocket mouse itself. Direct impacts would include the loss of grassland, sage scrub, and alluvial fan scrub habitats. Indirect impacts to the population of Los Angeles pocket mouse in the indirect impact area north of Build Alternative 1a could include degraded habitat due to increased vehicle noise, vibration, lights from vehicles, dispersing Los Angeles pocket mice being struck by vehicles, and long-term effects of habitat fragmentation. Habitat fragmentation could decrease gene flow in the species and could increase the number of subpopulations through isolation. Populations that were once continuous could become divided into separate fragments, forming small islands isolated from one another. Subsequently, local extirpations and genetic inbreeding could result.

Additionally, Build Alternative 1a would have permanent direct and indirect impacts to the southern portion of Criteria Area Cell 2364, where occupied habitat and Los Angeles pocket mice were observed. However, Build Alternative 1a would not preclude the goals of this Criteria Area Cell.

Burrowing Owl

Six pairs of burrowing owls and a single male could be permanently impacted by Build Alternative 1a. Of these, one pair would be directly impacted (RIV BUO-023, 2006 nest). A total of 9.95 ac of excellent quality habitat and 122.02 ac of suitable quality habitat could be directly impacted.

The remaining five pairs of burrowing owls and single male could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Their locations include RIV-BUO-005, 733 ft from the roadway centerline, RIV-BUO-006, 607 ft from centerline, RIV-BUO 023 (2005 nest), 993 ft from centerline, RIV-BUO-024, 685 ft from centerline, RIV-BUO-052, 298 ft from centerline, and RIV-BUO-053 (single male), 1,015 ft from centerline.

Additionally, Build Alternative 1a would directly impact the western portion of Criteria Area Cell 3683, so could indirectly impact RIV-BUO-005, which was observed in excellent quality habitat in the southwestern corner. However, Build Alternative 1a would not preclude the goals of this Criteria Area Cell.

Nesting and Foraging Raptors

No MSHCP covered nesting raptors would be directly impacted by Build Alternative 1a. However, two pairs of white-tailed kites were found 191 ft and 406 ft from centerline and could be indirectly impacted. The pair at 191 ft is expected to be impacted by operational roadway noise. The pair at 406 ft is expected to be impacted by habitat fragmentation and increased potential for collisions with vehicles. Therefore, this Build alternative may result in permanent, indirect impacts to two pairs of white-tailed kites.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Twelve pairs of nesting raptors could be permanently impacted by Build Alternative 1a. Of these 12 pairs, one pair of barn owls and four pairs of red tailed hawks, would be directly impacted. A total of 351.70 ac of raptor foraging habitat would be directly impacted.

The remaining seven pairs of nesting raptors could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased potential for collisions with vehicles. Their locations include two pairs of barn owls 772 ft and 353 ft from centerline and five pairs of red-tailed hawks at 1,103 ft, 1,140 ft, 439 ft, 1,015 ft, and 1,044 ft from centerline.

Bats

Removal of rock outcrops would permanently reduce available roosting habitat for bat species that are dependent on this limited resource. Additional permanent impacts to roosting habitat would also include removal of mature trees that may offer tree roosts (e.g., those containing cavities, exfoliating bark, suitable foliage, or well-developed frond skirts) for sensitive bat species. Established building roosts could also be permanently impacted by the demolition of man-made structures.

Threatened and Endangered Species

Stephens' Kangaroo Rat

Build Alternative 1a could permanently impact 581.0 ac of Stephens' kangaroo rat habitat. Direct impacts to occupied habitat would affect 250.4 ac, and indirect impacts would affect 330.6 ac.

Quino Checkerspot Butterfly

About 419.5 ac of suitable Quino checkerspot butterfly habitat would be permanently and directly impacted by Build Alternative 1a, while approximately 196.02 ac may be permanently, indirectly impacted.

Coastal California Gnatcatcher

About 144.7 ac of suitable coastal California gnatcatcher habitat would be permanently and directly impacted by Build Alternative 1a, while about 27.90 ac could be permanently, indirectly impacted.

Build Alternative 1b

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Impacts to Los Angeles pocket mouse, both habitat and populations, from Build Alternative 1b would be the same as Build Alternative 1a.

Burrowing Owl

Seven pairs of burrowing owls would be permanently impacted by Build Alternative 1b. Of these, one pair would be directly impacted (RIV BUO 023, 2006 nest). A total of 23.54 ac of excellent quality habitat and 143.96 ac of suitable quality habitat would be directly impacted.

The remaining six pairs of burrowing owls would be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include RIV BUO-005, 733 ft from centerline, RIV BUO-006, 607 ft from centerline, RIV-BUO-023 (2005 nest), 874 ft from centerline, RIV-BUO-024, 685 ft from centerline, RIV-BUO-042, 1,404 ft from centerline, and RIV BUO 052, 298 ft from centerline.

Impacts to burrowing owls in the western portion of Criteria Area Cell 3683 would be the same as Build Alternative 1a.

Nesting and Foraging Raptors

No MSHCP covered nesting raptors would be directly impacted by Build Alternative 1b. However, one pair of white-tailed kites was found 191 ft from centerline, so could be indirectly impacted by operational roadway noise.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Twelve pairs of nesting raptors would be permanently impacted by Build Alternative 1b. Of these 12 pairs, one pair of barn owls and four pairs of red tailed hawks would be directly impacted. A total of 264.42 ac of raptor foraging habitat would be directly impacted.

The remaining seven pairs of nesting raptors could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include one pair of barn owls 772 ft from centerline and six pairs of red-tailed hawks at 1,313 ft, 1,348 ft, 439 ft, 1,015 ft, 400 ft, and 1,135 ft from centerline.

Bats

Impacts to bats from Build Alternative 1b would be the same as Build Alternative 1a.

Threatened and Endangered Species

Stephens' Kangaroo Rat

Build Alternative 1b could permanently impact 557.9 ac of Stephens' kangaroo rat habitat. Permanent direct impacts to occupied habitat would be 247.1 ac, and indirect impacts would be 326.8 ac.

Quino Checkerspot Butterfly

About 432.7 ac of suitable Quino checkerspot butterfly habitat would be permanently and directly impacted by Build Alternative 1b, while about 210.25 ac could be indirectly impacted.

Coastal California Gnatcatcher

About 138.9 ac of suitable coastal California gnatcatcher habitat would be permanently and directly impacted by Build Alternative 1b, while about 28.62 ac could be indirectly impacted.

Design Option 1b1

With Design Option 1b1, the raptor foraging habitat and Quino checkerspot butterfly habitat would increase with the increased ROW in Roadway Segment B. Otherwise, the impacts to special-status animal species associated with Design Option 1b1 would be the same as those presented for Build Alternative 1b.

Nesting and Foraging Raptors

The raptor foraging habitat that would be permanently and directly impacted by Design Option 1b1 would increase to 265.25 ac from the base condition total of 264.42 ac.

Quino Checkerspot Butterfly

Permanent, direct impacts to Quino checkerspot butterfly habitat associated with Design Option 1b1 would increase slightly, to 433.2 ac from the total for Build Alternative 1b of 432.7 ac, while about 210.37 ac could be indirectly impacted.

Preferred Alternative (Build Alternative 1b with Refinements)

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Impacts to Los Angeles pocket mouse, both habitat and populations, from the Preferred Alternative would be the same as Build Alternative 1a.

Burrowing Owl

Five pairs of burrowing owls would be permanently impacted by the Preferred Alternative. Of these, one pair would be directly impacted (RIV-BUO-023, 2006 nest). A total of 23.54 ac of quality habitat and 143.96 ac of suitable quality habitat would be directly impacted.

The remaining four pairs of burrowing owls would be indirectly impacted. Locations include RIV-BUO-005, 732 ft from centerline, RIV-BUO-006, 663 ft from centerline, RIV-BUO-024, 666 ft from centerline, and RIV-BUO-052, 299 ft from centerline. Although operational roadway noise would be higher than the wildlife noise threshold for all four pairs within the indirect impact area, operational roadway noise would still be within the range of existing ambient noise levels for three of the four pairs within the indirect impact area (RIV-BUO-005, RIV-BUO-006, and RIV-BUO-052). Although roadway noise may not impact these nest locations, other indirect impacts such as habitat fragmentation or increased mortality from collisions with vehicles could still affect these sites.

There would be no direct impacts to burrowing owls in Criteria Area Cell 3683 from any of the Build Alternatives because there are no burrowing owls within the PIA in this area. Indirect impacts to burrowing owls in the western portion of Criteria Area Cell 3683 would be similar to Build Alternatives 1a and 1b (and Design Option 1b1) and would be less than Build Alternatives 2a and 2b (and Design Option 2b1) because the PIA is located further away from known owl locations.

Nesting and Foraging Raptors

No MSHCP-covered nesting raptors would be directly impacted by the Preferred Alternative. However, two pairs of white-tailed kites would be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. The white-tailed kites are located approximately 827 ft and 190 ft from centerline. Operational roadway noise at the kite nest located 827 ft from centerline would not be higher than the wildlife noise threshold. In fact, roadway noise at this location would still be within the range of existing ambient noise levels measured in the vicinity. Although roadway noise may not impact this nest location, other indirect impacts such as habitat fragmentation could still affect this site. Operational roadway noise at the kite nest located 190 ft from centerline would be higher than the wildlife noise threshold and higher than the range of existing ambient noise levels measured in the vicinity. Therefore, this nest is expected to be indirectly impacted by operational roadway noise and/or habitat fragmentation.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Nine pairs of nesting raptors could be permanently impacted by the Preferred Alternative. Of these, one pair of barn owls and four pairs of red-tailed hawks would be directly impacted by the Preferred Alternative and are the same nest locations that would be directly impacted by Build Alternative 1b. A total of 299.75 ac of raptor foraging habitat would be directly impacted.

The remaining four pairs of nesting raptors could be indirectly impacted by roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include one pair of barn owls 771 ft from centerline and three pairs of red-tailed hawks located 440 ft, 289 ft, and 1,135 ft from centerline. Operational roadway noise at all four nest locations in the indirect impact area would be higher than the wildlife noise threshold. However, operational roadway noise at the red-tailed hawk nest located 440 ft from centerline would still be within the range of existing ambient noise levels measured in the vicinity. Although roadway noise may not impact this nest location, other indirect impacts such as habitat fragmentation could still affect this site.

Operational roadway noise at the remaining three nest locations would be higher than the range of existing ambient noise levels measured in the vicinity. Therefore, these sites are expected to be indirectly impacted by operational roadway noise, habitat fragmentation, and/or increased mortality from collisions with vehicles.

Bats

Impacts to bats from the Preferred Alternative would be the same as Build Alternative 1a.

Threatened and Endangered Species

Stephens' Kangaroo Rat

The Preferred Alternative could permanently impact 491.1 ac of Stephens' kangaroo rat habitat. Permanent direct impacts to occupied habitat would be 182.3 ac, and indirect impacts would be 308.8 ac.

Quino Checkerspot Butterfly

The Preferred Alternative could permanently impact 562.27 ac of Quino checkerspot butterfly habitat. About 375.36 ac of suitable Quino checkerspot butterfly habitat would be directly impacted by Build Alternative 1br, and about 186.91 ac could be indirectly impacted.

Coastal California Gnatcatcher

The Preferred Alternative could permanently impact 111.19 ac of coastal California gnatcatcher habitat. About 72.68 ac of suitable coastal California gnatcatcher habitat would be directly impacted by Build Alternative 1b, and about 38.51 ac could be indirectly impacted.

Build Alternative 2a

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Impacts to Los Angeles pocket mouse from Build Alternative 2a would be the same as Build Alternative 1a.

Burrowing Owl

Six pairs of burrowing owls and a single male would be permanently impacted by Build Alternative 2a. Of these, two pairs (RIV-BUO-031 and RIV-BUO-056) would be directly impacted. A total of 76.92 ac of excellent quality habitat and 130.84 ac of suitable quality habitat would be directly impacted.

The remaining four pairs of burrowing owls and single male could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include RIV-BUO-004, 620 ft from centerline, RIV BUO-005, 454 ft from centerline, RIV BUO 023, 436 ft from centerline, RIV-BUO-052, 558 ft from centerline, and RIV-BUO-053 (single male), 1,015 ft from centerline.

Impacts to burrowing owls in the western portion of Criteria Area Cell 3683 would be similar to Build Alternative 1a, except that Build Alternative 2a would impact both RIV-BUO-004 and RIV-BUO-005.

Nesting and Foraging Raptors

No MSHCP covered nesting raptors would be permanently, directly impacted by Build Alternative 2a. However, three pairs of white-tailed kites 380 ft, 191 ft, and 765 ft from centerline and one pair of Cooper's hawks 651 ft from the centerline would be permanently, indirectly impacted by operational roadway noise, habitat fragmentation, and/or increased mortality from collisions with vehicles.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Twelve pairs of nesting raptors would be permanently impacted by Build Alternative 2a. Of these 12 pairs, one pair of barn owls and four pairs of red-tailed hawks would be directly impacted. A total of 351.70 ac of raptor foraging habitat would be directly impacted.

The remaining seven pairs of nesting raptors would be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include two pairs of barn owls 772 ft and 353 ft from centerline and five pairs of red-tailed hawks at 1,103 ft, 1,140 ft, 439 ft, 1,015 ft, and 1,044 ft from centerline.

Bats

Impacts to bats from Build Alternative 2a would be the same as Build Alternative 1a.

Threatened and Endangered Species

Vernal Pool Branchiopods

Build Alternative 2a would potentially permanently impact the hydrology of a vernal pool complex in Additional Indirect Impact Study Area 1, in the grassland just northwest of the intersection of Stowe Road and California Avenue. This vernal pool contains 1.79 ac of habitat occupied by vernal pool fairy shrimp, which are federally listed as threatened. Therefore, impacts to vernal pool fairy shrimp from Build Alternative 2a could be potentially significant unless measures BIO-27 and BIO-41 are implemented.

Additionally, Build Alternative 2a would permanently, indirectly impact the southeastern portion of Criteria Area Cell 3887 where vernal pool fairy shrimp were observed. However, Build Alternative 2a would not preclude the goals of this Criteria Area cell.

Stephens' Kangaroo Rat

Build Alternative 2a could permanently impact 572.9 ac of Stephens' kangaroo rat habitat. Permanent direct impacts to occupied habitat would be 216.1 ac, and indirect impacts would be 356.8 ac.

Quino Checkerspot Butterfly

About 371.0 ac of suitable Quino checkerspot butterfly habitat would be permanently and directly impacted by Build Alternative 2a, while about 581.67 ac could be indirectly impacted.

Coastal California Gnatcatcher

About 114.0 ac of suitable coastal California gnatcatcher habitat would be permanently and directly impacted by Build Alternative 2a, while about 100.68 ha could be indirectly impacted.

Build Alternative 2b

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Impacts to Los Angeles pocket mouse from Build Alternative 2b would be the same as Build Alternative 1a.

Burrowing Owl

Seven pairs of burrowing owls would be permanently impacted by Build Alternative 2b. Of these, two pairs, RIV-BUO-031 and RIV-BUO-056, would be directly impacted. A total of 81.72 ac of excellent quality habitat and 150.77 ac of suitable quality habitat would be directly impacted.

The remaining five pairs of burrowing owls could be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles. Locations include RIV BUO 004, 620 ft from centerline, RIV BUO-005, 454 ft from centerline, RIV-BUO-023, 436 ft from centerline, RIV-BUO-042, 1,404 ft from centerline, and RIV-BUO-052, 558 ft from centerline.

Impacts to burrowing owls in the western portion of Criteria Area Cell 3683 would be the same as Build Alternative 2a.

Nesting and Foraging Raptors

No MSHCP covered nesting raptors would be directly impacted by Build Alternative 2b. However, two pairs of white-tailed kites located 191 ft and 765 ft from centerline and one pair of Cooper's hawks 651 ft from centerline would be indirectly impacted by operational roadway noise, habitat fragmentation, or increased mortality from collisions with vehicles.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Impacts to nesting and foraging raptors from Build Alternative 2b would be the same as Build Alternative 1b.

Bats

Impacts to bats from Build Alternative 2a would be the same as Build Alternative 1a.

Threatened and Endangered Species

Vernal Pool Branchiopods

Impacts to vernal pool branchiopods would be the same from Build Alternative 2b as described for Build Alternative 2a.

Stephens' Kangaroo Rat

Build Alternative 2b could permanently impact 562.6 ac of Stephens' kangaroo rat habitat. Permanent direct impacts to occupied habitat would be 212.5 ac, and indirect impacts would be 350.1 ac.

Quino Checkerspot Butterfly

About 401.9 ac of suitable Quino checkerspot butterfly habitat would be permanently and directly impacted by Build Alternative 2b, while about 592.91 ac could be indirectly impacted.

Coastal California Gnatcatcher

About 108.3 ac of suitable coastal California gnatcatcher habitat would be permanently and directly impacted by Build Alternative 2b, while about 101.41 ac could be indirectly impacted.

Design Option 2b1

Design Option 2b1 would have the same impacts to animal species as Design Option 1b1.

Temporary Impacts Overview

The Project does not contain temporary construction easements that would result in the temporary removal of habitat or individuals. However, temporary impacts could occur to Los Angeles pocket mice, burrowing owls, nesting raptors, bats, Stephens' kangaroo rats, quino checkerspot butterflies, and coastal California gnatcatchers due to other temporary effects, as discussed below for each species. The analysis for temporary impacts to sensitive animal species overlaps with the permanent, indirect impact analysis for these species because the same individuals/pairs located in the indirect impact area may not only be impacted during construction, but could also be impacted after construction, when the new roadway is in full operation.

A summary of potential temporary impacts to animal species from the Build alternatives and design options is in Table 3.3-3.

Los Angeles Pocket Mouse

Temporary impacts to the Los Angeles pocket mouse would be the same regardless of the Build alternative or design option that is identified as the Preferred Alternative. Therefore, the discussion on temporary impacts to this species is included for the collective Project, as opposed to specific Build alternative or design option.

Temporary impacts to occupied Los Angeles pocket mouse habitat that may occur as result of the Project include degradation of habitat quality and suitability because of construction-related noise, lights, vibration, dust, and soil compaction along the ROW and routes for staging and access. Los Angeles pocket mice may be subject to mortality and injury from being struck by construction vehicles and equipment traveling along access dirt roads and staging areas. Although construction is temporary, the effects can be long-term disruptions to the species because Los Angeles pocket mice are rather short-lived and are very sensitive to disturbances in their environment. Therefore, the Project could have long-term impacts on Los Angeles pocket mouse breeding, foraging, movement, hibernation/sleeping patterns, dispersal, and predator avoidance behavior.

Due to the small size of the Los Angeles pocket mouse and its very specific metabolic requirements, this species is only able to be active within a very narrow range of temperatures. While active, they require a relatively high intake of calories to maintain their body temperature and activity patterns and avoid going into torpor. Vibration and noise from construction may disrupt the sleeping and aestivating patterns of the Los Angeles pocket mouse. Some individuals may leave the immediate Project area during the construction process because of noise and vibration. Los Angeles pocket mouse survival often depends on using acute hearing to detect approaching predators in the dark. In addition, increased trash and discarded food items from construction contractors may attract predators of the Los Angeles pocket mouse to the area.

Burrowing Owls and Nesting Raptors

Temporary impacts to burrowing owls and nesting raptors may include construction noise, night lighting, and increased human presence (construction personnel). Temporary construction noise may affect burrowing owls and raptors because birds primarily communicate with one another through vocalizations and auditory cues. Increased noise levels can interfere with normal communication. Therefore, background noise and isolated, impulsive noise (e.g., drilling, excavation) can interfere with contact between mated birds, warning and distress calls that signify predators and other threats, feeding behavior, and protection of the young. In addition, high noise levels may keep an area that is otherwise appropriate for nesting from being suitable.

The 500-ft buffer used to assess permanent indirect impacts for burrowing owls and nesting raptors was used to analyze temporary indirect impacts from construction noise, night lighting, and increased human presence.

Night lighting and increased human presence during construction can affect normal foraging patterns for burrowing owls and raptors. Although construction activities would be located entirely within the PIA and would not extend into the indirect impact area for burrowing owls or nesting raptors, the amount of construction activity, equipment, and increased human presence for the 39 or 40 month construction period could still affect daily behavior for these species. The potential for impacts would vary throughout the construction period, but the beginning and middle stages, when construction activities and numbers of personnel would peak, would be most likely to have the most effect. The potential for impacts would decrease as construction winds down, and activities and personnel would be minimal.

Roadway excavation would take place in the West Hemet Hills for all Build alternatives and design options. However, the low frequency impulsive noise from blasting has the potential to affect species within a 1.0 mi radius, so the potential for startle effects could extend into the valley.

Roadway overpasses and bridges would be required with all Build alternatives and design options, but not all of these structures would require pile driving. However, the structures that would require pile driving will not be determined until final design, so to include all potential impacts to burrowing owls and nesting raptors, this construction noise impact analysis assumes that every roadway overpass and bridge would require pile driving. Construction noise levels were based on the distance of the resource from the PIA. Existing ambient noise levels were taken from monitoring locations and were compared to future roadway noise levels that were calculated using the Federal Federal Highway Administration's Traffic Noise Model (FHWA TNM) (FHWA 2004). Reference noise levels of 98 decibels (dB) were used for general roadway and 105 dB for structure construction.

To take a conservative approach and account for the loudest possible construction activity, both reference noise levels represent the loudest noise level for that activity (e.g., noises associated with dump trucks and pile driving). Construction noise calculations were based on the reference numbers and a standard attenuation formula. Although a reference noise level of 95 dBA is listed for substantial excavation, the resulting construction noise for excavation (e.g., blasting) has been left blank (N/A) because this number depends on variables such as amount of detonation material and blasting method that cannot be determined until construction. Therefore, it is assumed that all resources within a 1.0-mi radius of blasting will be temporarily impacted by excavation activities and that the radius includes all Build alternatives and design options. Construction noise for burrowing owls and nesting raptors located in the indirect impact area is shown in Tables 3.3-16 and 3.3-17, respectively.

Construction is scheduled to take place in two 12-hour timeframes, over a 24-hour period, in a 5-day work week, Monday through Friday. Although excessive noise levels would occur from roadway excavation and bridge superstructure construction, this would be only during daylight, Monday through Friday. Project construction is estimated to take 39 or 40 months.

Bats

Temporary impacts to bat species would be the same regardless of the Build alternative or design option implemented. Therefore, the discussion about temporary impacts to bats is presented for the collective Project, as opposed to specific Build alternative or design option.

Temporary impacts to bats from all Build alternatives and design options could include disturbances to roost sites and disruptions of foraging areas due to increased vehicular traffic, night illumination, pile driving for bridges, tree cutting, building demolition, grubbing, and other construction-related noise, as well as blasting, drilling, rock hammering, and grading in areas with rock outcrops or hills.

Stephens' Kangaroo Rat, Quino Checkerspot Butterfly, and Coastal California Gnatcatcher

Temporary impacts to the Stephens' kangaroo rat, quino checkerspot butterfly, and coastal California gnatcatcher could include construction-related noise, lights, dust, and vibration. Increased mortality and injury from being struck by construction vehicles may also occur. In addition, increased trash and discarded food items from construction personnel may attract predators of the Stephens' kangaroo rat.

Temporary Impacts to Animal Species from the Project Alternatives and Design Options

All Build Alternatives and Design Options

MSHCP Covered Species and/or Planning Species

Los Angeles Pocket Mouse

Although construction-related activities would be limited to the PIA and the utility relocation areas, the Los Angeles pocket mice in the indirect impact areas are expected to be temporarily impacted by increased noise, dust, vibration, and lights during construction. The Project would temporarily impact 4.1 ac of habitat occupied by the Los Angeles pocket mouse just east of the existing SR 79 alignment, north of Ramona Expressway and south of

the San Jacinto River. This Los Angeles pocket mouse population is part of the regionally important core population within and near the San Jacinto River and Massacre Canyon wash.

Animal Species Not Covered by the MSHCP

Bats

Temporary impacts to bats from construction of any of the Build alternatives or design options could include disturbances to roost sites and disruptions of foraging areas due to increased vehicular traffic, night illumination, pile driving for bridges, tree cutting, building demolition, grubbing, and other construction noise, as well as blasting, drilling, rock hammering, and grading in areas that have rock outcrops or hills. Bats could abandon roost sites as a result of local disturbances and could alter their foraging behavior near lights, which could benefit them by attracting insects or repel them from an area to avoid predators.

Build Alternative 1a

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Five pairs of burrowing owls and a single male, RIV-BUO-005, 454 ft from the PIA, RIV-BUO-006, 387 ft from the PIA, RIV-BUO-023, 568 ft from the PIA, RIV-BUO-024, 104 ft from the PIA, RIV-BUO-052, 47 ft from the PIA, and RIV-BUO-053 (single male), 481 ft from the PIA, could be temporarily impacted by construction of Build Alternative 1a. Temporary impacts to these five pairs of burrowing owls and single male could include construction noise, night lighting, or increased human presence.

Nesting and Foraging Raptors

Three pairs of white-tailed kites were found 36 ft, 245 ft, and 478 ft from the PIA of Build Alternative 1a. Although these raptors would be outside the PIA, they could still be impacted by construction activities. Therefore, this Build alternative could result in temporary impacts to three pairs of white-tailed kites from construction noise, night lighting, or increased human presence.

Stephens' Kangaroo Rat

Build Alternative 1a could temporarily impact 330.6 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 1a could temporarily impact 196.02 ac of Quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 1a could temporarily impact 27.90 ac of coastal California gnatcatcher habitat.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Two pairs of barn owls were found 207 ft and 151 ft from the PIA of Build Alternative 1a. In addition, five pairs of red-tailed hawks were found 275 ft, 313 ft, 112 ft, 60 ft, and 13 ft from the PIA of Build Alternative 1a. Although these raptors would be outside the PIA, they could still be impacted by construction activities. Therefore, this Build alternative could result in temporary impacts to seven pairs of nesting raptors from construction noise, night lighting, or increased human presence.

Build Alternative 1b

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Six pairs of burrowing owls, RIV-BUO-005, 454 ft from the PIA, RIV-BUO-006, 387 ft from the PIA, RIV-BUO-023, 568 ft from the PIA, RIV-BUO-024, 104 ft from the PIA, RIV-BUO-042, 577 ft from the PIA, and RIV-BUO-052, 47 ft from the PIA, could be temporarily impacted by construction of Build Alternative 1b. Temporary impacts to these six pairs of burrowing owls could include construction noise, night lighting, or increased human presence.

Nesting and Foraging Raptors

Two pairs of white-tailed kites were found 36 ft and 478 ft from the Build Alternative 1b PIA. Although these raptors would be outside the PIA, they could still be impacted by construction activities. Impacts to these two pairs of white-tailed kites could include construction noise, night lighting, or increased human presence.

Stephens' Kangaroo Rat

Build Alternative 1b could temporarily impact 326.8 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 1b could temporarily impact 210.25 ac of quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 1b could temporarily impact 28.62 ac of coastal California gnatcatcher habitat.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

One pair of barn owls and six pairs of red-tailed hawks would be in the indirect impact area of Build Alternative 1b. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The barn owls were 207 ft from the PIA, and the red-tailed hawks were 275 ft, 313 ft, 112 ft, 60 ft, and 13 ft, and 148 ft from the PIA. Temporary impacts to these raptors could include construction noise, night lighting, or increased human presence.

Design Option 1b1

Design Option 1b1 would cause one minor change in temporary impacts to quino checkerspot butterfly habitat when compared to Build Alternative 1b. Design Option 1b1 would temporarily impact 210.37 ac of quino checkerspot butterfly habitat, instead of 210.25 ac under Build Alternative 1b. All other temporary impacts to sensitive animal species would be the same with Design Option 1b1 as Build Alternative 1b.

Preferred Alternative (Build Alternative 1b with Refinements)

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Four pairs of burrowing owls, RIV-BUO-005 located 446 ft from the PIA, RIV-BUO-006 located 420 ft from the PIA, RIV-BUO-024 located 78 ft from the PIA, and RIV-BUO-052, 46 ft from the PIA, could be temporarily impacted by construction of the Preferred Alternative. Temporary impacts to these four pairs of burrowing owls could include construction noise, night lighting, or increased human presence. Temporary impacts due to construction noise would differ based on the construction phase and associated work activities. However, for all phases of active construction listed in Table 3.3-16, construction noise levels would be higher than the wildlife noise threshold as well as the range of existing ambient noise in the general vicinity.

Nesting and Foraging Raptors

Two pairs of white-tailed kites located 325 ft from the PIA and 36 ft from the PIA, could be temporarily impacted by construction of the Preferred Alternative. Temporary impacts to these two pairs of white-tailed kites could include construction noise, night lighting, or increased human presence. Temporary impacts due to construction noise would differ based on the construction phase and associated work activities. However, for all phases of active construction listed in Table 3.3-17, construction noise levels would be higher than the wildlife noise threshold as well as the range of existing ambient noise in the general vicinity.

Stephens' Kangaroo Rat

The Preferred Alternative could temporarily impact 308.8 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 1br could temporarily impact 186.91 ac of Quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 1br could temporarily impact 38.51 ac of coastal California gnatcatcher habitat.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Four pairs of raptors including one barn owl located 207 ft from the PIA, and three red-tailed hawks located 16 ft from the PIA, 148 ft from the PIA, and 13 ft from the PIA, could be temporarily impacted by construction of the

Preferred Alternative. Temporary impacts to these four pairs of nesting raptors could include construction noise, night lighting, or increased human presence. Temporary impacts due to construction noise would differ based on the construction phase and associated work activities. However, for all phases of active construction listed in Table 3.3-17, construction noise levels would be higher than the wildlife noise threshold as well as the range of existing ambient noise in the general vicinity.

Build Alternative 2a

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Four pairs of burrowing owls and a single male, including RIV-BUO-004, 424 ft from the PIA, RIV-BUO-005, 454 ft from the PIA, RIV-BUO-023, 568 ft from the PIA, RIV-BUO-052, 47 ft from the PIA, and RIV BUO-053 (single male), 481 ft from the PIA, could be temporarily impacted by Build Alternative 2a. Impacts could include construction noise, night lighting, or increased human presence.

Nesting and Foraging Raptors

One pair of Cooper's hawks and four pairs of white-tailed kites would be in the indirect impact area of Build Alternative 2a. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The Cooper's hawks were found 430 ft from the PIA, and the white-tailed kites were found 176 ft, 144 ft, 411 ft, and 36 ft from the PIA. Temporary impacts could include construction noise, night lighting, or increased human presence.

Stephens' Kangaroo Rat

Build Alternative 2a could temporarily impact 356.8 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 2a could temporarily impact 581.69 ac of quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 2a could temporarily impact 100.68 ac of coastal California gnatcatcher habitat.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

Two pairs of barn owls and five pairs of red-tailed hawks were found in the indirect impact area of Build Alternative 2a. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The barn owls were 207 ft and 151 ft from the PIA, and the red-tailed hawks were 275 ft, 313 ft, 112 ft, 60 ft, and 13 ft from the PIA. Temporary impacts to these raptors could include construction noise, night lighting, or increased human presence.

Build Alternative 2b

MSHCP Covered Species and/or Planning Species

Burrowing Owl

Five pairs of burrowing owls, RIV-BUO-004, 424 ft from the PIA, RIV BUO-005, 454 ft from the PIA, RIV-BUO-023, 568 ft from the PIA, RIV-BUO-042, 577 ft from the PIA, and RIV-BUO-052, 47 ft from the PIA, could be temporarily impacted by construction of Build Alternative 2b. These impacts could include construction noise, night lighting, or increased human presence.

Nesting and Foraging Raptors

One pair of Cooper's hawks and two pairs of white-tailed kites were found in the indirect impact area of Build Alternative 2b. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The Cooper's hawks were 430 ft from the PIA, and the white-tailed kites were 411 ft and 36 ft from the PIA. Temporary impacts could include construction noise, night lighting, or increased human presence.

Stephens' Kangaroo Rat

Build Alternative 2b could temporarily impact 350.1 ac of Stephens' kangaroo rat habitat.

Quino Checkerspot Butterfly

Build Alternative 2b could temporarily impact 592.91 ac of quino checkerspot butterfly habitat.

Coastal California Gnatcatcher

Build Alternative 2b could temporarily impact 101.41 ac of coastal California gnatcatcher habitat.

Animal Species Not Covered by the MSHCP

Nesting and Foraging Raptors

One pair of barn owls and six pairs of red-tailed hawks were found in the indirect impact area of Build Alternative 2b. Although these raptors would be outside the PIA, they could still be impacted by construction activities. The barn owls were 207 ft from the PIA, and the red-tailed hawks were 275 ft, 313 ft, 112 ft, 60 ft, and 13 ft, and 148 ft from the PIA. Temporary impacts could include construction noise, night lighting, or increased human presence.

Design Option 2b1

Design Option 2b1 could cause one minor change in temporary impacts to quino checkerspot butterfly habitat when compared to Build Alternative 2b. Design Option 2b1 could temporarily impact 593.03 ac of Quino checkerspot butterfly habitat, instead of 592.91 ac with Build Alternative 2b. All other temporary impacts to sensitive animal species would be the same with Design Option 2b1 as Build Alternative 2b.

Avoidance, Minimization, and Mitigation Measures for Animal Species

Avoidance Measures

Avoidance measure BIO-27, for special-status plant species, would also apply to this section to protect the federally listed vernal pool branchiopod in the Stowe Road Vernal Pool Complex located in Additional Indirect Impact Study Area 1.

Minimization Measures

Measures BIO-14 and BIO-39 through BIO-44 would be implemented with all of the Build alternatives and design options.

Mitigation Measures

Mitigation measures BIO-27, BIO-33, BIO-39, BIO-40, and BIO-45 through BIO-46 will be implemented with all of the Build alternatives or design options.

CEQA Checklist Question IV.c

Permanent Impacts

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

This Build alternative would result in permanent impacts to 1.99 ac of vernal pools, 0.93 ac of seasonal wetlands, 9.05 ac of agricultural seasonal wetlands, and 1.59 ac of riparian seasonal wetlands.

Build Alternative 1b

Permanent, direct impacts to wetland resources would be similar to the permanent, direct impacts under Build Alternative 1a. However, the permanent, direct impacts to vernal pool habitat from this Build alternative would be less than Build Alternative 1a. Under this Build alternative, only 0.01 ac of permanent, direct impacts to vernal pools would occur.

Design Option 1b1

Impacts to wetland resources would be the same in Design Option 1b1 as presented for Build Alternative 1b.

Preferred Alternative (Build Alternative 1b with Refinements)

Permanent impacts for the Preferred Alternative are the same as Build Alternative1b with the exception of 0.09 ac of erosional drainages rather than 0.31 ac, 1.99 ac of vernal pools rather than 0.01 ac, and 4.4 ac of drainage ditches rather than 5.09ac. The permanent direct impacts to vernal pools for the Preferred Alternative would be the same as Build Alternatives 1a and 2b.

Permanent impacts for the Preferred Alternative to MSHCP riparian/riverine habitat (tamarisk, cottonwood, willows) would equal 5.27 ac, while permanent impacts to MSHCP vernal pool habitat, located near Esplanade Avenue and Warren Road (VP 0109, VP 0110, VP 0111), would equal 2.0 ac.

Build Alternative 2a

This Build alternative would result in permanent, direct impacts to 0.01 ac of vernal pools, 1.06 ac of seasonal wetlands, 1.59 ac of riparian seasonal wetlands, and 9.05 ac of agricultural seasonal wetlands.

Construction of Build Alternative 2a through the West Hemet Hills would permanently and directly impact about 7 percent of the watershed for the vernal pool complex located at the intersection of Stowe Road and California Avenue in Additional Indirect Impact Study Area 1. The 7 percent reduction in the watershed area may result in a permanent, indirect impact to 2.43 ac of additional vernal pool habitat located in Additional Indirect Impact Study Area 1 because of interruptions in hydrological patterns. Measures to minimize this potential indirect impact are described in Avoidance, Minimization, and/or Mitigation Measures.

Build Alternative 2b

Permanent direct and indirect impacts to wetlands and other waters from Build Alternative 2b would be similar to those described for Build Alternative 2a. Permanent, direct impacts to seasonal wetlands, riparian seasonal wetlands, and agricultural seasonal wetlands would be the same as Build Alternative 2a.

Permanent, direct impacts to vernal pool habitat from this Build alternative would be the same as Build Alternative 1a, 1.99 ac, compared to 0.01 ac with Build Alternatives 1b and 2a.

Design Option 2b1

Direct Impacts to wetlands and other waters would be the same in Design Option 2b1 as presented for Build Alternative 2b.

Temporary Impacts

Temporary impacts to wetlands, other waters, and vernal pool habitats would include transitory impacts during construction, such as installation of cofferdams, temporary support structures, and construction access routes. These would be removed after a relatively short time and would not result in any permanent loss or impact to the aquatic resource.

No Build Alternative

No Project-related impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

Build Alternative 1a

Build Alternative 1a could temporarily impact up to 2.85 ac of Salt Creek Channel during construction of the bridge across the channel.

Build Alternative 1b and Design Option 1b1

A maximum of 2.77 ac of the Salt Creek Channel and up to 0.72 ac of the Hemet Channel could be temporarily impacted during construction of Build Alternative 1b. Temporary impacts from Design Option 1b1 would be the same.

Preferred Alternative (Build Alternative 1b with Refinements)

Temporary impacts to wetlands and other waters under this alternative would be the same as Alternative 1b.Temporary impacts for the Preferred Alternative to MSHCP habitats would include Salt Creek Channel and Hemet Channel, which are both riverine resources. The amount of riverine habitat that could be temporarily impacted during construction would equal 3.48 ac.

Build Alternative 2a

A total of 2.85 ac in Salt Creek Channel and up to 1.85 ac of Hemet Channel could be temporarily impacted during construction of this Build alternative.

Build Alternative 2b and Design Option 2b1

A maximum of 3.15 ac in Salt Creek Channel and 1.32 ac in Hemet Channel could be temporarily impacted during construction of Build Alternative 2b. Temporary impacts from Design Option 2b1 would be the same.

Avoidance, Minimization and Mitigation Measures

The following measures will be implemented to offset potentially significant impacts to federally protected wetlands.

Avoidance Measures

As much as possible, the Build alternatives and design options have been developed to avoid permanent direct and indirect impacts to riparian/riverine and vernal pool habitats. Other Build alternatives that were considered (see Section 2.2.5) would have routed a portion of the roadway parallel to Warren Road on the east side of the San Diego Canal and west of the Hemet-Ryan Airport. This proposed alternative was eliminated from further analysis because of the large number of potential impacts to the habitat in this area. However, completely avoiding all areas that could be impacted would not be practicable, so measure BIO-27 will be implemented for Build Alternatives 2a and 2b and Design Option 2b1.

Minimization Measures

Measures WQ-1, WQ-4, WQ-5, and BIO-28 through BIO-32 would minimize impacts to wetlands and other waters.

Mitigation Measures

Mitigation measures BIO-32 and BIO-33 would be implemented to mitigate impacts to wetlands and other waters.

CEQA Checklist Question IV.d

A summary of the impacts to wildlife movement is in Table 3.3-3.

Permanent Impacts

Permanent direct impacts to wildlife movement would include blocking the existing wildlife linkages or corridors, making these connective features unsuitable for use by one or more wildlife movement categories. The lack of suitable crossings, such as culverts and bridges, could force wildlife to seek other, potentially more dangerous crossings over the roadway or could restrict home ranges or dispersal movements. This kind of restriction could increase the potential for extirpation, or local extinction, over time. Blocking an existing linkage or corridor would be a permanent direct impact and could affect Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers. No permanent direct impacts to Avian Wildlife movement are expected because local species in this category have the ability to fly over the roadway if culvert and bridge crossings are not present or are not suitable.

Permanent indirect impacts to wildlife movement would include alterations to the existing wildlife linkages or corridors that decrease their effectiveness. For example, traffic noise and artificial light could discourage wildlife from using the linkages or corridors, but would not prohibit their use. Therefore, traffic noise and artificial light would be indirect impacts. Likewise, in some areas, roadway operations could restrict wildlife crossings to only a few culverts and bridges, which could constrain the existing linkage or corridor, but would not prohibit its use. Such constraints because of roadway operations would also be considered indirect impacts.

No Build Alternative

No impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

All Build Alternatives and Design Options

Except for Existing Constrained Linkage C (San Jacinto River), the wildlife movement linkages and corridors described earlier would be permanently impacted by the Build alternatives and design options that cross them. The wildlife corridors trend east and west, and the Build alternatives and design options would be aligned north and south, thus would need to cross the corridors. These crossings would alter the corridors by placing man-made structures over them or through them. The kind of structure used at each crossing would depend on the topography, the requirements of the roadway, and environmental considerations such as drainage or historic preservation. Some crossings would be bridges, others would be on embankment with culverts, and others would block the corridor entirely. Structures that would enable wildlife to cross the roadway safely would be included throughout the Project. Figures 3.3-11 through 3.3-16 (Section 3.3) show the locations of linkages, corridors, and proposed bridges and culverts by Build alternative or design option.

All of the build alternatives and design options would have permanent impacts on the wildlife corridors they cross. These impacts would be direct or indirect, depending on the configuration of the Build alternative or design option and nature of the crossing. Direct impacts, if any, would depend on the Build alternative or design option.

Permanent indirect impacts from all Build alternatives and design options would include:

- Roadway structures that intrude into existing wildlife corridors and make them less desirable to certain species of wildlife
- The shadow effect from bridges, which would reduce the amount of natural light in a crossing during the day and could make the corridor less desirable for diurnal species (animals that are active in the daytime)
- Increased traffic noise and artificial light, which could decrease the effectiveness of a wildlife corridor

Some of these impacts would vary according to the dimensions of the structure causing the impact. For instance, a higher bridge would have a smaller shadow impact on a wildlife corridor than a lower one, and a short culvert would be less imposing than a longer one.

Although the locations of crossings might vary, some wildlife corridors would be impacted in various ways by all of the Build alternatives and design options. These corridors are:

- MSHCP Existing Constrained Linkage B (Salt Creek)
- Newport Road Hills to Patton Road (1)
- Hemet Channel (2)
- San Jacinto Branch Line (3)
- Lakeview Mountains to Tres Cerritos Hills (7)
- Colorado River Aqueduct (8)

Corridors that would be impacted only by Build Alternatives 1a, 1b and Design Option 1b1, and the Preferred Alternative are:

- Double Butte to West Hemet Hills (4)
- West Hemet Hills to Lakeview Mountains (6)

One corridor would be impacted only by Build Alternatives 2a and 2b and Design Option 2b1—West Hemet Hills to Hemet-Ryan Airport (5).

Existing Constrained Linkage C (San Jacinto River) would not be crossed by any of the Build alternatives or design options. The only Project-related impacts to this constrained linkage would be temporary.

Permanent impacts to the MSHCP linkage and local wildlife corridors are discussed below by Build alternative and design option.

Existing Constrained Linkage B (Salt Creek)

All Build alternatives and design options would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use MSHCP Existing Constrained Linkage B by making this corridor less desirable for species in these wildlife movement categories. Permanent impacts to Passive Dispersers (e.g., fairy shrimp and plants) are not expected because the habitat and hydrology would remain unchanged in the linkage.

Build Alternative 1a

Build Alternative 1a would maintain the existing constrained linkage by building an SR 79 bridge over Olive Avenue, Winchester Road, and Salt Creek Channel. The bridge would have a minimum vertical clearance of 19 ft and would be about 938 ft long. It would consist of two separate structures about 72 ft apart, one about 41 to 47 ft wide and the other about 52 to 78 ft wide. Although Winchester Road already crosses Salt Creek Channel in this location, the shadows cast by the proposed bridge would reduce the amount of natural light in the crossing during the day even further.

Build Alternative 1b

Build Alternative 1b would maintain the existing constrained linkage by building an SR 79 bridge over Olive Avenue and Salt Creek Channel. The bridge would have a minimum vertical clearance of about 18 ft and would be about 758 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 41 to 98 ft and 58 to 85 ft wide and would reduce the amount of natural light in the corridor.

Design Option 1b1

Design Option 1b1 would maintain the existing constrained linkage by building an SR 79 bridge over Salt Creek Channel. This bridge would be lower and shorter than the one designed for Build Alternative 1b, with a minimum vertical clearance of about 6 ft and a length of about 673 ft. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 46 ft to 98 ft and 62 to 85 ft wide. Like the Build alternative, the shadows cast by these structures would reduce the amount of natural light in the crossing. Indirect impacts from traffic noise and artificial light could be more severe with the design option than the base condition because the roadway would be closer to the linkage.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would maintain the existing constrained linkage by building a SR 79 bridge over Olive Avenue and Salt Creek Channel. The bridge would have a minimum vertical clearance of about 19 ft and would be about 889 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be approximately 39 to 75 ft and 49 to 82 ft wide and would reduce the amount of natural light in the corridor.

Build Alternative 2a

Build Alternative 2a would have the same impacts to Existing Constrained Linkage B (Salt Creek) as Build Alternative 1a. The configuration of the bridge would be the same, so the impacts would be the same.

Build Alternative 2b

Build Alternative 2b would maintain the existing constrained linkage by building an SR 79 bridge over Olive Avenue and Salt Creek Channel. The bridge would have a minimum vertical clearance of about 21.5 ft and would be about 889 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be about 41 to 74 ft and 50 to 78 ft wide. The shadows cast by the structures would reduce the amount of natural light in the crossing during the day.

Design Option 2b1

Design Option 2b1 would maintain the existing constrained linkage by building an SR 79 bridge over Salt Creek Channel. This bridge would be lower and shorter than the one designed for Build Alternative 2b, with a minimum vertical clearance of about 10 ft and a length of about 755 ft. Although the bridge would consist of two separate structures that are about 72 ft apart, the structures would be 41 ft to 74 ft and 53 ft to 78 ft wide. Like the Build alternative, the shadows cast by these structures would reduce the amount of natural light in the crossing during the day. Indirect impacts from traffic noise and artificial light could be more severe with the design option than the base condition because the roadway would be closer to the linkage.

Newport Road Hills to Patton Road Corridor (1)

Build Alternative 1a

Build Alternative 1a would permanently and directly impact Small Mammalian, Reptile, and Amphibian Wildlife and Insects that use the existing Newport Road Hills to Patton Road Corridor by making it unsuitable for species in these categories.

Build Alternative 1a would permanently and indirectly impact Avian Wildlife and Large Mammalian Wildlife that use the existing corridor by making it less desirable and more dangerous for species in these categories. To continue to use this already constrained corridor, wildlife would need to travel along Newport Road and cross Build Alternative 1a on the proposed Newport Road bridge or by using Culvert A-1 or Culvert A-2 when possible (some species might not be able to use these culvert crossings year round due to periodic inundation).

The proposed Newport Road bridge over SR 79 would not have any vegetation, and the elevated crossing could deter many species; however, the bridge would present fewer hazards from traffic than crossing SR 79 directly. Culverts A-1 and A-2 would run east and west on either side of the proposed Newport Road bridge. Each culvert opening would be about 3 ft by 7 ft. Culvert A-1 would be about 1,050 ft long, and Culvert A-2 would be about 1,210 ft long. The culvert openings would be adequate for many species, but the lengths might be undesirable.

Although Build Alternative 1a would not prohibit the movement of Avian Wildlife and Large Mammalian Wildlife, the altered routes required by this Build alternative would present new hazards from traffic and would not be as desirable or as direct as the existing corridor.

Build Alternative 1b and Design Option 1b1

Build Alternative 1b and Design Option 1b1 would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing Newport Road Hills to Patton Road Corridor by making it less desirable and more dangerous for species in these categories. To continue to use this already constrained corridor, wildlife would need to travel under or over proposed bridges or through proposed culverts.

Wildlife could travel under the proposed SR 79 bridges over Patterson Avenue or Patton Avenue, which would pose fewer hazards from traffic than crossing SR 79 directly. These routes would not be as direct as the existing corridor and would require wildlife to travel along existing roads, which could decrease the effectiveness of this

already constrained corridor. Although unlikely, wildlife could also travel along Newport Road and cross over SR 79 on the proposed Newport Road bridge or use Culverts B-1 or B 2 when seasonally possible. The proposed Newport Road bridge over SR 79 would not have any vegetation, and the elevated crossing could deter many species, but the bridge would present fewer traffic hazards than crossing SR 79 directly.

Culverts B-1 and B-2 would run east and west on either side of the proposed Newport Road bridge over SR 79. Each culvert opening would be about 3 ft by 7 ft. Culvert B-1 would be about 890 ft long, and Culvert B-2 would be about 790 ft long. The culvert openings would be adequate for many species, but the lengths could be undesirable.

Although Build Alternative 1b and Design Option 1b1 would not prohibit the movement of most wildlife, the altered routes associated with them would present new hazards from traffic and would not be as desirable or as direct as the existing corridor.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing Newport Road Hills to Patton Road Corridor by making it less desirable and more dangerous for species in these categories. To continue to use this already constrained corridor, wildlife would need to travel under proposed bridges or through proposed culverts.

Wildlife could travel under the proposed SR 79 bridges over Patterson Avenue or Patton Avenue, which would pose fewer hazards from traffic than crossing SR 79 directly. These routes would not be as direct as the existing corridor and would require wildlife to travel along existing roads and through the undercrossings, which could decrease the effectiveness of this already constrained corridor. Although unlikely, wildlife could also travel along Newport Road and use Culvert B-1 or B-2 when seasonally possible.

Culverts B-1 and B-2 would run east to west and southeast to northwest respectively, north of Newport Road. Culvert B-1 would have an opening approximately 7 ft by 4 ft and would be about 658 ft long. Culvert B-2 would have an opening approximately 7 ft by 3 ft and would be about 411 ft long. The culvert openings would be adequate for many species, but the lengths could be undesirable.

Although the Preferred Alternative would not prohibit the movement of most wildlife, the altered routes associated with them would present new hazards from traffic and would not be as desirable or as direct as the existing corridor.

Build Alternative 2a

Build Alternative 2a would have the same impacts to the existing Newport Road Hills to Patton Road Corridor as Build Alternative 1a.

Build Alternative 2b and Design Option 2b1

Build Alternative 2b and Design Option 2b1 would have the same impacts to the existing Newport Road Hills to Patton Road Corridor as Build Alternative 1b.

Hemet Channel Corridor (2)

Build Alternative 1a

Build Alternative 1a would not cross the Hemet Channel Corridor, so no permanent direct impacts are expected. However, it would be close enough to permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing corridor by making it less desirable for species in these categories. Permanent impacts to Passive Dispersers (e.g., plants) are not expected because the habitat and hydrology would remain unchanged in the corridor.

Build Alternative 1b

Build Alternative 1b would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use the existing Hemet Channel Corridor by making it less desirable for species in these categories.

Build Alternative 1b would maintain the existing corridor by creating an SR 79 bridge over Hemet Channel and the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of 25.5 ft and would be about 869 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 41 to 57 ft and 41 to 60 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Design Option 1b1

Design Option 1b1 would impact the same wildlife movement categories in the Hemet Channel Corridor as those discussed under Build Alternative 1b. Any difference in impacts would be related to changes in the dimensions of the bridge over Hemet Channel. Design Option 1b1 would not bridge over the San Jacinto Branch Line.

Like Build Alternative 1b, Design Option 1b1 would maintain the existing wildlife corridor by building an SR 79 bridge over Hemet Channel. This bridge would be lower and shorter than the one for the Build alternative, with a minimum vertical clearance of about 7 ft and a length of about 509 ft. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 41 to 49 ft and 41 ft wide. Like the Build alternative, the shadows cast by these structures would reduce the amount of natural light in the crossing during the day. Indirect impacts from traffic noise and artificial light could be more severe with the design option than the base condition because the roadway would be closer to the corridor.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use the existing Hemet Channel Corridor by making it less desirable for species in these categories.

The Preferred Alternative would maintain the existing corridor by creating an SR 79 bridge over Hemet Channel and the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of 25 ft and would be approximately 1,102 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would each be approximately 43 to 52 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Build Alternative 2a

Build Alternative 2a would impact the same wildlife movement categories in the Hemet Channel Corridor as Build Alternative 1b.

Build Alternative 2a would maintain the existing corridor by creating Culvert F-3 and an SR 79 bridge over the San Jacinto Branch Line and Hemet Channel. Culvert F-3 would cross under Build Alternative 2a. It would be about 200 ft long and would consist of four openings about 14 ft by 10 ft each. The culvert openings would be adequate for many species, but the lengths might be undesirable. Some species may be unable to use this culvert crossing year round due to periodic inundation.

The bridge over the San Jacinto Branch Line and Hemet Channel would have a minimum vertical clearance of about 27 ft and would be about 745 ft long. The bridge would consist of two separate structures about 72 ft apart, with widths of about 41 ft and 50 to 65 ft. In addition to the bridge, a Future Street "A" southbound off-ramp would be built over the San Jacinto Branch Line and Hemet Channel at this location, about 11 to 98 ft west of the bridge. This off-ramp would have a minimum vertical clearance of about 23.5 ft and would be about 873 ft long and 26 to 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce the amount of natural light in the crossing during the day.

Build Alternative 2b

Build Alternative 2b would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing Hemet Channel Corridor by making this corridor less desirable for species in these categories. Permanent impacts to Passive Dispersers (e.g., plants) are not expected because the habitat and hydrology would remain unchanged in the corridor.

Build Alternative 2b would maintain the existing corridor by creating an SR 79 bridge over the San Jacinto Branch Line and Hemet Channel. The bridge would have a minimum vertical clearance of about 28 ft and would be about 745 ft long. This bridge would consist of two separate structures about 72 ft apart, with widths of about 41 ft and 50 to 65 ft. A Future Street "A" southbound off-ramp would also be built over the San Jacinto Branch Line and Hemet Channel at this location, about 11 to 98 ft west of the bridge. This off-ramp would have a minimum vertical clearance of about 23.5 ft and would be about 873 ft long and 26 to 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce the amount of natural light in the crossing during the day, which could make the corridor less desirable for diurnal species.

Design Option 2b1

Design Option 2b1 would impact the same wildlife movement categories in the Hemet Channel Corridor as those discussed under Build Alternative 2b. Any difference in impacts would be related to changes in the dimensions of the structures over Hemet Channel. Design Option 2b1 would not bridge over the San Jacinto Branch Line.

Design Option 2b1 would maintain the existing wildlife corridor by building an SR 79 bridge over Hemet Channel. This bridge would be lower and shorter than the one for the Build alternative, with a minimum vertical clearance of about 7 ft and a length of about 236 ft. The bridge would consist of two separate structures, about 72 ft apart, with widths of about 41 ft and 55 to 60 ft. A Future Street "A" southbound off ramp would also be built over Hemet Channel in this location, about 39 to 102 ft west of the bridge. The off-ramp would have a minimum vertical clearance of about 10 ft and would be about 466 ft long and 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce amount of natural light in the crossing during the day. Indirect impacts from traffic noise and artificial light could be more severe with the design option than the base condition because the roadway would be closer to the corridor.

San Jacinto Branch Line Corridor (3)

Build Alternative 1a

Build Alternative 1a would have permanent and indirect impacts to Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing San Jacinto Branch Line Corridor by making it less desirable for species in these categories.

Build Alternative 1a would maintain the existing wildlife corridor by building an SR 79 bridge over the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of 25 ft and would be about 295 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 53 to 59 ft and 48 to 75 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Build Alternative 1b

Build Alternative 1b would have the same impacts to the same wildlife movement categories as Build Alternative 1a.

Build Alternative 1b would maintain the existing corridor by building an SR 79 bridge over Hemet Channel and the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of about 25.5 ft and would be about 869 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would be 41 to 57 ft and 41 to 60 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Design Option 1b1

Design Option 1b1 would impact the same wildlife movement categories in the San Jacinto Branch Line Corridor as those discussed under Build Alternative 1a. Because it would involve laying a section of roadway directly over the tracks, this design option would create a physical barrier to terrestrial wildlife movement in the existing San

Jacinto Branch Line Corridor. It would not provide culverts or bridges to facilitate wildlife movement, making this corridor unsuitable for all categories of wildlife movement except Avian Wildlife.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Hemet Channel Corridor by making it less desirable for species in these categories.

The Preferred Alternative would maintain the existing corridor by creating an SR 79 bridge over Hemet Channel and the San Jacinto Branch Line. The bridge would have a minimum vertical clearance of 25 ft and would be approximately 1,102 ft long. Although this bridge would consist of two separate structures about 72 ft apart, the structures would each be approximately 43 to 52 ft wide. The shadows cast by these structures would reduce the amount of natural light in the crossing during the day.

Build Alternative 2a

Build Alternative 2a would have the same types of impacts to the same wildlife movement categories as Build Alternative 1a, but it would include an off-ramp over Hemet Channel and the San Jacinto Branch Line, and the bridge configuration would be somewhat different.

Build Alternative 2a would maintain the existing corridor by building an SR 79 bridge over the San Jacinto Branch Line and Hemet Channel. The bridge would have a minimum vertical clearance of about 27 ft and would be about 745 ft long. This bridge would consist of two separate structures about 72 ft apart, with widths of about 41 ft and 50 to 65 ft. In addition to the bridge, a Future Street "A" southbound off-ramp would be built over the San Jacinto Branch Line and Hemet Channel in this same location, about 11 to 98 ft west of the bridge. This off-ramp would have a minimum vertical clearance of about 23.5 ft and would be about 873 ft long and 26 to 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce amount of natural light in the crossing during the day.

Build Alternative 2b

Build Alternative 2b would have the same types of impacts to the same wildlife movement categories as Build Alternative 1a.

Build Alternative 2b would maintain the existing corridor by creating an SR 79 bridge over the San Jacinto Branch Line and Hemet Channel. The bridge would have a minimum vertical clearance of about 28 ft and would be about 745 ft long. This bridge would consist of two separate structures about 72 ft apart, with widths of about 41 ft and 50 to 65 ft. A Future Street "A" southbound off-ramp would also be built over the San Jacinto Branch Line and Hemet Channel at this location, about 11 to 98 ft west of the bridge. This off-ramp would have a minimum vertical clearance of about 23.5 ft and would be about 873 ft long and 26 to 39 ft wide. Although the two bridge structures and the off-ramp would have gaps between them, their shadows would reduce the amount of natural light in the crossing during the day.

Design Option 2b1

Design Option 2b1 would have the same configuration and impacts as Design Option 1b1.

Double Butte to West Hemet Hills Corridor (4)

Build Alternative 1a

Build Alternative 1a would permanently and directly impact Large Mammalian Wildlife and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Double Butte to West Hemet Hills Corridor by making it unsuitable for species in these categories. This Build alternative would fragment existing habitat in the West Hemet Hills by creating a physical barrier to terrestrial wildlife movement in the corridor. Build Alternative 1a would not include culverts or bridges to facilitate wildlife movement in this corridor, making it unsuitable for all categories of wildlife movement except Avian Wildlife.

Build Alternative 1b and Design Option 1b1

Build Alternative 1b and Design Option 1b1 would have the same impacts to the same wildlife movement categories as Build Alternative 1a.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Double Butte to West Hemet Hills Corridor by making it less desirable and more dangerous for species in these categories. To continue to use this already constrained corridor, wildlife would need to travel under proposed bridges or through a proposed culvert.

Wildlife could travel under the proposed SR 79 bridges over Stowe Road or Stetson Avenue, which would pose fewer hazards from traffic than crossing SR 79 directly. These routes would not be as direct as the existing corridor and would require wildlife to travel along existing roads and through the undercrossings, which could decrease the effectiveness of this already constrained corridor. Although unlikely, wildlife could also travel between Stowe Road and Stetson Avenue through Culvert G-1 when seasonally possible.

Culvert G-1 would run east to west, north of the proposed Stowe Road undercrossing and south of the proposed Stetson Avenue undercrossing. The culvert opening would be about 3.5 ft in diameter and the length would be about 288 ft long. The culvert opening would be adequate for some species, but the length could be undesirable.

Although the Preferred Alternative would not prohibit the movement of most wildlife, the altered routes associated with them would present new hazards from traffic and would not be as desirable or as direct as the existing corridor.

Build Alternatives 2a and 2b and Design Option 2b1

Build Alternatives 2a and 2b and Design Option 2b1 would not cross the existing Double Butte to West Hemet Hills Corridor and would have no impact on it.

West Hemet Hills to Hemet-Ryan Airport Corridor (5)

Build Alternatives 1a, 1b and Design Option 1b1and the Preferred Alternative (Build Alternative 1b with Refinements)

Build Alternatives 1a, 1b and Design Option 1b1, and the Preferred Alternative would not cross the existing West Hemet Hills to Hemet-Ryan Airport Corridor and would have no impact on it.

Build Alternative 2a

Build Alternative 2a would permanently and directly impact Large Mammalian Wildlife that use the existing West Hemet Hills to Hemet-Ryan Airport Corridor by making this corridor unsuitable for species in this category. This Build alternative would fragment the habitat region in the West Hemet Hills by creating a physical barrier to Large Mammalian Wildlife movement in the existing corridor. Build Alternative 2a would not provide culverts or bridges that would be adequate for Large Mammalian Wildlife movement, making this corridor unsuitable for species in this category.

Build Alternative 2a would permanently and indirectly impact Avian Wildlife and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing West Hemet Hills to Hemet-Ryan Airport Corridor by making it less desirable for species in these categories. To continue to use this corridor, terrestrial wildlife would need to travel through proposed Culverts H-1, H-1a, H-1b, or H-2 when seasonally possible. Some species might not be able to use these culvert crossings year round due to periodic inundation. These culverts would cross under Build Alternative 2a. Culvert H-1 would be about 2.5 ft in diameter and about 245 ft long. Culverts H-1a and H-1b would be about 2.0 ft in diameter. Culvert H-1a would be about 475 ft long, and Culvert H-1b would be about 525 ft long. Culvert H-2 would be about 3.5 ft in diameter and about 320 ft long. These culvert openings would be adequate for many species, but the lengths might be undesirable.

Although Build Alternative 2a would not prohibit the movement of Avian Wildlife and Small Mammalian, Reptile, and Amphibian Wildlife, the routes the wildlife would have to use would not be as desirable or as direct as the existing West Hemet Hills to Hemet-Ryan Airport Corridor.

Build Alternative 2b

Impacts to this corridor from Build Alternative 2b would be the same as Build Alternative 2a.

Design Option 2b1

Design Option 2b1 would impact the same wildlife movement categories in the West Hemet Hills to Hemet-Ryan Airport Corridor as those discussed under Build Alternative 2a. Any difference in impacts would be related to changes in the dimensions of the culverts included with this design option.

Like Build Alternatives 2a and 2b, Design Option 2b1 would fragment the habitat region in the West Hemet Hills by creating a physical barrier to Large Mammalian Wildlife. To continue to use the West Hemet Hills to Hemet-Ryan Airport Corridor, smaller terrestrial wildlife would need to travel through proposed Culverts H-1, H-1a, H-1b, or H-2 when seasonally possible. These culverts would cross under the Design Option 2b1 roadway. Some species might not be able to use them year round due to periodic inundation.

With Design Option 2b1, Culvert H-1 would have an opening that would be the same size as with the base condition, but it would be longer, about 292 ft. Culverts H-1a and H-1b would not change from the base condition. Like the base condition, Culvert H-2 would be about 3.5 ft in diameter, but it would be longer, at about 364 ft. These culvert openings would be adequate for many species, but the longer lengths in two of the culverts could make them even more undesirable than those in the base condition.

West Hemet Hills to Lakeview Mountains Corridor (6)

Build Alternative 1a

Build Alternative 1a would permanently and directly impact Large Mammalian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it unsuitable for species in this category. This Build alternative would fragment existing habitat in the West Hemet Hills by creating a physical barrier to wildlife movement in the existing corridor. Build Alternative 1a would not provide culverts or bridges to facilitate wildlife movement in the corridor, making it unsuitable for Large Mammalian Wildlife.

The noise, artificial light, and traffic on Build Alternative 1a would permanently and indirectly impact Avian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it less desirable for species in this category.

Build Alternative 1b and Design Option 1b1

Impacts to this corridor from Build Alternative 1b and Design Option 1b1 would be the same as Build Alternative 1a.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and directly impact Large Mammalian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it unsuitable for species in this category. This build alternative would fragment existing habitat in the West Hemet Hills by creating a physical barrier to wildlife movement in the existing corridor. The Preferred Alternative would provide one culvert, Culvert G-2, which would be considered unsuitable for Large Mammalian Wildlife. Culvert G-2 runs southeast to northwest. The culvert opening would be about 3.0 ft in diameter and the length would be about 411 ft long. The culvert opening may be adequate for some species, but the length would likely be undesirable.

The noise, artificial light, and traffic on the Preferred Alternative would permanently and indirectly impact Avian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it less desirable for species in this category.

Build Alternatives 2a and 2b and Design Option 2b1

Build Alternatives 2a and 2b and Design Option 2b1 would not cross the existing West Hemet Hills to Lakeview Mountains Corridor and would have no impact on it.

Lakeview Mountains to Tres Cerritos Hills Corridor (7)

All Build Alternatives and Design Options

All of the Build alternatives and design options would permanently and directly impact Large Mammalian Wildlife that use the existing Lakeview Mountains to Tres Cerritos Hills Corridor by making it unsuitable for species in this category. They would block the existing connection (a bridge over the San Diego Canal) and create a physical barrier to wildlife movement along the corridor. None of the Build alternatives or design options would provide culverts or bridges to facilitate wildlife movement in this corridor, making it unsuitable for Large Mammalian Wildlife.

Increased noise, artificial light, and traffic on any of the Build alternatives or design options would permanently and indirectly impact Avian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor by making it less desirable for species in this category.

Colorado River Aqueduct Corridor (8)

Build Alternative 1a

Build Alternative 1a would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Colorado River Aqueduct Corridor by making it less desirable for species in these categories.

To continue to use this corridor, terrestrial wildlife would need to travel through two proposed culverts, Culvert L-15 or Culvert L-16. Culvert L-15 would be about 250 ft long and would consist of four openings, each about 4 ft by 7 ft. Culvert L-16 would be about 131 ft long and would consist of eight openings, each about 5 ft by 10 ft. The heights and widths of the culverts would be adequate for many species, but the lengths might be undesirable. Some species might not be able to use these culvert crossings year round due to periodic inundation.

Build Alternative 1b and Design Option 1b1

The impacts from Build Alternative 1b and Design Option 1b1 would generally be the same as Build Alternative 1a. Any differences would be the result of variance in culvert design.

Build Alternative 1b and Design Option 1b1 would include two proposed culverts, Culvert M-11 and Culvert M-12. Culvert M-11 would be 280 ft long and would consist of four openings, each 4 ft tall and 7 ft wide. Culvert M-12 would be 130 ft long and would consist of eight openings, each 5 ft tall and 10 ft wide.

Preferred Alternative (Build Alternative 1b with Refinements)

The Preferred Alternative would permanently and indirectly impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Colorado River Aqueduct Corridor by making it less desirable for species in these categories.

To continue to use this corridor, terrestrial wildlife would need to travel through two proposed culverts, Culvert M-11 or Culvert M-12. Culvert M-11 would be about 300 ft long and would consist of four openings, each about 4 ft by 7 ft. Culvert M-12 would be about 275 ft long and would consist of eight openings, each about 5 ft by 10 ft.

The heights and widths of the culverts would be adequate for many species, but the lengths might be undesirable. Some species might not be able to use these culvert crossings year round due to periodic inundation.

Build Alternative 2a

The impacts from Build Alternative 2a would be the same as Build Alternative 1a. Culvert designs would also be the same.

Build Alternative 2b and Design Option 2b1

The impacts from Build Alternative 2b and Design Option 1b1 would be the same as Build Alternative 1b. Culvert designs would also be the same.

Temporary Impacts

Temporary impacts to wildlife movement would be related to construction and could include increased collision mortality because of construction vehicles and restricted movement due to temporary fencing, construction noise, night lighting, and increased human presence. Dust, noise, night lighting, or increased human presence also could deter wildlife movement. Construction activities could also cause wildlife to find more dangerous roadway crossings or restrict home ranges or disrupt dispersal movements.

No Build Alternative

No temporary impacts would occur with this alternative. The existing conditions would remain, and the roadway would be unchanged.

All Build Alternatives and Design Options

All Build alternatives and design options would have temporary impacts to the following wildlife corridors:

- MSHCP Existing Constrained Linkage B (Salt Creek)
- Existing Constrained Linkage C
- Newport Road Hills to Patton Road
- Hemet Channel
- San Jacinto Branch Line
- Lakeview Mountains to Tres Cerritos Hills
- Colorado River Aqueduct

Existing Constrained Linkage B (Salt Creek)

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use Existing Constrained Linkage B (Salt Creek).

Existing Constrained Linkage C

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use Existing Constrained Linkage C.

Newport Road Hills to Patton Road Corridor

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, and Insects that use the existing Newport Road Hills to Patton Road Corridor.

Hemet Channel Corridor

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, Small Mammalian, Reptile, and Amphibian Wildlife, Insects, and Passive Dispersers that use the existing Hemet Channel Corridor.

San Jacinto Branch Line Corridor

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing San Jacinto Branch Line Corridor.

Lakeview Mountains to Tres Cerritos Hills Corridor

Construction activity would temporarily impact Avian Wildlife that use the existing Lakeview Mountains to Tres Cerritos Hills Corridor.

Colorado River Aqueduct Corridor

Construction activity would temporarily impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Colorado River Aqueduct Corridor.

Build Alternatives 1a, 1b and Design Option 1b1, and the Preferred Alternative (Build Alternative 1b with Refinements)

The Double Butte to West Hemet Hills Corridor and the West Hemet Hills to Lakeview Mountains Corridor would be impacted only by Build Alternatives 1a, 1b and Design Option 1b1, and the Preferred Alternative.

Double Butte to West Hemet Hills Corridor

Build Alternatives 1a, 1b, and the Preferred Alternative would temporarily impact Avian Wildlife, Large Mammalian Wildlife, and Small Mammalian, Reptile, and Amphibian Wildlife that use the existing Double Butte to West Hemet Hills Corridor.

West Hemet Hills to Lakeview Mountains Corridor

Build Alternatives 1a, 1b, and the Preferred Alternative would temporarily impact Avian Wildlife that use the existing West Hemet Hills to Lakeview Mountains Corridor.

Build Alternatives 2a, 2b, and Design Option 2b1

The West Hemet Hills to Hemet-Ryan Airport Corridor would be impacted only by Build Alternatives 2a, 2b, and Design Option 2b1.

West Hemet Hills to Hemet-Ryan Airport Corridor

Build Alternatives 2a and 2b would temporarily impact Avian Wildlife, Small Mammalian, Reptile and Amphibian Wildlife, and Insects that use the existing West Hemet Hills to Hemet-Ryan Airport Corridor.

Avoidance, Minimization, and Mitigation Measures

Avoidance Measures

Measures BIO-11 through BIO-13 will be incorporated to avoid potentially significant impacts to wildlife.

Minimization Measures

All Build alternatives will incorporate minimization measures BIO-14 through BIO-25 to comply with all MSHCP guidelines related to minimizing impacts to wildlife movement within or adjacent to the MSHCP Conservation Area.

Mitigation Measures

All Build alternatives will incorporate mitigation measure BIO-26 to comply with all MSHCP guidelines related to minimizing impacts to wildlife movement within or adjacent to the MSHCP Conservation Area.

4.2.3.4 CULTURAL RESOURCES (CEQA CHECKLIST QUESTIONS V.A AND V.B)

Native American consultation with the Pechanga Band resulted in the identification of a TCP within the Project APE; this TCP has cultural and religious significance to the Luiseño people. Caltrans determined that the TCP is eligible for the NRHP, and thus the CRHR. In addition, a PPAD was assumed eligible for the NRHP/CRHR for the purposes of the Project. Although not individually eligible for the NRHP/CRHR, 24 prehistoric bedrock milling components within the APE are presumed to collectively contribute to the presumed eligibility of the PPAD. Significant adverse changes to the TCP and PPAD are discussed here. The TCP and the PPAD, would be impacted differently based on the build alternative, thus the discussion of impacts for each of these resources is presented by specific build alternative.

PPAD

The PPAD was presumed eligible for listing on the NRHP under Criteria A and D for the purposes of the Project, thus Criteria 1 and 4 for the CRHR. The PPAD extends beyond the limits of the APE and contains an unknown number of archaeological resources. The size and anticipated composition of the PPAD precludes a complete inventory at this time; however, at a minimum, the 24 bedrock milling components recorded within the APE—while determined not individually eligible for the NRHP/CRHR (i.e., CA-RIV-5461, -5462, -5790, -5791, -5829/H, -7885, -7887, -7888, -7891, -7893, -7894/H, -7907, -7908, -8140, -8141, -8142, -8143, -8146, -8147, -8148, -8160, and -8169) or presumed eligible under the Section 106 PA (Stipulation VIII.C.3 [ESA]) [i.e., CA-RIV-6907/H and -8156/H]—are potential contributors to the presumed eligibility of the PPAD for the current undertaking should the PPAD ever be formally evaluated. Various combinations of these potentially contributing elements were identified on all build alternatives and design options (see discussion below).

All build alternatives and design options have the potential to directly and indirectly impact the historical resource with construction of new roadway and bridges that would require the physical destruction or damage to contributing elements to the PPAD, and introduce visual elements that would diminish the integrity of the PPAD. Therefore, Caltrans has determined that the Project would cause a substantial adverse change in the significance of the historical resource and thus would have a significant effect on the environment.

Build Alternative 1a: For Build Alternative 1a, direct impacts to potentially contributing elements of the PPAD would result from the physical destruction of six bedrock milling components (CA-RIV-5790, -5791, -7885, -7887, -7907, -7908) and physical damage to part of one bedrock milling components (CA-RIV-8169). Build Alternative 1a also has the possibility of causing indirect impacts to the PPAD at 18 bedrock milling components (CA-RIV-5461, -5462, -5829/H, -6907/H, -7888, -7891, -7893, -7894/H, -8140, -8141, -8142, -8143, -8164, -8147, -8148, -8156/H, -8160, and -8169).

Build Alternative 1b (Design Options 1b1): For Build Alternative 1b (and Design Option 1b1), direct impacts to potentially contributing elements of the PPAD would result from the physical destruction of three bedrock milling components (CA-RIV-7885, -7887, -8160) and physical damage to part of three bedrock milling components (CA-RIV-8141, -8142, and -8169). Build Alternative 1b (and Design Option 1b1) also has the possibility of causing indirect impacts to the PPAD at 21 bedrock milling components (CA-RIV-5461, -5462, -5790, -5791, -5829/H, -6907/H, -7888, -7891, -7893, -7894/H, -7907, -7908, -8140, -8141, -8142, -8143, -8146, -8147, -8148, -8156/H, and -8169).

Build Alternative 1br: For Build Alternative 1br, direct impacts to potentially contributing elements of the PPAD would result from the physical destruction of one bedrock milling component (CA-RIV-7885) and physical damage to part of two bedrock milling components (CA-RIV-8141 and -8142). Build Alternative 1br also has the possibility of causing indirect impacts to the PPAD at 23 bedrock milling component (CA-RIV-5461, -5462, -5790, -5791, -5829/H, -6907/H, -7887, -7888, -7891, -7893, -7894/H, -7907, -7908, -8140, -8141, -8142, -8143, -8146, -8147, -8148, -8156/H, -8160, and -8169).

Build Alternative 2a: For Build Alternative 2a, direct impacts to potentially contributing elements of the PPAD would result from the physical destruction of four bedrock milling components (CA-RIV-5790, -5791, -7894/H, and -7907) and physical damage to part of three bedrock milling components (CA-RIV-7888, -7908, and -8169). Build Alternative 2a also has the possibility of causing indirect impacts to the PPAD at 20 bedrock milling components (CA-RIV-5461, -5462, -5829/H, -6907/H, -7885, -7887, -7888, -7891, 7893, -7908, -8140, -8141, -8142, -8143, -8146, -8147, -8148, -8156/H, -8160, -8169).

Build Alternative 2b (Design Options 2b1): For Build Alternative 2b and Option 2b1, direct impacts to potentially contributing elements of the PPAD would result from the physical destruction of two bedrock milling components (CA-RIV-7894/H and -8160) and physical damage to part of four bedrock milling components (CA-RIV-7888, -8141, -8142, and -8169). Build Alternative 2b (and Design Option 2b1) also has the possibility of causing indirect impacts to the PPAD at 22 bedrock milling components (CA-RIV-5461, -5462, -5790, -5791, -5829/H, -6907/H, -7885, -7887, -7888, -7891, 7893, -7907, -7908, -8140, -8141, -8142, -8143, -8146, -8147, -8148, -8156/H, and -8169).

TCP

The TCP is eligible for the NRHP and CRHR under Criterion A/1 for its association with events that have made a significant contribution to broad patterns of American history; Criterion B/2 for its association with *'Anó* and the *Chéexayam*, significant persons in the history of the Luiseño as well as other local Native American communities; and Criterion D/4 for continued potential to yield information important to history.

All build alternatives and design options have the potential to directly and indirectly impact the historical resource with construction of new roadway and bridge that would require the physical destruction or damage to '*Ano Pótma*, and the intervening valley, contributing element to the TCP, and introduce visual elements that would diminish the integrity of the TCP. Therefore, Caltrans has determined that the Project would cause a substantial adverse change in the significance of the historical resource and thus would have a significant impact to the resource.

While all build alternatives and design options have the potential to directly and indirectly impact the TCP, each alternative would result in a different suite of impacts to contributing features of the TCP, as discussed below.

Build Alternatives 1a: Build Alternative 1a proposes construction of new roadway along the west end of West Hemet Hill that would result in physical damage of 142.3 ac of the 2,908.3 ac TCP, or (4.9 percent). Direct impacts would occur at contributing features '*Anó´ Potma* and the intervening valley. At '*Anó´ Potma*, the proposed cut would extend across the western and northwestern slope, where approximately 86.0 ac would be removed, or approximately 18.3 percent of the West Hemet Hills. The impact to '*Anó´ Potma* caused by Build Alternative 1a would significantly change setting, feeling, location, and character of the hill and would diminish its association to the point that it may no longer convey its significance as a contributor to the TCP. Cut and fill would also impact approximately 56.3 ac of the intervening valley (12.1 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 1a would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features.

Build Alternatives 1b (Design Options 1b1): Build Alternative 1b proposes construction of new roadway that would result in physical damage of 142.0 ac of the 2,908.3-ac TCP, or 4.9 percent. Direct impacts would occur at contributing features 'Anó´ Potma and the intervening valley. At '*Anó´ Potma*, the proposed cut would extend across the western and northwestern slope, where approximately 86.0 ac would be removed, or approximately 18.3 percent of the West Hemet Hills. The impact to '*Anó´ Potma* caused by Build Alternative 1b would significantly change setting, feeling, location, and character of the hill and would diminish its association to the point that it may no longer convey its significance as a contributor to the TCP. Cut and fill would also impact approximately 56.0 ac of the intervening valley (12.0 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 1b would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features.

Design Option 1b1 would reduce the direct impact to the TCP, resulting in physical damage to 119.9 ac, or 4.1 percent. At '*Anó´ Potma*, the proposed cut would extend across the western and northwestern slope, where

approximately 68.7 ac would be removed, or approximately 14.6 percent of the West Hemet Hills. The impact to '*Anó´ Potma* caused by Build Alternative 1b1 would significantly change setting, feeling, location, and character of the hill and would diminish its association to the point that it may no longer convey its significance as a contributor to the TCP. Cut and fill would also impact approximately 54.6 ac of the intervening valley (11.7 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 1b1 would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features.

Build Alternative 1br: Build Alternative 1b with refinements (1br) was designed to reduce direct impacts to the TCP by minimizing the cut through 'Anó´ Potma. Build Alternative 1br proposes construction of new roadway that would result in physical damage of 99.7 ac of the 2,908.3-ac TCP, or 3.4 percent. Direct impacts would occur at contributing features '*Anó´ Potma* and the intervening valley. At '*Anó´ Potma*, the proposed cut would be limited to the northwestern slope where approximately 29.7 ac would be removed, equivalent to approximately 6.3 percent of the hill. The impact to '*Anó´ Potma* caused by Build Alternative 1br would significantly change the setting, feeling, and character of the hill but would not diminish the integrity of its location or association to the point that it no longer contributes to the significance of the TCP. Cut and fill would also impact approximately 70.0 ac of the intervening valley (15.0 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 1br would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features.

Build Alternative 2a: Build Alternative 2a proposes construction of new roadway that would result in physical damage of 110.6 ac of the 2,908.3-ac TCP, or 3.8 percent. Direct impacts would occur at contributing features '*Anó´ Potma* and the intervening valley. The proposed cut over the top of West Hemet Hill would remove 65.3 ac from the heart of '*Anó´ Potma*, equivalent to approximately 13.9 percent of the hill, and would reduce '*Anó´ Potma* to a shadow of its former self. Although the calculated area of direct impact at '*Anó´ Potma* is less than other proposed alternatives (e.g., Build Alternatives 1a and 1b), the severity of the impact—that is, the removal of the hilltop—would diminish all the integrity of '*Anó´ Potma* and the TCP as a whole to the point where the TCP may no longer retain sufficient integrity to convey its significance. Cut and fill would also impact approximately 45.3 ac of the intervening valley (9.7 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 2a would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features

Build Alternative 2b (Design Options 2b1): Build Alternative 2b proposes construction of new roadway that would result in physical damage of 110.6 ac of the 2,908.3-ac TCP, or 3.8 percent. Direct impacts would occur at contributing features '*Anó´ Potma* and the intervening valley. The proposed cut over the top of West Hemet Hills would remove 65.3 ac from the heart of '*Anó´ Potma*. Approximately 65.3 ac of the 470.8-ac West Hemet Hills would be impacted, representing 13.9 percent of the hill, and would reduce 'Anó´ Potma to a shadow of its former self. Although the calculated ADI at '*Anó´ Potma* would be less than other proposed alternatives (e.g., Build

Alternatives 1a and 1b), the severity of the impact—that is, the removal of the hilltop—would diminish all the integrity of '*Anó´ Potma* and the TCP as a whole to the point where the TCP may no longer retain sufficient integrity to convey its significance. Cut and fill would also impact approximately 45.3 ac of the intervening valley (9.7 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 2b would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features.

Design Option 2b1 would reduce the direct impact to the TCP causing physical damage to 97.2 ac of the TCP, or 3.3 percent. Direct impacts would occur at contributing features '*Anó´ Potma* and the intervening valley. The proposed cut over the top of West Hemet Hills would remove 56.0 ac from the heart of '*Anó´ Potma*, equivalent to approximately 11.9 percent and reduce '*Anó´ Potma* to a shadow of its former self. Although the calculated ADI at '*Anó´ Potma* would be less than other proposed alternatives (e.g., Build Alternatives 1a and 1b), the severity of the impact—that is, the removal of the hilltop—would diminish all the integrity of '*Anó´ Potma* and the TCP as a whole to the point where the TCP may no longer retain sufficient integrity to convey its significance. Cut and fill would also impact approximately 41.2 ac of the intervening valley (8.9 percent). Direct impacts to open space within the intervening valley would change the setting and feeling of the valley but would not diminish its integrity of location, feeling, or association. In addition, Build Alternative 2b1 would introduce visual elements, such as elevated roadway and bridges, which would diminish the integrity of the TCP's contributing features.

Build Alternative 1br was designed specifically to reduce direct impacts to historical resources, in accordance with CEQA guidance (Section 15126.4), to achieve the preferred mitigation option of preserving historical resources in place. Redesign of Build Alternative reduced direct impacts to the TCP and minimized destruction of bedrock milling components that contribute to the PPAD. Further, in an effort to avoid, mitigate, and minimize impacts to historical resources, measures CR-1 through CR-9 are presented in Section 3.1.8.4 and the ECR (Appendix E). Caltrans is continuing to consult to resolve adverse effects pursuant to Section 106 PA Stipulation XI, and 35 CFR 800.6 through preparation of an MOA in consultation with consulting parties. Specific measures to resolve adverse effects to historic properties in the Preferred Alternative developed in the MOA will be included in the Final EIR/EIS and CEQA Checklist to address significant impacts to historical resources. At a minimum, these would include protection through the establishment of ESAs, archaeological and Native American monitoring, treatment to mitigate impacts to the PPAD (such as additional research and management planning for bedrock milling components), actions to mitigate impacts to the TCP (such as preparation of a National Register nomination); and analysis, reporting, and curation (if necessary). Although these mitigation measures CR-1 through CR-9) are expected to reduce the significant adverse impacts of the Project on the TCP and PPAD, all build alternatives would still have the potential to cause an adverse change in the significance of these historical resources, and this would results in a significant effect on the environment.

4.2.3.5 HAZARDS AND HAZARDOUS MATERIALS (CEQA CHECKLIST QUESTION VIII.C)

Winchester Elementary School is the closest school facility to the Project that is within 0.25 mi of the Build Alternatives. The Build Alternatives are for a transportation project; therefore, they do not involve the potential for release of hazardous emissions or handling of acutely hazardous materials. As previously discussed, however,

there is a potential that hazardous materials may be encountered during the construction of the Project. The exact types of material and the proximity to the school cannot be known at this time and so the impact is assumed to be significant because of the possibility and the sensitivity of the school. Mitigation measures HAZMAT-1 through HAZMAT-5 are proposed to address the risk of hazardous materials releases. However, the potential for significant impacts cannot be fully eliminated and so the risk is considered unavoidable.

4.2.3.6 NOISE AND VIBRATION (CEQA CHECKLIST QUESTIONS XII.A, XII.C AND XII.D)

As discussed in Section 4.2.2.7, significant traffic noise impacts under CEQA are wide-spread. Table 4.2-1 is a summary of the CEQA noise analysis, identifying all of the CEQA impacts. To abate these impacts, mitigation has been incorporated into the project at several levels:

Under the Caltrans Traffic Noise Analysis Protocol, 22 barriers were recommended for further consideration:

- Noise Barriers 1A-E1 and 2A-F1
- Noise Barriers 1A-G1/1B-G2 and 2A-H1/2B-H1
- Noise Barriers 1A-L3/2A-L3
- Noise Barriers 1A-J2/2B-J2 and 1B-K3/2A-K3
- Noise Barriers 1B-M3/2B-M3 and 1A-L2/2A-L2
- Noise Barriers 1B-M4/2B-M4
- Noise Barriers 1B-N1/2B-N1
- Noise Barriers 1B-N2/2B-N2

Under CEQA, an additional noise barrier was recommended for further consideration. This property is known as Reflection Lake or Cottonwood Lake. This property is a private campground with recreational-vehicle storage and day-use picnic areas. Using the Caltrans Traffic Noise Analysis Protocol, a feasible and reasonable noise barrier could not be created at this location. While the noise barrier at Cottonwood Lake is not valid under the Caltrans Protocol, it meets the criteria under CEQA. Under CEQA, the barriers at this location (Noise Barriers 1A-JL1, 1B-M2, 2A-L1, and 2B-M2) warrant further consideration. A noise barrier at Reflection/Cottonwood Lake meet the metrics for CEQA-specific mitigation.

CEQA mitigation for the remainder of the significantly impacted sites (without barrier recommendations) were determined to not satisfy CEQA criteria. Therefore, the SR-79 Realignment Project would result in significant and unavoidable noise impacts to these sites:

- 1A-SCH-2, 1A-E2, 1A-E3, 1A-I1, 1A-J1 and 1A-J3
- 1B-C1, 1B-C2, 1B-I1, 1B-K2, and 1B-K4
- 2A-SCH-2, 2A-I1, 2A-J3 and 2A-K2
- 2B-B1, 2B-I1, 2B-J1 and 2B-J3

4.2.3.7 MANDATORY FINDINGS OF SIGNIFICANCE (CEQA CHECKLIST QUESTION XVIII.B)

The Build Alternatives, when combined with other reasonably foreseeable projects, would contribute to significant cumulative effects that are not fully mitigated or offset and so it the Build Alternatives are determined to contribute to the following unavoidable significant cumulative impacts to:

- Visual/aesthetics and community character through alteration of the visual character and quality of the San Jacinto Valley
- Air quality during construction of the Project
- Cultural resources through destruction and damage of these resources during excavation activities, and indirect effects caused by the introduction of visual and/or audible elements resulting from the Project that may diminish the integrity of a resource or make changes to the current setting of a resource.
- Paleontological resources through destruction and damage of these resources during excavation activities
- Species not covered in the MSHCP and wetlands and other waters through habitat removal and/or degradation

The Project would incorporate measures to minimize and mitigate Project-related impacts and to lessen the potential cumulative effects to these resources to the following:

Visual/Aesthetics

Project would incorporate specific design elements to reduce the visual effect the Project would have on its surroundings, including embankment development and design, rock weathering, and landscaping. However, due to the ongoing changes to visual character in the San Jacinto Valley, the Project would contribute to the cumulative effect of declining rural and agricultural values in the San Jacinto Valley, which directly contribute to the visual character and quality of the area. This impact is considered significant.

Air Quality

The Project would incorporate both standard conditions and mitigation measures during construction to lessen the impact on air quality. The Project is located in an area designated as nonattainment of the California O_3 air quality standards, and construction of the Project would result in elevated, NO_X emissions. Therefore, construction of the Project is expected to contribute to existing violations of the O_3 standards. This short-term impact would be potentially significant.

Community Character

The Project would incorporate specific design elements to reduce the effect the Project has on its surroundings, including embankment development and design, rock weathering, and landscaping. The general plans of the local jurisdictions indicate their intent to support future growth and change. Most noticeably, this has resulted in the conversion of open space and agriculture to more urban uses, such as housing developments and commercial centers. In addition, the proposed Project would realign an existing roadway in a rural area. This permanent change to the visual character and quality of the San Jacinto Valley would be a significant impact.

Cultural Resources

With the selection of a Preferred Alternative, the Project would incorporate specific avoidance, protection, and/or minimization measures that address the cumulative impacts of Project activities on cultural resources, including implementation of an ESA Action Plan and the establishment of an MOA. Nonetheless, this mitigation would not reduce the Project's contribution to potential cumulative effects to less than significant.

Species Not Covered by the MSHCP

The Project would incorporate specific minimization measures, such as preconstruction surveys and tree removal following confirmation that nests are inactive, to address impacts to nesting and foraging raptors. However, due to the ongoing loss of nesting raptors in western Riverside County and Southern California, the Project would contribute to the cumulative effect of declining nesting raptor populations and reproductive success within the region.

The Project would incorporate specific mitigation measures to improve bat roosting sites and habitat. Measures would include installing a bat-friendly gate on a nearby mine adit to limit or remove human disturbance and improve the quality of this mine roost site. In addition, as part of landscape design for the Project, mature plantings of native deciduous trees would be incorporated to provide suitable habitat for vegetation-roosting bats. This Project-specific mitigation would reduce the Project's contribution to potential cumulative effects to less than significant.

Wetlands and Other Waters

The Project would create, enhance, and/or preserve wetland areas as required by state and federal permits. Permits would be based on the Preferred Alternative. The Project would incorporate engineering controls and best management practices, such as culvert design and placement and erosion control (e.g., silt fencing), to minimize altered hydrology and roadway runoff. This Project-specific mitigation is expected to reduce the Project's contribution to potential cumulative effects to less than significant.

4.2.4 Significant Irreversible Environmental Changes

Sections 3.4 and 3.5 describe the potential commitments of resources if any of the proposed Build alternatives are built. The approval and construction of any of the Build alternatives would result in long-term and permanent commitments of natural, physical, human, and fiscal resources throughout the existence of the Project.

The Project would require the commitment of agricultural lands, biological habitats, and open space and would involve permanent residential and nonresidential land conversion for the roadway and associated facilities. Other effects include altered viewsheds and community character, permanent expenditures of state and local funds for construction, maintenance, and upkeep of the Project, and material contributions to a local landfill with finite capacity. Although the proposed Project would be considered a permanent use, if a more compelling need were to arise for use of the land, or the facility was no longer needed, the land could ultimately be converted to another use. However, this is highly unlikely, and, therefore, the conversion of existing land uses would be considered an irretrievable commitment of resources.

The irreversible and irretrievable commitment of materials, labor, resources, and funds associated with the Build alternatives would be offset by the beneficial aspects of an improved transportation system. Associated benefits would consist of improved accessibility, travel, time, and safety for residents, workers, travelers, and others.

4.2.5 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988, has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light duty trucks, other trucks, buses, and motorcycles make up the largest source (second to electricity generation) of GHG emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. "Adaptation," refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).[2]

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing the growth of vehicle miles traveled (VMT), 3) transitioning to lower GHG emitting fuels, and 4) improving vehicle technologies. To be most effective all four strategies should be pursued cooperatively.

4.2.5.1 Regulatory Setting

The following Regulatory Setting section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

State

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California has been innovative and pro-active in addressing GHG emissions and climate change.

[2] http://climatechange.transportation.org/ghg_mitigation/

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases, 2002: requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the United States Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars model years 2017-2025.

Executive Order (EO) S-3-05: (signed on June 1, 2005, by former Governor Arnold Schwarzenegger) the goal of this EO is to reduce California's GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80 percent below the year 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB 32, the Global Warming Solutions Act of 2006, Núñez and Pavley: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan (which includes market mechanisms) and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (signed on October 18, 2006 by former Governor Arnold Schwarzenegger) further directs state agencies to begin implementing AB 32, including the recommendations made by California's Climate Action Team.

Executive Order S-01-07: (signed on January 18, 2007 by former Governor Arnold Schwarzenegger) set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by the year 2020.

Senate Bill 97 (SB 97), Chapter 185, 2007: required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Caltrans Director's Policy 30 (DP-30) Climate Change (approved June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. This policy contributes to the Department's stewardship goal to preserve and enhance California's resources and assets.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board (CARB) to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions reduction target for their region.

Senate Bill 391 (SB 391), Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Federal

Although climate change and GHG reduction is a concern at the federal level; currently there are no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level GHG analysis. FHWA supports the approach that climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in vehicle travel activity.

Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in **Massachusetts v. EPA** (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions. U.S. EPA in conjunction with NHTSA issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.[3]

[3] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.[4]

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO_2) per mile, (the equivalent to 35.5 miles per gallon [MPG] if the automobile industry were to meet this CO_2 level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, U.S. EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is projected to save approximately four billion barrels of oil and two billion metric tons of GHG emissions.

The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

In August 2016, the U.S. EPA and NHSTA extended the emissions and fuel economy standards for medium and heavy-duty vehicles for model year 2018 and beyond. The final rule would cut GHG emissions by 1.1 billion metric tons, conserve 2 billion barrels of oil, and lower fuel costs by about $170 billion over the lifetime of the vehicles sold in model years 2018-2027.

4.2.5.2 PROJECT ANALYSIS

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[5] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively

[4]http://epa.gov/otaq/climate/regulations.htm

[5]This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air

considerable" (CEQA Guidelines sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 contains the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

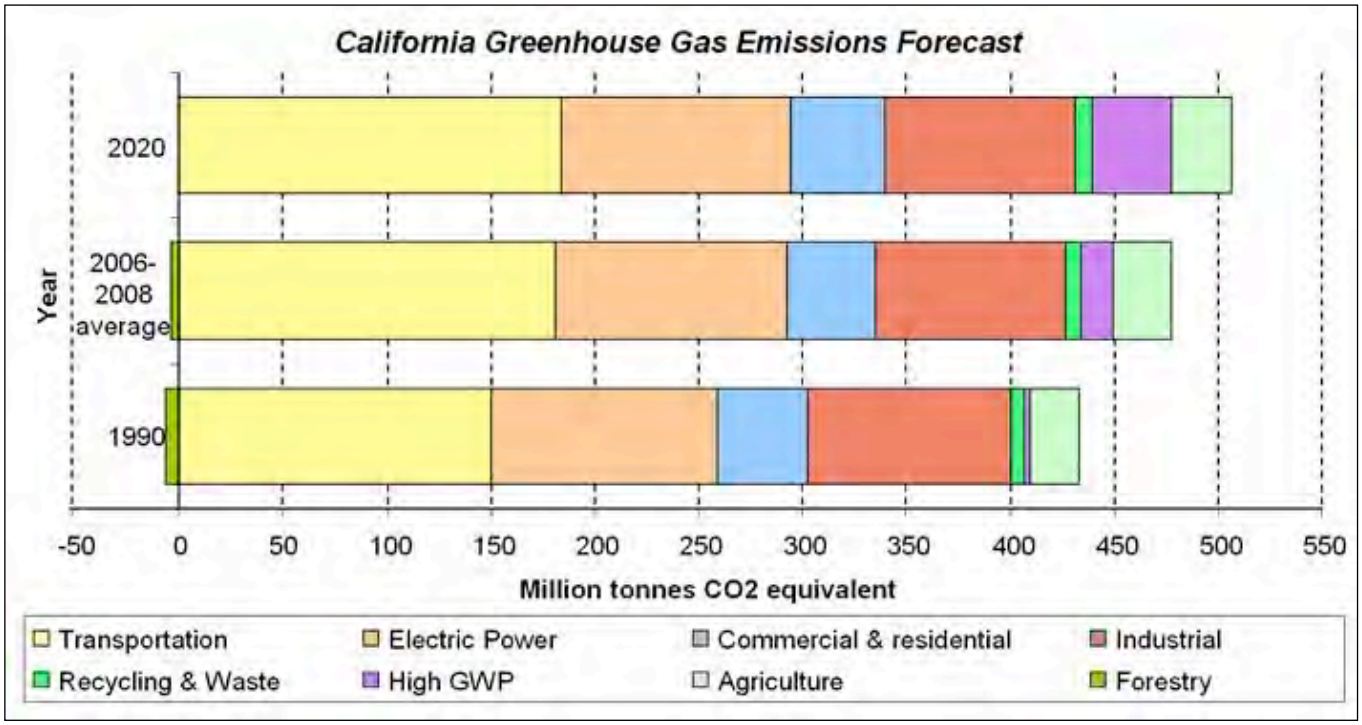

Figure 4.2-1 California Greenhouse Gas Forecast
Source: *http://www.arb.ca.gov/cc/inventory/data/forecast.htm*

The Department and its parent agency, Transportation, Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[6]

Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

[6]Caltrans Climate Action Program is located at the following web address:
http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

One of the main strategies in the Department's Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide (CO_2) from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour (see Figure 4.2-2 below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO_2, may be reduced.

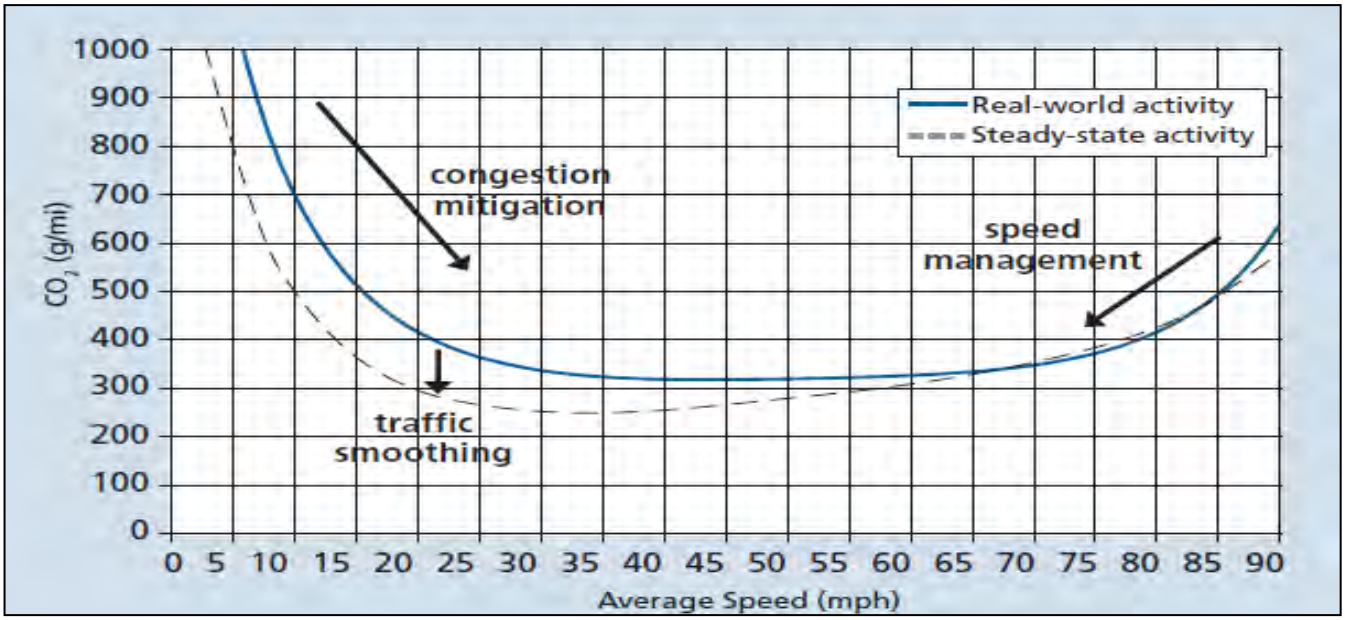

Figure 4.2-2 Possible Effect of Traffic Operation Strategies in Reducing On-Road CO_2 Emission[7]

One of the purposes of the proposed Project is to improve traffic flow for local and regional traffic in the San Jacinto Valley. The proposed Project is intended to improve capacity to support increased local and regional travel demands associated with projected growth in the area. For the No Build Alternative (Year 2040), 10 roadway segments are expected to operate at LOS F according to the Supplemental Traffic Report for SR 79 Realignment (CH2M HILL, 2014) and Table 3.1-37. The traffic data for the different Build alternatives would be similar, so the analysis evaluates the Build alternatives collectively. Under the Build alternatives, in 2040, the Supplemental Traffic Report for SR 79 Realignment and Table 3.1-37 indicates SR 79 would be expected to operate at LOS C or better along the entire alignment, except for the two segments between Newport Road and Grand Avenue, which are projected to operate at LOS E (CH2M HILL, 2014). Table 3.1-40 indicates that nine of the ten roadway segments operating at LOS F under the No Build alternative (Year 2040) would experience an improvement in LOS and the improvement in traffic flow with the Build alternatives which would be expected to have a beneficial effect to regional GHG emissions through reductions in GHG emissions due to reduced vehicle delay and idling associated with improvements under the Build alternatives. The Project would be beneficial to regional and local

[7]**Traffic Congestion and Greenhouse Gases**: Matthew Barth and Kanok Boriboonsomsin(TR News 268 May-June 2010)<*http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf*>

efforts to reduce GHG emissions. It would help to achieve regional and subregional GHG emission reduction targets by reducing traffic congestion, thus reducing vehicle exhaust emissions. The Project is listed in the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2014), which includes programs, policies, and measures to address air emissions, including greenhouse gases. Consistent with SB 375 requirements, the ARB issued a per capita GHG reduction target of 8% for 2020 and 13% for 2035 for SCAG's 2012-2035 RTP/SCS. SCAG's 2012-2035 RTP/SCS will surpass the ARB's reduction targets with GHG emission reductions of 9% per capita in 2020 and 16% per capita in 2035. Measures in the RTP/SCS that help mitigate air emissions, including GHG emissions, are composed of strategies to reduce congestion, increase access to public transportation, improve air quality, and enhance coordination between land use and transportation decisions. The City of Hemet General Plan 2030 identifies improving traffic conditions and reducing vehicle miles traveled as measures to reduce GHG emissions, in accordance with Senate Bill 375 regional and/or subregional targets established by the CARB. The environmental impact report recently approved for this general plan proposes to create and implement programs that will aid in improving air quality by reducing motor vehicle trips, such as those programs recommended by the RTP, RCIP, and the South Coast Air Quality Management District (SCAQMD) (Hemet 2012). GHG emissions are not evaluated or discussed in the current City of San Jacinto General Plan (San Jacinto 2012).

CO2 emissions from the proposed Project operation were estimated using CT-EMFAC 5 and the total VMT for the proposed Project. The estimated CO2 emissions are presented in Table 4.2-3. The proposed Project would reduce overall congestion. It would be expected that drivers could take more direct routes, thereby reducing overall VMT from the No Build Alternative. Therefore, although the modeled CO2 emissions in the future years (2020 and 2040) would be higher than the 2014 emissions, the 2020 and 2040 CO2 emissions for the Build alternative would be less than the No Build Alternative emissions due to the reduced VMT and improved traffic conditions. In 2020, the modeled Build alternative emissions would be 29,991 metric tons per year less than the No Build Alternative emissions; in 2040, the modeled Build alternative emissions would be 37,526 metric tons per year less than the No Build Alternative emissions. Based on the quantitative analysis, the Build alternative would reduce CO2 emissions compared to the No Build Alternative, and would be consistent with the RTP/SCS's regional GHG reduction goals.

The CO2 emissions presented in the analysis are only for the purposes of comparison between alternatives. The emission values are not necessarily an accurate reflection of what the true CO2 emissions will be because CO2 emissions are dependent on other factors that are not part of the EMFAC2011 model such as the fuel mix. The EMFAC model emission rates are only for direct engine-out CO2 emissions, not full fuel cycle, and the fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components, rate of acceleration, and the aerodynamics and efficiency of the vehicles.

Table 4.2-3 Direct Emissions of CO_2

Alternative	Vehicle Kilometers Traveled	Vehicle Miles Traveled	Emissions (metric tons/day)	Emissions (metric tons/yr)
			CO_2	CO_2
Existing (2014)	5,149,900	4,700,000	1,991	726,625
No Build Alternative (2020)	7,724,850	5,500,000	2,338	853,244
Build Alternative (2020)	7,563,920	5,400,000	2,255	823,253
No Build Alternative (2040)	12,231,010	8,400,000	3,646	1,330,960
Build Alternative (2040)	12,070,080	8,300,000	3,544	1,293,434

VMT data Source: CH2M HILL calculations from Supplemental Traffic Report for SR 79 Realignment (CH2M HILL, 2014). See Appendix D of the Updated Air Quality Technical Memorandum (Caltrans, 2015).Note: Emission factors from EMFAC2007 (version 2.3) for the Riverside County portion of the South Coast Air Basin.

The results for the Build alternative represent Build Alternatives 1a, 1b (including Design Option 1b1), 2a, and 2b (including Design Option 2b1) because the traffic data for the Build alternatives are similar.

Limitations and Uncertainties with Modeling

EMFAC

Although emission factors (EMFAC) can calculate CO_2 emissions from mobile sources, the model does have limitations when it comes to accurately reflecting CO_2 emissions. According to the National Cooperative Highway Research Program (NCHRP), studies have revealed that brief but rapid accelerations can contribute significantly to a vehicle's carbon monoxide and hydrocarbon emissions during a typical urban trip (NCHRP 2008). Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idle) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work by USEPA and the ARB is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling. In addition, EMFAC does not include speed corrections for most vehicle classes for CO_2 emissions. For most vehicle classes, emission factors are held constant, which means that EMFAC is not sensitive to the decreased emissions associated with improved traffic flows for most vehicle classes. Therefore, unless a project involves a large number of heavy-duty vehicles, the difference in modeled CO_2 emissions due to speed change will be slight.

The ARB is currently not using EMFAC to create its inventory of GHG emissions. It is unclear why the ARB has made this decision. The ARB website simply states:

> *REVISION: Both the EMFAC and OFFROAD models develop CO_2 and CH_4 [methane] emission estimates; however, they are not currently used as the basis for [ARB's] official [GHG] inventory which is based on fuel usage information. However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models.*

Other Variables

With the current science, project-level analysis of GHG emissions is limited. Although a GHG analysis is included for this Project, there are numerous key GHG variables that are likely to change dramatically during the design life of the proposed Project and would thus dramatically change the projected CO_2 emissions.

First, vehicle fuel economy is increasing. The USEPA's annual light-duty automobile trend report provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks (USEPA 2008). The report confirms that average fuel economy has improved each year beginning in 2005, and is now the highest since 1993 (USEPA 2008). Most of the increase since 2004 is due to higher fuel economy for light trucks, following a long-term trend of slightly declining overall fuel economy that peaked in 1987. These vehicles also have a slightly lower market share, peaking at 52 percent in 2004 with projections at 48 percent in 2008. The options for vehicle fuel economy increases studied by the National Highway Traffic Safety Administration (NHTSA) are presented in Table 4.2-4 (NHTSA 2008a).

Table 4.2-4 Model Year 2015 Required Miles per Gallon for Various Fuel Economy Options

Vehicle Type	Required Miles per Gallon					
	No Action	25% Below Optimized	Optimized (Preferred)	25% Above Optimized	50% Above Optimized	Total Costs Equal Total Benefits
Cars	27.5	33.9	35.7	37.5	39.5	43.3
Trucks	23.5	27.5	28.6	29.8	30.9	33.1

Source: Final EIS for New Corporate Average Fuel Economy, NHTSA 2008

Second, near zero carbon vehicles will come into the market during the design life of this Project. According to a report released by the University of California, Davis, Institute of Transportation Studies (Cunningham et al. 2008):

> *Large advancements have occurred in fuel cell vehicle and hydrogen infrastructure technology over the past 15 years. Fuel cell technology has progressed substantially resulting in power density, efficiency, range, cost, and durability all improving each year. In another sign of progress, automotive developers are now demonstrating over 100 fuel cell vehicles (FCVs) in California – several in the hands of the general public – with configurations designed to be attractive to buyers. Cold-weather operation and vehicle range challenges are close to being solved, although vehicle cost and durability improvements are required before a commercial vehicle can be successful without incentives. The pace of development is on track to approach pre-commercialization within the next decade.*
>
> *A number of the United States Department of Energy (USDOE) 2010 milestones for FCV development and commercialization are expected to be met by 2010. Accounting for a five to six year production development cycle, the scenarios developed by the USDOE suggest that 10,000s of vehicles per year from 2015 to 2017 would be possible in a federal demonstration program, assuming large cost share grants by the government and industry are available to reduce the cost of production vehicles.*

Third, and as previously stated, California has recently adopted a low-carbon transportation fuel standard. The ARB is scheduled to review the draft regulation for low carbon fuels in April 2009 with implementation of the standard to begin in 2010.

Fourth, driver behavior has been changing as the U.S. economy and oil prices have changed. The Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists have adjusted to higher gas prices by making fewer trips and driving more slowly, 2) the market share of sports utility vehicles is declining, and 3) the average prices for larger, less-fuel-efficient models have declined over the past 5 years as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more-fuel-efficient vehicles (CBO 2008).

Limitations and Uncertainties with Impact Assessment

The range of uncertainties in assessing GHG impacts grows with each step of the analysis (NHTSA 2008a).

> *Cascade of uncertainties typical in impact assessments showing the "uncertainty explosion" as these ranges are multiplied to encompass a comprehensive range of future consequences, including physical, economic, social, and political impacts and policy responses.*

Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in CO_2 emissions would mean for climate change given the overall California GHG emissions inventory of approximately 430 million tons of CO_2 equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global GHG emissions and to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce GHG emissions. Non-mitigation IPCC scenarios project an increase in global GHG emissions by 9.7 up to 36.7 billion metric tons CO_2 from 2000 to 2030, which represents an increase of between 25 and 90 percent (IPCC 2007).

The assessment is further complicated by the fact that changes in GHG emissions can be difficult to attribute to a particular project because the projects often move the location for some type of GHG emissions, rather than causing "new" GHG emissions. It is difficult to assess the extent to which any project-level increase in CO_2 emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

The complexities and uncertainties associated with project-level impact analysis are further borne out in a recently released NHTSA report (NHTSA 2008b). As the text quoted below shows, even when dealing with GHG emission scenarios on a national scale for the entire passenger car and light truck fleet, the numerical differences among alternatives is very small and well within the error sensitivity of the model.

In analyzing across the CAFE 30 alternatives, the mean change in the global mean surface temperature, as a ratio of the increase in warming between the B1 (low) to A1B (medium) scenarios, ranges from 0.5 percent to 1.1 percent. The resulting change in sea level rise (compared to the No Action Alternative) ranges, across the alternatives, from 0.04 centimeter to 0.07 centimeter. In summary, the impacts of the model year 2011-2015 CAFE alternatives on global mean surface temperature, sea level rise, and precipitation are relatively small in the context of the expected changes associated with the emission trajectories. This is due primarily to the global and multi-sectoral nature of the climate problem. Emissions of CO_2, the primary gas driving the climate effects, from the United States automobile and light truck fleet represented about 2.5 percent of total global emissions of all greenhouse gases in the year 2000 (EPA, 2008; CAIT, 2008). While a significant source, this is a still small percentage of global emissions, and the relative contribution of CO_2 emissions from the United States light vehicle fleet is expected to decline in the future, due primarily to rapid growth of emissions from developing economies (which are due in part to growth in global transportation sector emissions).

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. The following construction minimization measures will be implemented for air quality to reduce exhaust emissions during construction. These measures would also be expected to reduce GHG emissions during construction.

AQ-1 **First-Stage Smog Alerts.** Suspension of all construction equipment operations during first-stage smog alerts is required.

AQ-2 **Electricity.** To the extent feasible, use electricity from power poles rather than temporary diesel- or gasoline-powered generators.

AQ-3 **Construction Parking.** Configure construction parking to minimize traffic interference on local streets.

AQ-4 **Construction Truck Routes.** To the extent feasible, reroute construction trucks from congested streets or sensitive receptor areas.

AQ-5 **Onsite Construction Traffic Control.** Provide temporary traffic controls, such as a flag man, for onsite construction vehicles during all phases of construction to maintain smooth traffic flow.

AQ-6 **Construction Vehicle Turn Lanes.** Provide dedicated turn lanes for movement of construction vehicles, if no turn lane currently exists, where feasible.

AQ-8 Signal Boards. All message/signal boards shall be solar powered.

AQ-10 Construction Equipment. If practical, lease new, clean equipment meeting the most stringent of applicable federal or state standards. In general, meet and ideally go beyond ARB requirements for in-use diesel engines and equipment, particularly for non-road construction fleets. Ensure that construction equipment meet or exceed equivalent emissions performance to that of U.S. EPA Tier 4 standards for non-road engines.

CEQA Conclusion

As discussed above, both the future Build alternatives and future No Build Alternative show increases in CO_2 emissions over the existing levels; however, the future Build alternative CO_2 emissions are less than the future No Build Alternative emissions, demonstrating that any increase over the baseline is not a result of the Project. In addition, as discussed above, there are also limitations with EMFAC and with assessing what a given CO_2 emissions increase means for climate change. Thus, any increase from a comparison to the existing conditions would occur without the Build Alternative and would be attributable to other factors, not the Build Alternative. Regardless, however, there is insufficient information to assess what a given CO2 emissions increase from an individual project means for climate change on a global scale. Therefore, it is the Department's determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a determination regarding significance of the Project's direct impact and its contribution on the cumulative scale to climate change. However, the Department is firmly committed to implementing measures to help reduce the potential effects of the Project. These measures are outlined below.

Greenhouse Gas Reduction Strategies

The Department continues to be actively involved on the Governor's Climate Action Team as ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies the Department is using to help meet the targets in AB 32 come from Former Governor Arnold Schwarzenegger's California Strategic Growth Plan for California, which is updated each year. The Strategic Growth Plan targets a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in GHG emissions while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in Figure 4.2-3: The Mobility Pyramid.

Figure 4.2-3 The Mobility Pyramid

The Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. The Department works closely with local jurisdictions on planning activities, but does not have local land use planning authority. The Department assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the Department is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by U.S. EPA and ARB.

The Department is also working towards enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), SB 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs.

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

Table 4.2-5 summarizes the Department and statewide efforts that it is implementing in order to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 4.2-5 Climate Change/CO_2 Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings (million metric tons)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, Cal/EPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement Biodiesel 20 Biodiesel 100	 .0045	.0065 .045 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5% limestone cement mix 25% fly ash cement mix >50% fly ash/slag mix	1.2 .36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal/EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Source: Climate Change Program at Caltrans, December 2006

The following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

GHG reduction measures:

1. The Department and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. ITS commonly consists of electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

2. In addition, the Riverside County Transportation Commission and San Bernardino Associated Governments jointly provide ridesharing services, park-and-ride facilities, trip transit trip planning information, and additional information about alternative modes of travel through their IE511.org and 511 phone service to help manage the growth in demand for highway capacity within Riverside and San Bernardino Counties.

3. Landscaping reduces surface warming, and through photosynthesis, decreases CO_2. The Project proposes to provide landscaping where necessary in the corridor to provide aesthetic treatment, replacement planting, or mitigation planting for the Project.

4. The Project would incorporate the use of energy-efficient lighting, such as light-emitting diode (LED) traffic signals. LED bulbs cost $60 to $70 apiece but last five to six years, compared to the one-year average lifespan of incandescent light bulbs previously used. The LED bulbs themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the Project's CO_2 emissions (KBJ 2008).

5. According to Caltrans Standard Specifications, the contractor must comply with all of the South Coast Air Quality Management District's rules, ordinances, and regulations in regards to air quality restrictions. In addition, the contractor will restrict idling of construction vehicles to no longer than 5 consecutive minutes to comply with Title 13, California Code of Regulations §2449. Compliance with this regulation reduces harmful emissions and GHG from diesel-powered construction vehicles.

6. Implementation of minimization measures for construction equipment described in Section 3.2.6.4, including AQ-1, AQ-3, AQ-4, AQ-5. AQ-6, AQ-8, and AQ-10 would reduce the GHG emissions during the construction period of the project.

Adaptation Strategies

"Adaptation strategies" refer to how the Department and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011 the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks. Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop. The California Climate Adaptation Strategy (Dec 2009),[8] which summarizes the best known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing (now the California State Transportation Agency); Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

- The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report to recommend how California should plan for future sea level rise. The report was released in June 2012 and included: Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates;
- The range of uncertainty in selected sea level rise projections;
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems;
- A discussion of future research needs regarding sea level rise for California.

[8] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academies Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. All projects that have filed a Notice of Preparation (NOP) as of the date of the EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The NOP for the proposed Project was filed in March 2005. Therefore, no further analysis of adaptation strategies for sea level rise is required for the proposed Project.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency (now the California State Transportation Agency) to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment Report.

4.3 Mitigation Measures for Significant Impacts under CEQA

In response to the potential significant impacts identified in association with the proposed Project, a number of avoidance, minimization, and/or mitigation measures were developed. These measures, along with other measures for impacts that are less than significant, are presented in detail in the Environmental Commitment Record in Appendix E. Specific mitigation measures for significant impacts under CEQA are listed below by environmental topic.

4.3.1 Aesthetics

To address significant changes to views from scenic vistas, effects to scenic resources on a State Scenic Highway, degradation of visual character and visual quality, and additional roadway lighting, the following mitigation measures are proposed (see Section 3.1.7.4 [ECR [Appendix E] for full text of the measures). A description of each mitigation measures follows the list below.

- VIS-1: Corridor Master Plan
- VIS-2: Mitigation Planting/Highway Planting
- VIS-3: Plantings to Bring Down Apparent Scale
- VIS-4: Minimize Visual Impacts with Revegetation
- VIS-5: Textured Noise Barriers
- VIS-6: Aesthetic Treatment to Structures
- VIS-7: Planting on Structures Such as Retaining Walls and Bridges to Minimize Glare
- VIS-8: Concentrations of Trees and Shrubs at Interchanges
- VIS-9: Screening Treatments in Winchester
- VIS-10: Noise Barrier Screening in Winchester
- VIS-11: Prepare Contour Grading Plans
- VIS-12: Cut Slope Design
- VIS-13: Over-Excavate Slopes
- VIS-14: Create Artificial Draws
- VIS-15: Weathering of Exposed Rock
- VIS-16: Revegetate Cut Slopes
- VIS-17: Erosion Control
- VIS-18: Hydroseed Fill Slopes
- VIS-19: Texturize Fill Slopes
- VIS-20: Revegetate Fill Slopes
- VIS-21: Benched Slopes
- VIS-22: Fill Slope Design
- VIS-23: Earthen Basins
- VIS-24: Non-Reflective Materials
- VIS-25: Overcrossing Design
- VIS-26: Noise Barrier Design Treatments
- VIS-27: Noise Barrier Landscaping
- VIS-28: Noise Barrier Surfaces
- VIS-29: Lighting

4.3.2 Air Quality

To address violation of air quality standards and Project contributions to criteria pollutants that are in nonattainment during construction, the following minimization measures are proposed (see Section 3.2.6.4 or the ECR [Appendix E] for full text of the measures):

- AQ-1: First-Stage Smog Alerts
- AQ-2: Electricity
- AQ-3: Construction Parking
- AQ-4: Construction Truck Routes
- AQ-5: Onsite Construction Traffic Control
- AQ-6: Construction Vehicle Turn Lanes
- AQ-7: Blasting Activities
- AQ-8: Signal Boards
- AQ-9: Environmentally Sensitive Areas
- AQ-10: Construction Equipment
- AQ-11:Construction Areas
- AQ-12: Street Sweeping
- AQ-13: Traffic Speed Control
- AQ-14: Grading

4.3.3 Biological Resources

To address impacts to biological resources, the following avoidance, minimization, and mitigation measures are proposed (see Sections 3.3.1.4, 3.3.2.4, 3.3.3.4, 3.3.4.4, 3.3.5.4, 3.3.6.4, or the ECR [Appendix E] for full text of the measures):

Avoidance

- BIO-11: Bridge over Salt Creek Channel
- BIO-12: Avoidance of San Jacinto River
- BIO-13: Avoidance of Existing Constrained Linkage C
- BIO-15: Crossing Structures and Spacing Intervals for a Variety of Species
- BIO-16: Openings in K-Rails for Small Animals
- BIO-17: Wildlife Crossings Intended for Large Mammalian Wildlife
- BIO-18: Use of Tree and Shrub Buffers around Crossing Entrances, No Artificial Lighting
- BIO-19: Crossing Facilities Vegetated as Naturally as Possible
- BIO-20: Use of Biodegradable Material in Erosion and Sediment Control Devices
- BIO-21: Use of Natural Objects in the Crossing Facility
- BIO-22: Installation of Vegetative Cover near the Entrances to Culverts
- BIO-23: Installation of Dirt, Rock, or Concrete Benches on at Least One Side of the Large Mammal Crossing Facilities
- BIO-24: Wildlife Fencing

- BIO-25: Installation of Jump-Outs and Escape Ramps
- BIO-27, 27a: Environmentally Sensitive Area Fencing, Temporary Treatment BMPs
- BIO-34: Avoidance of Sensitive Plant Populations

Minimization

- BIO-1 and BIO-2: Landscaping Plans
- BIO-3: Barrier Fencing along ROW
- BIO-4: Slope Construction within ROW
- BIO-5: Equipment Storage, Fueling, and Staging Areas
- BIO-6: Training about Sensitive Biological Resources
- BIO-7: Fire Season Work
- BIO-8: Dust Minimization
- BIO-9: Designated Areas for Equipment Maintenance and Staging
- BIO-10: Litter Control
- BIO-14: Night Lighting
- BIO-28: Onsite and Offsite Drainage Facilities in the Project ROW
- BIO-29: Maintenance of Constructed Storm Water Systems
- BIO-30: No Erodible Materials Deposited in Water Courses
- BIO-31: Ongoing Monitoring and Reporting
- BIO-35, 36a, 36b, 36c: Avoid the Spread of Invasive Plant Species
- BIO-39: Conduct Presence/Absence Surveys Immediately Prior to Construction Each Year
- BIO-40: Relocation of Burrowing Owls
- BIO-41: Maintenance of Hydrology to Existing Vernal Pool/Alkali Playa Habitat
- BIO-42: Conducting Vegetation Clearance to Avoid Active Breeding Season (March 1 through June 30)
- BIO-43: Nesting Raptor Surveys and Implementation of Nest Exclusion
- BIO-44: Inspections for Roosting Bats before Demolition
- BIO-47: Conducting Clearance of Riparian Habitat Outside Riparian Bird Active Breeding Season (Generally March 1 through June 30)

Mitigation

- BIO-26: Enhancements to Wildlife Corridors
- BIO-32: Modification of the Project Design to Construct a Gravity-Based Surface Water Diversion System
- BIO-33: Mitigation of Impacts to Water Features
- BIO-36: Mitigation for Robinson's Peppergrass Populations
- BIO-37: Coulter's Goldfields and Smooth Tarplant Populations
- BIO-38: Culvert/Drainage System for Coulter's Goldfields and Smooth Tarplant Populations
- BIO-45: Installation of Bat-Friendly Gate on Mine Adit Adjacent to Roadway Segments A, B, and C
- BIO-46: Provision of Suitable Habitat for Vegetation-Roosting Bats

4.3.4 Cultural Resources

Caltrans is continuing to consult to resolve adverse effects pursuant to Section 106 PA Stipulation XI, and 35 CFR 800.6 in consultation with consulting parties under an MOA that was signed by Caltrans/FHWA and SHPO on March 25, 2016. Specific avoidance, minimization, and/or mitigation measures to resolve adverse effects to historic properties in the Preferred Alternative developed in the MOA are included in this Final EIR/EIS and CEQA Checklist to address significant impacts to historical resources. Mitigation and minimization measures CR-1 through CR-9 are presented in Section 3.1.8.4 and the ECR (Appendix E).

- CR-1: Cultural Materials Discovered during Construction
- CR-2: Archaeological and Native American Monitoring
- CR-3: Discovery of Human Remains
- CR-4: Establishments of Environmentally Sensitive Areas
- CR-5: Preparation of a Historic Context for the PPAD
- CR-6: Spatial and Visual Analysis of Elements of the PPAD
- CR-7: Photogrammetric Documentation of Elements of the PPAD
- CR-8: Support for the NRHP Nomination of the TCP
- CR-9: Collaboration on Reports

4.3.5 Paleontogical Resources

Mitigation and minimization measure PALEO-1, including sub-measures PALEO-1a through PALEO-1h, is presented in Section 3.2.4.4 (Final EIR/EIS) and the ECR (Appendix E of the Final EIR/EIS). The literature review, archival searches, field survey, and a review of the geologic maps of the Project area indicate that a paleontologically highly sensitive rock unit (Younger Alluvium) is at or near the surface in areas where earth-moving activities associated with Project construction would have high potential for encountering fossilized remains. Therefore, measures to mitigate potential impacts to paleontological resources will be required. The mitigation measure listed below represents the minimum required by Department guidelines. Other measures may be added as Project design progresses.

- PALEO-1: Paleontological Mitigation Plan

4.3.6 Hazards and Hazardous Materials

To address significant hazards to the public and hazardous emissions, the following mitigation measures are proposed (see Section 3.2.5.4 or the ECR [Appendix E] for full text of the measures):

- HAZMAT-1: Phase II Environmental Site Assessment
- HAZMAT-2: Aerially Deposited Lead Surveys
- HAZMAT-3: Asbestos Containing Materials and Lead-Based Paint Surveys
- HAZMAT-4: Hazardous Materials Contingency Plan
- HAZMAT-5: National Pollutant Discharge Elimination System Permit
- SERV-1: Coordination with Emergency Responders Prior to Opening Year (2015)

- SERV-2: Coordination of Temporary Detours with Emergency Responders

4.3.7 Noise

To address impacts caused by traffic noise, the following abatement measure is proposed (see Section 3.2.7.4 or the ECR [Appendix E] for full text of the measures):

- NO-1: Installation of Recommended Noise Barriers Shown to be Feasible and Reasonable

To address impacts caused by construction noise, the following abatement measures are proposed:

- NO-2: Observation of Time Restrictions and Use of Alternative Alarms
- NO-3: Use Mufflers on Equipment with Internal Combustion Engines
- NO-4: Placement of Stationary Equipment
- NO-5: Construction Equipment Staging

4.3.8 Public Services

To address impacts associated with public services, the following minimization and mitigation measures are proposed (see Sections 3.1.1.3, 3.1.5.3 [, 3.1.4.1, or the ECR [Appendix E] for full text of the measures):

Minimization

- LU-8: Public Notification of Alternative San Jacinto Parks

Mitigation

- SERV-1: Coordination with Emergency Responders Prior to Opening Year (2020)
- SERV-2: Coordination of Temporary Detours with Emergency Responders
- COM-1: Establish Pedestrian/Bike/Equestrian Paths
- COM-2: School District Coordination
- COM-3: Traffic Management Plan for Access

4.3.9 Transportation/Traffic

To address transportation and traffic impacts, the following mitigation measures are proposed (see Section 3.1.5.3 or the ECR [Appendix E] for full text of the measure):

- UTIL-3: Temporary Detour for Railroad
- SERV-1: Coordination with Emergency Responders Prior to Opening Year (2015)
- SERV-2: Coordination of Temporary Detours with Emergency Responders

Chapter 5 Comments and Coordination

5.1 Introduction

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation, the level of analysis required, and to identify potential impacts and mitigation measures and related environmental requirements. Appropriate coordination has been conducted for the Project in accordance with the National Environmental Policy Act of 1969 (NEPA), the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and the California Environmental Quality Act (CEQA).

Among the earliest coordination products are publication of a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) and publication of a Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) under the California Environmental Quality Act (CEQA). The NOI was published in the Federal Register on September 7, 2004. The NOP was filed on September 10, 2004, and distributed to agencies by the State Clearinghouse. A Supplemental NOP was distributed on March 7, 2005. The following quote is from the NOI, but essentially the same statement was included in both NOP filings:

> *The FHWA, in cooperation with the California Department of Transportation, District 8, and the Riverside County Transportation Commission, will prepare an Environmental Impact Statement (EIS) to realign State Route (SR) 79 1.2 miles south of Domenigoni Parkway to Gilman Springs Road. The proposed realignment corridor to be evaluated is located east of the existing SR 79, through the community of Winchester, and west of the existing route as it passes through Hemet and San Jacinto.*
>
> *A range of alignment alternatives will be analyzed in the EIR/EIS. Alignment alternatives in the western, central and eastern portions of the project area were identified through an alternatives analysis process described in detail in the Project Criteria and Alternatives Selection for Preliminary Agreement, dated June 22, 2004.*

Additionally a Notice of Availability (NOA) for the Draft EIR/EIS was published February 8, 2013 and a NOA for the Partially Recirculated DEIR/SDEIS was published on August 21, 2015.

Agency consultation and public participation for the Project have been accomplished through a variety of formal and informal methods. Coordination included monthly Project Development Team (PDT) meetings, interagency coordination meetings, and focused discipline-specific technical meetings, as well as ongoing consultation with Native American tribes. Public participation was incorporated into the environmental process through meetings held in September and October 2004, October 2005, February 2013 and September 2015, public notices, newsletters/factsheets, newspaper advertisements, updates on the Project website, and email notifications. This chapter summarizes the results of the Department's efforts to fully identify, address, and resolve Project related issues through early and continuing coordination.

SAFETEA-LU is the federal transportation act that was signed into law on August 10, 2005. It makes important changes in the environmental compliance process for transportation projects that fall under the purview of the United States Department of Transportation (USDOT).

Section 6002 of SAFETEA-LU makes changes in the preparation and processing of environmental documents for environmental impact reports with an NOI publication date of August 11, 2007, or later, so Section 6002 does not apply to the Project.

5.2 Consultation and Coordination with Public Agencies

Coordination for the Project was led by the Riverside County Transportation Commission (RCTC) (the responsible agency) and Caltrans (the NEPA and CEQA lead agency), with participation by the United States Army Corps of Engineers (USACE) (Cooperating Agency), United States Environmental Protection Agency (USEPA), United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), and other agencies with an interest in the Project. FHWA was also a participant in this regard until July 1, 2007, when Caltrans began its assignment of NEPA responsibilities, pursuant to Section 6005 of the Safe, Accountable, Flexible, and Efficient Transportation Act: A Legacy for Users (SAFETEA-LU) (23 USC 327). This team was formed to ensure collaborative planning at key decision points during the environmental review process.

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

- Preliminary Agreement on Purpose and Need from USACE and USEPA (December 2003)
- Preliminary Agreement on the Final Project Criteria and Alternatives Selection (June 2004)
- Response to the request for Cooperating Agency participation (April 2005)
- Preliminary Agreement on Supplemental Information for Project Criteria and Alternatives Selection (May 2005)
- Final Agreement on the Build Alternatives to be Identified in the Draft Environmental Impact Statement (July 2007)
- Concurrence on the Preliminary Least Environmentally Damaging Practicable Alternative (LEDPA) and the Conceptual Mitigation Plan (August 2015)

The following sections summarize the activities surrounding key decision points and Project milestones that required discretionary action/input from the resource agencies.

5.2.1 Cooperating Agency Participation

In accordance with Council on Environmental Quality (CEQ) Regulation 1501.6 and 23 CFR 771, the FHWA requested Cooperating Agency participation from USACE, USEPA, and USFWS in November 2004 (FHWA 2004a, 2004b, 2004c). In addition to their administrative responsibilities under Section 404 of the Clean Water Act (CWA), the USACE agreed to be a Cooperating Agency.

Due to resource constraints at the time of the request, USEPA and USFWS declined the role of Cooperating Agency on the Project, but committed to providing technical assistance, input, and review/approval consistent with the NEPA/404 MOU (USEPA 2004a, USFWS 2004a).

5.2.2 Alternatives Screening

The Project alternatives were developed over many years and in accordance with the NEPA/404 Integration Process in a joint effort among federal, state, local agencies (California Department of Transportation [Caltrans], Federal Highway Administration [FHWA], United States Army Corps of Engineers [USACE], United States Environmental Protection Agency [USEPA], United States Fish and Wildlife Service [USFWS], California Department of Fish and Wildlife [CDFW], Regional Water Quality Control Board [RWQCB], Riverside County Transportation Commission [RCTC], City of Hemet, City of San Jacinto, and County of Riverside), supported by community involvement (see Section 5.3). The results of that effort are documented in the reports listed below. Additional details about this coordination are included in Section 1.1.1.1 and Section 2.2.5.

- State Route 79 Realignment Study Report (January 1998)
- City of San Jacinto Resolution No. 2309 to Select a Locally Preferred Alternative (August 2001)
- Project Study Report/Project Development Support (January 2002)
- Final Project Criteria and Alternatives Selection for Preliminary Agreement (June 2004)
- Supplemental Information for Project Criteria and Alternatives Selection for Updated Preliminary Agreement (May 2005)
- Request for Updated Preliminary Agreement for Project Criteria and Alternatives Selection and Responses (August 2005)
- City of Hemet Resolution No. 4216 to Select a Locally Preferred Alternative (May 2008)

5.2.3 Additional Public Agency Coordination

The following sections summarize resource-specific coordination with public agencies.

5.2.3.1 Farmlands/Agricultural Lands

Coordination with the Riverside County Assessor's Office staff member, Jim Harlow, took place on January 17 and January 22, 2008, regarding Williamson Act contract lands. Mr. Harlow provided information to determine property

parcels enrolled in the Williamson Act program and their status (preserve or nonrenewal). Subsequently, on November 10 and 12, 2009, via email, Mr. Harlow confirmed the status of Williamson Act contract land located within the Agricultural Study Area.

Final coordination with the California Department of Conservation (CDC) and the federal Natural Resources Conservation Service (NRCS) was initiated by Caltrans in March 2010 via separate transmittals of documented summaries of the Project's potential impacts to Williamson Act lands, and prime, unique, and farmland of statewide importance. A response letter was received from the CDC in April 2010, and comments were addressed (Appendix G). The NRCS responded in June 2010 by filling out the remaining portions of Form CPA-106 (included in Appendix G).

Coordination with the NRCS was initiated again by Caltrans in February 2012 to document updates to prime farmland, unique farmland, and farmland of statewide importance impacts on an updated Form CPA-106. The NRCS responded in July 2012 by filling out the remaining portions of Form CPA-106 (included in Appendix G). Additional coordination with the NRCS by Caltrans in September 2015 to document additional updates on an updated Form CPA-106. The NRCS responded in December 2015 by filling out the remaining portions of Form CPA-106 (included in Appendix G).

5.2.3.2 Isolated Waters/USACE

USACE has reviewed the isolated waters of the United States jurisdictional determination forms for the Project and approved the jurisdictional determination (JD) on April 14, 2011. Since this approved JD expired in April 2016, USACE issued an updated approved JD on (August 23, 2016) based on the findings identified in the April 14, 2011 approved JD. This approval, as well as USACE's letter for Preliminary Agreement on the purpose and need, is included in Coordination with USACE at the end of this chapter. On August 24, 2015 USACE issued a letter of concurrence on the LEDPA and the Conceptual Mitigation Plan (Plan). Within this letter, USACE agreed with the finding that the Preferred Alternative 1br was the preliminary LEDPA.

5.2.3.3 Cultural Resources

Pursuant to Stipulation XII of the Section 106 Programmatic Agreement (PA), Caltrans is using a phased approach to evaluation and finding of effect for this Project. The State Historic Preservation Officer (SHPO) was notified of the Caltran's intent to use a phased approach for the Project in a letter dated May 20, 2008, which is included at the end of this chapter.

The Historic Property Survey Report (HPSR) is the document that transmits several technical studies (the Historical Resources Evaluation Report, Archaeological Survey Report, and Extended Phase I Proposal and Report, as well as the Area of Potential Effects map and documentation of Public Participation [including Native American consultation]) to SHPO requesting concurrence on the NRHP eligibility of properties that could be affected by the Project. In accordance with PA Stipulation VIII.C.5, on June 24, 2010, Caltrans requested SHPO concurrence on determinations of eligibility for 12 built environment properties and two historical archaeological sites. SHPO concurred with the determinations on August 2, 2010. The SHPO concurrence letter is included at the end of this chapter.

Following public circulation of the Draft EIR/EIS, Phase II archaeological evaluations were conducted for all prehistoric resources on all alternatives, using limited subsurface testing and additional studies, including Native American consultation. Three historical archaeological sites, and three multicomponent sites were also evaluated for NRHP and CRHR eligibility. Finally, a Traditional Cultural Property (TCP) and a Potential Prehistoric Archaeological District (PPAD) were identified and evaluated through extensive research and consultation with local tribes. Caltrans sought concurrence on evaluations for 22 prehistoric archaeological sites, three historical archaeological sites, and three multicomponent sites, as well as the TCP and the PPAD, as documented in a Supplemental HPSR (Delu and Eddy 2014).

Following SHPO concurrence on NRHP of the TCP and presumed eligibility of the PPAD (letter dated January 20, 2015, included at the end of this chapter), the Project impacts of each alternative were analyzed. A Finding of Adverse Effect, with concurrence from SHPO on March 2, 2015 (included at the end of this chapter), documented the direct and indirect effects of each alternative on identified historic properties. Caltrans notified the Advisory Council on Historic Preservation (ACHP) of the adverse effect finding on April 24, 2015 pursuant to 36 CFR Part 800.6(a)(1) and the ACHP declined to comment in a letter dated May 12, 2015 (included at the end of this chapter) pursuant to 36 CFR Part 800.6(a)(1)(iii). Avoidance, minimization, and mitigation measures for the Preferred Alternative have been developed in consultation with the SHPO and the Tribes, and formalized in the Section 106 Memorandum of Agreement and summarized in the Partially Recirculated DEIR/SDEIS to allow for public disclosure and additional tribal and public comment.

See Section 5.6 for details concerning the Native American consultation process.

5.2.3.4 USFWS Species List

Caltrans requested a Project Species List from USFWS on November 8, 2012. The list of special-status species analyzed for the Project was developed consistent with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), which is documented in the Natural Environment Study prepared for the Project. However, because the Project has its own conditions, the species that are required to be addressed by USFWS are listed separately in the USFWS Species List included at the end of this chapter. An updated species list was requested by Caltrans and was received on October 27, 2015 to ensure the project had addressed all federally listed species and critical habitat potentially occurring within the project area. An MSHCP Consistency Determination for the Preferred Alternative was issued by USFWS on November 23, 2015. Caltrans initiated Section 7 Consultation with the USFWS on December 15, 2015 for the Preferred Alternative and received a Biological Opinion (FWS-WRIV-09B0190-16F0335) on March 10, 2016 which can be found in Appendix N. A subsequent updated species list was issued by USFWS on June 20, 2016, which is also attached in Chapter 5, attachments.

5.2.3.5 Parks and Recreation

Coordination with the Riverside County Habitat Conservation Agency, Riverside County, and the Cities of Hemet and San Jacinto took place in December 2010 and January 2011 to confirm whether the Project would impact certain resources that might be protected by the provisions of Section 4(f) of the 1966 Department of Transportation Act (49 USC 303). Riverside County and the Cities of Hemet and San Jacinto confirmed the status of the bike paths and trails in the Project study area. Meeting summaries are included as Appendix I. Based on the information provided

by the County of Riverside, Cities of Hemet and San Jacinto, and Riverside County Habitat Conservation Agency, Caltrans has determined that the bike paths and trails are expected to be recognized as an exception to 23 CFR 774, specifically in the context of 23 CFR 774.13 (f) (4), "Trails, paths, bikeways, and sidewalks that are part of the local transportation system and which function primarily for transportation."

5.2.3.6 Air Quality Conformity

As part of the continued coordination regarding air quality standards and emissions analyses, Caltrans submitted a complete request for a project-level conformity determination on January 13, 2016 to FHWA. On February 1, 2016, FHWA issued the project-level conformity determination which is included in the attachments at the end of this chapter.

5.2.4 Transportation Conformity Working Group

The interagency consultation process is a tool used for project-level conformity determinations for particulate matter (PM) hot spot analyses. The Southern California Association of Governments (SCAG) Transportation Conformity Working Group (TCWG) was developed to support interagency coordination and maintain transportation conformity in Southern California. The TCWG is composed of federal (USEPA, FHWA, Federal Transit Administration [FTA]), state (California Air Resources Board [ARB], Caltrans), regional (Air Quality Management Districts, SCAG, etc.), and sub-regional (County transportation commissions) agencies and other stakeholders. The Project PM hot spot analysis was presented to the TCWG to meet the interagency consultation requirements in October 2008 and January 2015. Caltrans, FHWA, and USEPA approved the Project PM hot spot analysis for NEPA circulation. The TCWG approval for NEPA circulation of the PM hot spot analysis is included at the end of this chapter.

5.3 Public Participation

Project scope development (scoping) was conducted between September 2004 and February 2006 to seek citizen, agency, and other stakeholder input regarding a new alignment for SR 79 in the cities of Hemet and San Jacinto and a part of unincorporated Riverside County. Public feedback was solicited to identify concerns about and benefits of the alternatives to be considered in focused technical studies and defined for analysis in the Draft EIR/EIS. The results of the scoping were detailed in the Final Scoping Summary Report (September 2005), Final Hemet Public Information Meeting Summary Report (October 2005), and Final Meeting Summary, Winchester Homeowners Association Meeting (October 2005), Winchester Homeowners Association Meeting (September 2014), Public Hearing Summary Report (September 2015). Those results are summarized below.

Additionally, public meetings were held during the circulation of the Draft EIR/EIS and Partially Recirculated DEIR/SDEIS. These public meetings were held to garner feedback from the local community and stakeholders on the alternatives presented, and document any concerns the community had pertaining to the project. The public comments received and their responses can be found in Appendix K (Volume 3).

5.3.1 Public Notifications

Public notification was achieved using a number of methods to ensure that stakeholders received information about the Project, the public scoping process, and other opportunities for public participation. These methods are discussed below.

5.3.1.1 Website

A Project website (*http://www.sr79project.info*) was developed to post information about Project contacts, status, and activities, as well as methods for the public to provide feedback.

5.3.1.2 Mailing List

A Project mailing list of agencies, landowners, stakeholders, and other interested parties was used to distribute letters of invitation to participate in the public scoping process and periodic newsletters with information about the Project. The Project mailing list was updated throughout the scoping, document preparation, and circulation process and included current landowners, as well as the following:

- Members of the public who had attended previous meetings associated with the Project
- Landowners included in a 2002 court order for property access
- Elected officials
- Agency department heads
- School districts
- Water agencies
- Utility companies
- Other public representatives
- Business organizations concerned with economic development and community development
- Building industry representatives
- Environmental groups
- Community nonprofit groups
- Local organizations
- Native American representatives
- Members of the public who had previously expressed an interest to RCTC regarding transportation projects

5.3.1.3 Newspaper Notices

Notices were published in the *Press Enterprise, Hemet-San Jacinto Edition* (a local, daily, subscriber-based newspaper) and *Valley Chronicle* (a local, weekly, subscriber- and nonsubscriber-based newspaper) to inform the public about the Project and announce public meetings. Notices were placed prior to each public meeting, over a series of weekdays and weekend days in local newspapers.

Press Enterprise, Hemet-San Jacinto Edition

Notice of the scoping meetings on Wednesday, September 29, 2004, and Wednesday, October 6, 2004, was published in the *Press Enterprise, Hemet-San Jacinto Edition*, on the following dates:

Wednesday, September 15, 2004
Saturday, September 18, 2004
Wednesday, September 22, 2004
Saturday, September 25, 2004
Wednesday, September 29, 2004

Notice of the public information meeting held on Wednesday, October 19, 2005, was published in the *Press Enterprise, Hemet-San Jacinto Edition*, on the following dates:

Wednesday, October 5, 2005
Saturday, October 8, 2005
Wednesday, October 12, 2005
Saturday, October 15, 2005
Wednesday, October 19, 2005

Notice of Availability of the Partially Recirculated DEIR/SDEIS and the public information meeting held on Thursday, September 10, 2015, was published in the *Press Enterprise, Hemet-San Jacinto Edition*, on the following dates:

Friday, August 21, 2015
Friday, August 28, 2015

Valley Chronicle

Notice of the scoping meetings on Wednesday, September 29, 2004, and Wednesday, October 6, 2004, was published in the *Valley Chronicle* on Friday, October 1, 2004. Notice of the public information meeting held on Wednesday, October 19, 2005, was published in the *Valley Chronicle* on the following dates:

Friday, October 7, 2005
Friday, October 14, 2005

Notice of Availability of the Partially Recirculated DEIR/SDEIS and the public information meeting held on Thursday, September 10, 2015, was published in the *Valley Chronicle*, on the following dates:

Thursday, September 3, 2015

5.3.1.4 Notice of Intent and Notice of Preparation

In accordance with NEPA and CEQA, a Notice of Intent (NOI) to prepare an EIS and a Notice of Preparation (NOP) soliciting public participation in determining the scope of the EIR were prepared and distributed for the Project.

The NOI was published in the *Federal Register* on Tuesday, September 7, 2004, to notify federal agencies of the Project. The NOP was posted with the Office of Planning and Research State Clearinghouse (SCH) on Thursday, September 9, 2004, and with the County of Riverside County Clerk (County Clerk) on Friday, September 10, 2004, to notify state, regional, and local agencies concerning the Project. The Project was assigned SCH No. 2004031140.

Although no changes occurred to the Project as it was described in the September 2004 NOP, a supplemental NOP was prepared in March 2005 to provide an extended opportunity for agency and public comment. The supplemental NOP was posted with the SCH on Friday, March 4, 2005, and with the County Clerk on Monday, March 7, 2005. It was also mailed to state, regional, and local agencies and to environmental and Native American groups on the Project mailing list. The March 2005 supplemental NOP was filed under SCH No. 2004031140, the same SCH number as the September 2004 NOP. Thus the Project received two 30-day comment periods, established on each of the dates the NOPs were published.

A summary of the comments received from the NOI and NOPs is provided later in this chapter.

5.3.1.5 Notice of Availability for the Draft Environmental Document and Partially Recirculated Draft Environmental Document

Caltrans notified the general public and all relevant agencies that the Draft EIR/EIS was available for review from February 8, 2013 to March 25, 2013. The Notice of Availability (NOA) of the Draft EIR/EIS was sent to the various parties listed in the Distribution List (see Chapter 7). The notice provided information on the project, where the environmental document could be reviewed, the address to which comments should be sent, and the close of the comment period. Information regarding the location and dates of public meetings to discuss the project was also provided. The public notice and the Draft EIR/EIS were posted on the Project website and copies of the Draft EIR/EIS were available for review at local libraries, Caltrans and RCTC. Additionally, copies of the NOA were published in local newspapers.

In addition to the NOA for the Draft EIR/EIS, Caltrans notified the general public and all relevant agencies that the Partially Recirculated Draft EIR/Supplemental Draft EIS was available for review from August 21, 2015 to October 8, 2015. The Notice of Availability (NOA) of the Partially Recirculated DEIR/SDEIS was sent to the various parties listed in the Distribution List (see Chapter 7). The notice provided the same information as the NOA prepared for the Draft EIR/EIS; where the environmental document could be reviewed, the address to which comments should be sent, and the close of the comment period. Information regarding the location and dates of public meetings to discuss the project was also provided. The public notice and the Partially Recirculated DEIR/SDEIS were posted on the Project website and copies of the Partially Recirculated DEIR/SDEIS were available for review at local libraries, Caltrans and RCTC. Additionally, copies of the NOA for the Partially Recirculated DEIR/SDEIS were published in local newspapers.

5.3.2 Public Meetings

Two public scoping meetings were held to solicit input on the proposed alternatives for the Project. These meetings were held on Wednesday, September 29, 2004, at the James Simpson Memorial Center in the city of Hemet (approximately 120 attendees) and on Wednesday, October 6, 2004, at the San Jacinto Unified School District Conference Room in the city of San Jacinto (approximately 36 attendees).

Two additional meetings were held in October 2005 to update the public and solicit feedback about changes to the Project. A homeowners' association (HOA) meeting was held in the town of Winchester, and a public information meeting was held in Hemet. The Winchester HOA meeting was held on Thursday, October 6, 2005, at the

Winchester Community Center (approximately 80 attendees), and the Hemet public information meeting was held on Wednesday, October 19, 2005, at the James Simpson Memorial Center (approximately 152 attendees).

During the circulation and public comment period of the Draft EIR/DEIS and the Partially Recirculated EIR/SDEIS, additional public meetings were held. Two public meetings to discuss the Draft EIR/EIS were held on February 26th and 27th 2013 in the Tahquitz High School Multipurpose Room, in the City of Hemet. For the circulation and public comment period of the Partially Recirculated DEIR/SDEIS one public meeting was held on September 10, 2015 in the gym of the Valle Vista Community Center, in the City of Hemet (approximately 80 attendees).

Descriptions of the above referenced meetings are provided below.

5.3.2.1 2004 Scoping Meetings

Except for location, the scoping meetings held in 2004 were organized and handled in a similar fashion. The following discussion is applicable to both meetings unless otherwise noted.

Meeting Activities

Upon entering the venue, the meeting attendees were provided a nametag, an agenda/comment card with self-stick Post-it® Notes, and a newsletter (dated September 2004). A Spanish-speaking interpreter was available at both meetings, but no interpretation services were requested.

Meeting attendees were directed to proceed to the exhibit area of the meeting room, where three large maps displayed the draft alignment alternatives proposed for the Project. To determine support for and opposition to the three draft alignments under consideration, meeting attendees were asked to place a green Post-it® Note on the portions of the draft alignment alternatives they endorsed and a yellow Post-it® Note on the portions of the alternatives they opposed. At the Hemet meeting, the Western and Eastern Alignments showed equal degrees of opposition, with the Western and Central Alignments showing about the same number of endorsements. At the San Jacinto meeting, opposition to the Eastern Alignment was strong, but there was no clear endorsement of any particular alignment.

Following the review of the alignment exhibits, RCTC staff and environmental and engineering technical staff were introduced to the attendees, the agenda for the evening was reviewed, and an overview of the proposed Project was presented. Meeting attendees were divided into five “breakout” groups to discuss and respond to five specific questions regarding the benefits and drawbacks of each alternative. Each group was assigned two facilitators.

Following the breakout group discussions, the meeting attendees reconvened to review the results from each group.

Public Input/Feedback

Feedback was provided either verbally during the meetings or written on comment cards. Public feedback can generally be categorized into environmental, engineering, or general topic areas, as discussed below. Based on public feedback, stakeholders were generally supportive of the Project. However, the feedback indicated varying preferences for the alternative that might be chosen for the Project.

Environmental Feedback

Aesthetics/Visual Resources

Commenters requested that the Project preserve the rural character of the community and use corridors that are already heavily impacted. Some commenters were concerned about increased litter along the roadway. Preserving the scenic nature of the valley was also identified as important.

Agricultural Land and Farming/Livestock Activities

Concerns about agricultural land and farming/livestock activities were raised by a number of public scoping meeting attendees, and several written comments were submitted on this topic. Specifically, commenters were concerned about potential impacts to dairies, horse farms, ranches, and cow pastures.

Air Quality

Several written comments addressed air quality. Concerns about air quality were specifically related to the effect of the Project on sensitive receptors, including homes and schools. Many felt that the Eastern Alignment Alternative would have the most impact with respect to air quality because of its proximity to existing development.

Biological Resources

Biological resources, including wildlife, vernal pools, and biological preserves, were a topic of concern for a number of meeting attendees. This topic area also was the subject of one of the written comments received through the Project website, which stressed the importance of protecting fairy shrimp and tadpoles that inhabit vernal pools in the Project area. Specifically, concerns were voiced about reducing wildlife habitat and wasting natural resources. One commenter suggested elevating the roadway over sensitive biological areas to avoid impacts.

Community Impacts

Commenters want to preserve established communities and maintain their quality and character. Some commenters identified a preference for an alignment through rural areas or open space/vacant land where it would disrupt fewer people.

Cultural Resources

Native Americans and local historical societies identified the importance of preserving cultural resources within the Project study area.

Economics

Economic concerns related to the cost of ROW acquisition were expressed. Some commenters identified a preference for the alignment that would be the least costly with respect to ROW acquisition. Several suggested the use of ROW along existing roads and surface water facilities to save money. Additional concerns with respect to economics were related to the economic growth limitations to cities that the draft alignments might impose. Some commenters were concerned that the proposed Project would increase their taxes, reduce their property value, or stand in the way of marketing and selling their property.

Floodplain Issues

Concerns were identified with respect to flooding and the location of the flood zone in relation to the Project.

Growth

Concerns that the proposed Project might impede growth and development were raised. Specifically, commenters were concerned about impacts to development of future residential areas, schools, and commercial businesses. Commenters suggested that the proposed alignment be designed to support growth in the valley.

Hazardous Materials

Several commenters noted the importance of avoiding existing landfills in the Project study area.

Hydrology

Concerns about surface water channels and water quality were raised, environmental impacts to Seattle Channel in particular.

Noise

Concerns with noise produced by vehicular traffic along the proposed roadway were identified. One commenter suggested the Project use rubberized asphalt to reduce noise emissions. Another suggested that the existing topography be used as a natural sound barrier.

Public Safety

Public safety concerns were raised. Commenters acknowledged that roadway safety is very important, especially due to dangers on existing surface streets. They suggested that the proposed alignment should not occur near housing, schools, or businesses for safety reasons. Some commenters suggested that the Project may have the potential to increase crime in the Project area.

Recreation

Commenters stated that access to recreation facilities, including horse trails, was important. They also requested that the Project provide trails for recreational activities.

Relocation Impacts

Relocation concerns were raised. Many commenters said that it is important to avoid disturbing existing development, including businesses, homes, and schools. It was suggested that the Project use existing ROW as much as possible to reduce the acquisition of private property, including alignments along Warren Road and Domenigoni Parkway. In addition, several property owners requested information on how the value of property and the businesses and homes located on that property are assessed and valued.

Topography

Some commenters identified the importance of the topography of the Project area and requested that roadway construction not use fill from the surrounding areas.

Traffic and Circulation

Commenters were concerned with construction traffic and congestion during this portion of the Project. Commenters requested information about the effect that the Project would have on local surface streets. Some

commenters noted that the Project had the potential to increase traffic, but other commenters disagreed, saying that it would redirect traffic from local surface streets (such as Florida Avenue). Commenters wanted to upgrade the traffic capacity of the area. Commenters requested that the Project redirect traffic away from downtown areas and that alignments along Sanderson Avenue were not good because too much traffic is already there. They also indicated concern with traffic congestion and requested that a circulation plan be developed.

Engineering Feedback

Airport

Concerns about interference with the Hemet-Ryan Airport sphere of influence were raised at the public scoping meetings and in written comments.

Construction Phasing

Concerns about how the Project would be constructed were raised. Several commenters stated that the Project should obtain ROW for the full Project buildout conditions. They also commented that it should be built to full capacity (six lanes), instead of four lanes initially, with expansion to six lanes in the future. Some commenters requested that the roadway designation be assigned as a freeway and not a highway.

Drainage Control

In a written comment, one commenter identified the need to maintain drainage within the Project area.

Future Roadway Development/Route Expansion

Concerns about future roadway development and expansion activities were raised. Comments identified the importance of the ability to appropriately expand the paved roadway and interchanges. Specifically, a concern was raised regarding the proximity of the proposed alignment to existing facilities, such as railroad or canal, and the potential for these facilities to impede future roadway development and route expansion.

Railroad

Comments regarding the railroad identified concerns with an alignment parallel to the railroad tracks and how that might affect traffic.

Route Design

Commenters requested that the roadway be designed as straight as possible to avoid dangerous curves. It was indicated that commenters valued a roadway that was easy to drive on that would not crowd the roadway into an existing developed area. One commenter asked why the Project was not focusing on a transportation corridor between Winchester and Temecula. Another commenter requested that the Project use high-quality materials for pavement and lighting. Comments regarding access and connectivity were also provided in relation to route design.

Access

Commenters noted that the roadway alignment should consider the importance of connecting east-west access roads and a north-south route from Interstate 10 (I-10) to San Diego. They also stated that it was important for the

alignment to occur near existing and planned retail developments and downtown areas. A limited access facility was suggested, as well as requests for increased access to existing streets and services. Frontage roads providing access to development along the roadway were identified as important.

Directness

Commenters indicated that a direct route for the roadway alignment was preferred.

General Feedback

Decision-Making Authority for the Project

Some commenters raised concerns regarding the decision-making authority for the Project and stated that individuals with local knowledge should have the ability to assist in the decision making.

Project Progress

Concerns were expressed about Project progress and implementation. Commenters indicated that the alignment selection process needs to be faster and asked if the proposed Project would ever be built. Several indicated that the Project is moving too slowly.

Property Access

One commenter indicated that he would prefer that access to his property be restricted.

Public Outreach

Commenters requested that the Project continue to conduct public outreach and provide more publicity for Project-related activities. One commenter requested disclosure of Project decisions.

5.3.2.2 2005 Winchester HOA Meeting

The Winchester HOA meeting was held with members of the Winchester community to solicit feedback on changes that had been made to the Project since the 2004 scoping meetings.

Meeting Activities

Names and contact information were collected only from those individuals who indicated that they would like to be added to the Project mailing list. Meeting materials included displays of the alignments presented at the 2004 scoping meetings and displays of the updated alignments, as well as a display of the potential interchange locations along the updated alignments. A presentation to illustrate the specific changes that had occurred to the alignments since the 2004 scoping meetings was given.

Public Input/Feedback

Feedback was provided verbally during the meeting and generally indicated the following concerns:

- Attendees asked where they would be able to access the future roadway (intersections or interchanges). They want to maintain access to their community, especially for businesses. They did not want traffic diverted away from the local businesses.
- Attendees were interested in the sequencing of local access. This is related to how the Project would determine which intersections would be converted to interchanges and when.
- Landowners do not want their property to be impacted by the Project, but if it needs to be impacted, then they want it to be purchased.
- Attendees were interested in understanding how the Project is being funded.
- Attendees were concerned by the potential impact to the topography of the hills located between Stowe Road and Florida Avenue, west of California Avenue and east of Winchester Road.
- Attendees were concerned about potential economic impacts of the Project. More specifically, they were concerned that property sales either will not occur or will fall out of escrow when this Project is disclosed to a buyer. This is due to large Project study areas and the fact that a specific alternative has not been identified.
- Landowners were concerned that the Project will divide the community.

Attendees asked technical questions about air quality, noise, and relocation schedules for businesses and residences.

5.3.2.3 2005 Hemet Public Information Meeting

The 2005 Hemet public information meeting was held to highlight Project changes made in response to ongoing public feedback and agency coordination.

Meeting Activities

Similar to the organization of the 2004 scoping meetings, attendees were provided a name tag, agenda/comment card, and fact sheet (dated October 2005), then were directed to an exhibit area of the meeting room to view two large exhibits. Representatives of RCTC, as well as environmental and engineering technical staff, were present at each station and available to answer questions. Spanish-language translators were available at the meeting, but no interpretation services were requested.

Following the presentation, meeting attendees were asked about the benefits and drawbacks of the currently proposed alignments.

Public Input/Feedback

Feedback was provided verbally during the meeting and recorded on poster paper hung on the wall facing the audience. In summary, the community was very interested in the status and outcome of the Project. Feedback indicated that the public wanted the Project to be approved and constructed quickly to alleviate traffic congestion in the area and to avoid costly delays. People wanted an alignment to be identified so that they could prepare to move

forward with development plans. They wanted the least amount of disruption to homeowners, and all preferred that the road not go near their homes.

Concerns about quality of life were at the forefront of public input. Although better traffic flow was welcomed, concerns remained about transforming the quiet, rural feel of the area. Those who had lived in the area for a long time were concerned about the potential changes the Project represented to their community.

5.3.2.4 2013 Draft EIR/EIS Public Meetings

Two public meetings were held in February 2013 (February 26th and 27th) to discuss the Draft EIR/EIS with the community and to collect comments.

Meeting Activities

Names and contact information were collected from those individuals who indicated they would like to be added to the Project mailing list. Meeting materials included a project fact sheet, displays of the alignments proposed within the Draft EIR/EIS, visual impacts of the project at particular locations, noise wall exhibits, and traffic analysis of intersection locations. This material was presented in an open house forum with staff available to answer questions about the various project alternatives, the project schedule or for the public to provide comments.

Public Input/Feedback

Feedback was provided verbally during the meeting and generally indicated the following concerns:

- The desire to have the Tres Cerritos Avenue interchange removed from the Project.
- The potential visual, air quality, noise and vibration impacts which would result from the Project.
- Attendees asked technical questions about traffic impacts to their community.
- Landowners do not want their property to be impacted by the Project, but if it does, they want to be purchased.
- Attendees were interested in understanding how the Project will be funded.
- Attendees were concerned with the location of future on/off ramps and maintaining access to their community.
- Attendees were concerned about potential economic impacts of the Project.

5.3.2.5 2014 Winchester HOA Meeting

A meeting with the Winchester HOA was held with members of the Winchester community to present changes that had been made to the Project, including the inclusion of additional project alternatives, design options and refinements.

Meeting Activities

A PowerPoint presentation was given to present the community members with relevant project changes, such as the addition of new alternatives, design options and refinements. Meeting materials included displays of the alignments presented in the Draft EIR/EIS and displays of the updated alignments.

Public Input/Feedback

The community was very interested in the status of the Project. Feedback indicated that the public wanted to maintain access into and out of their community along Winchester Road. Economic impacts and the future growth

of the community of Winchester were also voiced. Concerns related to air quality, noise and aesthetics and how these potential impacts would be addressed were also brought up during the meeting.

5.3.2.6 2015 Partially Recirculated DEIR/SDEIS Public Meeting

A public meeting was held on September 10, 2015 to discuss the Partially Recirculated DEIR/SDEIS.

Meeting Activities

Names and contact information were collected from those individuals who indicated they would like to be added to the Project mailing list. Meeting materials included a project fact sheet, displays of the alignments proposed within the Partially Recirculated DEIR/SDEIS, visual impacts of the project at particular locations, noise wall exhibits, and traffic analysis of intersection locations. This material was presented in an open house forum with staff available to answer questions about the various project alternatives, the project schedule or for the public to provide comments.

Public Input/Feedback

Feedback was provided verbally during the meeting and generally indicated the following concerns; which were similar to those voiced during the Partially Recirculated DEIR/SDEIS public meetings:

- The possible visual, air quality, and noise impacts that would result from the Project.
- Attendees asked technical questions about traffic impacts.
- Landowners do not want their property to be impacted by the Project, but if it does, they want to be purchased.
- Attendees were interested in understanding how the Project will be funded.
- Attendees were interested in the Project impact changes resulting from Alternative 1br.

5.4 Additional Public Input/Feedback

In addition to public feedback provided at scoping meetings, public input was provided via emails submitted through the Project website and letter responses to the NOI and NOPs.

5.4.1 Email Feedback

The Project website was accessible throughout scoping, as well as throughout the circulation of the Draft EIR/EIS and the Partially Recirculated DEIR/SDEIS. During the Project scoping period, many people used the website for requests to be added to the Project mailing list; some also provided feedback. Comments were also submitted via the website during the public meetings and public comment periods for the Draft EIR/EIS and the Partially Recirculated DEIR/SDEIS.

Comments received via email through the Project website are presented below, nearly verbatim, with clarifications in brackets.

- We are against the western alignment.

- Have you considered widening Winchester Road through the town [of] Winchester and then continue the route once it reaches the northern portion of Winchester Road?

- We support the eastern routes. The new middle route [New Alternative] will provide much needed fill material for this and other projects throughout the county.

- Why is there no proposed route down Warren Road? [Warren Road] is a straight shot to Domenigoni Parkway and doesn't impact any current populations or homes.

- The proposed route over the mountain [New Alternative] goes into our small community of more than 20 years. [The New Alternative] seems like a misuse of public funds because of the extra cost.

- Development interests seem to be against using Warren Road.

- The Western Alternative is disruptive and would affect property values. The routes that utilize existing roadways and Domenigoni Parkway would be better.

- Where can I obtain a written report showing the results of the October 19, 2005, meeting?

5.4.2 Responses to the NOI and NOPs

Letters received in response to the NOI (September 2004) and the two NOPs (September 2004 and March 2005) for the Project provided valuable insights into the issues and concerns of potentially affected agencies, groups, and individuals. General information has been released to the public, and no specific responses have been provided. Although many of the letters identified topics that are required in the environmental analysis, the information and opinions provided in the letters identify specific issues to be addressed in the Draft EIR/EIS. All substantive comments provided in response to the NOI and NOPs have been considered by Caltrans in developing the alternatives to be analyzed in the Draft EIR/EIS. The key issues raised in the letters are listed below.

September 2004 NOI

United States Army Corps of Engineers, Los Angeles District (October 15, 2004)

- Coordination consistent with the NEPA/Clean Water Act Section 404 Integration Process for Surface Transportation Project Memorandum of Understanding (NEPA/404 MOU)

- Reasonable and practicable alternatives and impacts to water resources – specifically, the Least Environmentally Damaging Practicable Alternative (LEDPA)

United States Fish and Wildlife Service (October 19, 2004)

- Consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) to minimize and mitigate habitat loss and the incidental take of covered species under the section 10(a)(1)(B) permit

- Avoidance and minimization of impacts to the Upper Salt Creek Vernal Pool Complex and MSHCP Criteria Area

- A Preferred Alternative consistent with both the Section 404(b)(1) guidelines and requirements of the MSHCP

United States Environmental Protection Agency (October 22, 2004)

- Compliance with the Clean Water Act Section 404(b)(1) Guidelines
- Reasonable and practicable alternatives and impacts to aquatic resources, specifically the LEDPA
- Impacts to wildlife and native communities and compliance with the requirements of the MSHCP
- Emissions from Project construction and operation in the nonattainment South Coast Air Basin
- Traffic modeling to compare relative travel benefits among alternatives and to estimate air emissions
- Growth inducement within the San Jacinto/Hemet area, as well as within the Banning/Beaumont-to-Temecula corridor
- Cumulative impacts to air quality, water quality, wildlife habitat, and vernal pools and other wetlands
- Environmental justice mitigation for adverse impacts to minority and low-income populations
- Pollution prevention in accordance with the Resource Conservation and Recovery Act (RCRA), Section 6002

September 2004 NOP

Native American Heritage Commission (September 20, 2004)

- Early consultation with tribes
- Archaeological mitigation

Hemet Unified School District (September 21, 2004)

- Impacts to the ability to safely or adequately provide school facilities to students of the Hemet Unified School District (HUSD) would be opposed
- A primary alternative roadway alignment along Warren Avenue

California Highway Patrol (September 27, 2004)

- A comprehensive traffic management program to address commuter and resident transportation needs during construction
- Additional patrol personnel to manage traffic on the new roadway
- Ramps and traffic management strategies to address additional traffic introduced by the Project
- California Highway Patrol (CHP) involvement in the Project assessment and planning process

Metropolitan Water District of Southern California (October 13, 2004)

- Potential impacts to Metropolitan Water District of Southern California (MWD) facilities, property, rights-of-way, and/or reserve lands

- MWD involvement in the planning process to avoid or minimize impacts to MWD interests
- Project consistency with the growth management plan adopted by SCAG

California Department of Fish and Game (October 26, 2004)

- Western Riverside County Multiple Species Habitat Conservation Plan to minimize and mitigate habitat loss

March 2005 NOP

South Coast Air Quality Management District (March 9, 2005)

- Potential adverse air quality impacts from all phases of the Project and all air pollutant sources related to the Project
- Feasible mitigation for all significant air quality impacts, including measures for controlling fugitive dust emissions
- South Coast Air Quality Management District (SCAQMD) rules and use of relevant air quality reports and data

Native American Heritage Commission (March 23, 2005)

- Early consultation with tribes
- Archaeological mitigation

Public Utilities Commission (March 28, 2005)

- Safety of the Burlington Northern Santa Fe Railroad (BNSF) rail corridor

Southern California Association of Governments (March 30, 2005)

- Regionally significant project
- Relevant Regional Comprehensive Plan and Guidelines (RCP&G) policies

California Department of Conservation (April 4, 2005)

- Agricultural setting, qualitative/quantitative impacts, and mitigation measures
- Williamson Act lands

5.5 Development of the Design Options and Refinements

In May 2009, comments were received from the public (specifically the Winchester HOA and the County of Riverside) regarding the proposed design of the Project. The Winchester HOA requested that two items be considered in a modified design. The first was a lower profile of the roadway south of Stowe Road. The second was access at Newport Road. Because of the comments received, the Project alternatives were modified and now include design options to the base condition for Build Alternatives 1b and 2b. The design options include variations in access at SR 79/Winchester Road, Simpson Road, and Ranchland/Future Street A and a lower roadway profile from Domenigoni Parkway north to California Avenue. Stakeholders were informed about the proposed design options, and their feedback was positive. In June 2009, the design options were incorporated as part of the Project.

After the circulation of the Draft EIR/EIS, Alternative 1b with refinements (1br) was developed, engineering refinements for Build Alternative 1br have been incorporated in response to comments received during the public circulation of the Draft EIR/EIS. Refinements were also made to comply with Caltrans' mandatory design standards and to minimize impacts to the Traditional Cultural Property (TCP) identified during the Native American consultations in 2013 and 2014. With this alternative the alignment was shifted west around the West Hemet Hills, within the existing environmental study limits, to reduce the cut to the West Hemet Hills. The revised alignment would include a retaining wall along the west and north side of the alignment and eliminates the need to relocate the existing communication towers. A bridge would be built over Stetson Avenue and the dirt access road would be graded to tie-in to the existing dirt access road so that access to the communication towers can be maintained. The shift would lessen the impact to the West Hemet Hills by reducing the amount of cut needed. A Partially Recirculated DEIR/DSEIS was prepared in August 2015 to provide new information relevant to the proposed Project, information that was not available when the Draft EIR/EIS was circulated for public review and comment in February 2013. The new information included Cultural Resources, Section 4(f) evaluation, updated traffic data, updated air quality data, in addition to, visual and noise impacts due to the westerly realignment of Alternative 1b.

5.6 Native American Consultation

The FHWA and Caltrans (under the authority of the FHWA, pursuant to NEPA delegation) have maintained continuous consultation with Native American groups and individuals throughout the history of the Project. Detailed accounts of the consultation process, specific tribal and individual contacts, and the substance of communications with various Native Americans are included in Exhibits 2, 4, and 5 (Archaeological Survey Report, Extended Phase I Proposal, and Extended Phase I Report) in the HPSR (June 2010) and in the Supplemental HPSR (SHPSR)(December 2014). The HPSR, and specifically the Native American correspondence included as Part 3 of Exhibit 6 to that report, and Attachment E of the SHPSR are incorporated herein by reference. Consultation and coordination efforts for the Project are summarized below.

A letter, dated May 12, 2005, regarding the SR 79 Realignment Project was sent to the Native American Heritage Commission (NAHC) requesting a review of the Sacred Lands file. The NAHC responded by letter on June 6, 2005, stating that the search of the Sacred Land files indicated the presence of Native American sacred sites at undisclosed locations in the immediate vicinity of the Project. NAHC provided a list of tribes and individuals to be contacted for additional information about resources in the vicinity and to be consulted formally about any Project concerns. Thirteen individuals and tribal representatives from the list were contacted by mail in July 2005. The letter described the Project and the status of cultural resources identification tasks. It also invited individuals and tribes to identify any traditional cultural properties or values in the Project area or to state any concerns about the Project.

Thirteen letters were distributed, but only three responses were received. The San Manuel Band of Mission Indians (San Manuel Band, a Serrano group) indicated that the Project is not within an area of known Serrano cultural resources. Two groups, the Ramona Band of Cahuilla Indians (Ramona Band, a Cahuilla group) and the Morongo Band of Mission Indians (Morongo Band, which includes Cupeño, Serrano, and Cahuilla members), requested that Native American monitors be hired to observe ground-disturbing Project activities in sensitive locations.

5.6.1 Extended Phase I Identification

Tribes were notified about updated Project survey findings and preliminary plans to conduct Extended Phase I (XPI) studies via letter, dated July 5, 2007. The letter also requested attendance at a meeting to discuss general concerns or monitoring plans for the Project. The letter was sent to 11 groups or individuals who had either indicated they were interested in continued involvement in the Project or had not responded to previous correspondence regarding the Project. Prior to this second letter, the Rincon Band of Mission Indians indicated to the Department Native American Coordinator that they did not wish to consult on projects in this part of Riverside County; thus they were not included in this mailing.

In reply, seven groups expressed an interest in attending a meeting to discuss XPI studies and monitoring, including the Cahuilla Band of Mission Indians (Cahuilla Band), the Morongo Band, Pauma/Yuima Band of Mission Indians (Pauma/Yuima), the Ramona Band, the Santa Rosa Band of Mission Indians (Santa Rosa Band), the Soboba Band of Luiseño Indians (Soboba Band), and the Temecula Band of Luiseño Mission Indians (Pechanga Band). Mr. Willie Pink (Luiseño) indicated that he would defer to the Pechanga Band on this Project, and the Twenty-Nine Palms Band of Mission Indians had no specific comments at that time. In addition, the La Jolla Band of Mission Indians indicated to Caltrans that they did not wish to consult further on this Project.

A meeting with the interested Native American groups, Caltrans, RCTC, and the RCTC cultural resources consultant was held on July 26, 2007, at the RCTC office in Riverside, California, to review the sites that were proposed for XPI study, present the methods and procedures for conducting XPI investigations, and discuss tribal monitoring. The meeting was intended to provide the Native American groups with an opportunity to comment on the goals and methods being presented. Members from the Cahuilla Band, the Pechanga Band, the Santa Rosa Band, and the Soboba Band attended the meeting. Representatives from the Morongo Band and the Ramona Band were unable to attend the meeting, but expressed an interest in the XPI study. Copies of the Draft Archaeological Survey Report of May 2007 were circulated at the meeting or were mailed to those groups that were unable to attend. No concerns from the groups were raised during this meeting, although all tribal representatives at the meeting expressed an interest in monitoring XPI fieldwork.

Follow-up emails with the groups were circulated on August 13, 2007, to coordinate monitoring efforts for XPI investigations. The Pechanga Band, the Ramona Band, the Santa Rosa Band, and the Soboba Band agreed to provide monitors; the Morongo Band deferred monitoring efforts to the other participating tribes. No response was received from the Cahuilla Band.

Following completion of the first phase of the XPI study (September 2007), the Pechanga Band issued a letter to Caltrans on October 8, 2007, expressing their concerns about the tribal consultation on the Project to date. Their concerns about the speed of Project development, adequacy of methods employed during fieldwork, and consideration of their tribal knowledge during archaeological site evaluations were expressed again in a meeting with Caltrans, RCTC, and the RCTC cultural resources consultant on September 24, 2008, and again by letter on November 26, 2008.

The FHWA responded to the tribes' comments and concerns in a letter dated January 29, 2008 (HPSR Exhibit 6, Public Participation: Native American Scoping and Consultation). The FHWA provided clarification on the

adequacy of technical approaches used during survey, consultation, and XPI to identify potentially NRHP-eligible properties in the APE. The FHWA also acknowledged its obligations under existing laws to continue to consider Native American concerns as the Section 106 consultation proceeds and especially as they relate to evaluation of the NRHP eligibility of resources, selection of alternatives, and treatment of historic properties that would be affected by the Build alternatives, as well as inadvertent discoveries.

Copies of the Draft XPI Report (Exhibit 5 of the HPSR) were sent to the Cahuilla Band, the Morongo Band, the Pechanga Band, the Ramona Band, the Santa Rosa Band, and the Soboba Band on July 22, 2008, for review and comment. The Pechanga Band issued an email response to Caltrans on August 29, 2008, regarding their concerns with the Draft XPI report and requested a meeting with Caltrans to discuss their concerns about the report. In September 2008, follow-up telephone calls were made to the Cahuilla Band, the Morongo Band, the Ramona Band, and the Soboba Band. Those bands issued no concerns regarding the Draft XPI Report. The Santa Rosa Band requested a replacement copy for review.

A revised Draft XPI Report was provided to the Pechanga Band and the Santa Rosa Band on October 24, 2008, for review and comment. The Santa Rosa Band voiced no concerns with the revised draft report. The Pechanga Band issued their comments in a letter to RCTC, dated November 26, 2008. On behalf of the FHWA, Caltrans responded to the Tribes' comments and concerns in a letter dated January 26, 2009 (HPSR Exhibit 6, Public Participation: Native American Scoping and Consultation).

5.6.2 Phase II Evaluation

Caltrans notified the SHPO by letter dated May 20, 2008, that the Project would phase the evaluation stage of the Section 106 process, as allowed for in 36 CFR 800.4(b)(2) and 800.5(a)(3) and Section XII of the PA. As a result, the Phase II evaluations were to occur once a Preferred Alternative had been identified for the Project.

In preparation for the Phase II evaluation process, Caltrans and RCTC requested a meeting with the tribes to seek their input on evaluations of prehistoric sites. Representatives from the Cahuilla Band, Soboba Band, Pechanga Band, and Santa Rosa Band attended a meeting in Hemet, California, on September 14, 2009, to discuss approaches for evaluating sites from both the tribes' perspective and the archaeological perspective.

Caltrans, on behalf of FHWA, continued consultation with Native American tribes following approval of the HPSR. Caltrans consulted with the Cahuilla Band, the Morongo Band, the Pechanga Band, the Ramona Band, the Santa Rosa Band, and the Soboba Band, whose traditional use areas are in the Project vicinity. A complete record of Native American consultation is provided in the SHPSR, Attachment E.

In May of 2011, prior to execution of Phase II fieldwork, Caltrans circulated a draft Archaeological Evaluation Proposal (AEP) (Attachment C to the SHPSR) to the six tribal communities noted above along with a request for comments. The written request was followed by several email and telephone call requests. No comments were received from the Ramona Band, Soboba Band, or Santa Rosa Band. Tribal representatives responded on behalf of the Cahuilla Band, Morongo Band, and Pechanga Band confirming receipt of the Draft AEP (SHPSR, Attachment C). Only the Pechanga Band submitted formal comments. In a letter dated July 15, 2011, Anna Hoover, Cultural Analyst for the Pechanga Band of Luiseño Indians, asserted Luiseño cultural affiliation with the Project area

providing ethnographic documentation and oral historical accounts that identified named places in the vicinity of the Project APE. The letter also critiqued several sections of the AEP including the background context statements, proposed field methods and regional settlement patterns analysis methods, treatment of human remains, and proposed curation arrangements for archaeological collections recovered during Phase II fieldwork.

During the course of the Phase II fieldwork, Native American monitors from the Pechanga Band, Soboba Band, and Cahuilla Band were present to observe the work and provide daily reports to their respective tribal cultural resources committees. Monitoring contract negotiations occurred in September 2011, but the fieldwork was put on hold for more than a year. Tribes were notified of the delay and were notified prior to the execution of fieldwork in January 2013.

As part of a cultural landscape and regional settlement pattern analysis to aid NRHP-eligibility determinations for the prehistoric archaeological sites/components, the six tribal communities noted above were consulted in an effort to gather information related to the Native American cultural landscape and settlement patterns in the Project area. Letters inviting the six tribal communities to participate in the analysis were sent out on November 4, 2011. The Pechanga Band and Soboba Band expressed interest; the Cahuilla Band, Morongo Band, Ramona Band, and Santa Rosa Band did not respond to the request. The Pechanga Band provided ethnographic and oral historical information on the cultural landscape during a meeting at the Pechanga Cultural Resources Department and in several comment letters submitted previously by the tribe. No further information or response was received from the Soboba Band.

In September 2013, the six tribal communities were invited to a Native American cultural resource focus meeting hosted by Caltrans and RCTC. Prior to the meeting, William Madrigal, Jr., the Cultural Resource Manager for the Morongo Band of Mission Indians, requested copies of all cultural resource reports completed to date. A CD-ROM containing the HPSR (Goldberg and Mirro 2010) and AEP (Goldberg *et al.* 2011; SHPSR, Attachment C) were provided to Mr. Madrigal on September 6, 2013.

The purpose of the cultural resource focus meeting was to reintroduce the SR 79 Realignment Project to Native American stakeholders, present what was then considered a preferred alternative (Alt. 2b) and discuss the ongoing environmental process as it related to cultural resources. Preliminary recommendations of eligibility, the cultural landscape and settlements patterns analysis context, and upcoming steps in the Section 106 process were discussed. Native American representatives from the Cahuilla Band, Pechanga Band, and Soboba Band were in attendance.

During that meeting, Pechanga Band representatives identified a named place of cultural and religious significance to the Luiseño people. This TCP, including prominent hills identified as *Chéexayam Pum'wáppivu* (Seven Sisters) and *'Anó´ Potma* (Coyote's Mouth), as well as an intervening valley is partially within the Project APE. Follow up Section 106 consultation meetings between Caltrans and the Pechanga Band occurred on September 25, October 28, and November 18, 2013. The purpose of these meetings was to discuss the Section 106 cultural resource process and the Pechanga Band's involvement in that process as it related to Native American cultural resources and the TCP. Discussions focused on the cultural and religious significance of the TCP and the undertaking's potential to affect the TCP adversely during Project construction and operation.

During the November 18, 2013 meeting, the Pechanga Band requested that grading limits as proposed in Alternative 2b be adjusted to avoid impacts to the TCP. If adjustments could not be made, the Pechanga Band would consider it a fatal flaw in the Project and oppose findings made in the EIR/EIS. In response to the Pechanga Band's concerns over the undertaking's potential to adversely affect the TCP, Project proponents considered possible adjustments to Alternatives 1 and 2.

In December 2013, Caltrans circulated the Draft AER (SHPSR, Attachment D) to five tribal communities (Cahuilla Band, Morongo Band, Pechanga Band, Ramona Band, and Soboba Band) for review and comment. Following up on a request from the Pechanga Band to consult with other Luiseño communities, Caltrans prepared a letter informing tribes about the TCP and notifying them of NRHP determinations of eligibility presented in the AER. Letters were sent to the Pala Band of Mission Indians, the Pauma Band of Luiseño Indians, and the Rincon Band of Luiseño Indians on January 21, 2014. Letters were also sent to the Twenty-Nine Palms Band of Mission Indians and Santa Rosa Band of Cahuilla Indians. The Pala Band responded in writing on January 29, 2014, stating that the Project was beyond their Traditional Use Area and deferred to the recommendations of Native American communities in closer proximity to the Project APE. In a letter dated February 20, 2014, the Rincon Band stated that the Project area was not within Luiseño Aboriginal Territory, but fell within Kumeyaay Territory. No responses were received from the Pauma Band, Santa Rosa Band, or Twenty-Nine Palms Band.

Following circulation of the Draft AER, Caltrans attended a Section 106 consultation meeting with the Pechanga Band on February 13, 2014. The purpose of the meeting was to allow the Pechanga Band an opportunity to voice their concerns regarding the Draft AER. It was agreed that a separate focus meeting would be needed to address the Pechanga Band's comments on the Draft AER. Informal comments on the cultural landscape context chapter of the AER were submitted by the Pechanga Band on February 25, 2014, followed by a focus meeting between the Pechanga Band and the consulting firm preparing the AER on March 11, 2014. Comments provided by the Pechanga Band were discussed individually along with ideas on how the chapter of the AER could potentially be revised. A second focus meeting was held on March 18, 2014, to discuss additional comments that had not been included by the Pechanga Band in the informal comment memo. Consultation efforts resulted in refinements to Build Alternatives in an attempt to minimize direct impacts to the TCP.

Cultural landscape and settlement patterns analysis coordination efforts with the Pechanga Band continued between March and July 2014, as the AER was being revised. During that time, a series of emails were exchanged between the Pechanga Band's archivist and RCTC's consulting archaeologist, focusing on specific issues related to the cultural landscape context and named places within the Project area.

Ongoing consultation between Caltrans and the Pechanga Band in September and October 2014 focused on revisions to the Draft AER. Discussions pertained to the NRHP-evaluation of the TCP and the evaluation of bedrock milling sites in the context of the PPAD.

On October 30, 2014, Caltrans circulated the SHPSR that included Revised APE Map, a Supplemental Archaeological Survey Report, an approved Archaeological Evaluation Proposal, and a revised AER, to the five tribal communities (Cahuilla Band, Morongo Band, Pechanga Band, Ramona Band, and Soboba Band) for review and comment. The Pechanga Band submitted a formal comment letter on November 25, 2014, recommending that

Caltrans submit the SHPSR to SHPO for concurrence on determinations of eligibility. The Morongo Band informed Caltrans that the Project lies outside their area of concern and deferred to Soboba for all consultation moving forward. No comments were received from the Cahuilla Band, Ramona Band, or Soboba Band. As a result, Caltrans assumed there were no concerns with the findings documented in the SHPSR and submitted the report to SHPO on December 16, 2014.

5.6.3 Finding of Adverse Effect

On November 17, 2014, Caltrans and RCTC's consultant presented the results of the analysis of effects of the Project alternatives on historic properties to invited tribes and answered questions. Representatives from the Pechanga Band, the Cahuilla Band, and the Soboba Band were in attendance. The draft FoE was circulated at the meeting and also mailed to the Ramona Band for review and comment. The Pechanga Band submitted a formal letter on December 17, 2014, identifying Alternative 1br as their preferred and recommended alternative (SHPSR, Appendix C). The Pechanga Band further requested additional consultation on the Project including the potential relocation of milling features that may be directly impacted by Project construction. No comments were received from the Cahuilla, Ramona, or Soboba bands. On December 19, 2014, Caltrans distributed an email to these three tribes that notified them of Caltrans' intention to forward the FoE to SHPO for concurrence and assumed that the tribes were in agreement with the findings. The FoE, with concurrence from SHPO on March 2, 2015 (see letter at end of this chapter), documented the direct and indirect effects of each alternative on identified historic properties.

5.6.4 Memorandum of Agreement

Following the SHPO's concurrence that the Project would have an adverse effect on the TCP and the PPAD further consultation was conducted with the tribes to develop the necessary and appropriate measures to avoid, minimize, and mitigate adverse effects. Caltrans drafted a Memorandum of Agreement (MOA) for tribal review and comment. Caltrans transmitted the draft MOA to the Cahuilla, Pechanga, Ramona, and Soboba bands on June 10, 2015 and invited the bands to an informational meeting on July 8, 2015 at the Bechtel/RCTC office in Riverside to discuss the proposed provisions of the MOA and answer questions. Representatives from the Cahuilla Band and Pechanga Band attended the meeting. A Soboba Band representative was unable to attend, but the Band requested that a presentation be made to the Soboba Band Tribal Council at a later date. Caltrans had requested written comments on the draft MOA on or before July 27, 2015. Comments were received only from the Pechanga Band. With receipt of no further tribal comments, Caltrans revised the MOA and recirculated the second draft to the four consulting tribes on August 31, 2015, requesting comments no later than October 1, 2015. In a letter dated October 1, 2015, the Soboba Band requested additional mitigation for any required removal and relocation of bedrock milling features during construction. Those requests were incorporated into a draft MOA submitted to the SHPO on October 21, 2015.

Avoidance, minimization, and mitigation measures that were developed in consultation with the Tribes, have been formalized in the Section 106 MOA. The Section 106 MOA was signed by Caltrans/FHWA and SHPO on March 25, 2016, at which time the MOA was circulated to all consulting tribes, RCTC, the cities of Hemet and San Jacinto, and Riverside County for their signature.

SHPO Concurrence on FOE

March 2, 2015

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

March 2, 2015 Reply In Reference To: FHWA080523D

Annmarie Medin
Chief, Cultural Studies Office
Department of Transportation
Division of Environmental Analysis, MS27
1120 N Street
P.O. Box 942874
Sacramento, CA 94274-0001

RE: Request for Concurrence on Finding of Effect for the Proposed State Route 79 Realignment Project in Riverside County, California (PM R15.8 to R33.8)

Dear Ms. Medin,

Thank you for seeking my consultation regarding the above referenced undertaking in accordance with the January 2014 *first Amended Programmatic Agreement (PA) among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Office, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the to the Administration of the Federal-Aid Highway Program in California*. In accordance with 36 CFR §800.4(c)(1) and Stipulation VIII.C of the PA, the California Department of Transportation (Caltrans) has evaluated the historic significance of identified properties and determined National Register of Historic Places (NRHP) eligibility within the undertaking's Area of Potential Effects (APE) and has previously received my concurrence on these determinations. Caltrans is now requesting my concurrence on their finding of effect for the above referenced undertaking in accordance with 36 CFR §800.4(d)(2) and Stipulation X.C.1.a of the PA.

The undertaking proposes to widen and realign SR-79 in the San Jacinto Valley near the communities of San Jacinto, Hemet and Winchester in western Riverside County, California. The realignment will occur between Newport Road, just south of Winchester (PM R15.8) and Gilman Springs Road, northwest of San Jacinto (PM R33.8).

By letter dated December 16, Caltrans requested my concurrence on their determinations of eligibility for listing on the National Register of Historic Places (NRHP) for 27 prehistoric and mixed-component archaeological sites and one TCP, and their presumption of eligibility for one potential prehistoric archaeological district (PPAD) and the prehistoric component of one archaeological site. I provided concurrence with these determinations and additional comments in a letter dated January 20, 2015. In their submission dated January 29, 2015 Caltrans provided the following document supporting their finding of effect for the undertaking:

- *State Route 79 Realignment Project: Domenigoni Parkway to Gilman Springs Road Draft Finding of Adverse Effect Realign State Route 79 between Domenigoni Parkway and Gilman Springs Road in the Cities of Hemet and San Jacinto and the County of Riverside, California District 8-RIV-79-KP R25.4/R54.4(PM R15.78/R33.80)PN 0800000784/EA 08-494000* (Applied EarthWorks, Inc. 2015)

This report details the finding of effect for one historic built environment resource, two multi-component archaeological sites, one TCP and one Potential Prehistoric Archaeological District (PPAD). This document indicates that the Colorado River Aqueduct (CA-RIV-6726H/33-11265), that was previously determined eligible for listing on the NRHP under Criterion A, will not be adversely affected by the proposed undertaking due to the aqueduct being underground in the area where it will be crossed. Caltrans has also proposed to presume that the prehistoric component of archaeological site CA-RIV-8156/H is eligible under criterion A and D for the purposes of this undertaking, because it can be protected in place through establishment of an Environmentally Sensitive Area (ESA). An ESA will also be used to protect CA-RIV-6907/H from adverse effects. However, the Traditional Cultural Property (TCP) known as '*Anó' Potma* and *Chéexayam Pum'wáppivu* that is individually eligible for the NRHP under Criteria A, B, and D will be adversely affected by the proposed undertaking, as will the PPAD. Consequently, Caltrans has proposed a finding of adverse effect for this undertaking and is proposing to continue consultation with my office, with the assistance of the participating Tribes regarding the resolution of adverse effects pursuant to Stipulation XI of the PA and 36 CFR 800.6(B)(1). At this time, Caltrans is requesting my concurrence with their finding of effect as stated above. Based on my review of your letter and supporting documentation, I have the following comments:

- I concur that the *Potential Prehistoric Archaeological District (PPAD)* and the TCP including '*Anó' Potma* and *Chéexayam Pum'wáppivu* will be adversely affected by the proposed undertaking.
- I agree that CA-RIV-6907/H and the prehistoric component of CA-RIV-8156/H can be protected in place through the implementation of an ESA with standard conditions.
- I concur that the Colorado River Aqueduct will not be adversely affected by this undertaking as currently proposed.
- Pursuant to PA Stipulation X.C.1.b of the PA and 36 CFR 800.5(d)(2), I concur with Caltrans' finding of adverse effect for the proposed undertaking.

Thank you for seeking my comments and considering historic properties as part of your undertaking. I look forward to continuing consultation with Caltrans regarding the resolution of adverse effects of this undertaking pursuant to Stipulation XI of the PA and 36 CFR 800.6(b)(1). If you require further information, please contact Jessica Tudor of my staff at 916-445-7016 or at jessica.tudor@parks.ca.gov.

Sincerely,

Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, Ph.D.
State Historic Preservation Officer

SHPO Concurrence

August 2, 2010

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OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
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www.ohp.parks.ca.gov

August 2, 2010 Reply To: FHWA100523D

Olufemi Odufalu, Office Chief
Environmental Support/Cultural Studies
Caltrans District 8
Environmental Planning (MS 825)
464 W Fourth Street, 6th Floor
San Bernardino, CA 92401-1400

Re: Determinations of Eligibility for the Proposed State Route 79 Realignment Project, Riverside County, CA

Dear Mr./Ms. Odufalu:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

The California Department of Transportation (Caltrans) is requesting my concurrence that the following properties are not eligible for the National Register of Historic Places (NRHP):

- CBJ Dairy (P-33-15752)
- Ramona Boulevard Property (P-33-15748)
- Second San Diego Aqueduct Canal (CA-RIV-8195H)
- Reflection Lake Recreational Vehicle Resort (P-33-15741)
- Braswell Property (P-33-15749)
- Wilhelm Ranch (P-33-15751)
- Bidondo Property (P-33-15750)
- Shannon Drive Property (P-33-15744)
- Vanderlinden Property (P-33-15740)
- San Jacinto Valley Railway (CA-RIV-8196H)
- Haddock Street Property (P-33-15747)
- CA-RIV-1418H
- CA-RIV-8158H

Based on my review of the submitted documentation, I concur with the above findings.

Caltrans is also requesting my concurrence that the Colorado River Aqueduct (CA-RIV-6726H) is eligible for the NRHP as a contributor to a potential Colorado River Aqueduct Historic District. I concur.

Caltrans is also proposing to assume that CA-RIV-6907/H is eligible for the NRHP. Caltrans will protect CA-RIV-6907/H in place through designation and enforcement of an Environmentally Sensitive Area. I have no objections to this proposal.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

The Office of Historic Preservation has moved. Please note our new address and phone numbers as listed in the letterhead above.

Request for SHPO Concurrence

June 24, 2010

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DEPARTMENT OF TRANSPORTATION
DISTRICT 8
ENVIRONMENTAL PLANNING (MS 825)
464 W. FOURTH STREET, 6TH FLOOR
SAN BERNARDINO, CA 92401-1400
PHONE (909) 383-4042
FAX (909) 383-6494
TTY (909) 383-6300

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June 24, 2010

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
California Office of Historic Preservation
1416 Ninth Street, Room 1442
Sacramento, CA 95814

08-Riv-79-PM 25.1/52.8
State Route 79 Realignment
Project, Riverside County
EA 49400

Dear Mr. Donaldson:

Subject: Determinations of Eligibility for the California Department of Transportation (Caltrans) State Route 79 Realignment Project, located in Riverside County, California.

Caltrans, on behalf of the Federal Highway Administration (FHWA), and the Riverside County Transportation Commission (RCTC) proposes to construct the State Route 79 (SR-79) Realignment Project, located in Riverside County, California.

This consultation is undertaken in accordance with the Programmatic Agreement (PA) among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation, executed January 1, 2004.

By letter, dated May 20, 2008 (attached), the Department notified the State Office of Historic Preservation that it desired to phase the evaluation of cultural resources for the undertaking in accordance with the Section 106 process, as allowed for in 36 CFR 800.4(b)(2) and 800.5(a)(3) and Stipulation XII of the PA. Section 106 documentation to date for this undertaking consists of an Historic Property Survey Report (HPSR, June 2010) and attachments, which documents the development of the project's Area of Potential Effects (APE), consultation efforts with interested parties and Native Americans, identification of cultural resources within the APE, and the evaluation of the properties within the APE that do not require Phase II archaeological testing.

At this time, in accordance with PA Stipulation VIII.C(5), the Department is seeking SHPO concurrence on determination of eligibility for 12 built environment properties and two historical archaeological sites. The department is also requesting concurrence with the appropriateness of the assumed eligibility for the purposes of this project of one multi-component site that will be protected in place with an Environmentally sensitive area (ESA), pursuant to PA Stipulation

VIII.C(3). These results are detailed below.

The following properties were evaluated and determined to be ineligible for the NRHP:

Name	Resource Description	OHP Status Code	Map Reference Number	Status of Evaluation	Report Reference
*CBJ Dairy (P-33-15752)	Late 1950s residence and dairy	3CS	1	Not eligible	HRER (Exhibit 3)
Ramona Boulevard Property (P-33-15748)	1950s residence and former farmstead	6Z	3	Not eligible	HRER (Exhibit 3)
Second San Diego Aqueduct Canal (CA-RIV-8195H)	Late 1940s-late 1950s water conveyance system	6Z	4	Not eligible	HRER (Exhibit 3)
Reflection Lake Recreational Vehicle Resort (P-33-15741)	Early 1950s manmade lake and late 1960s Recreational Vehicle Resort	6Z	5	Not eligible	HRER (Exhibit 3)
Braswell Property (P-33-15749)	Early 1950s modern adobe block residence	6Z	6	Not eligible	HRER (Exhibit 3)
Wilhelm Ranch (P-33-15751)	Early 1900s farmstead with multiple outbuildings (School house, Bunkhouse, Apiary, Milk house, Workshop, Garage, Tank house, Irrigation machine building, and Concrete reservoir) razed in 2006	6Z	8	Not eligible	HRER (Exhibit 3)
Bidondo Property (P-33-15750)	Early 1950s modern adobe block residence	6Z	9	Not eligible	HRER (Exhibit 3)
Shannon Drive Property (P-33-15744)	1940s modern adobe block residence	6Z	10	Not eligible	HRER (Exhibit 3)
Vanderlinden Property (P-33-15740)	Modern farmstead consisting of a ranch house, modular house, sheds and water tower, and 1900s barn	6Z	11	Not eligible	HRER (Exhibit 3)
San Jacinto Valley Railway (CA-RIV-8196H)	Late 1880s railway	6Z	13	Not eligible	HRER (Exhibit 3)
Haddock Street Property (P-33-15747)	Late 1950s vernacular residence	6Z	14	Not eligible	HRER (Exhibit 3)
CA-RIV-1418H	Rock retaining wall	6Z	16	Not eligible	ASR (Exhibit 2) HRER (Exhibit 3)

Name	Resource Description	OHP Status Code	Map Reference Number	Status of Evaluation	Report Reference
CA-RIV-8158H	Structural remains and concrete stand pipe	6Z	7	Not eligible	ASR (Exhibit 2) HRER (Exhibit 3)

*Note that this resource was jointly evaluated in conjunction with the Mid County Parkway Project in 2008; the SHPO has already provided preliminary concurrence for the lack of NRHP eligibility of this resource (see HPSR Appendix A). The property was determined to be ineligible for the NRHP, but is considered to be an Historical Resource for the purposes of CEQA.

The following property was evaluated and determined eligible for the NRHP:

Name	Resource Description	OHP Status Code	Map Reference Number	Status of Evaluation	Report Reference
*Colorado River Aqueduct (CA-RIV-6726H)	1930s system conveying water from the Colorado River to much of Southern California	3S	2	Eligible	HRER (Exhibit 3)

*The Metropolitan Water District of Southern California, owner of this operating system, is in the process of evaluating NRHP eligibility of the entire system and intends to seek SHPO concurrence on the evaluation at a later date. Only the portion of the property within the APE was evaluated.

The following property will be presumed eligible for the purposes of this undertaking and will be protected in place through designation and enforcement with an ESA:

Name	Resource Description	OHP Status Code	Map Reference Number	Status of Evaluation	Report Reference
*CA-RIV-6907/H	26 outcrops with 50 milling slicks; rock wall, granite quarrying and bottle fragments	Presumed eligible	See APE Map Grid 6 & 10	To be Protected in ESA	ASR (Exhibit 2)

*The ESA is described in Section 5 of the HPSR. However, a full ESA Action plan will be developed after selection of a preferred alternative for the undertaking. Therefore, the ESA Action plan will be submitted with a Supplemental HPSR.

Pursuant to Stipulation VIII.C.(3) and VIII.C.(5) of the Section 106 PA, we request your concurrence with the above-listed determinations of eligibility.

The remaining properties within the APE that require evaluation, consisting of up to 28 prehistoric and/or historical archaeological sites, will be evaluated following the selection of a preferred alternative for the project. These findings will be presented in a Supplemental HPSR. Following concurrence with the Supplemental HPSR, the Department will seek concurrence on a Finding of Effect for the project as a whole. Note that the Preliminary Archeological Evaluation Memorandum referred to in the May 2008 Phasing letter will no longer be submitted because it was determined prudent to defer evaluation of all prehistoric sites and fully document them in the supplemental HPSR.

We look forward to receiving your response within thirty (30) days of your receipt of this submittal, in accordance with Stipulation VIII.C.5.a of the Section 106 PA. If you have any questions or comments regarding the proposed project, please feel free to contact Andrew Walters, Associate Environmental Planner (Architectural History) at (909) 383-7566 (andrew_walters@dot.ca.gov). In return correspondence, please refer to this project by the EA number provided. We look forward to your response.

Sincerely,

OLUFEMI ODUFALU
Office Chief
Environmental Support/Cultural Studies

c. Jill Hupp, Section 106 Coordinator, Division of Environmental Analysis, HQ

Enclosures

Historic Property Survey Report for the State Route 79 Realignment Project: Domenigoni Parkway to Gilman Springs Road, (June 2010).

Exhibit 1	*Area of Potential Effects Map (bound separately)*
Exhibit 2	*Archaeological Survey Report (bound separately)*
Exhibit 3	*Historical Resources Evaluation Report (bound separately)*
Exhibit 4	*Extended Phase I Proposal (bound separately)*
Exhibit 5	*Extended Phase I Report (bound separately)*
Exhibit 6	*Public Participation: Native American Scoping and Consultation (bound separately)*

Notification of Intent to Phase Section 106

May 20, 2008

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DEPARTMENT OF TRANSPORTATION
DISTRICT 8
ENVIRONMENTAL PLANNING (MS 825)
464 W. FOURTH STREET, 6TH FLOOR
SAN BERNARDINO, CA 92401-1400
PHONE (909) 383-6933
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Flex your power!
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May 20, 2008

Mr. Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
Office of Historic Preservation
P. O. Box 942896
Sacramento, CA 94296-0001

08-Riv-79-PM 25.1/52.8
State Route 79
Realignment
Riverside County

EA 494000

Dear Mr. Donaldson:

SUBJECT: Notification for use of a phased approach to evaluate and determine Finding of Effect (FOE) under Section 106 for the State Route 79 Realignment Project, Riverside County California

The California Department of Transportation (Caltrans), on behalf of the Federal Highway Administration (FHWA), and the Riverside County Transportation Commission (RCTC) propose to construct the State Route 79 (SR-79) Realignment project, located in Riverside County, California. The purpose of this letter is to provide background information on identification and evaluation efforts and to establish the document submittal process to the State Historic Preservation Officer (SHPO) to fulfill Section 106 compliance for this project using a phased approach.

Under the National Environmental Quality Act (NEPA) Delegation, which became effective July 1, 2007, Caltrans has assumed the oversight responsibilities of the FHWA for compliance with NEPA and Section 106 of National Historic Preservation Act (NHPA, 36 CFR Part 800). The Section 106 Programmatic Agreement (PA) among the FHWA, Advisory Council on Historic Preservation (ACHP), SHPO, and Caltrans also applies to this project. Caltrans desires to phase the evaluation and finding of effect (FOE) stage of the Section 106 process, as allowed for in 36 CFR 800.4(b)(2) and 800.5(a)(3) and Section XII of the PA. After public circulation of the Draft Environmental Impact Report/Environmental Impact Statement (DEIR/DEIS), a Preferred Alternative will be selected. The Phase II archaeological evaluation proposes to limit the evaluations to the Preferred Alternative in order to avoid unnecessary impacts to sites on other alternatives.

To date, the identification phase of the project has been completed on all four (4) build alternatives. In addition, all built environment properties and the majority of the historical archaeological sites on all four (4) build alternatives have been evaluated. These identification and evaluation efforts will be presented for SHPO's review and concurrence prior to the public circulation of the DEIR/DEIS in the following documentation:

1. Historic Properties Survey Report (HPSR), including rationale for the deferral of Phase II Evaluations;

2. Project Maps/Area of Potential Effects;

3. Archaeological survey Report (ASR);

4. Extended Phase I (XP1) Proposal and Report;

5. Historic Resources Evaluation Report (HRER) for all Built Environmental resources and all historical archaeological sites for which there was no potential for subsurface deposits, or for which archival research demonstrated the lack of a focused historic context that would support NRHP eligibility under Criterion D;

6. Preliminary Archaeological Evaluation Memorandum for all prehistoric sites for which there was no potential for subsurface deposits or XP1 assessment confirmed that a subsurface component was lacking, and for which all potential for NRHP eligibility under Criterion D was realized and recovered during the process of site recording or XP1 analysis. This Memorandum will include identification of all sites that will require formal Phase II Archaeological Evaluation in order to determine their NRHP eligibility status;

7. Native American Consultation Documentation; and

8. Public Participation/Consulting Parties Documentation.

This documentation will constitute the bulk of the NRHP evaluations for the proposed project, covering all four (4) build alternatives, resulting in the completion of NRHP evaluation of all but five (5) archeological sites that must continue to Phase II evaluation.

Following the circulation of the DEIR/DEIS, and selection of a Preferred Alternative, the Section 106 process will be completed. Remaining activities would include NRHP-eligibility evaluations for archaeological sites requiring Phase II subsurface testing located only within the Preferred Alternative. Subsequent to the documentation of the site evaluations, Caltrans will request your concurrence on NRHP-eligibility on these sites on the basis of a Supplemental HPSR and combined HRER/Archaeological Evaluation Report (HRER/AER). Prior to issuance of the Final EIR/EIS, Caltrans will submit the FOE for the entire project, which will include one (1) built environment historic property, as well as any archaeological sites found eligible during Phase II evaluations.

In the event that adverse effects to historic properties would require resolution, a Memorandum of Agreement (MOA) would then be prepared to detail the negotiated and approved treatments or mitigation.

If you have any questions, please contact me at (909) 383-6933. Thank you for your assistance with this project.

Sincerely,

Christie Hammond

CHRISTIE HAMMOND
Office Chief
Environmental Support/Cultural Studies

c: Jill Hupp, Section 106 Coordinator, HQ

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Coordination with the

United States Army Corps of Engineers

Approved Jurisdictional Determination

August 23, 2016

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
915 WILSHIRE BOULEVARD, SUITE 930
LOS ANGELES, CALIFORNIA 90053-3401

August 22, 2016

Scott Quinnell
California Department of Transportation, District 8
Senior Environmental Planner
464 West 4th Street, 6th Floor
San Bernardino, California 92401-1400

SUBJECT: Approved Jurisdictional Determination regarding presence/absence of geographic jurisdiction

Dear Mr. Quinnell:

This letter supersedes our previous letter dated April 14, 2011. I am responding to your request (File No. SPL-2004-00289-SJH) dated January 12, 2016 requesting verification of the jurisdictional limits of the Section 404 of the Clean Water Act (CWA) for a number of water bodies, tributaries and wetlands occurring within the State Route 79 (SR-79) Realignment Project study area located between Domenigoni Parkway and Gilman Springs Road, in the Cities of Hemet and San Jacinto, and the County of Riverside, California. Your jurisdictional determination verification request is a formal concurrence point specified in the multi-agency collaborative process to integrate and streamline the requirements of the National Environmental Policy Act and Section 404 of the CWA for Surface Transportation Projects in the State of California. This letter of verification fulfills this concurrence point.

This letter contains an approved jurisdictional determination for the SR-79 Realignment Project. The Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, a permit would likely be required. The first test determines whether or not the proposed project is located within the Corps' geographic jurisdiction (i.e., it is within a water of the United States). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the Rivers and Harbors Act or Section 404 of the Clean Water Act. This letter pertains to both tests.

Based on our May 17, 2006 site visit and information furnished to our office, including the September 2008 jurisdictional delineation report entitled *"State Route* 79 *Realignment Project: Domenigoni Parkway to Gilman Springs Road, Final Jurisdictional Wetland and Other Waters Delineation Report,"* we have determined there are waters of the United States on the project site, as well as non-jurisdictional aquatic resources, and that your proposed project does discharge dredged or fill material into a water of the United States (U.S.). Therefore, the project is subject to our jurisdiction under Section 404 of the CWA and a Department of the Amy (DA) permit is required from our office. According to the delineation report, realignment of the SR-79 would result in the placement of fill material into the following water bodies, tributaries, and adjacent wetlands: San Jacinto River, Salt Creek Channel, and Hemet Channel. Preliminary estimates indicate a range of approximately 21.27 to 24.66 acres of waters of the U.S., including

wetlands, would be permanently impacted by the proposed SR-79 realignment, depending on the alternative selected. Similarly, approximately 2.85 to 4.70 acres of waters of the U.S., including wetlands, would be temporarily impacted.

Table 1 identifies all the waters of the U.S., including wetlands, regulated by Section 404 of the CWA occurring within each of the proposed SR-79 project alternatives under consideration. Table 2 identifies isolated wetlands. The aquatic resources identified in Table 2 as isolated wetlands are intrastate isolated waters with no apparent interstate or foreign commerce connection. As such, these waters are not currently regulated by the Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Clean Water Act. Other Federal, State, and local laws may apply to your activities. In particular, you may need authorization from the California State Water Resources Control Board and/or the U.S. Fish and Wildlife Service. All tables referenced in this letter correspond to figures and maps compiled in the *SR-79 Realignment Project, Final Jurisdictional Wetland and Other Waters Delineation Report* (Caltrans, September 2008).

This letter includes an approved jurisdictional determination for the SR-79 Realignment Project, Domenigoni Parkway to Gilman Springs Road, in the Cities of Hemet and San Jacinto, and the County of Riverside, California. If you wish to submit new information regarding this jurisdictional determination, please do so within 60 days. We will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. If you object to this or any revised or reissued jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you wish to appeal this decision, you must submit a completed RFA form within 60 days of the date on the NAP to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division, CESPD-PDS-O, 2042B
1455 Market Street
San Francisco, California 94103-1399

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5 (see below), and that it has been received by the Division Office by **October 21, 2016**.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the particular project site identified in your request, and is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Thank you for participating in the regulatory program. If you have any questions, please contact me at 213-452-3410 or via e-mail at Stephanie.J.Hall@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

Daniel P. Swenson
Chief, Los Angeles and San Bernardino Section
North Coast Branch
Regulatory Division

Enclosures

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: California Department of Transportation, District 8 Attn: Mr. Scott Quinnell	File No.: SPL-2004-00289-SJH	Date: August 22, 2016
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at *http://www.usace.army.mil/cecw/pages/reg_materials.aspx* or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Stephanie J. Hall
Environmental Protection Specialist
Senior Project Manager
Regulatory Division
U.S. Army Corps of Engineers
915 Wilshire Boulevard, Suite 930
Los Angeles, California 90017-3401
Phone: 213-452-3410, FAX 916-557-7803
Email: Stephanie.J.Hall@usace.army.mil

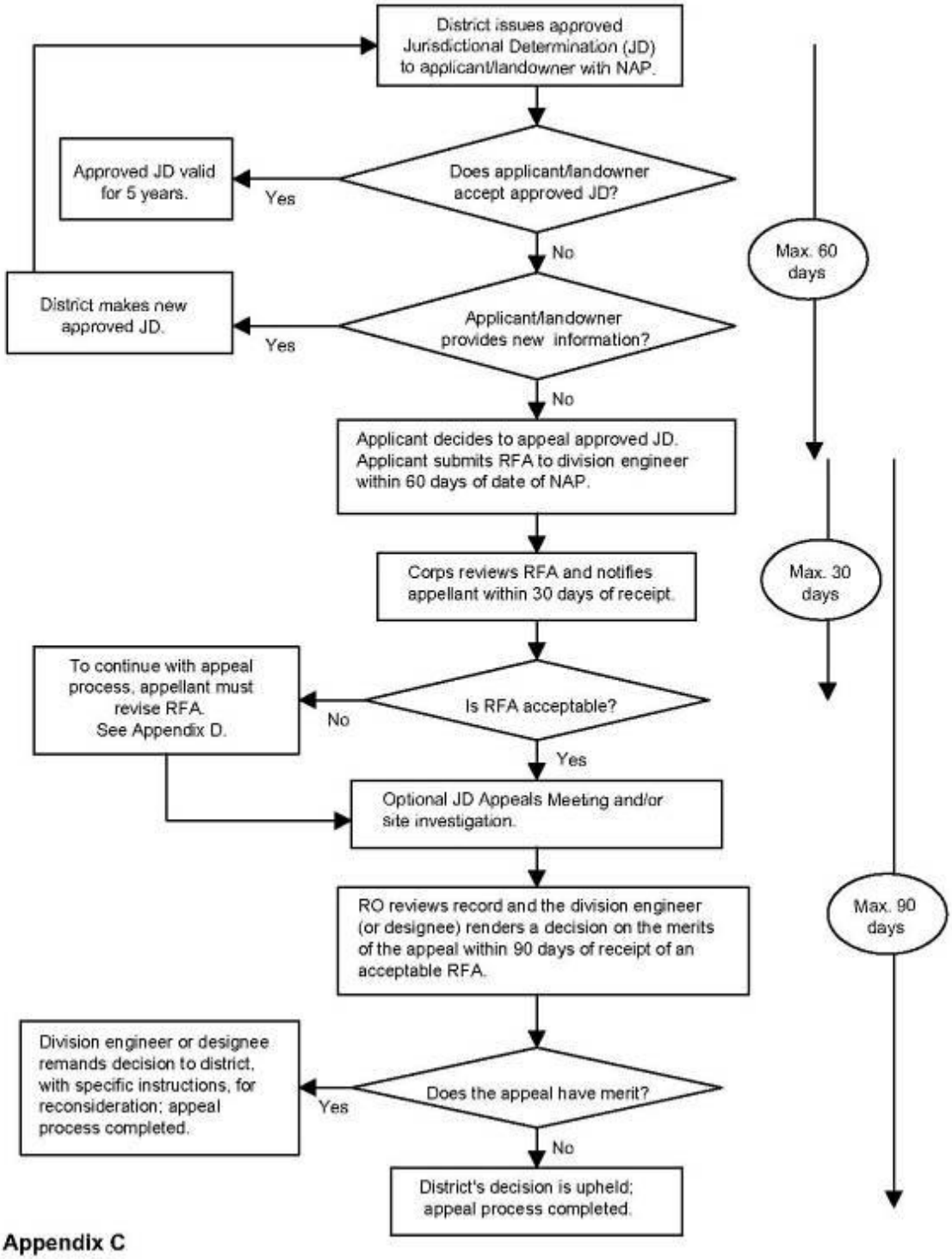
If you only have questions regarding the appeal process you may also contact:

Thomas J. Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street, 2052B
San Francisco, California 94103-1399
Phone: 415-503-6574, FAX 415-503-6646)
Email: Thomas.J.Cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

§ 331.5 Criteria.

(a) *Criteria for appeal* —(1) *Submission of RFA.* The appellant must submit a completed RFA (as defined at §331.2) to the appropriate division office in order to appeal an approved JD, a permit denial, or a declined permit. An individual permit that has been signed by the applicant, and subsequently unilaterally modified by the district engineer pursuant to 33 CFR 325.7, may be appealed under this process, provided that the applicant has not started work in waters of the United States authorized by the permit. The RFA must be received by the division engineer within 60 days of the date of the NAP.

(2) *Reasons for appeal.* The reason(s) for requesting an appeal of an approved JD, a permit denial, or a declined permit must be specifically stated in the RFA and must be more than a simple request for appeal because the affected party did not like the approved JD, permit decision, or the permit conditions. Examples of reasons for appeals include, but are not limited to, the following: A procedural error; an incorrect application of law, regulation or officially promulgated policy; omission of material fact; incorrect application of the current regulatory criteria and associated guidance for identifying and delineating wetlands; incorrect application of the Section 404(b)(1) Guidelines (see 40 CFR Part 230); or use of incorrect data. The reasons for appealing a permit denial or a declined permit may include jurisdiction issues, whether or not a previous approved JD was appealed.

(b) *Actions not appealable.* An action or decision is not subject to an administrative appeal under this part if it falls into one or more of the following categories:

(1) An individual permit decision (including a letter of permission or a standard permit with special conditions), where the permit has been accepted and signed by the permittee. By signing the permit, the applicant waives all rights to appeal the terms and conditions of the permit, unless the authorized work has not started in waters of the United States and that issued permit is subsequently modified by the district engineer pursuant to 33 CFR 325.7;

(2) Any site-specific matter that has been the subject of a final decision of the Federal courts;

(3) A final Corps decision that has resulted from additional analysis and evaluation, as directed by a final appeal decision;

(4) A permit denial without prejudice or a declined permit, where the controlling factor cannot be changed by the Corps decision maker (e.g., the requirements of a binding statute, regulation, state Section 401 water quality certification, state coastal zone management disapproval, etc. (See 33 CFR 320.4(j));

(5) A permit denial case where the applicant has subsequently modified the proposed project, because this would constitute an amended application that would require a new public interest review, rather than an appeal of the existing record and decision;

(6) Any request for the appeal of an approved JD, a denied permit, or a declined permit where the RFA has not been received by the division engineer within 60 days of the date of the NAP;

(7) A previously approved JD that has been superseded by another approved JD based on new information or data submitted by the applicant. The new approved JD is an appealable action;

(8) An approved JD associated with an individual permit where the permit has been accepted and signed by the permittee;

(9) A preliminary JD; or

(10) A JD associated with unauthorized activities except as provided in §331.11.

Table 1. Jurisdictional Waters of the U.S.

Site Number	Longitude	Latitude	Cowardin Class	Acres	Class of Aquatic Resource
AW0017	-117.005384	33.81968279	Palustrine, emergent	0.15	Non-Section 10 Wetland
AW0018	-117.0048222	33.82038306	Palustrine, emergent	0.69	Non-Section 10 Wetland
AW0019	-117.0040207	33.82050516	Palustrine, emergent	0.35	Non-Section 10 Wetland
AW0020	-117.0048914	33.82120515	Palustrine, emergent	0.05	Non-Section 10 Wetland
AW0021	-117.0050714	33.82624597	Palustrine, emergent	8.82	Non-Section 10 Wetland
AW0022	-117.0046909	33.83102435	Palustrine, emergent	0.27	Non-Section 10 Wetland
CP0002	-117.031762	33.786422	Palustrine, emergent	0.17	Non-Section 10 Wetland
CP0005	-117.001550	33.801699	Palustrine, emergent	2.12	Non-Section 10 Wetland
CP0006	-117.003922	33.817191	Palustrine, scrub-shrub	1.73	Non-Section 10 Non-Wetland
CP0007	-117.005863	33.818272	Palustrine	0.27	Non-Section 10 Non-Wetland
CP0009	-117.005603	33.818646	Palustrine	0.37	Non-Section 10 Non-Wetland
DD0001	-117.083750	33.6959450	Riverine	0.10	Non-Section 10 Non-Wetland
DD0002	-117.091555	33.696436	Riverine	0.20	Non-Section 10 Non-Wetland
DD0003	-117.084546	33.69738	Riverine	0.10	Non-Section 10 Non-Wetland
DD0004	-117.086127	33.698601	Riverine	0.62	Non-Section 10 Non-Wetland
DD0005	-117.050086	33.701306	Riverine	0.04	Non-Section 10 Non-Wetland
DD0006	-117.076173	33.703722	Riverine	0.12	Non-Section 10 Non-Wetland
DD0007	-117.045466	33.708564	Riverine	0.02	Non-Section 10 Non-Wetland
DD0008	-117.050051	33.716149	Riverine	0.04	Non-Section 10 Non-Wetland
DD0009	-117.054951	33.716796	Riverine	0.50	Non-Section 10 Non-Wetland
DD0010	-117.032459	33.719302	Riverine	0.02	Non-Section 10 Non-Wetland
DD0011	-117.050199	33.720258	Riverine	0.08	Non-Section 10 Non-Wetland
DD0012	-117.047219	33.721926	Riverine	0.02	Non-Section 10 Non-Wetland
DD0013	-117.045553	33.722592	Riverine	0.34	Non-Section 10 Non-Wetland
DD0014	-117.050027	33.723159	Riverine	0.23	Non-Section 10 Non-Wetland
DD0015	-117.050168	33.724794	Riverine	0.13	Non-Section 10 Non-Wetland
DD0016	-117.047523	33.726068	Riverine	0.002	Non-Section 10 Non-Wetland
DD0017	-117.044027	33.726217	Riverine	0.03	Non-Section 10 Non-Wetland
DD0018	-117.048654	33.726281	Palustrine, emergent	0.59	Non-Section 10 Wetland

Table 1. Jurisdictional Waters of the U.S.

Site Number	Longitude	Latitude	Cowardin Class	Acres	Class of Aquatic Resource
DD0019	-117.041243	33.729108	Riverine	0.25	Non-Section 10 Non-Wetland
DD0020	-117.041919	33.729707	Riverine	0.09	Non-Section 10 Non-Wetland
DD0021	-117.045118	33.730255	Palustrine, emergent	0.01	Non-Section 10 Wetland
DD0022	-117.045193	33.730445	Palustrine, emergent	0.000	Non-Section 10 Wetland
DD0023	-117.046903	33.731048	Palustrine, emergent	0.07	Non-Section 10 Wetland
DD0024	-117.032631	33.731979	Riverine	0.09	Non-Section 10 Non-Wetland
DD0026	-117.041334	33.732833	Palustrine, emergent	0.07	Non-Section 10 Wetland
DD0027	-117.044437	33.732824	Palustrine, emergent	0.02	Non-Section 10 Wetland
DD0028	-117.043659	33.734178	Riverine	0.07	Non-Section 10 Non-Wetland
DD0029	-117.044141`	33.734682	Palustrine, emergent	0.22	Non-Section 10 Wetland
DD0030	-117.032605	33.735706	Riverine	0.02	Non-Section 10 Non-Wetland
DD0031	-117.040294	33.729285	Riverine	0.45	Non-Section 10 Non-Wetland
DD0032	-117.030569	33.736596	Riverine	0.32	Non-Section 10 Non-Wetland
DD0034	-117.041964	33.740618	Palustrine, emergent	1.16	Non-Section 10 Wetland
DD0035	-117.031916	33.744020	Riverine	0.02	Non-Section 10 Non-Wetland
DD0037	-117.036310	33.752307	Palustrine, emergent	0.22	Non-Section 10 Wetland
DD0042	-117.035949	33.769221	Riverine	0.23	Non-Section 10 Non-Wetland
DD0043	-117.033486	33.770884	Riverine	0.27	Non-Section 10 Non-Wetland
DD0044	-117.031959	33.771138	Palustrine, emergent	0.07	Non-Section 10 Wetland
DD0045	-117.033303	33.771224	Palustrine, emergent	0.22	Non-Section 10 Wetland
DD0046	-117.028818	33.772794	Riverine	0.12	Non-Section 10 Non-Wetland
DD0048	-117.034145	33.773077	Palustrine, emergent	0.03	Non-Section 10 Wetland
DD0049	-117.033340	33.773964	Palustrine, emergent	0.10	Non-Section 10 Wetland
DD0050	-117.033534	33.7763834	Riverine	0.32	Non-Section 10 Non-Wetland
DD0051	-117.029231	33.787336	Riverine	0.19	Non-Section 10 Non-Wetland
DD0054	-117.002192	33.801345	Riverine	0.10	Non-Section 10 Non-Wetland
DD0055	-117.007063	33.805520	Riverine	0.39	Non-Section 10 Non-Wetland
DD0056	-117.004840	33.809074	Riverine	1.02	Non-Section 10 Non-Wetland
DD0057	-117.006853	33.809236	Riverine	0.63	Non-Section 10 Non-Wetland

Table 1. Jurisdictional Waters of the U.S.

Site Number	Longitude	Latitude	Cowardin Class	Acres	Class of Aquatic Resource
DD0058	-117.003538	33.815721	Riverine	0.10	Non-Section 10 Non-Wetland
DD0060	-117.005329	33.817317	Riverine	0.02	Non-Section 10 Non-Wetland
DD0061	-117.006677	33.818325	Riverine	0.01	Non-Section 10 Non-Wetland
DD0062	-117.007693	33.818493	Riverine	0.21	Non-Section 10 Non-Wetland
DD0064	-117.003944	33.821906	Riverine	0.07	Non-Section 10 Non-Wetland
DD0065	-117.003552	33.821955	Riverine	0.15	Non-Section 10 Non-Wetland
DD0066	-117.006122	33.822772	Riverine	0.13	Non-Section 10 Non-Wetland
DD0069	-117.004135	33.830503	Palustrine, emergent	2.10	Non-Section 10 Wetland
DD0070	-117.004893	33.833378	Riverine	0.29	Non-Section 10 Non-Wetland
Hemet Channel	-117.060430	33.714488	Riverine	16.82	Non-Section 10 Wetland
Flood Control Channel	-117.037226	33.734813	Riverine	3.61	Non-Section 10 Non-Wetland
OW0001	-117.003148	33.830859	Palustrine	0.15	Non-Section 10 Non-Wetland
RP0001	-117.00250044	33.80134626	Palustrine, forested	0.52	Non-Section 10 Wetland
RP0002	-117.0073896	33.81870202	Palustrine, forested	2.60	Non-Section 10 Wetland
RP0003	-117.0031455	33.83072596	Palustrine, forested	2.29	Non-Section 10 Wetland
RP0004	-117.0039472	33.83113079	Palustrine, forested	0.84	Non-Section 10 Wetland
Salt Creek Channel	-117.085829	33.699035	Riverine	13.10	Non-Section 10 Wetland
SW0003	-117.0455854	33.708388	Palustrine, emergent	0.32	Non-Section 10 Wetland
SW0004	-117.0321510	33.717965	Palustrine, emergent	0.02	Non-Section 10 Wetland
SW0005	-117.0475113	33.719733	Palustrine, emergent	1.46	Non-Section 10 Wetland
SW0006	-117.0321569	33.720743	Palustrine, emergent	0.30	Non-Section 10 Wetland
SW0007	-117.0497368	33.723412	Palustrine, emergent	0.39	Non-Section 10 Wetland
SW0008	-117.0446427	33.725500	Palustrine, emergent	0.15	Non-Section 10 Wetland
SW0009	-117.0449274	33.725644	Palustrine, emergent	1.01	Non-Section 10 Wetland
SW0010	-117.0448578	33.726040	Palustrine, emergent	0.07	Non-Section 10 Wetland
SW0011	-117.049693	33.727819	Palustrine, emergent	0.05	Non-Section 10 Wetland
SW0012	-117.0407819	33.728735	Palustrine, emergent	0.05	Non-Section 10 Wetland
SW0013	-117.0342729	33.733182	Palustrine, emergent	0.05	Non-Section 10 Wetland
SW0014	-117.0446441	33.734300	Palustrine, emergent	0.05	Non-Section 10 Wetland

Table 1. Jurisdictional Waters of the U.S.

Site Number	Longitude	Latitude	Cowardin Class	Acres	Class of Aquatic Resource
SW0015	-117.0313941	33.734494	Palustrine, emergent	0.15	Non-Section 10 Wetland
SW0018	-117.0522797	33.738439	Palustrine, emergent	1.14	Non-Section 10 Wetland
SW0020	-117.0395121	33.739647	Palustrine, emergent	0.001	Non-Section 10 Wetland
SW0021	-117.0393402	33.739787	Palustrine, emergent	0.000	Non-Section 10 Wetland
SW0022	-117.0400005	33.740080	Palustrine, emergent	0.002	Non-Section 10 Wetland
SW0023	-117.0414056	33.742853	Palustrine, emergent	0.01	Non-Section 10 Wetland
SW0024	-117.033243	33.743518	Palustrine, emergent	0.17	Non-Section 10 Wetland
SW0025	-117.0402312	33.743495	Palustrine, emergent	0.02	Non-Section 10 Wetland
SW0026	-117.0401552	33.744305	Palustrine, emergent	0.12	Non-Section 10 Wetland
SW0027	-117.0415994	33.745068	Palustrine, emergent	1.41	Non-Section 10 Wetland
SW0029	-117.0375078	33.755610	Palustrine, emergent	1.8	Non-Section 10 Wetland
SW0030	-117.0374970	33.755915	Palustrine, emergent	0.05	Non-Section 10 Wetland
SW0031	-117.0350771	33.773151	Palustrine, emergent	0.02	Non-Section 10 Wetland
SW0032	-117.0321510	33.717965	Palustrine, emergent	0.35	Non-Section 10 Wetland
SW0033	-117.0299197	33.785047	Palustrine, emergent	0.15	Non-Section 10 Wetland
SW0034	-117.0307131	33.787196	Palustrine, emergent	0.02	Non-Section 10 Wetland
SW0035	-117.0051338	33.817677	Palustrine, emergent	0.15	Non-Section 10 Wetland
SW0036	-117.0065883	33.823410	Palustrine, emergent	0.05	Non-Section 10 Wetland
SW0037	-117.0052525	33.823423	Palustrine, emergent	0.40	Non-Section 10 Wetland
SW0038	-117.0039129	33.829631	Palustrine, emergent	0.15	Non-Section 10 Wetland
SW0039	-117.0038795	33.832093	Palustrine, emergent	0.57	Non-Section 10 Wetland
VP0002	-117.050887	33.722207	Palustrine, emergent	0.22	Non-Section 10 Wetland
VP0003	-117.045150	33.722314	Palustrine, emergent	0.004	Non-Section 10 Wetland
VP0004	-117.044967	33.722379	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0005	-117.044970	33.722405	Palustrine, emergent	0.004	Non-Section 10 Wetland
VP0006	-117.050732	33.722516	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0007	-117.050840	33.722549	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0008	-117.050946	33.722553	Palustrine, emergent	0.002	Non-Section 10 Wetland
VP0009	-117.050717	33.722579	Palustrine, emergent	0.07	Non-Section 10 Wetland

Table 1. Jurisdictional Waters of the U.S.

Site Number	Longitude	Latitude	Cowardin Class	Acres	Class of Aquatic Resource
VP0010	-117.052015	33.722590	Palustrine, emergent	0.89	Non-Section 10 Wetland
VP0011	-117.042342	33.722726	Palustrine, emergent	0.004	Non-Section 10 Wetland
VP0012	-117.043874	33.722815	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0013	-117.0510080	33.722900	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0014	-117.052049	33.723188	Palustrine, emergent	0.79	Non-Section 10 Wetland
VP0015	-117.050848	33.723447	Palustrine, emergent	0.45	Non-Section 10 Wetland
VP0016	-117.051965	33.723664	Palustrine, emergent	0.05	Non-Section 10 Wetland
VP0017	-117.045609	33.725182	Palustrine, emergent	0.30	Non-Section 10 Wetland
VP0018	-117.044474	33.725305	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0019	-117.047154	33.725898	Palustrine, emergent	0.37	Non-Section 10 Wetland
VP0020	-117.041211	33.726456	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0021	-117.040945	33.727124	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0022	-117.040940	33.727214	Palustrine, emergent	0.002	Non-Section 10 Wetland
VP0023	-117.040906	33.727346	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0024	-117.049656	33.727918	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0025	-117.046728	33.727938	Palustrine, emergent	0.67	Non-Section 10 Wetland
VP0026	-117.049395	33.728101	Palustrine, emergent	0.07	Non-Section 10 Wetland
VP0027	-117.040729	33.728532	Palustrine, emergent	0.002	Non-Section 10 Wetland
VP0028	-117.047751	33.729311	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0029	-117.043696	33.729657	Palustrine, emergent	0.002	Non-Section 10 Wetland
VP0030	-117.047686	33.729725	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0031	-117.043690	33.729896	Palustrine, emergent	0.05	Non-Section 10 Wetland
VP0032	-117.028332	33.730081	Palustrine, emergent	5.80	Non-Section 10 Wetland
VP0033	-117.037120	33.730153	Palustrine, emergent	0.40	Non-Section 10 Wetland
VP0034	-117.036862	33.730319	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0035	-117.043730	33.730279	Palustrine, emergent	0.10	Non-Section 10 Wetland
VP0036	-117.047393	33.730358	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0037	-117.036629	33.730497	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0038	-117.044855	33.730600	Palustrine, emergent	0.05	Non-Section 10 Wetland

Table 1. Jurisdictional Waters of the U.S.

Site Number	Longitude	Latitude	Cowardin Class	Acres	Class of Aquatic Resource
VP0039	-117.036545	33.730664	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0040	-117.036323	33.730750	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0041	-117.045740	33.730721	Palustrine, emergent	6.67	Non-Section 10 Wetland
VP0042	-117.036191	33.730921	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0043	-117.046726	33.731075	Palustrine, emergent	0.77	Non-Section 10 Wetland
VP0044	-117.036209	33.731141	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0045	-117.046850	33.731575	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0046	-117.042608	33.731732	Palustrine, emergent	6.77	Non-Section 10 Wetland
VP0047	-117.032038	33.732000	Palustrine, emergent	0.25	Non-Section 10 Wetland
VP0048	-117.033743	33.732009	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0049	-117.046756	33.731993	Palustrine, emergent	0.10	Non-Section 10 Wetland
VP0050	-117.047137	33.732025	Palustrine, emergent	0.05	Non-Section 10 Wetland
VP0051	-117.033634	33.732239	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0052	-117.047198	33.732246	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0053	-117.046932	33.732419	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0054	-117.031939	33.732539	Palustrine, emergent	1.04	Non-Section 10 Wetland
VP0055	-117.037932	33.732574	Palustrine, emergent	0.10	Non-Section 10 Wetland
VP0056	-117.046823	33.7326592	Palustrine, emergent	0.05	Non-Section 10 Wetland
VP0057	-117.045729	33.732606	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0058	-117.046110	33.732697	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0058a	-117.047083	33.732729	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0059	-117.046199	33.732728	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0060	-117.046934	33.732735	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0061	-117.036171	33.732983	Palustrine, emergent	0.05	Non-Section 10 Wetland
VP0062	-117.031768	33.733217	Palustrine, emergent	1.66	Non-Section 10 Wetland
VP0063	-117.041826	33.733314	Palustrine, emergent	3.34	Non-Section 10 Wetland
VP0064	-117.035228	33.733387	Palustrine, emergent	0.004	Non-Section 10 Wetland
VP0065	-117.045636	33.733364	Palustrine, emergent	1.24	Non-Section 10 Wetland
VP0066	-117.047037	33.733577	Palustrine, emergent	2.62	Non-Section 10 Wetland

Table 1. Jurisdictional Waters of the U.S.

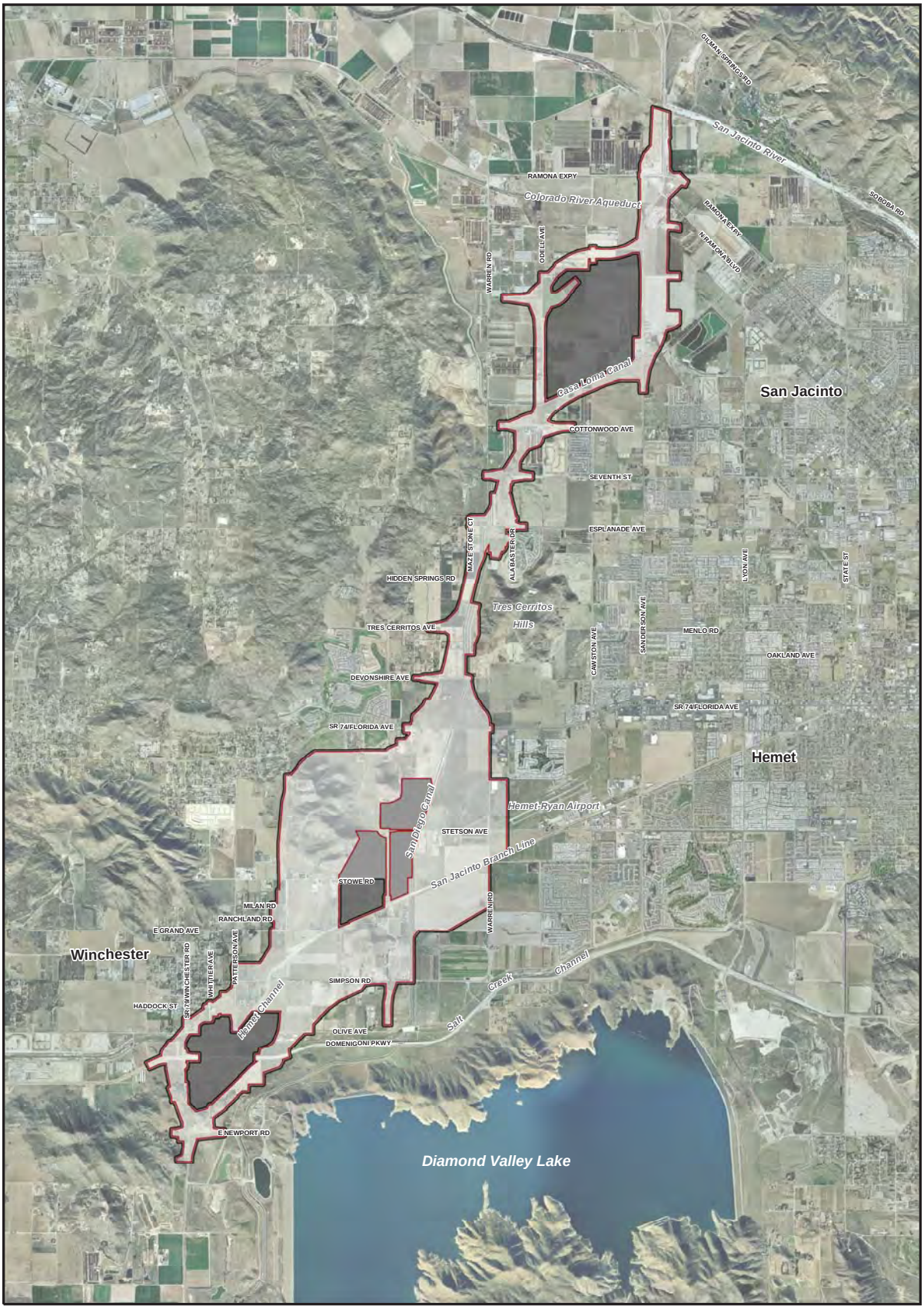
Site Number	Longitude	Latitude	Cowardin Class	Acres	Class of Aquatic Resource
VP0067	-117.033714	33.733689	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0069	-117.033418	33.734127	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0070	-117.034374	33.734170	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0074	-117.039044	33.734502	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0076	-117.033285	33.734567	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0078	-117.039136	33.735090	Palustrine, emergent	0.17	Non-Section 10 Wetland
VP0079	-117.041689	33.735210	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0080	-117.041504	33.735710	Palustrine, emergent	0.002	Non-Section 10 Wetland
VP0081	-117.041436	33.735892	Palustrine, emergent	0.002	Non-Section 10 Wetland
VP0082	-117.041324	33.736144	Palustrine, emergent	0.004	Non-Section 10 Wetland
VP0083	-117.036804	33.744249	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0084	-117.037231	33.744279	Palustrine, emergent	0.004	Non-Section 10 Wetland
VP0085	-117.038158	33.745041	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0087	-117.037889	33.745491	Palustrine, emergent	0.05	Non-Section 10 Wetland
VP0088	-117.037546	33.745736	Palustrine, emergent	0.05	Non-Section 10 Wetland
VP0095	-117.036294	33.749400	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0096	-117.031739	33.769090	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0097	-117.033081	33.769112	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0098	-117.032978	33.769290	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0099	-117.031612	33.769450	Palustrine, emergent	0.002	Non-Section 10 Wetland
VP0100	-117.031378	33.769555	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0101	-117.032382	33.769553	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0102	-117.032596	33.769742	Palustrine, emergent	0.000	Non-Section 10 Wetland
VP0103	-117.032248	33.769936	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0104	-117.033082	33.769977	Palustrine, emergent	0.07	Non-Section 10 Wetland
VP0105	-117.031586	33.770017	Palustrine, emergent	0.44	Non-Section 10 Wetland
VP0106	-117.032355	33.770077	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0107	-117.032315	33.770204	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0108	-117.032467	33.770788	Palustrine, emergent	1.90	Non-Section 10 Wetland

Table 1. Jurisdictional Waters of the U.S.

Site Number	Longitude	Latitude	Cowardin Class	Acres	Class of Aquatic Resource
VP0109	-117.034721	33.773603	Palustrine, emergent	1.98	Non-Section 10 Wetland
VP0110	-117.034583	33.773989	Palustrine, emergent	0.01	Non-Section 10 Wetland
VP0111	-117.034816	33.774069	Palustrine, emergent	0.02	Non-Section 10 Wetland
VP0112	-117.029879	33.783131	Palustrine, emergent	0.02	Non-Section 10 Non-Wetland

Table 2. Non-Jurisdictional Isolated Wetlands

Wetland ID	Figure	Roadway Segment	Acreage	Latitude	Longitude
AW0001	E-1a	B	0.02	33.686084	-117.080038
AW0003	E-1b	East of AllSA 1	0.4	33.718689	-117.043245
AW0004	E-1b	East of AllSA1	0.12	33.719603	-117.041935
AW0005	E-1b	East of AllSA 1	6.94	33.719678	-117.035716
AW0006	E-1b	East of AllSA 1	0.44	33.720001	-117.040581
AW0007	E-1b	East of AllSA 1	0.27	33.720666	-117.040018
AW0008	E-1b	East of Al ISA 1	0.44	33.721395	-117.038729
AW0009	E-1d	AllSA1	0.35	33.73666	-117.045617
AW0016	E-1e	M	0.12	33.794248	-117.008124
CP0001	E-1e	J, K	0.4	33.7802	-117.029137
CP0003	E-1e	M	0.35	33.794664	-117.010302
CP0004	E-1e, E-1f	M	3.36	33.799923	-117.004683
CP0008	E-1f	L, M	0.52	33.818146	-117.004666
SW0016	E-1d	East of AllSA 1	0.32	33.734494	-117.031394
SW0017	E-1d	East of Al ISA 1	0.02	33.734598	-117.030218
SW0019	E-1d	G,H	0.12	33.738439	-117 .052279
SW0028	E-1d	West of AllSA1	0.25	33.745065	-117.0416
VP0001	E-1a	South of AllSA 1	0.51	33.718934	-117 .059853
VP0068	E-1d	East of AllSA1	0.04	33.733942	-117.030191
VP0071	E-1d	East of AllSA 1	0.01	33.734271	-117 .030286
VP0072	E-1d	East of Al ISA 1	0.02	33.734434	-117.030003
VP0073	E-1d	East of AllSA 1	0.002	33.73452	-117.02974
VP0075	E-1d	East of AllSA 1	0.002	33.734588	-117 .029605
VP0077	E-1d	East of AllSA 1	0.02	33.734611	-117 .029735
VP0086	E-1d	West of AllSA1	0.05	33.745254	-117 .040366
VP0089	E-1d	West of AllSA1	0.22	33.745965	-117.041744
VP0090	E-1d	West of AllSA1	0.004	33.746368	-117 .038888
VP0091	E-1d	West of AllSA1	0.01	33.7479	-117.039252
VP0092	E-1d	West of AllSA1	0.02	33.748703	-117.038781
VP0093	E-1d	West of AllSA1	0.05	33.748731	-117.038322
VP0094	E-1d	West of AllSA1	0.004	33.7488	-117.038684



Aerial Date: February 2006, AirPhotoUSA

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LEGEND

- Biological Direct Impact Study Area[CH]
- Wetland Indirect Impact Study Area[CH]
- Outside Study Area[CH]

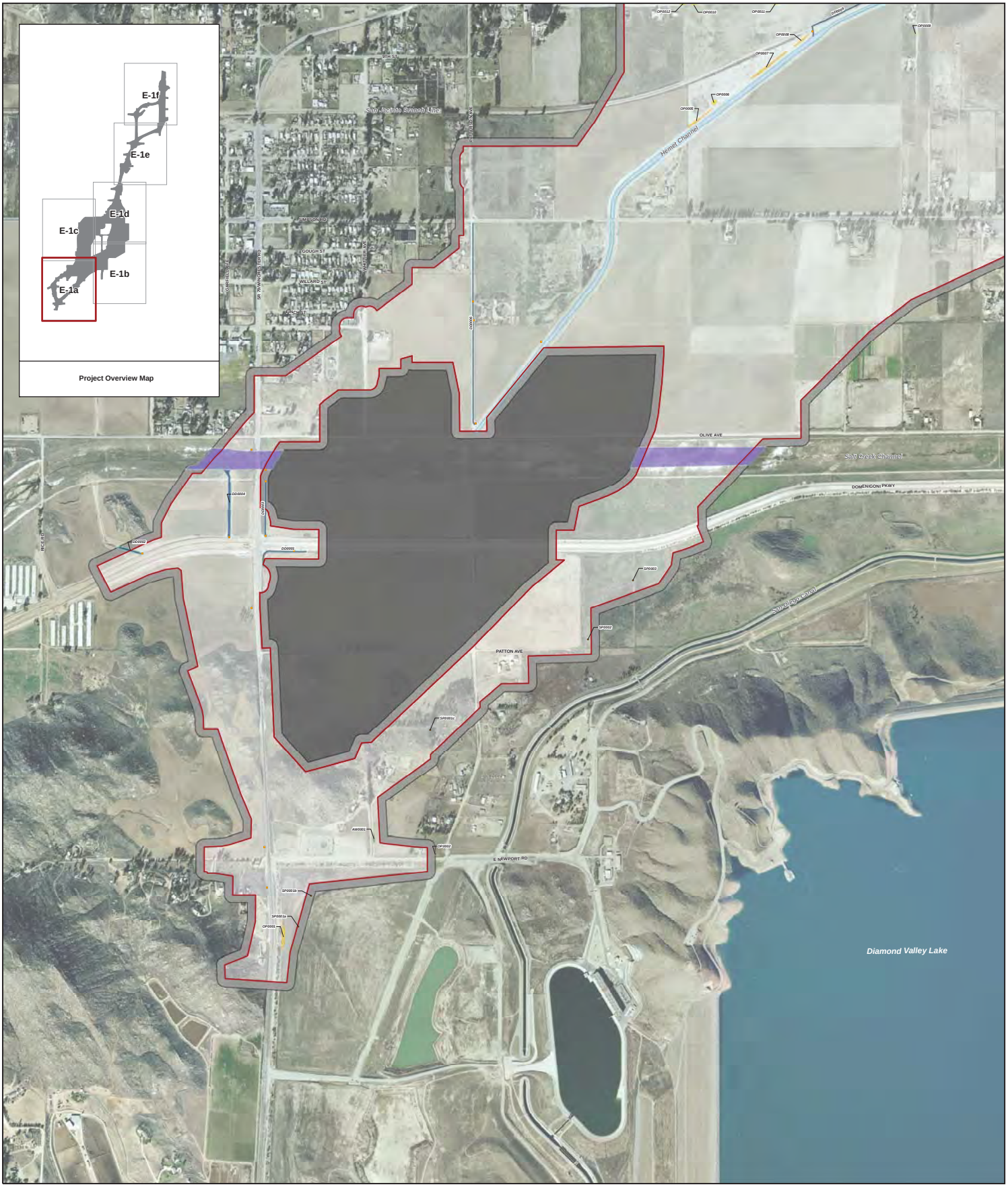
0 5,000 Feet

0 1,000 Meters

1:60,000

Source: CH - CH2M HILL

Figure 1.2-1
Wetlands Study Area
Final Jurisdictional Wetland and Other Waters Delineation Report
State Route 79 Realignment Project



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LEGEND

- Biological Direct Impact Survey Area[CH]
- Wetland Indirect Impact Study Area[CH]
- Outside Study Area[CH]
- Culvert Point[CH]
- Soil Sample Point[CH]

Potential Jurisdictional Features[CH]

- Drainage Ditch
- Drainage Ditch
- Hemet Channel
- Flood Control Channel
- Salt Creek Channel
- Open Water
- Constructed Pond
- Vernal Pool
- Agricultural Seasonal Wetland
- Seasonal Wetland
- Vernal Pool
- Riparian

Potential Non-Jurisdictional Features[CH]

- Sample Point
- Erosional Drainage
- Drainage Ditch
- Seasonal Swale
- Storm Water Retention Basin
- Other Ponding
- Constructed Treatment Wetland/Pond
- Agricultural Settling Basin
- Alkali Grassland
- Alkali Playa

Potentially Isolated Wetlands[CH]

- Agricultural Seasonal Wetland
- Constructed Pond
- Seasonal Wetland
- Vernal Pool

0 400 800 Feet

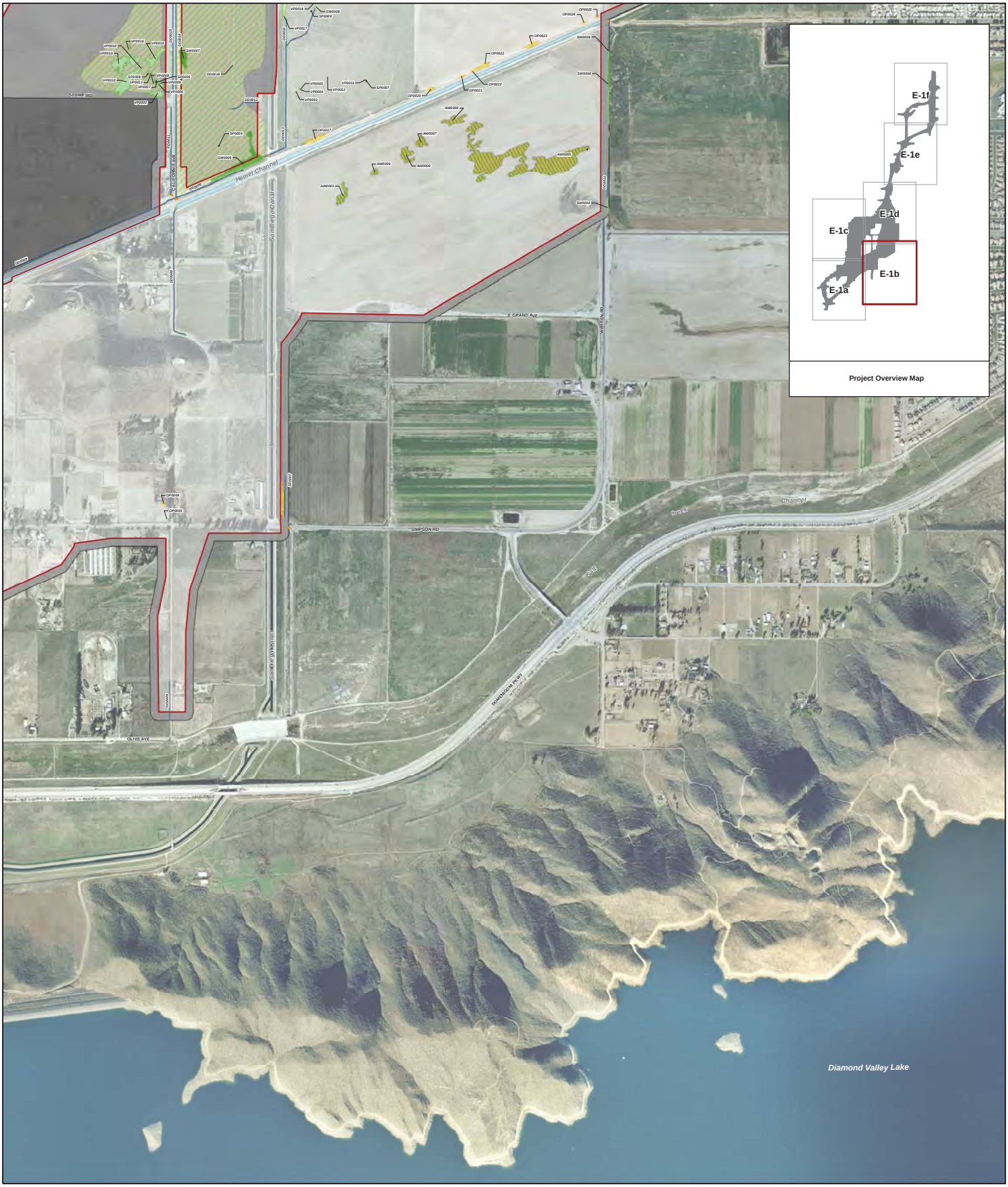
0 80 160 Meters

1:4,800

Source: CH - CH2M HILL

Figure E-1a
Wetlands and Other Waters

Final Jurisdictional Wetland and Other Waters Delineation Report
State Route 79 Realignment Project



Aerial Date: February 2006, AirPhotoUSA

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LEGEND

- Biological Direct Impact Survey Area[CH]
- Wetland Indirect Impact Study Area[CH]
- Outside Study Area[CH]
- Culvert Point[CH]
- Soil Sample Point[CH]

Potential Jurisdictional Features[CH]

- Drainage Ditch
- Drainage Ditch
- Hemet Channel
- Flood Control Channel
- Salt Creek Channel
- Open Water
- Constructed Pond
- Vernal Pool
- Agricultural Seasonal Wetland
- Seasonal Wetland
- Vernal Pool
- Riparian

Potential Non-Jurisdictional Features[CH]

- Sample Point
- Erosional Drainage
- Drainage Ditch
- Seasonal Swale
- Storm Water Retention Basin
- Other Ponding
- Constructed Treatment Wetland/Pond
- Agricultural Settling Basin
- Alkali Grassland
- Alkali Playa

Potentially Isolated Wetlands[CH]

- Agricultural Seasonal Wetland
- Constructed Pond
- Seasonal Wetland
- Vernal Pool

0 400 800 Feet

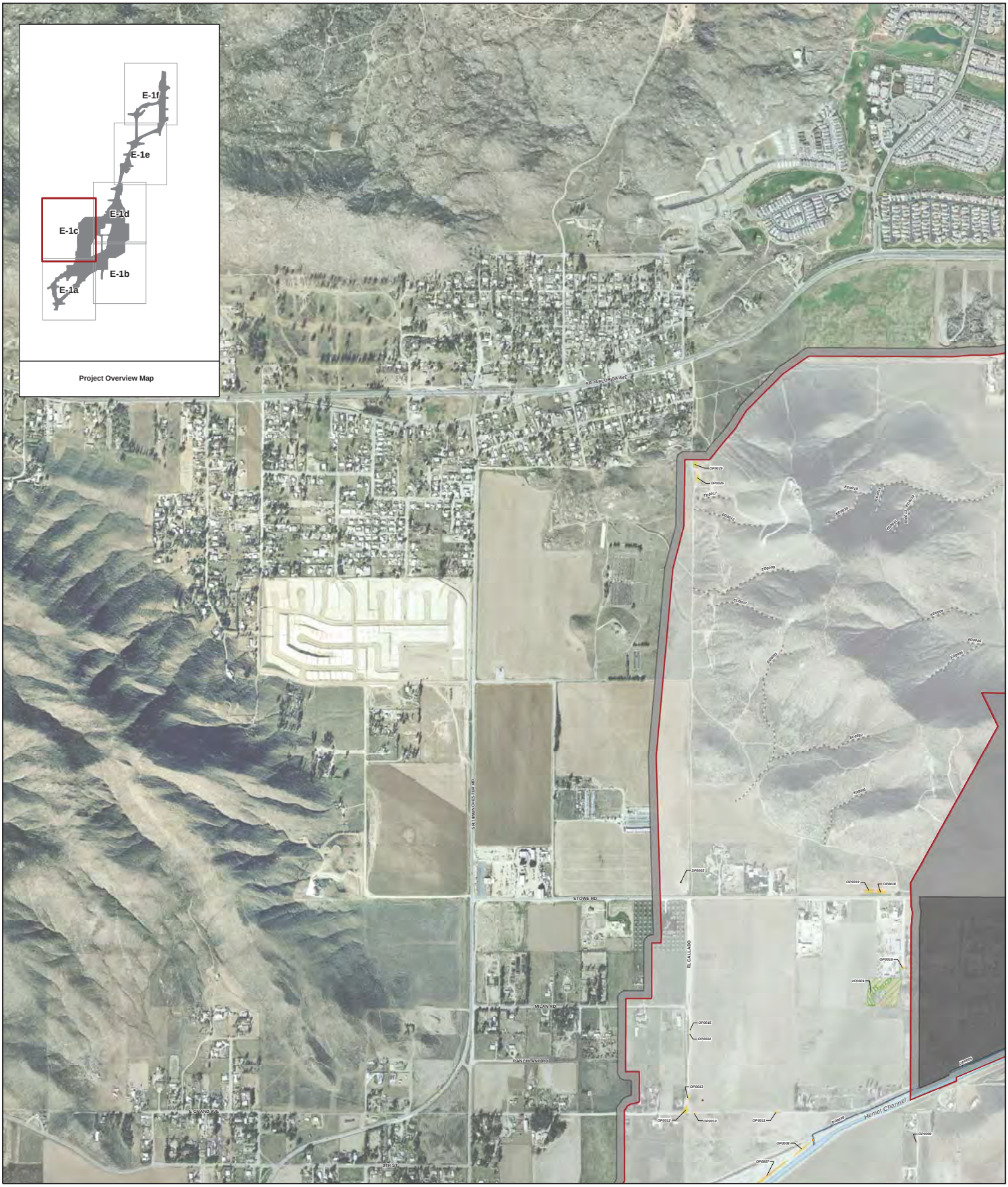
0 80 160 Meters

1:4,800

Source: CH - CH2M HILL

Figure E-1b
Wetlands and Other Waters

Final Jurisdictional Wetland and Other Waters Delineation Report
State Route 79 Realignment Project



Aerial Date: February 2006, AirPhotoUSA

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LEGEND

- Biological Direct Impact Survey Area[CH]
- Wetland Indirect Impact Study Area[CH]
- Outside Study Area[CH]
- Culvert Point[CH]
- Soil Sample Point[CH]

Potential Jurisdictional Features[CH]

- Drainage Ditch
- Drainage Ditch
- Hemet Channel
- Flood Control Channel
- Salt Creek Channel
- Open Water
- Constructed Pond
- Vernal Pool
- Agricultural Seasonal Wetland
- Seasonal Wetland
- Vernal Pool
- Riparian

Potential Non-Jurisdictional Features[CH]

- Sample Point
- Erosional Drainage
- Drainage Ditch
- Seasonal Swale
- Storm Water Retention Basin
- Other Ponding
- Constructed Treatment Wetland/Pond
- Agricultural Settling Basin
- Alkali Grassland
- Alkali Playa

Potentially Isolated Wetlands[CH]

- Agricultural Seasonal Wetland
- Constructed Pond
- Seasonal Wetland
- Vernal Pool

0 400 800 Feet

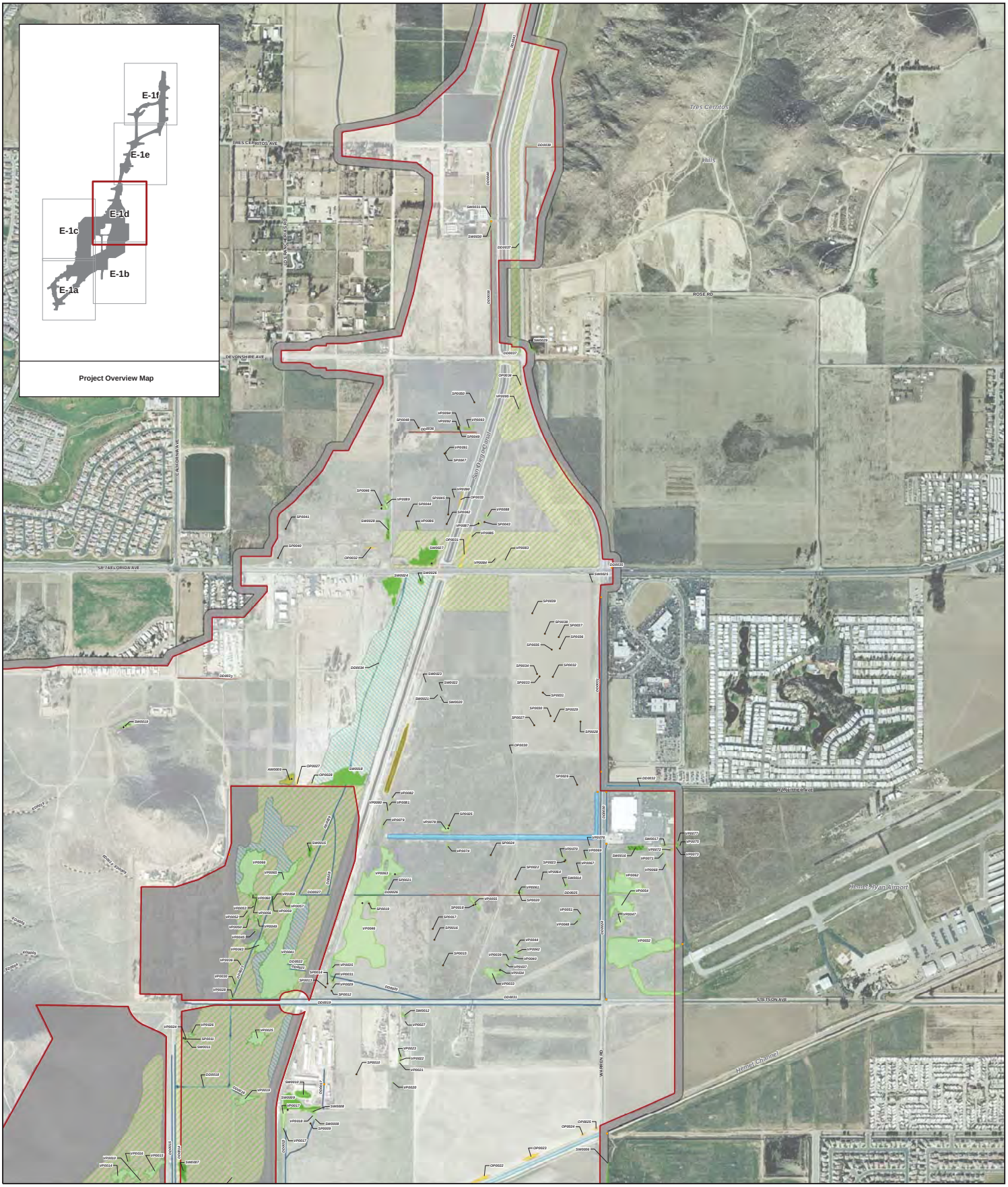
0 80 160 Meters

1:4,800

Source: CH - CH2M HILL

Figure E-1c
Wetlands and Other Waters

Final Jurisdictional Wetland and Other Waters Delineation Report
State Route 79 Realignment Project



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LEGEND

- Biological Direct Impact Survey Area[CH]
- Wetland Indirect Impact Study Area[CH]
- Outside Study Area[CH]
- Culvert Point[CH]
- Soil Sample Point[CH]

Potential Jurisdictional Features[CH]

- Drainage Ditch
- Drainage Ditch
- Hemet Channel
- Flood Control Channel
- Salt Creek Channel
- Open Water
- Constructed Pond
- Vernal Pool
- Agricultural Seasonal Wetland
- Seasonal Wetland
- Vernal Pool
- Riparian

Potential Non-Jurisdictional Features[CH]

- Sample Point
- Erosional Drainage
- Drainage Ditch
- Seasonal Swale
- Storm Water Retention Basin
- Other Ponding
- Constructed Treatment Wetland/Pond
- Agricultural Settling Basin
- Alkali Grassland
- Alkali Playa

Potentially Isolated Wetlands[CH]

- Agricultural Seasonal Wetland
- Constructed Pond
- Seasonal Wetland
- Vernal Pool

0 400 800 Feet

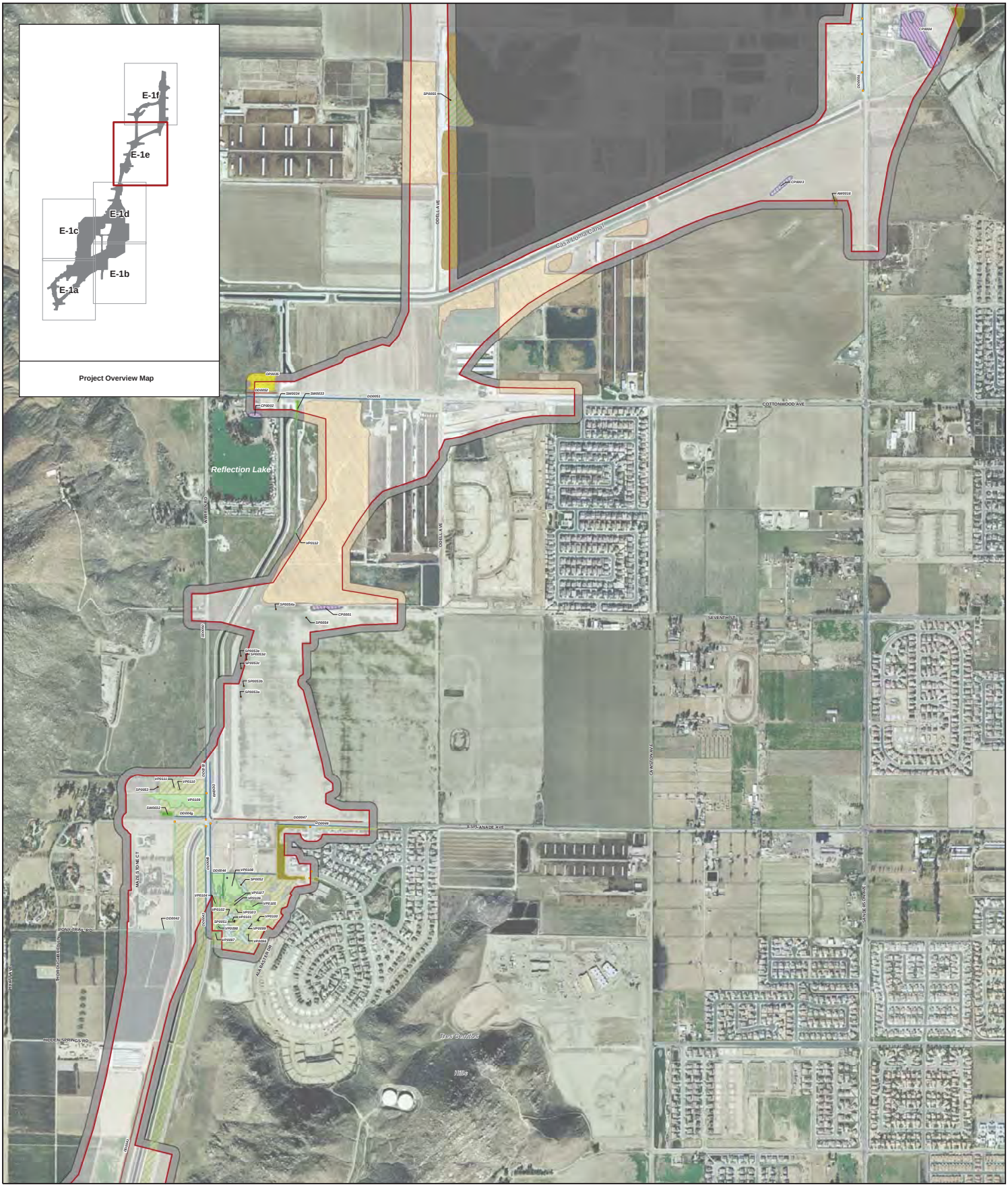
0 80 160 Meters

1:4,800

Source: CH - CH2M HILL

Figure E-1d
Wetlands and Other Waters

Final Jurisdictional Wetland and Other Waters Delineation Report
State Route 79 Realignment Project



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LEGEND

- Biological Direct Impact Survey Area[CH]
- Wetland Indirect Impact Study Area[CH]
- Outside Study Area[CH]
- Culvert Point[CH]
- Soil Sample Point[CH]

Potential Jurisdictional Features[CH]

- Drainage Ditch
- Drainage Ditch
- Hemet Channel
- Flood Control Channel
- Salt Creek Channel
- Open Water
- Constructed Pond
- Vernal Pool
- Agricultural Seasonal Wetland
- Seasonal Wetland
- Vernal Pool
- Riparian

Potential Non-Jurisdictional Features[CH]

- Sample Point
- Erosional Drainage
- Drainage Ditch
- Seasonal Swale
- Storm Water Retention Basin
- Other Ponding
- Constructed Treatment Wetland/Pond
- Agricultural Settling Basin
- Alkali Grassland
- Alkali Playa

Potentially Isolated Wetlands[CH]

- Agricultural Seasonal Wetland
- Constructed Pond
- Seasonal Wetland
- Vernal Pool

0 400 800 Feet

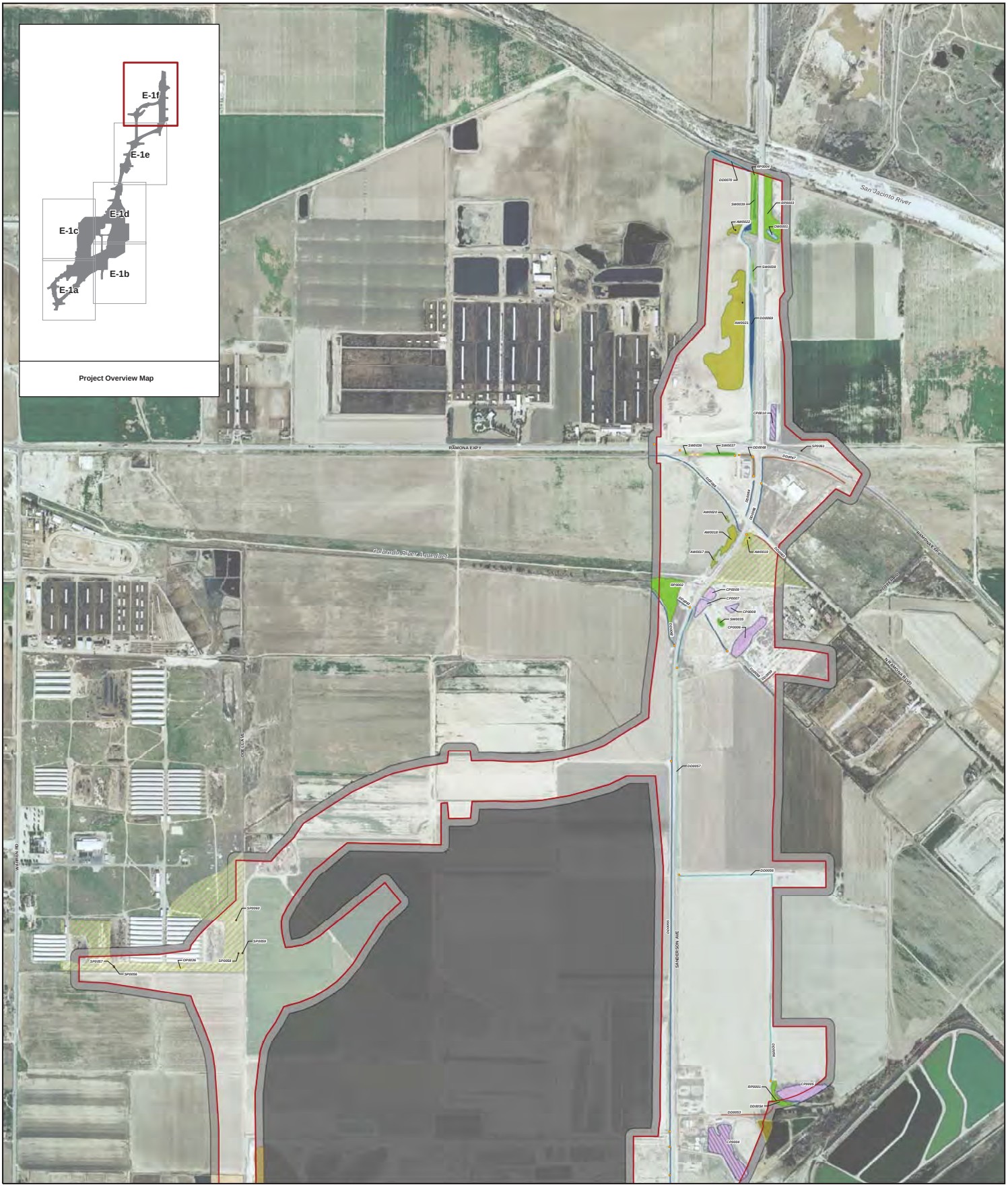
0 80 160 Meters

1:4,800

Source: CH - CH2M HILL

Figure E-1e
Wetlands and Other Waters

Final Jurisdictional Wetland and Other Waters Delineation Report
State Route 79 Realignment Project



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LEGEND

- Biological Direct Impact Survey Area[CH]
- Wetland Indirect Impact Study Area[CH]
- Outside Study Area[CH]
- Culvert Point[CH]
- Soil Sample Point[CH]

Potential Jurisdictional Features[CH]

- Drainage Ditch
- Drainage Ditch
- Hemet Channel
- Flood Control Channel
- Salt Creek Channel
- Open Water
- Constructed Pond
- Vernal Pool
- Agricultural Seasonal Wetland
- Seasonal Wetland
- Vernal Pool
- Riparian

Potential Non-Jurisdictional Features[CH]

- Sample Point
- Erosional Drainage
- Drainage Ditch
- Seasonal Swale
- Storm Water Retention Basin
- Other Ponding
- Constructed Treatment Wetland/Pond
- Agricultural Settling Basin
- Alkali Grassland
- Alkali Playa

Potentially Isolated Wetlands[CH]

- Agricultural Seasonal Wetland
- Constructed Pond
- Seasonal Wetland
- Vernal Pool

0 400 800 Feet

0 80 160 Meters

1:4,800

Source: CH - CH2M HILL

Figure E-1f
Wetlands and Other Waters

Final Jurisdictional Wetland and Other Waters Delineation Report
State Route 79 Realignment Project

Coordination with the

United States Army Corps of Engineers

Approved Jurisdictional Determination

April 14, 2011

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DEPARTMENT OF THE ARMY

RECEIVED
APR 19 2011
REGULATORY DIVISION
LOS ANGELES OFFICE

April 14, 2011

REPLY TO
ATTENTION OF
Office of the Chief
Regulatory Division

Scott Quinnell
California Department of Transportation, District 8
c/o CH2MHILL
Attention: Carolyn Washburn
3 Hutton Centre Drive Ste 200
Santa Ana, California 92707-8794

SUBJECT: Approved Jurisdictional Determination regarding presence/absence of geographic jurisdiction

Dear Mr. Quinnell:

Reference is made to your request (File No. SPL-2004-00289-SJH) dated October 8, 2008, requesting verification of the jurisdictional limits of the Section 404 of the Clean Water Act (CWA) for a number of water bodies, tributaries and wetlands occurring within the State Route 79 (SR-79 Realignment Project study area located between Domenigoni Parkway and Gilman Springs Road, in the Cities of Hemet and San Jacinto, and the County of Riverside, California. Your jurisdictional determination verification request is a formal concurrence point specified in the multi-agency collaborative process to integrate and streamline the requirements of the National Environmental Policy Act and Section 404 of the CWA for Surface Transportation Projects in the State of California. This letter of verification fulfills this concurrence point.

This letter contains an approved jurisdictional determination of the SR-79 Realignment Project. As you may know, the Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, then a permit is required. The first test determines whether or not the proposed project is located in a water of the United States (i.e., it is within the Corps' geographic jurisdiction). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the River and Harbor Act or Section 404 of the Clean Water Act. As part of the evaluation process, pertaining to the first test only, we have made the jurisdictional determination below.

Based on our May 17, 2006 site visit and information furnished to our office, including the September 2008 jurisdictional delineation report entitled *"State Route 79 Realignment Project: Domenigoni Parkway to Gilman Springs Road, Final Jurisdictional Wetland and Other Waters Delineation Report,"* we have determined there are waters of the United States on the project site, as well as non-jurisdictional aquatic resources, and that your proposed project does discharge dredged or fill material into a water of the United States (U.S.). Therefore, the project is subject to our jurisdiction under Section 404 of the Clean Water Act (CWA) and a Department of the Amy (DA) permit is required from our office. According to the delineation report, realignment of the SR-79 would result in the placement of fill material into the following water bodies, tributaries, and adjacent wetlands: San Jacinto River, Salt Creek

Channel, and Hemet Channel. Preliminary estimates indicate a range of approximately 21.73 to 24.66 acres of waters of the U.S., including wetlands, would be permanently impacted by the proposed SR-79 realignment, depending on the alternative selected. Similarly, approximately 2.85 to 4.47 acres of waters of the U.S., including wetlands, would be temporarily impacted.

The enclosed tables list the waters of the United States, including wetlands, regulated by Section 404 of the CWA. Specifically, Table 1 identifies the permanent and temporary direct impacts to jurisdictional waters of the U.S, including wetlands, occurring within each of the proposed SR-79 project alternatives under consideration, Table 2 identifies permanent direct impacts to jurisdictional waters of the U.S. within the San Jacinto Watershed and Associated Hydrologic Sub-Areas, and Table 3 identifies watersheds and drainages and the maximum temporary impacts associated. Table 4 identifies Isolated Wetlands. The aquatic resources identified in Table 4 as Isolated Wetlands, are intrastate isolated waters with no apparent interstate or foreign commerce connection. As such, these waters are not currently regulated by the Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Clean Water Act. Other Federal, State, and local laws may apply to your activities. In particular, you may need authorization from the California State Water Resources Control Board and/or the U.S. Fish and Wildlife Service. Table 5 identifies all jurisdictional wetland and non-wetland waters. All tables referenced in this letter correspond to figures and maps compiled in the SR-79 Realignment Project, Final Jurisdictional Wetland and Other Waters Delineation Report (Caltrans, September 2008). The subject report will be retained in our office files as part of the project's official administrative record and the Corps' approved jurisdictional delineation/determination.

This delineation/determination has been conducted to identify the limits of the Corps jurisdiction for the particular site indentified in this request. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in the USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

This letter contains an approved jurisdictional determination for the SR 79 Realignment Project, Domenigoni Parkway to Gilman Springs Road, in the Cities of Hemet and San Jacinto, and the County of Riverside, California If you object to this decision, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet (Appendix A) and Request for Appeal (RFA) form. If you request to appeal this decision you must submit a completed RFA form to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh
Administrative Appeal Review Officer,
U.S. Army Corps of Engineers
South Pacific Division, CESPD-PDS-O, 2042B
1455 Market Street, San Francisco, California 94103-1399

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. Part 331.5, and that it has been received by the Division Office within 60 days of the date on the NAP. Should you decide to

submit an RFA form, it must be received at the above address by May 16, 2011. It is not necessary to submit an RFA form to the Division office if you do not object to the decision in this letter.

This verification is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. If you wish to submit new information regarding the approved jurisdictional determination for this site, please submit this information to Stephanie Hall at the letterhead address by May 16, 2011. The Corps will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. A revised or reissued jurisdictional determination can be appealed as described above.

If you have any questions, please contact Stephanie Hall of my staff at 213-452-3410 or via e-mail at Stephanie.J.Hall@usace.army.mil.

Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Mark D. Cohen
Deputy Chief, Regulatory Division

Enclosures

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Scott Quinnell, California Department of Transportation, District 8	File Number: SPL-2004-00289-SJH	Date:04/14/2011

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

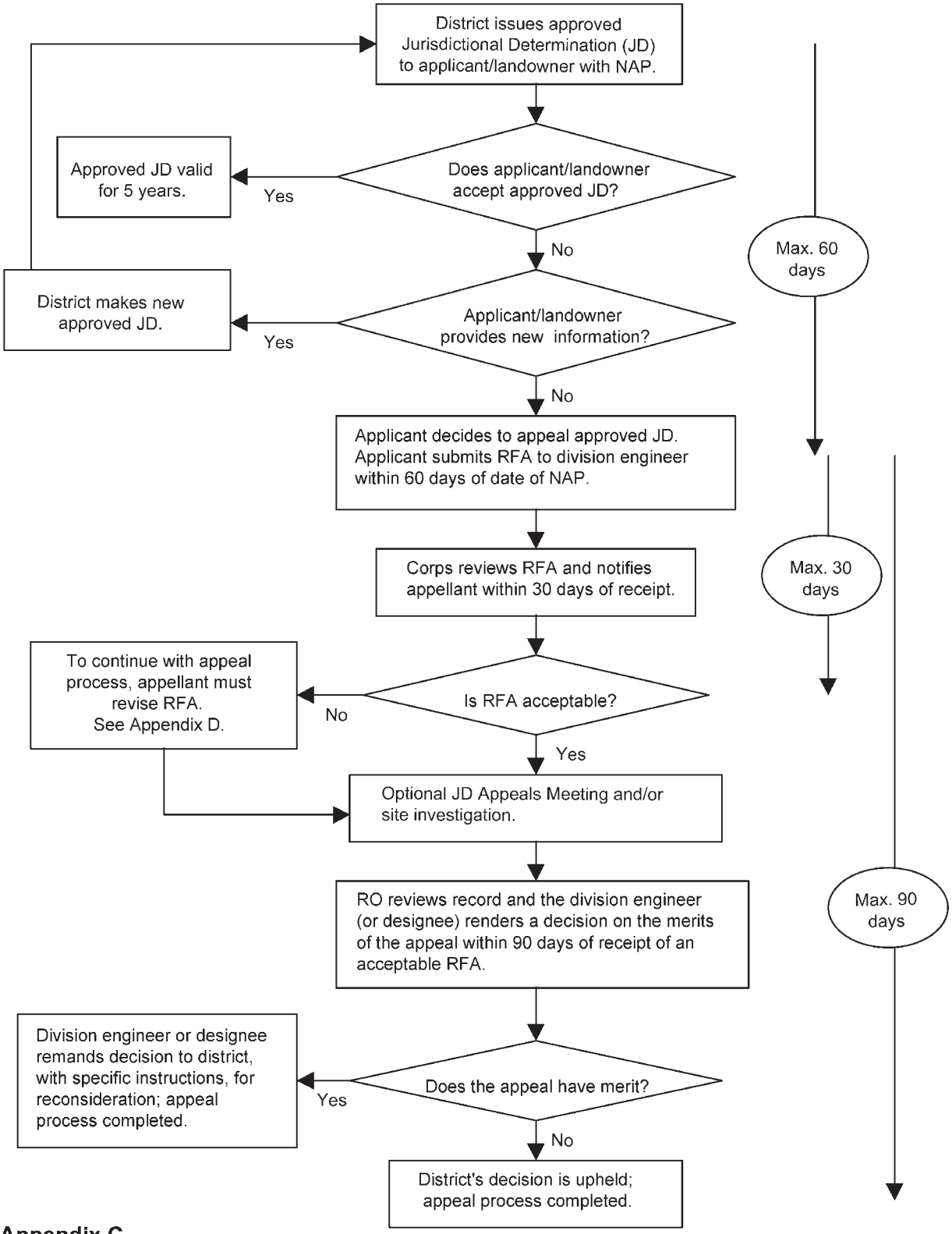
D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT		
REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)		
ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.		
POINT OF CONTACT FOR QUESTIONS OR INFORMATION:		
If you have questions regarding this decision and/or the appeal process you may contact: DISTRICT ENGINEER Los Angeles District, Corps of Engineers ATTN: Chief, Regulatory Division P.O. Box 532711 Los Angeles, CA 90053-2325 Tel. (213) 452-3425	If you only have questions regarding the appeal process you may also contact: DIVISION ENGINEER South Pacific Division, Corps of Engineers ATTN: Tom Cavanaugh Administrative Appeal Review Officer, South Pacific Division, CESPD-PDS-O, 2042B 1455 Market Street, San Francisco, California 94103-1399 Tel. (415) 503-6574	
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.		
_____ Signature of appellant or agent.	Date:	Telephone number:

Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

State Route 79 Summary Tables for Waters of the United States

TABLE 1.
Permanent and Temporary Direct Impacts to Jurisdictional Waters of the United States

	Build Alternative 1a	Build Alternative 1b	Build Alternative 2a	Build Alternative 2b
Permanent				
Waters [1]	7.72	10.76	7.59	10.97
Wetlands	13.55	11.57	11.71	13.69
Total	**21.27**	**22.33**	**19.30**	**24.66**
Temporary				
Waters [2]	0.29	1.00	2.14	1.64
Wetlands[3]	2.56	2.49	2.56	2.83
Total	**2.85**	**3.49**	**4.70**	**4.47**

[1] Permanent impacts to waters include drainage ditches and constructed ponds
[2] Temporary impacts to waters include the Salt Creek Channel and the Hemet Channel
[3]Wetlands include the vegetated portion of the Salt Creek Channel

TABLE 2.
Permanent Direct Impacts to Jurisdictional Waters of the United States within the San Jacinto Watershed (HUC 18070202) and Associated Hydrologic Sub-Areas

Hydrologic Sub-Areas		Build Alternative 1a	Build Alternative 1b	Build Alternative 2a	Build Alternative 2b
Gilman Hot Springs	Waters [1]	6.04	9.96	6.04	9.98
	Wetlands	11.39	11.39	11.53	11.53
	Total	**17.43**	**21.35**	**17.57**	**21.51**
Hemet	Waters[2]	0.96	0.80	0.80	0.96
	Wetlands	2.16	0.18	0.18	2.16
	Total	**3.12**	**0.98**	**0.98**	**3.12**
Winchester	Waters [2]	0.72	0	0.75	0.03
	Wetlands	0	0	0	0
	Total	**0.72**	**0**	**0.75**	**0.03**

[1] Permanent impacts to waters include drainage ditches and constructed ponds
[2] Permanent impacts to waters include only ditches

TABLE 3.
Watersheds and Drainages

Watershed/ Hydrologic Sub-area	Drainage	Latitude	Longitude	Wetland	Waters	Total
San Jacinto / Winchester	Salt Creek Channel	-117.08564	33.69903	2.83	0.32	3.15*
San Jacinto / Winchester	Hemet Channel	-117.065965	33.711204	0	1.85	1.85*

* Represents the maximum area of temporary impacts.

TABLE 4.
Isolated Wetland Included in the Wetland Delineation Report

Wetland ID	Figure[1]	Roadway Segment	Acreage[2]	Latitude	Longitude
VP0001	E-1a	South of AIISA1	0.51	33.718934	-117.059853
VP0068	E-1d	East of AIISA1	0.04	33.733942	-117.030191
VP0071	E-1d	East of AIISA1	0.01	33.734271	-117.030286
VP0072	E-1d	East of AIISA1	0.02	33.734434	-117.030003
VP0073	E-1d	East of AIISA1	0.002	33.734520	-117.029740
VP0075	E-1d	East of AIISA1	0.002	33.734588	-117.029605
VP0077	E-1d	East of AIISA1	0.02	33.734611	-117.029735
VP0086	E-1d	West of AIISA1	0.05	33.745254	-117.040366
VP0089	E-1d	West of AIISA1	0.22	33.745965	-117.041744
VP0090	E-1d	West of AIISA1	0.004	33.746368	-117.038888
VP0091	E-1d	West of AIISA1	0.01	33.747900	-117.039252
VP0092	E-1d	West of AIISA1	0.02	33.748703	-117.038781
VP0093	E-1d	West of AIISA1	0.05	33.748731	-117.038322
VP0094	E-1d	West of AIISA1	0.004	33.748800	-117.038684
SW0016	E-1d	East of AIISA1	0.32	33.734494	-117.031394
SW0017	E-1d	East of AIISA1	0.02	33.734598	-117.030218
SW0019	E-1d	G, H	0.12	33.738439	-117.052279
SW0028	E-1d	West of AIISA1	0.25	33.745065	-117.041600
AW0001	E-1a	B	0.02	33.686084	-117.080038
AW0003	E-1b	East of AIISA1	0.40	33.718689	-117.043245
AW0004	E-1b	East of AIISA1	0.12	33.719603	-117.041935
AW0005	E-1b	East of AIISA1	6.94	33.719678	-117.035716

TABLE 4.
Isolated Wetland Included in the Wetland Delineation Report

Wetland ID	Figure[1]	Roadway Segment	Acreage[2]	Latitude	Longitude
VP0001	E-1a	South of AIISA1	0.51	33.718934	-117.059853
VP0068	E-1d	East of AIISA1	0.04	33.733942	-117.030191
AW0006	E-1b	East of AIISA1	0.44	33.720001	-117.040581
AW0007	E-1b	East of AIISA1	0.27	33.720666	-117.040018
AW0008	E-1b	East of AIISA1	0.44	33.721395	-117.038729
AW0009	E-1d	AIISA1	0.35	33.736660	-117.045617
AW0016	E-1e	M	0.12	33.794248	-117.008124
CP0001	E-1e	J, K	0.40	33.780200	-117.029137
CP0003	E-1e	M	0.35	33.794664	-117.010302
CP0004	E-1e, E-1f	M	3.36	33.799923	-117.004683
CP0008	E-1f	L, M	0.52	33.818146	-117.004666

[1] Figure number refers to the figures included in the final Jurisdictional Wetlands and Others Water Delineation Report
[2] Represents delineated acreage of the feature only – does not include impacts

TALBE 5: Jurisdictional Waters of the U.S.

Waters_Name	Cowadin_C	HGM_Cod	Area (acre	Linear (ft)	Waters Ty	Latitude(dd nad83)	Longitude dd nad83)	Local_Waterway
VP0002	R		0.22		RPWWD	33.722207	-117.050887	San Jacinto River
VP0003	R		0.004		RPWWD	33.722314	-117.045150	San Jacinto River
VP0004	R		0		RPWWD	33.722379	-117.044967	San Jacinto River
VP0005	R		0.004		RPWWD	33.722405	-117.044970	San Jacinto River
VP0006	R		0		RPWWD	33.722516	-117.050732	San Jacinto River
VP0007	R		0.01		RPWWD	33.722549	-117.050840	San Jacinto River
VP0008	R		0.002		RPWWD	33.722553	-117.050946	San Jacinto River
VP0009	R		0.07		RPWWD	33.722579	-117.050717	San Jacinto River
VP0010	R		0.89		RPWWD	33.722590	-117.052015	San Jacinto River
VP0011	R		0.004		RPWWD	33.722726	-117.042342	San Jacinto River
VO0012	R		0		RPWWD	33.722815	-117.043874	San Jacinto River
VP0013	R		0.02		RPWWD	33.722900	-117.051080	San Jacinto River
VP0014	R		0.79		RPWWD	33.723188	-117.052049	San Jacinto River
VP0015	R		0.45		RPWWD	33.723447	-117.050848	San Jacinto River
VP0016	R		0.05		RPWWD	33.723664	-117.051965	San Jacinto River
VP0017	R		0.3		RPWWD	33.725182	-117.045609	San Jacinto River
VP0018	R		0		RPWWD	33.725305	-117.044474	San Jacinto River
VP0019	R		0.37		RPWWD	33.725898	-117.047154	San Jacinto River
VP0020	R		0		RPWWD	33.726456	-117.041211	San Jacinto River
VP0021	R		0		RPWWD	33.727124	-117.040945	San Jacinto River
VP0022	R		0.002		RPWWD	33.727214	-117.040940	San Jacinto River
VP0023	R		0.02		RPWWD	33.727346	-117.040906	San Jacinto River
VP0024	R		0		RPWWD	33.727918	-117.049656	San Jacinto River
VP0025	R		0.67		RPWWD	33.727938	-117.046728	San Jacinto River
VP0026	R		0.07		RPWWD	33.728101	-117.049395	San Jacinto River
VP0027	R		0.002		RPWWD	33.728532	-117.040729	San Jacinto River
VP0028	R		0.01		RPWWD	33.729311	-117.047751	San Jacinto River
VP0029	R		0.002		RPWWD	33.729657	-117.043696	San Jacinto River
VP0030	R		0.02		RPWWD	33.729725	-117.047686	San Jacinto River
VP0031	R		0.05		RPWWD	33.729896	-117.043690	San Jacinto River
VP0032	R		5.8		RPWWD	33.730081	-117.028332	San Jacinto River
VP0033	R		0.4		RPWWD	33.730153	-117.037120	San Jacinto River
VP0034	R		0.01		RPWWD	33.730319	-117.036862	San Jacinto River
VP0035	R		0.1		RPWWD	33.730279	-117.043730	San Jacinto River
VP0036	R		0.02		RPWWD	33.730358	-117.047393	San Jacinto River
VP0037	R		0.01		RPWWD	33.730497	-117.036629	San Jacinto River

TABLE 5:(Continued)

VP0038	R	0.05	RPWWD	33.730600	-117.044855	San Jacinto River
VP0039	R	0.02	RPWWD	33.730664	-117.036545	San Jacinto River
VP0040	R	0.02	RPWWD	33.730750	-117.036323	San Jacinto River
VP0041	R	6.67	RPWWD	33.730721	-117.045740	San Jacinto River
VP0042	R	0.02	RPWWD	33.730921	-117.036191	San Jacinto River
VP0043	R	0.77	RPWWD	33.731075	-117.046726	San Jacinto River
VP0044	R	0.01	RPWWD	33.731141	-117.036209	San Jacinto River
VP0045	R	0.02	RPWWD	33.731575	-117.046850	San Jacinto River
VP0046	R	6.77	RPWWD	33.731732	-117.042608	San Jacinto River
VP0047	R	0.25	RPWWD	33.732000	-117.032038	San Jacinto River
VP0048	R	0.02	RPWWD	33.732009	-117.033743	San Jacinto River
VP0049	R	0.1	RPWWD	33.731993	-117.046756	San Jacinto River
VP0050	R	0.05	RPWWD	33.732025	-117.047137	San Jacinto River
VP0051	R	0.01	RPWWD	33.732239	-117.033634	San Jacinto River
VP0052	R	0	RPWWD	33.732246	-117.047198	San Jacinto River
VP0053	R	0.02	RPWWD	33.732419	-117.046932	San Jacinto River
VP0054	R	1.04	RPWWD	33.732539	-117.031939	San Jacinto River
VP0055	R	0.1	RPWWD	33.732574	-117.037932	San Jacinto River
VP0056	R	0.05	RPWWD	33.732592	-117.046823	San Jacinto River
VP0057	R	0.02	RPWWD	33.732606	-117.045729	San Jacinto River
VP0058	R	0.02	RPWWD	33.732697	-117.046110	San Jacinto River
VP0058a	R	0.02	RPWWD	33.732729	-117.047083	San Jacinto River
VP0059	R	0.01	RPWWD	33.732728	-117.046199	San Jacinto River
VP0060	R	0.02	RPWWD	33.732735	-117.046934	San Jacinto River
VP0061	R	0.05	RPWWD	33.732983	-117.036171	San Jacinto River
VP0062	R	1.66	RPWWD	33.733217	-117.031768	San Jacinto River
VP0063	R	3.34	RPWWD	33.733314	-117.041826	San Jacinto River
VP0064	R	0.004	RPWWD	33.733387	-117.035228	San Jacinto River
VP0065	R	1.24	RPWWD	33.733364	-117.045636	San Jacinto River
VP0066	R	2.62	RPWWD	33.733577	-117.047037	San Jacinto River
VP0067	R	0.01	RPWWD	33.733689	-117.033714	San Jacinto River
VP0069	R	0.02	RPWWD	33.734127	-117.033418	San Jacinto River
VP0070	R	0.02	RPWWD	33.734170	-117.034374	San Jacinto River
VP0074	R	0.02	RPWWD	33.734502	-117.039044	San Jacinto River
VP0076	R	0	RPWWD	33.734567	-117.033285	San Jacinto River
VP0078	R	0.17	RPWWD	33.735090	-117.039136	San Jacinto River
VP0079	R	0.02	RPWWD	33.735210	-117.041689	San Jacinto River

TABLE 5: (Continued)

VP0080	R	0.002	RPWWD	33.735710	-117.041504	San Jacinto River
VP0081	R	0.002	RPWWD	33.735892	-117.041436	San Jacinto River
VP0082	R	0.004	RPWWD	33.736144	-117.041324	San Jacinto River
VP0083	R	0	RPWWD	33.744249	-117.036804	San Jacinto River
VP0084	R	0.004	RPWWD	33.744279	-117.037231	San Jacinto River
VP0085	R	0.01	RPWWD	33.745041	-117.038158	San Jacinto River
VP0087	R	0.05	RPWWD	33.745491	-117.037889	San Jacinto River
VP0088	R	0.05	RPWWD	33.745736	-117.037546	San Jacinto River
VP0095	R	0.02	RPWWD	33.749400	-117.036294	San Jacinto River
VP0096	R	0.01	RPWWD	33.769090	-117.031739	San Jacinto River
VP0097	R	0.02	RPWWD	33.769112	-117.033081	San Jacinto River
VP0098	R	0.02	RPWWD	33.769290	-117.032978	San Jacinto River
VP0099	R	0.002	RPWWD	33.769450	-117.031612	San Jacinto River
VP0100	R	0.02	RPWWD	33.769555	-117.031378	San Jacinto River
VP0101	R	0.02	RPWWD	33.769553	-117.032382	San Jacinto River
VP0102	R	0	RPWWD	33.769742	-117.032596	San Jacinto River
VP0103	R	0.02	RPWWD	33.769936	-117.032248	San Jacinto River
VP0104	R	0.07	RPWWD	33.769977	-117.033082	San Jacinto River
VP0105	R	0.44	RPWWD	33.770017	-117.031586	San Jacinto River
VP0106	R	0.02	RPWWD	33.770077	-117.032355	San Jacinto River
VP0107	R	0.02	RPWWD	33.770204	-117.032315	San Jacinto River
VP0108	R	1.9	RPWWD	33.770788	-117.032467	San Jacinto River
VP0109	R	1.98	RPWWD	33.773603	-117.034721	San Jacinto River
VP0110	R	0.01	RPWWD	33.773989	-117.034583	San Jacinto River
VP0111	R	0.02	RPWWD	33.774069	-117.034816	San Jacinto River
VP0112	R	0.02	RPWWD	33.783131	-117.029879	San Jacinto River
SW0003	R	0.32	RPWWD	33.708388	-117.0455854	San Jacinto River
SW0004	R	0.02	RPWWD	33.717965	-117.032151	San Jacinto River
SW0005	R	1.46	RPWWD	33.719733	-117.0475113	San Jacinto River
SW0006	R	0.3	RPWWD	33.720743	-117.0321569	San Jacinto River
SW0007	R	0.39	RPWWD	33.723412	-117.0497368	San Jacinto River
SW0008	R	0.15	RPWWD	33.725500	-117.0446427	San Jacinto River
SW0009	R	1.01	RPWWD	33.725644	-117.0449274	San Jacinto River
SW0010	R	0.07	RPWWD	33.726040	-117.0448578	San Jacinto River
SW0011	R	0.05	RPWWD	33.727819	-117.049693	San Jacinto River
SW0012	R	0.05	RPWWD	33.728735	-117.0407819	San Jacinto River
SW0013	R	0.05	RPWWD	33.733182	-117.0342729	San Jacinto River

TABLE 5: (Continued)

SW0014	R	0.05	RPWWD	33.734300	-117.0446441	San Jacinto River
SW0015	R	0.15	RPWWD	33.734494	-117.0313941	San Jacinto River
SW0018	R	1.14	RPWWD	33.738439	-117.0522797	San Jacinto River
SW0020	R	0.001	RPWWD	33.739647	-117.0395121	San Jacinto River
SW0021	R	0	RPWWD	33.739787	-117.0393402	San Jacinto River
SW0022	R	0.002	RPWWD	33.740080	-117.0400005	San Jacinto River
SW0023	R	0.01	RPWWD	33.742853	-117.0414056	San Jacinto River
SW0024	R	0.17	RPWWD	33.743518	-117.033243	San Jacinto River
SW0025	R	0.02	RPWWD	33.743495	-117.0402312	San Jacinto River
SW0026	R	0.12	RPWWD	33.744305	-117.0401552	San Jacinto River
SW0027	R	1.41	RPWWD	33.745068	-117.0415994	San Jacinto River
SW0029	R	1.8	RPWWD	33.755610	-117.0375078	San Jacinto River
SW0030	R	0.05	RPWWD	33.755915	-117.037497	San Jacinto River
SW0031	R	0.02	RPWWD	33.773151	-117.0350771	San Jacinto River
SW0032	R	0.35	RPWWD	33.717965	-117.032151	San Jacinto River
SW0033	R	0.15	RPWWD	33.785047	-117.0299197	San Jacinto River
SW0034	R	0.02	RPWWD	33.787196	-117.0307131	San Jacinto River
SW0035	R	0.15	RPWWD	33.817677	-117.0051338	San Jacinto River
SW0036	R	0.05	RPWWD	33.823410	-117.0065883	San Jacinto River
SW0037	R	0.4	RPWWD	33.823423	-117.0052525	San Jacinto River
SW0038	R	0.15	RPWWD	33.829631	-117.0039129	San Jacinto River
SW0039	R	0.57	RPWWD	33.832093	-117.0038795	San Jacinto River
AW0017	R	0.15	RPWWD	33.81968279	-117.005384	San Jacinto River
AW0018	R	0.69	RPWWD	33.82038306	-117.0048222	San Jacinto River
AW0019	R	0.35	RPWWD	33.82050516	-117.0040207	San Jacinto River
AW0020	R	0.05	RPWWD	33.82120515	-117.0048914	San Jacinto River
AW0021	R	8.82	RPWWD	33.82624597	-117.0050714	San Jacinto River
AW022	R	0.27	RPWWD	33.83102435	-117.0046909	San Jacinto River
RP0001	R	0.52	RPW	33.80134626	-117.0025044	San Jacinto River
RP0002	R	2.6	RPW	33.81870202	-117.0073896	San Jacinto River
RP0003	R	2.29	RPWWD	33.83072596	-117.0031455	San Jacinto River
RP0004	R	0.84	RPWWD	33.83113079	-117.0039472	San Jacinto River
DD0001	R	0.1	RPW	33.695945	-117.083750	San Jacinto River
DD0002	R	0.2	RPW	33.696436	-117.091555	San Jacinto River
DD0003	R	0.1	RPW	33.697398	-117.084546	San Jacinto River
DD0004	R	0.62	RPW	33.698601	-117.086127	San Jacinto River
DD0005	R	0.04	RPW	33.701306	-117.050086	San Jacinto River

TABLE 5: (Continued)

DD0006	R	0.12	RPW	33.703722	-117.076173	San Jacinto River
DD0007	R	0.02	RPW	33.708564	-117.045466	San Jacinto River
DD0008	R	0.04	RPW	33.716149	-117.050051	San Jacinto River
DD0009	R	0.5	RPW	33.716796	-117.054951	San Jacinto River
DD0010	R	0.02	RPWWD	33.719302	-117.032459	San Jacinto River
DD0011	R	0.08	RPW	33.720258	-117.050199	San Jacinto River
DD0012	R	0.02	RPWWD	33.721926	-117.047219	San Jacinto River
DD0013	R	0.34	RPW	33.722592	-117.045553	San Jacinto River
DD0014	R	0.23	RPW	33.723159	-117.050027	San Jacinto River
DD0015	R	0.13	RPW	33.724794	-117.050168	San Jacinto River
DD0016	R	0.002	RPWWD	33.726068	-117.047523	San Jacinto River
DD0017	R	0.03	RPW	33.726217	-117.044027	San Jacinto River
DD0018	R	0.59	RPWWD	33.726281	-117.048654	San Jacinto River
DD0019	R	0.25	RPW	33.729108	-117.041243	San Jacinto River
DD0020	R	0.09	RPWWD	33.729707	-117.041919	San Jacinto River
DD0021	R	0.01	RPWWD	33.730255	-117.045118	San Jacinto River
DD0022	R	0	RPWWD	33.730445	-117.045193	San Jacinto River
DD0023	R	0.07	RPWWD	33.731048	-117.046903	San Jacinto River
DD0024	R	0.09	RPW	33.731979	-117.032631	San Jacinto River
DD0026	R	0.07	RPWWD	33.732833	-117.041334	San Jacinto River
DD0027	R	0.02	RPWWD	33.732824	-117.044437	San Jacinto River
DD0028	R	0.07	RPWWD	33.734178	-117.043659	San Jacinto River
DD0029	R	0.22	RPWWD	33.734682	-117.044141	San Jacinto River
DD0030	R	0.02	RPW	33.735706	-117.032605	San Jacinto River
DD0031	R	0.45	RPW	33.729285	-117.040294	San Jacinto River
DD0032	R	0.32	RPW	33.736596	-117.030569	San Jacinto River
DD0034	R	1.16	RPWWD	33.740618	-117.041964	San Jacinto River
DD0035	R	0.02	RPW	33.744020	-117.031916	San Jacinto River
DD0037	R	0.22	RPWWD	33.752307	-117.036310	San Jacinto River
DD0042	R	0.23	RPW	33.769221	-117.035949	San Jacinto River
DD0043	R	0.27	RPW	33.770884	-117.033486	San Jacinto River
DD0044	R	0.07	RPWWD	33.771138	-117.031959	San Jacinto River
DD0045	R	0.22	RPWWD	33.771224	-117.033303	San Jacinto River
DD0046	R	0.12	RPW	33.772794	-117.028818	San Jacinto River
DD0048	R	0.03	RPWWD	33.773077	-117.034145	San Jacinto River
DD0049	R	0.1	RPWWD	33.773964	-117.033340	San Jacinto River
DD0050	R	0.32	RPW	33.776384	-117.033534	San Jacinto River

TABLE 5: (Continued)

DD0051	R	0.19	RPW	33.787336	-117.029231	San Jacinto River
DD0054	R	0.1	RPW	33.801345	-117.002192	San Jacinto River
DD0055	R	0.39	RPW	33.805520	-117.007063	San Jacinto River
DD0056	R	1.02	RPW	33.809074	-117.004840	San Jacinto River
DD0057	R	0.63	RPW	33.809236	-117.006853	San Jacinto River
DD0058	R	0.1	RPW	33.815721	-117.003538	San Jacinto River
DD0060	R	0.02	RPWWD	33.817317	-117.005329	San Jacinto River
DD0061	R	0.01	RPWWD	33.818325	-117.006677	San Jacinto River
DD0062	R	0.21	RPWWD	33.818493	-117.007693	San Jacinto River
DD0064	R	0.07	RPW	33.821906	-117.003944	San Jacinto River
DD0065	R	0.15	RPW	33.821955	-117.003552	San Jacinto River
DD0066	R	0.13	RPW	33.822772	-117.006122	San Jacinto River
DD0069	R	2.1	RPW	33.830503	-117.004135	San Jacinto River
DD0070	R	0.29	RPW	33.833378	-117.004893	San Jacinto River
CP0002	R	0.17	RPW	33.786422	-117.031762	San Jacinto River
CP0005	R	2.12	RPW	33.801699	-117.001550	San Jacinto River
CP0006	R	1.73	RPW	33.817191	-117.003992	San Jacinto River
CP0007	R	0.27	RPW	33.818272	-117.005863	San Jacinto River
CP0009	R	0.37	RPW	33.818646	-117.005603	San Jacinto River
Salt Creek Channel	R	13.1	RPW	33.699035	-117.085829	San Jacinto River
Hemet Channel	R	16.8	RPW	33.714488	-117.060430	San Jacinto River
Flood Control Channe	R	3.61	RPW	33.734813	-117.037226	San Jacinto River
OW0001	R	0.15	RPW	33.830859	-117.003148	San Jacinto River

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Coordination with the

United States Army Corps of Engineers

Preliminary Agreement on Purpose and Need

December 19, 2003

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HS, CB, BH, GQ

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DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

December 19, 2003

REPLY TO
ATTENTION OF:

Office of the Chief
Regulatory Branch

RECEIVED
DEC 23 2003
RIVERSIDE COUNTY
TRANSPORTATION COMMISSION

Mahfoud Licha
Federal Highway Administration
650 Capitol Mall, 4-100
Sacramento, CA 95814

Dear Mr. Licha:

At the request of the Federal Highway Administration (FHWA), the California Department of Transportation (Department) and the Riverside County Transportation Commission (RCTC), the U.S. Army Corps of Engineers (USACE) has been asked to participate in the evaluation of the purpose and need for the State Route 79 Project (Domenigoni Parkway to Gilman Springs Road).

We appreciate the opportunity for early involvement in the State Route 79 Project. Pursuant to the NEPA/CWA Section 404 Integration Process Memorandum of Understanding (MOU), the above agencies have also requested our concurrence on the purpose and need statements on the above project per your letter dated October 27, 2000. Although the MOU does not require our final concurrence on the purpose and need statements until the Draft EIS development, we are providing our preliminary agreement on the purpose and need statements by means of this response letter.

My staff has completed a review of the purpose and need statements. Our feedback during meetings, conference calls, and in previous written correspondence has precipitated revisions to several draft statements over the course of the past two months. We do not have any substantive objections to the most current version (dated December 18, 2003) of the purpose statement. As you may know, the overall project purpose provides for a more specific definition of the purpose and need of the project. It is important that the overall project purpose be specific enough to define the needs, but not so restrictive as to preclude all discussion of alternatives. The defined project purpose is used to evaluate practicable alternatives under the Section 404(b)(1) Guidelines of the Clean Water Act (CWA). Accordingly, we endorse the following language for the project purpose:

> *To construct a realigned SR 79 facility between Domenigoni Parkway and Gilman Springs Road that will increase capacity to facilitate the regional movement of people and goods for the planning design year of 2030, enhance safety, and protect right-of-way needed for the SR 79 facility improvements.*

In accordance with the provisions of the MOU, we offer our preliminary agreement on the December 18, 2003 draft version of the Purpose and Need Statement. We appreciate your efforts to seek our early participation in this process and we look forward to our continued involvement with the SR 79 project. Should you have any questions, please contact Ms. Stephanie Hall of my staff at (213) 452-3410. Please refer to this letter and Corps reference number 200400289-SJH in your reply.

Sincerely,

Aaron O. Allen, Ph. D
Acting Chief, Regulatory Branch

Enclosure(s)

CC:
FHWA, Maiser Khaled
FHWA, Larry Vinzant
EPA, Liz Varnhagen
EPA, Mary Butterwick
USFWS, Doreen Stadtlander
USFWS, Karin Cleary Rose
RWQCB-Region 8, Adam Fischer
CDFG, Scott Dawson
Caltrans-District 8, Marie Petry
Caltrans-District 8, Aaron Burton
Caltrans, Susan Glasgow
RCTC, Hideo Sugita
RCTC, Cathy Bechtel
RCTC, Bill Hughes
RCTC, Gustavo Quintero
CH2M HILL, Rick Simon
CH2M HILL, Carolyn Washburn

040060001

United States Fish and Wildlife Service

List of Proposed, Threatened, or Endangered Species

June 20, 2016

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish and Wildlife Office
2177 SALK AVENUE - SUITE 250
CARLSBAD, CA 92008
PHONE: (760)431-9440 FAX: (760)431-5901
URL: www.fws.gov/carlsbad/

Consultation Code: 08ECAR00-2016-SLI-0716 June 20, 2016
Event Code: 08ECAR00-2016-E-01064
Project Name: SR 79 Realignment Updated species list

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

Official Species List

Provided by:

Carlsbad Fish and Wildlife Office
2177 SALK AVENUE - SUITE 250
CARLSBAD, CA 92008
(760) 431-9440
http://www.fws.gov/carlsbad/

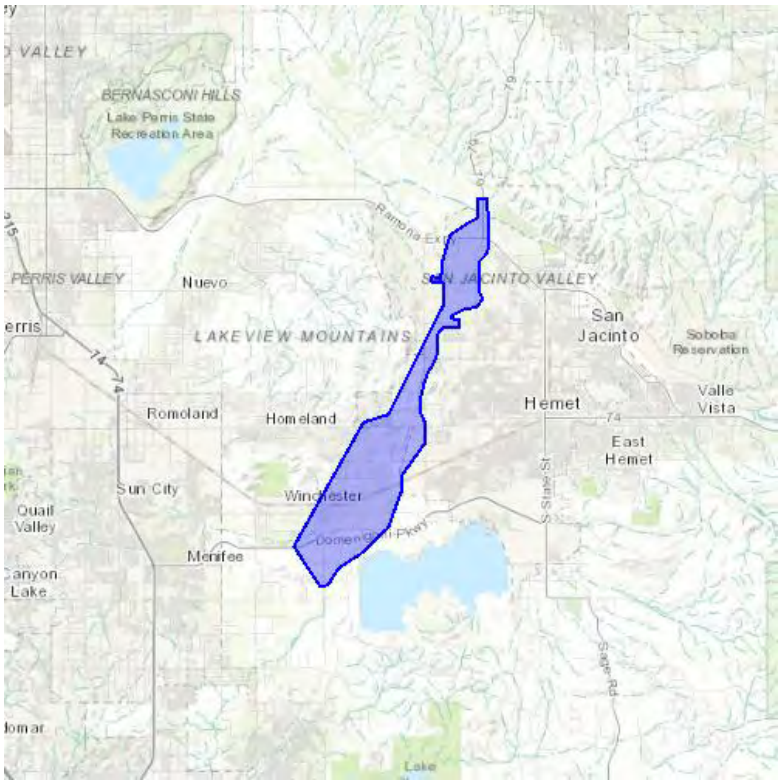
Consultation Code: 08ECAR00-2016-SLI-0716
Event Code: 08ECAR00-2016-E-01064

Project Type: TRANSPORTATION

Project Name: SR 79 Realignment Updated species list
Project Description: Updated species list

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Riverside, CA

Endangered Species Act Species List

There are a total of 15 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	**Status**	**Has Critical Habitat**	**Condition(s)**
arroyo toad *(Anaxyrus californicus)* Population: Entire	Endangered	Final designated	
Birds			
Coastal California gnatcatcher *(Polioptila californica californica)* Population: Entire	Threatened	Final designated	
Least Bell's vireo *(Vireo bellii pusillus)* Population: Entire	Endangered	Final designated	
Southwestern Willow flycatcher *(Empidonax traillii extimus)* Population: Entire	Endangered	Final designated	
Crustaceans			
Riverside fairy shrimp *(Streptocephalus woottoni)* Population: Entire	Endangered	Final designated	
Vernal Pool fairy shrimp *(Branchinecta lynchi)*	Threatened	Final designated	

Population: Entire			
Flowering Plants			
California Orcutt grass *(Orcuttia californica)*	Endangered		
Munz's onion *(Allium munzii)*	Endangered	Final designated	
San Diego ambrosia *(Ambrosia pumila)*	Endangered	Final designated	
San Jacinto Valley crownscale *(Atriplex coronata var. notatior)*	Endangered		
Spreading navarretia *(Navarretia fossalis)*	Threatened	Final designated	
Thread-Leaved brodiaea *(Brodiaea filifolia)*	Threatened	Final designated	
Insects			
Quino Checkerspot butterfly *(Euphydryas editha quino (=e. e. wrighti))* Population: Entire	Endangered	Final designated	
Mammals			
San Bernardino Merriam's kangaroo rat *(Dipodomys merriami parvus)* Population: Entire	Endangered	Final designated	
Stephens' kangaroo rat *(Dipodomys stephensi)* Population: Entire	Endangered		

Critical habitats that lie within your project area

The following critical habitats lie fully or partially within your project area.

Birds	**Critical Habitat Type**
Coastal California gnatcatcher *(Polioptila californica californica)* Population: Entire	Final designated
Flowering Plants	
Spreading navarretia *(Navarretia fossalis)*	Final designated
Thread-Leaved brodiaea *(Brodiaea filifolia)*	Final designated
Mammals	
San Bernardino Merriam's kangaroo rat *(Dipodomys merriami parvus)* Population: Entire	Final designated

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Hemet (3311668) OR Lakeview (3311771) OR San Jacinto (3311678) OR Winchester (3311761))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia villosa var. aurita chaparral sand-verbena	PDNYC010P1	None	None	G5T2T3	S2	1B.1
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S2S3	WL
Allium marvinii Yucaipa onion	PMLIL02330	None	None	G1	S1	1B.2
Allium munzii Munz's onion	PMLIL022Z0	Endangered	Threatened	G1	S1	1B.1
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Artemisiospiza belli belli Bell's sage sparrow	ABPBX97021	None	None	G5T2T4	S2?	WL
Aspidoscelis hyperythra orangethroat whiptail	ARACJ02060	None	None	G5	S2S3	SSC
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	
Astragalus pachypus var. jaegeri Jaeger's milk-vetch	PDFAB0F6G1	None	None	G4T2	S2	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex coronata var. notatior San Jacinto Valley crownscale	PDCHE040C2	Endangered	None	G4T1	S1	1B.1
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
California macrophylla round-leaved filaree	PDGER01070	None	None	G3?	S3?	1B.2
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
Calochortus weedii var. intermedius intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T2	S2	1B.2
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	ABPBG02095	None	None	G5T3Q	S3	SSC
Caulanthus simulans Payson's jewelflower	PDBRA0M0H0	None	None	G4	S4	4.2
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Charina trivirgata rosy boa	ARADA01020	None	None	G4G5	S3S4	
Chorizanthe parryi var. parryi Parry's spineflower	PDPGN040J2	None	None	G3T3	S3	1B.1
Chorizanthe polygonoides var. longispina long-spined spineflower	PDPGN040K1	None	None	G5T3	S3	1B.2
Circus cyaneus northern harrier	ABNKC11010	None	None	G5	S3	SSC
Clinopodium chandleri San Miguel savory	PDLAM08030	None	None	G2	S2	1B.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Coleonyx variegatus abbotti San Diego banded gecko	ARACD01031	None	None	G5T3T4	S1S2	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Deinandra mohavensis Mojave tarplant	PDAST4R0K0	None	Endangered	G2	S2	1B.3
Desert Fan Palm Oasis Woodland Desert Fan Palm Oasis Woodland	CTT62300CA	None	None	G3	S3.2	
Dipodomys merriami parvus San Bernardino kangaroo rat	AMAFD03143	Endangered	None	G5T1	S1	SSC
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
Dodecahema leptoceras slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T3Q	S3	WL
Euphydryas editha quino quino checkerspot butterfly	IILEPK405L	Endangered	None	G5T1T2	S1S2	
Imperata brevifolia California satintail	PMPOA3D020	None	None	G3	S3	2B.1
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	SSC
Myosurus minimus ssp. apus little mousetail	PDRAN0H031	None	None	G5T2Q	S2	3.1
Nama stenocarpa mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
Navarretia fossalis spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Onychomys torridus ramona southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
Orcuttia californica California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
Perognathus longimembris brevinasus Los Angeles pocket mouse	AMAFD01041	None	None	G5T1T2	S1S2	SSC
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plegadis chihi white-faced ibis	ABNGE02020	None	None	G5	S3S4	WL
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
Sidalcea neomexicana Salt Spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Socalchemmis icenoglei Icenogle's socalchemmis spider	ILARAU7020	None	None	G1	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Coast Live Oak Riparian Forest						
Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Cottonwood Willow Riparian Forest						
Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	
Southern Mixed Riparian Forest						
Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Riparian Scrub						
Spea hammondii	AAABF02020	None	None	G3	S3	SSC
western spadefoot						
Streptocephalus woottoni	ICBRA07010	Endangered	None	G1G2	S1S2	
Riverside fairy shrimp						
Taxidea taxus	AMAJF04010	None	None	G5	S3	SSC
American badger						
Tortula californica	NBMUS7L090	None	None	G2G3	S2S3	1B.2
California screw moss						
Trichocoronis wrightii var. wrightii	PDAST9F031	None	None	G4T3	S1	2B.1
Wright's trichocoronis						
Vireo bellii pusillus	ABPBW01114	Endangered	Endangered	G5T2	S2	
least Bell's vireo						

Record Count: 71

CNPS California Native Plant Society Rare and Endangered Plant Inventory

Plant List

57 matches found. Click on scientific name for details

Search Criteria

Found in 9 Quads around 33116F8

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Abronia villosa var. aurita	chaparral sand-verbena	Nyctaginaceae	annual herb	1B.1	S2	G5T2T3
Allium munzii	Munz's onion	Alliaceae	perennial bulbiferous herb	1B.1	S1	G1
Ambrosia pumila	San Diego ambrosia	Asteraceae	perennial rhizomatous herb	1B.1	S1	G1
Astragalus pachypus var. jaegeri	Jaeger's bush milk-vetch	Fabaceae	perennial shrub	1B.1	S2	G4T2
Atriplex coronata var. notatior	San Jacinto Valley crownscale	Chenopodiaceae	annual herb	1B.1	S1	G4T1
Atriplex pacifica	South Coast saltscale	Chenopodiaceae	annual herb	1B.2	S2	G4
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	1B.1	S1	G1G2
Atriplex serenana var. davidsonii	Davidson's saltscale	Chenopodiaceae	annual herb	1B.2	S1	G5T1
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	1B.1	S1	G1
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	1B.1	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.2	S3?	G3?
Calochortus palmeri var. munzii	San Jacinto mariposa lily	Liliaceae	perennial bulbiferous herb	1B.2	S3	G3T3
Calochortus plummerae	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Calochortus weedii var. intermedius	intermediate mariposa lily	Liliaceae	perennial bulbiferous herb	1B.2	S2	G3G4T2
Caulanthus simulans	Payson's jewelflower	Brassicaceae	annual herb	4.2	S4	G4
Centromadia pungens ssp. laevis	smooth tarplant	Asteraceae	annual herb	1B.1	S2	G3G4T2
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	4.2	S3	G3
Chorizanthe parryi var. parryi	Parry's spineflower	Polygonaceae	annual herb	1B.1	S3	G3T3
Chorizanthe polygonoides var. longispina	long-spined spineflower	Polygonaceae	annual herb	1B.2	S3	G5T3
Chorizanthe xanti var. leucotheca	white-bracted spineflower	Polygonaceae	annual herb	1B.2	S3	G4T3
Clinopodium chandleri	San Miguel savory	Lamiaceae	perennial shrub	1B.2	S2	G2
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	4.2	S4	G4
Cryptantha wigginsii	Wiggins' cryptantha	Boraginaceae	annual herb	1B.2	S1	G2
Deinandra mohavensis	Mojave tarplant	Asteraceae	annual herb	1B.3	S2	G2

Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	4.2	S4	G4
Delphinium hesperium ssp. cuyamacae	Cuyamaca larkspur	Ranunculaceae	perennial herb	1B.2	S2	G4T2
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	1B.1	S1	G1
Galium angustifolium ssp. jacinticum	San Jacinto Mountains bedstraw	Rubiaceae	perennial herb	1B.3	S2?	G5T2?
Galium californicum ssp. primum	Alvin Meadow bedstraw	Rubiaceae	perennial herb	1B.2	S1	G5T1
Githopsis diffusa ssp. filicaulis	Mission Canyon bluecup	Campanulaceae	annual herb	3.1	S1	G5T2T3
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	4.2	S3	G4
Holocarpha virgata ssp. elongata	graceful tarplant	Asteraceae	annual herb	4.2	S3	G5T3
Hordeum intercedens	vernal barley	Poaceae	annual herb	3.2	S3S4	G3G4
Hulsea vestita ssp. callicarpha	beautiful hulsea	Asteraceae	perennial herb	4.2	S3	G5T3
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	2B.1	S3	G3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	1B.1	S2	G4T2
Lepechinia cardiophylla	heart-leaved pitcher sage	Lamiaceae	perennial shrub	1B.2	S2S3	G3?
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	4.3	S3	G5T3
Lilium parryi	lemon lily	Liliaceae	perennial bulbiferous herb	1B.2	S3	G3
Lycium torreyi	Torrey's box-thorn	Solanaceae	perennial shrub	4.2	S3	G4G5
Microseris douglasii ssp. platycarpha	small-flowered microseris	Asteraceae	annual herb	4.2	S4	G4T4
Mimulus diffusus	Palomar monkeyflower	Phrymaceae	annual herb	4.3	S3	G4Q
Mimulus purpureus	little purple monkeyflower	Phrymaceae	annual herb	1B.2	S2	G2
Monardella macrantha ssp. hallii	Hall's monardella	Lamiaceae	perennial rhizomatous herb	1B.3	S3	G5T3
Monardella nana ssp. leptosiphon	San Felipe monardella	Lamiaceae	perennial rhizomatous herb	1B.2	S2	G4G5T2Q
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	3.1	S2	G5T2Q
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	1B.1	S2	G2
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	1B.1	S1	G1
Penstemon californicus	California beardtongue	Plantaginaceae	perennial herb	1B.2	S2	G3
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	1B.2	S3	G4T3
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	2B.2	S2	G4
Sidotheca caryophylloides	chickweed oxytheca	Polygonaceae	annual herb	4.3	S4	G4
Streptanthus bernardinus	Laguna Mountains jewelflower	Brassicaceae	perennial herb	4.3	S3S4	G3G4
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2
Texosporium sancti-jacobi	woven-spored lichen	Caliciaceae	crustose lichen (terricolous)	3	S1	G3
Tortula californica	California screw-moss	Pottiaceae	moss	1B.2	S2S3	G2G3
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	2B.1	S1	G4T3

Suggested Citation

CNPS, Rare Plant Program. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 20 June 2016].

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United States Fish and Wildlife Service

List of Proposed, Threatened, or Endangered Species

October 27, 2015

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer To:
FWS-WRIV-09B0190-15SL0056

OCT 27 2015

Mr. Scott Quinnell
Senior Environmental Planner
California Department of Transportation - District 8
Environmental Planning (MS 1222)
464 West 4th Street, 6th Floor
San Bernardino, California 92401-1400

Subject: Request for a List of Proposed, Threatened, or Endangered Species Potentially Occurring in the Vicinity of the SR-79 Realignment Project in Riverside County, California

Dear Mr. Quinnell:

This letter is in response to your request, received by our office on October 12, 2015, for information on federally endangered, threatened, proposed, and candidate species that may occur in the vicinity of the State Route 79 Realignment Project in Riverside County, California. To assist you in evaluating the potential occurrence of federally listed endangered, threatened, proposed, and candidate species that may occur in the vicinity of the proposed action, we are providing the enclosed list.

Because we do not have site-specific information for the proposed project, we recommend that you seek assistance from a biologist familiar with the habitat conditions and associated species in and around the project site to assess the actual potential for direct, indirect, and cumulative impacts likely to result from the proposed activity. We also suggest that you contact the California Department of Fish and Wildlife regarding State-listed and sensitive species that may occur within the project area. Please note that State-listed species are protected under the provisions of the California Endangered Species Act.

As a reminder, if a proposed project is authorized, funded, or carried out by a Federal agency and may affect a federally listed species, then section 7 consultation pursuant to the Endangered Species Act of 1973 (Act), as amended, is required. If a proposed project does not involve a Federal agency, but is likely to result in the take of a listed animal species, then the project proponent should apply for an incidental take permit, pursuant to section 10 of the Act.

Should you have any questions regarding the species listed or your responsibilities under the Act, please contact Sally Brown of this office at 760-431-9440, extension 278.

Sincerely,

Sally Brown

for

Karen A. Goebel
Assistant Field Supervisor

Enclosure

Federally Endangered, Threatened, Proposed, and Candidate Species and Critical Habitat that May Occur in the Vicinity of the SR-79 Realignment Project in Riverside County, California **October 27, 2015**			
Common Name	**Scientific Name**	**Federal Status**	**Critical Habitat in Vicinity**
Plants			
Munz's onion	*Allium munzii*	endangered	none
thread-leaved brodiaea	*Brodiaea filifolia*	threatened	present
Slender-horned spine flower	*Dodecahema leptoceras*	endangered	N/A*
spreading navarretia	*Navarretia fossalis*	threatened	present
California Orcutt grass	*Orcuttia californica*	endangered	N/A
San Jacinto Valley crownscale	*Atriplex coronata var. notatior*	endangered	none
Invertebrates			
Riverside fairy shrimp	*Streptocephalus woottoni*	endangered	none
vernal pool fairy shrimp	*Branchinecta lynchi*	threatened	none
Quino checkerspot butterfly	*Euphydryas editha quino*	endangered	none
Birds			
coastal California gnatcatcher	*Polioptila californica californica*	threatened	none
least Bell's vireo	*Vireo bellii pusillus*	endangered	none
southwestern willow flycatcher	*Empidonax traillii extimus*	endangered	none
Mammals			
Stephens' kangaroo rat	*Dipodomys stephensi*	endangered	N/A
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	endangered	none

* N/A = not applicable

United States Fish and Wildlife Service

List of Proposed, Threatened, or Endangered Species

November 14, 2012

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

In Reply Refer To:
FWS-WRIV-09B0190-13SL0059

NOV 15 2012

Mr. Scott Quinnell
Senior Environmental Planner
California Department of Transportation - District 8
Environmental Planning (MS 1222)
464 West 4th Street, 6th Floor
San Bernardino, California 92401-1400

Subject: Request for a List of Proposed, Threatened, or Endangered Species Potentially Occurring in the vicinity of the SR-79 Realignment Project in Riverside County, California

Dear Mr. Quinnell:

This letter is in response to your request, received by our office on November 8, 2012, for information on federally endangered, threatened, proposed, and candidate species that may occur in the vicinity of the State Route 79 Realignment Project in Riverside County. To assist you in evaluating the potential occurrence of federally listed endangered, threatened, proposed, and candidate species that may occur in the vicinity of the proposed action, we are providing the enclosed list.

Because we do not have site-specific information for the proposed project, we recommend that you seek assistance from a biologist familiar with the habitat conditions and associated species in and around the project site to assess the actual potential for direct, indirect, and cumulative impacts likely to result from the proposed activity. We also suggest that you contact the California Department of Fish and Game regarding State-listed and sensitive species that may occur within the project area. Please note that State-listed species are protected under the provisions of the California Endangered Species Act.

As a reminder, if a proposed project is authorized, funded, or carried out by a Federal agency and may affect a federally listed species, then section 7 consultation pursuant to the Endangered Species Act of 1973 (Act), as amended, is required. If a proposed project does not involve a Federal agency, but is likely to result in the take of a listed animal species, then the project proponent should apply for an incidental take permit, pursuant to section 10 of the Act.

Please note that the Carlsbad Fish and Wildlife Office is hosting all critical habitat GIS data within our jurisdictional area on our website at http://www.fws.gov/carlsbad. Select the GIS DATA link to access current critical habitat layers.

Should you have any questions regarding the species listed or your responsibilities under the Act, please contact Sally Brown of this office at 760-431-9440, extension 278.

Sincerely,

Sally Brown

for Kennon A. Corey
Assistant Field Supervisor

Enclosure

Federally Endangered, Threatened, Proposed, and Candidate Species and Critical Habitat that May Occur in the Vicinity of the SR-79 Realignment Project in Riverside County, California
November 14, 2012

Common Name	Scientific Name	Federal Status	Critical Habitat in Vicinity
Plants			
Munz's onion	*Allium munzii*	endangered	none
thread-leaved brodiaea	*Brodiaea filifolia*	threatened	present
Slender-horned spine flower	*Dodecahema leptoceras*	endangered	N/A*
spreading navarretia	*Navarretia fossalis*	threatened	present
California Orcutt grass	*Orcuttia californica*	endangered	N/A
San Jacinto Valley crownscale	*Atriplex coronata var. notatior*	endangered	present
Invertebrates			
Riverside fairy shrimp	*Streptocephalus woottoni*	endangered	none
vernal pool fairy shrimp	*Branchinecta lynchi*	threatened	none
Quino checkerspot butterfly	*Euphydryas editha quino*	endangered	none
Birds			
coastal California gnatcatcher	*Polioptila californica californica*	threatened	none
least Bell's vireo	*Vireo bellii pusillus*	endangered	none
southwestern willow flycatcher	*Empidonax traillii extimus*	endangered	none
Mammals			
Stephens' kangaroo rat	*Dipodomys stephensi*	endangered	N/A
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	endangered	none

* N/A = Not Applicable

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Transportation Conformity Working Group
Hotspot Determination

January 2015

PM Hot Spot Analysis Project Lists

Review of PM Hot Spot Interagency Review Forms

January, 2015	Determination
LA0G872 January 2015	Not a POAQC - Hot Spot Analysis Not Required
RIV031209 January 2015 Traffic Validation Report RIV031209 January 2015 Figures RIV031209 January 2015	
RIV62024 January 2015 MemoLOS RIV62024 January 2015 Appendices RIV62024 January 2015	Not a POAQC - Hot Spot Analysis Not Required (TCWG concurrence received via email after the meeting)

RTIP ID# *(required)* RIV62024

TCWG Consideration Date: 01/27/2015

Project Description *(clearly describe project)*
The Riverside County Transportation Commission (RCTC), in cooperation with Caltrans, the County of Riverside, the City of Hemet, and the City of San Jacinto, has proposed a project for the realignment of SR 79 in the vicinity of the cities of Hemet and San Jacinto in Riverside County, California. The Project would realign SR 79 from just south of Domenigoni Parkway to Gilman Springs Road. This realignment would facilitate the regional movement of people and goods, enhance safety, and protect right-of-way for future improvements and would provide a more efficient connection between Domenigoni Parkway and Gilman Springs Road. The completed Project would be a limited-access expressway with accommodation for oversized trucks and would not preclude future multimodal transportation systems. A map showing the regional location of the Project is in Appendix A, Figure 1.

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

The Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) released for public review in February 2013 described the four proposed build alternatives and two design options to realign SR 79. Roadway segments have been created to describe the Project at specific locations along the alignment (Appendix A, Figure 2). The descriptions of the build alternatives, design options, and roadway segments are as follows:

- Build Alternative 1a – Roadway Segments A, E, G, I, J, L, and N (Appendix A, Figure 3)
- Build Alternative 1b and Design Option 1b1 – Roadway Segments B, C, G, I, K, M, and N (Appendix A, Figure 4)
- Build Alternative 2a – Roadway Segments A, F, H, I, K, L, and N (Appendix A, Figure 5)
- Build Alternative 2b and Design Option 2b1 – Roadway Segments B, D, H, I, J, M, and N (Appendix A, Figure 6)

Subsequent to the circulation of the Draft EIR/EIS (February 2013), it was determined that another alternative would need to be developed to minimize impacts to cultural resources located in the West Hemet Hills area. This Refined Alternative 1br used Alternative 1b as a basis:

- Build Alternative 1b with Refinements (1br) – Roadway Segments B, C, G, I, J, M, and N (Appendix A Figure 7). The location of the refinements are shown in Appendix A, Figure 8.

Alternative 1b and 1br have similar alignments and project limits. There are three primary shifts in the alignment of Alternative 1br that differ from Alternative 1b as evaluated in the Draft EIR/EIS; the change in interchange location from Ranchland Road to Grand Ave to more consistently align with the City of Hemet's General Plan, the westerly shift of the alignment around the West Hemet Hills, and the use of Segment J near Esplanade Avenue that takes the alignment to the west of the San Diego Canal. Alternative 1br would also result in a change to access at Tres Cerritos Avenue and Newport Road. At Tres Cerritos Ave, the interchange would be eliminated and a cul-de-sac placed along the west side of the SR79 alignment. The Newport Road intersection would realign existing Newport Road to Winchester Road and would intersect with proposed SR79 as an at-grade intersection. It should be noted that all refinements are within the previously evaluated/analyzed environmental study area. Additional refinements were also made to the geometry of the project to comply with updated Caltrans design standards and to minimize impacts to the cultural resources identified during Native American consultation in 2013 and 2014. Build Alternative 1br maintains the same environmental study area as Alternative 1b and does not require any new right-of-way. The four build alternatives and the design options proposed in the Draft EIR/EIS remain the same and do not include refinements.

Type of Project *(use Table 1 on instruction sheet)* Change to existing state highway				
County Riverside	**Narrative Location/Route & Postmiles** Between Domenigoni Parkway and Gilman Spring Road in the Cities of Hemet and San Jacinto, District 8-RIV-79-KP R25.4/R54.4 (PM R15.78/R33.80) **Caltrans Projects – EA#** 08-494000			
Lead Agency: Caltrans				
Contact Person Tony Louka	**Phone#** (909) 383-6385	**Fax#** 909) 383-5975	**Email** tony_louka@dot.ca.gov	
Hot Spot Pollutant of Concern *(check one or both)* **PM2.5 X** **PM10 X**				
Federal Action for which Project-Level PM Conformity is Needed *(check appropriate box)*				
Categorical Exclusion (NEPA)	X **EA or Draft EIS**	**FONSI or Final EIS**	**PS&E or Construction**	**Other**
Scheduled Date of Federal Action: 4/14/16				
NEPA Assignment – Project Type *(check appropriate box)*				
Exempt	**Section 326 –Categorical Exemption**	X **Section 327 – Non-Categorical Exemption**		

Current Programming Dates *(as appropriate)*

	PE/Environmental	ENG	ROW	CON
Start	10/1/1998	1/1/2016	1/1/2016	9/1/2017
End	4/14/2016	6/30/2017	6/30/2017	12/15/2020

Project Purpose and Need (Summary): *(attach additional sheets as necessary)*

Project Purpose

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

Project Need

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

- Regional traffic on the current SR 79 alignment traverses heavily developed areas in Winchester, Hemet, and San Jacinto. The regional traffic competes with local traffic for the limited SR 79 roadway capacity.
- The current alignment of SR 79 between Domenigoni Parkway and Gilman Springs Road is circuitous, with numerous at-grade intersections, residential and commercial driveways, traffic signals, and other impediments that degrade the operational characteristics of the facility. With no viable alternative facilities, Sanderson Avenue and Warren Road have become default north-south routes for regional traffic, thereby adding more traffic onto local streets.
- SR 79 and SR 74 are collocated as one facility for about 11.3 km (7 mi) along Florida Avenue. As a result, SR 74 east-west traffic and SR 79 north-south traffic are combined.
- The geometric design of SR 79 does not support the movement of trucks exceeding the length of 12.2 meters (m) (40 feet [ft]), which are authorized under the Surface Transportation Assistance Act (STAA). As such, STAA vehicles (vehicles exceeding a length of 12.2 m [40 ft]) are diverted to Sanderson Avenue.

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*
Current land use in the project area and the surrounding areas consist of a mixture of residential/commercial, open space, and agriculture use. The areas are changing rapidly, and much of the existing agricultural land and open space is planned for future development for residential/commercial use.

Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

The LOS, AADT, % Trucks, and truck AADT on segments along the project corridor for the opening year (2020) Build and No Build alternatives are obtained from the traffic study performed for the SR 79 Realignment Project Supplemental Traffic Report (CH2M HILL, September 2014) and are presented in Appendix B, Table 1. Traffic data of Alternative 1br was used to represent the traffic conditions of all build alternatives and options, because the traffic conditions are not substantially different between the build alternatives.

As shown in Table 1, in 2020:

- For all the roadway segments analyzed along the corridor, the LOS for the Build alternatives will be the same or better than the No Build alternative.
- The AADT varies along the project corridor. The highest AADT is 44,100 for the No Build alternative and 75,600 for the Build alternatives.
- Trucks account for 8.5% of the traffic.

Note: For the new SR79 (freeway) alignment segments #48 to #54, the traffic study conservatively used the 2040 Build Alternatives AADT as the 2020 Build Alternatives AADT.

RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

The LOS, AADT, % Trucks, and truck AADT on segments along the project corridor for the horizon year (2040) Build and No Build alternatives are obtained from the traffic study performed for the SR 79 Realignment Project Supplemental Traffic Report (CH2M HILL, September 2014) and are presented in Appendix B, Table 2. Traffic data of Alternative 1br was used to represent the traffic conditions of all build alternatives, because the traffic conditions are not substantially different between the build alternatives.

As shown in Table 2, in 2040:

- For all the roadway segments analyzed along the corridor, the LOS for the Build alternatives will be the same or better than the No Build alternative.
- The AADT varies along the project corridor. The highest AADT is 63,200 for the No Build alternative and 75,600 for the Build alternatives.
- Trucks account for 8.5% of the traffic.

Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

Not Applicable to this project.

RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

Not applicable to this project.

Describe potential traffic redistribution effects of congestion relief *(impact on other facilities)*

In general, the SR 79 Realignment Project would have a positive effect on the study area since traffic would be shifting from the local streets in the cities of Hemet and San Jacinto to the new alignment with uninterrupted traffic flow. The traffic analysis concludes that with the project, 12 of 17 deficient existing local arterial roadways would improve from unacceptable LOS to acceptable LOS based on reductions in traffic. The remaining deficient arterial roadways would improve from the no build condition. Similarly, eight of the 11 study intersections would improve from unacceptable LOS in the horizon year (2040) no build condition to acceptable LOS with the project. The remaining intersections would result in a lower delay with the project, compared to the no build condition. While the proposed realignment project will increase traffic in areas near the newly constructed interchanges, the traffic analysis shows that 11 of the 13 intersections along the realignment will operate at acceptable LOS in both peak periods.

Comments/Explanation/Details *(attach additional sheets as necessary)*
Project Background

A previous PM hot spot analysis was performed in 2008 for the Draft EIR/EIS that covered four Build alternatives 1a, 1b, 2a, and 2b. At that time, a qualitative PM hot spot analysis was conducted following the EPA/FHWA 2006 guidance on PM_{10}/$PM_{2.5}$ hot spot analysis. The analysis was submitted to TCWG for interagency consultation and approved by TCWG for NEPA circulation in November 2008. TCWG also determined that the project was not a Project of Air Quality Concern (POAQC) (see Appendix C).

Since then, the project went through several changes and the information included in this submittal is to provide TCWG the up-to-date project information needed to evaluate the level of PM hot spot analysis required for this project. The related project changes include:

- Update of the project analysis years from 2004 (existing condition), 2015 (opening year), and 2035 (horizon year) to 2014 (existing condition), 2020 (opening year), and 2040 (horizon year).
- Add a refined build alternative, Alternative 1br. No changes are made to the four other build alternatives/options that were included in the DEIR/EIS.

Change of the project years and the addition of the refined alternative would not cause substantial differences, i.e. no significant new information, between the traffic conditions previously presented in the Draft EIR/EIS.

Project Analysis

FHWA and EPA released a PM hot spot analysis guidance titled *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* in December 2010 (2010 PM guidance) that superseded the 2006 PM guidance. The 2010 guidance was later updated in 2013 (2013 PM guidance). The discussion presented below follows the 2013 PM guidance to determine whether the project changes mentioned above would make the project a project of air quality concern, and if a quantitative PM hot spot analysis is required.

The area where the project would be located is a federal nonattainment area for $PM_{2.5}$, and a maintenance area for PM_{10}. Therefore, project level conformity demonstration for PM_{10}/$PM_{2.5}$ is required for the project. To demonstrate that the project would be unlikely to cause a new violation or contribute to an existing violation of the national ambient air quality standards for PM_{10} or $PM_{2.5}$, the project was evaluated according to the criteria listed in 2013 PM guidance.

According to this guidance, the first step in the PM_{10} and $PM_{2.5}$ hotspot evaluation is to determine if the project would be a project of air quality concern. EPA specified in 40 CFR 93.123(b)(1) that projects of concern with respect to air quality are certain highway and transit projects that involve significant levels of diesel vehicle traffic, such as major highway projects and projects at congested intersections that handle significant diesel traffic, or any other project identified in the $PM_{2.5}$ or PM_{10} SIP as a localized air quality concern.

According to USEPA criteria, the project would not be of air quality concern for the following reasons:

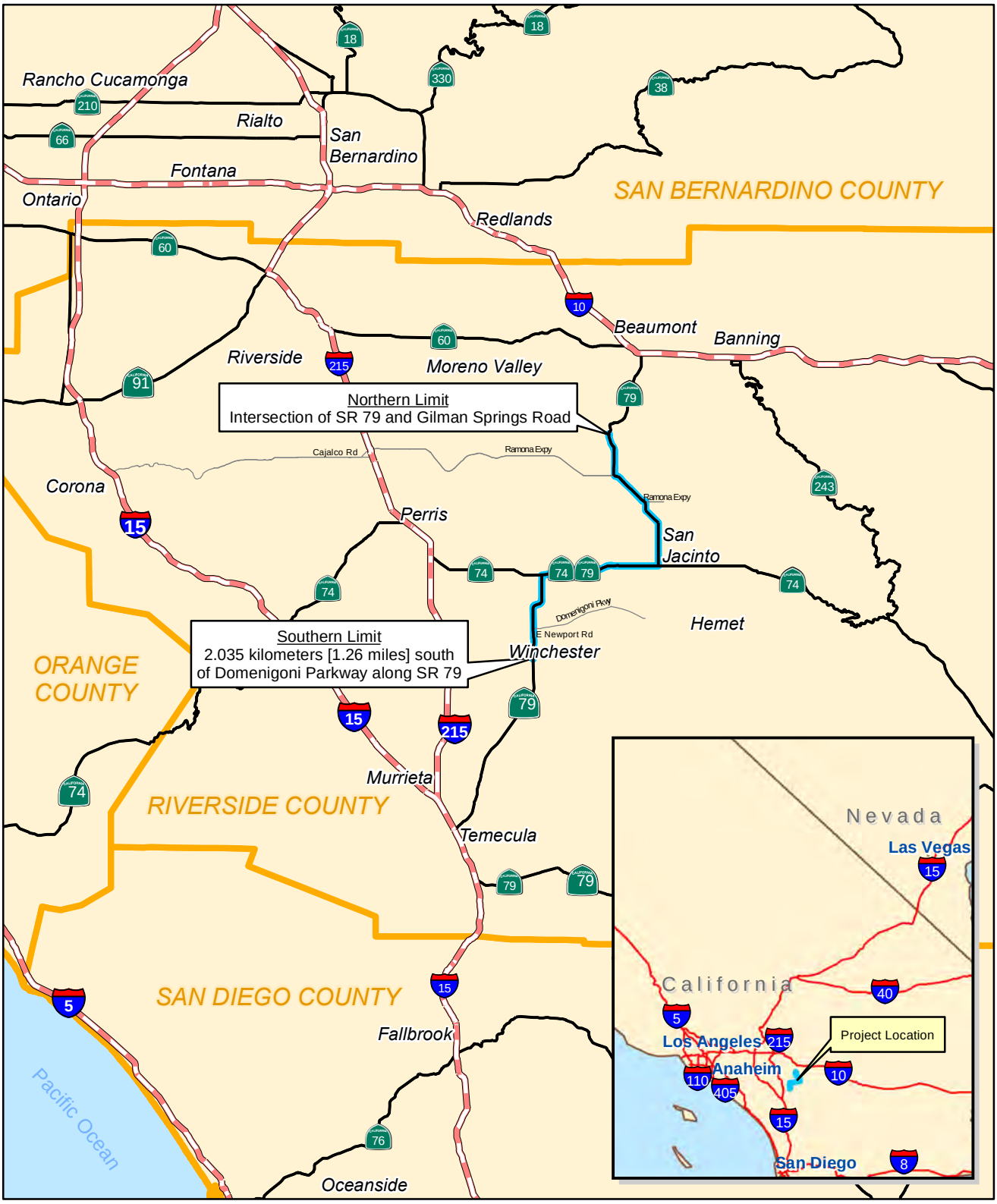
- The proposed project is not a new highway or expressway that serves a significant volume of diesel truck traffic. As shown in Appendix B, Tables 1 and 2, the highest AADT along the project corridor for the Build alternatives are 47,600 and 64,200 in 2020 and 2040, respectively. Trucks account for 8.5% of the AADT. The project AADT is lower than 125,000 which was referenced in the PM guidance for projects to be considered of air quality concern. Therefore, the project is not expected to significantly increase the truck traffic in the project area.
- The proposed project is expected to relieve traffic congestions along the project corridor as well as at intersections in the project area. Based on the intersection data from the SR 79 Realignment Project Supplemental Traffic Report (CH2M HILL, September 2014) which is shown in Appendix B, Table 3, the LOS at intersections within the project area would either improve or remain the same as the No Build alternative. None of the intersections in the project area have or would have significant number of diesel vehicles.

Comments/Explanation/Details *(attach additional sheets as necessary)*

- The project does not involve any new bus and rail terminals and transfer points that would have a significant number of diesel vehicles congregating at a single location.
- The project does not involve expanded bus and rail terminals and transfer points that would significantly increase the number of diesel vehicles congregating at a single location
- The project corridor on SR-79 and the nearby roadways was not identified in the state implementation plan (SIP) as a roadway of concern for reaching PM2.5 and PM_{10} attainment.

Based on the above discussion, the project would not be expected to be of air quality concern. Therefore, the project would not be expected to cause or contribute to any new localized $PM_{2.5}$ and PM_{10} violations or increase the frequency or severity of any existing violations. As such, the project would meet the requirements of 40 CFR 93.116 without explicit quantitative hot-spot analysis as this project has been determined not to be a POAQC.

Appendix A:
Project Location and Project Roadway Segments



Basemap Data: ESRI StreetMaps, 2004.

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LEGEND

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

Sources: CR - County of Riverside; ES - ESRI

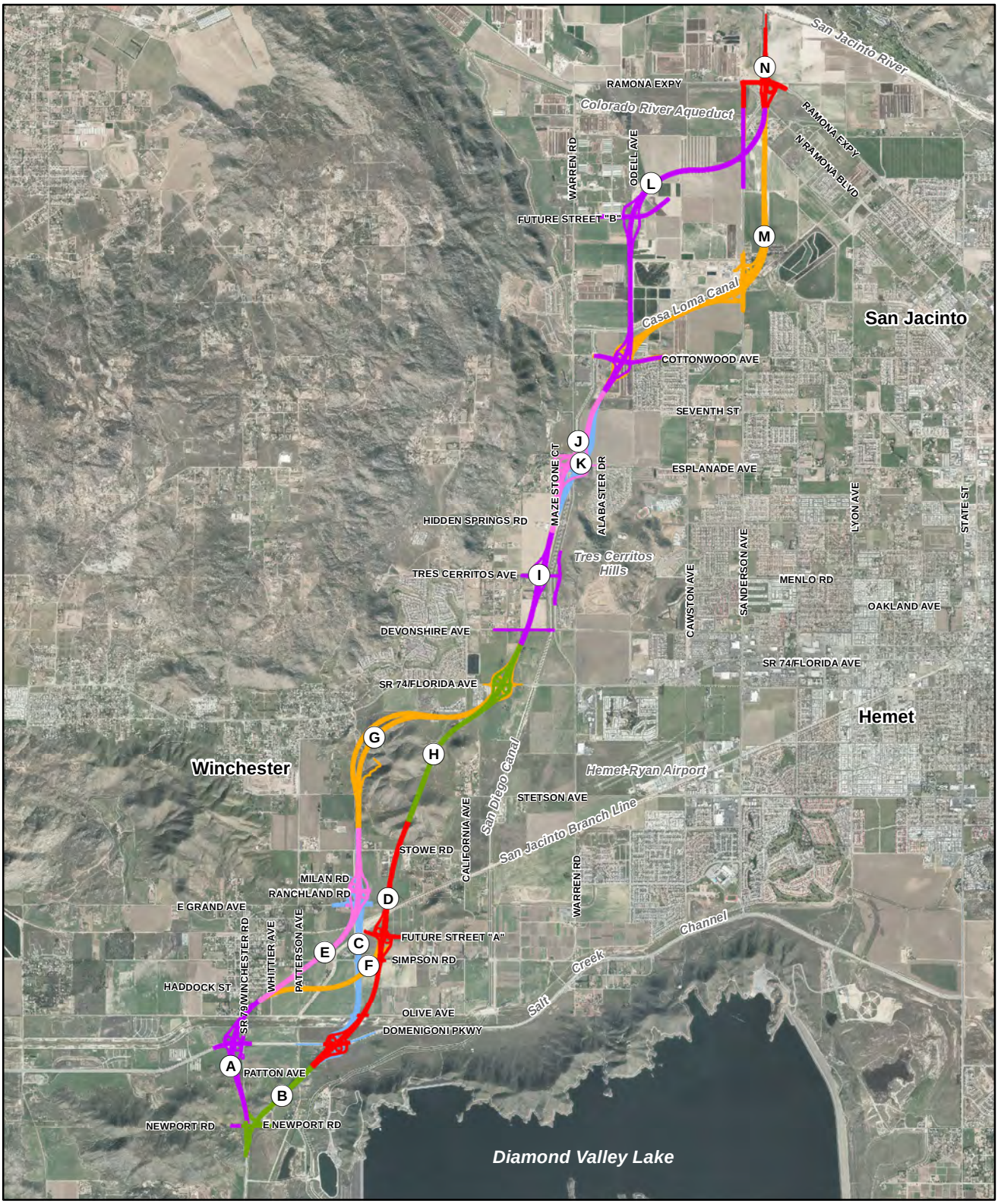
0 8.5 Miles

0 8.5 Kilometers

1:538,560

Figure 1
Regional Project Location
Air Quality PM Hot Spot Update
State Route 79 Realignment Project

DRAFT - NOT FOR PUBLIC CIRCULATION



Aerial Date: February 2011, Aero-Graphics, Inc

\\GALT\PROJ\RCTC\171146\2014\MAPFILES\AQ\PAD_SGS_A.MXD PAD_SGS_A.PDF 11/20/2014

0 7,000 Feet

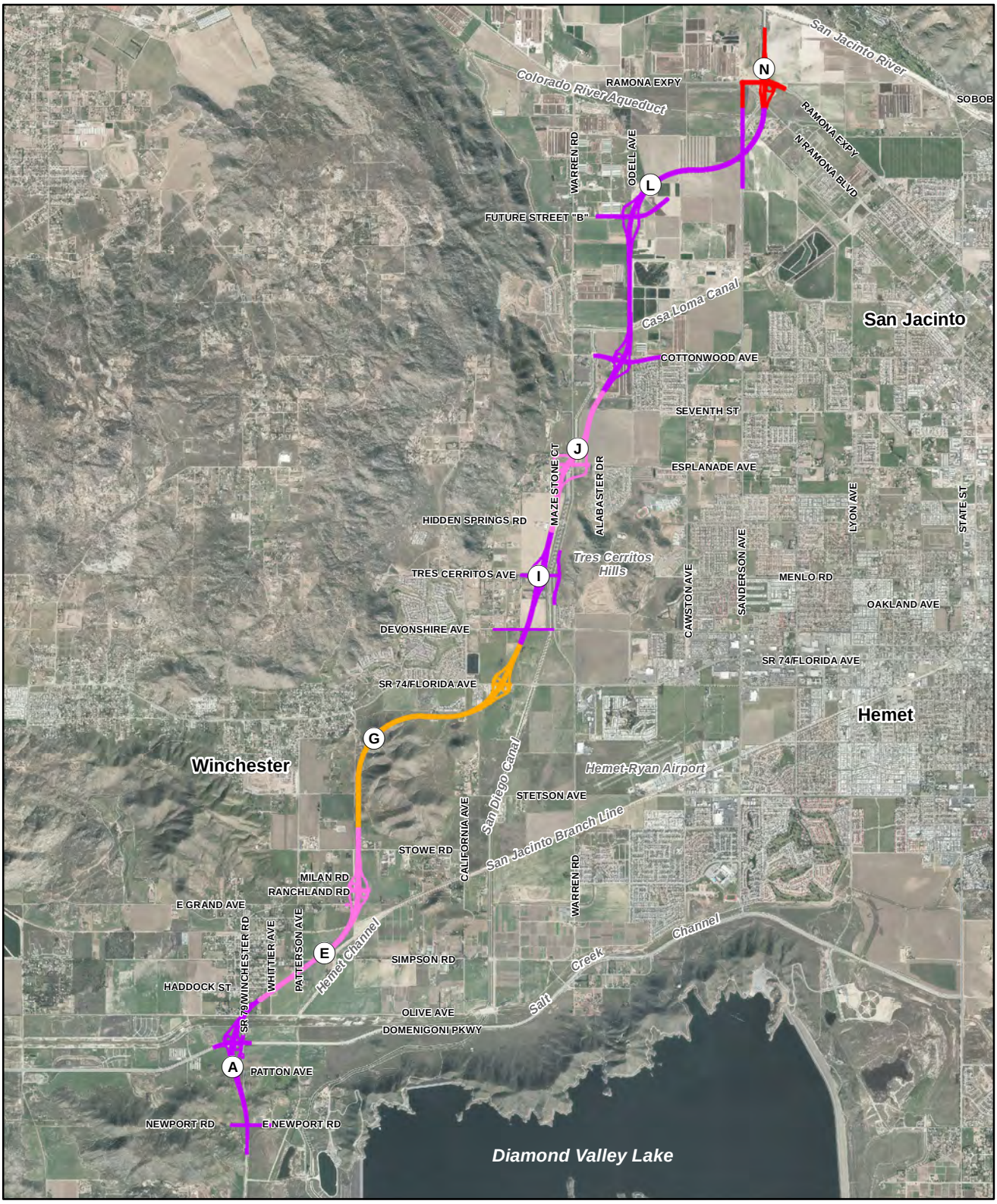
0 1,500 Meters

1:84,000

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

Figure 2
Project Roadway Segments
Air Quality PM Hot Spot Update
State Route 79 Realignment Project

DRAFT - NOT FOR PUBLIC CIRCULATION



Aerial Date: February 2011, Aero-Graphics, Inc

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0 7,000 Feet

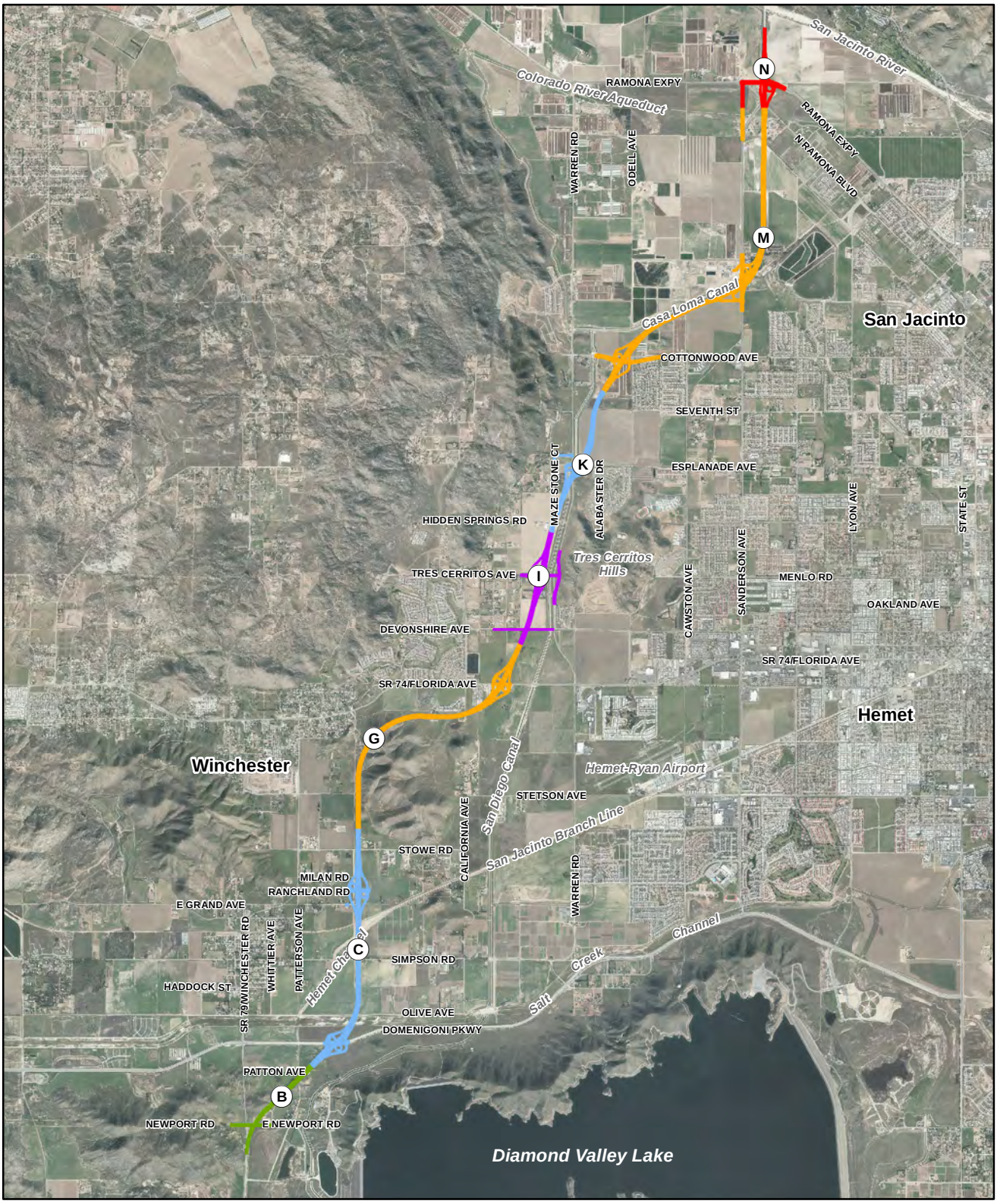
0 1,500 Meters

1:84,000

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

Figure 3
Build Alternative 1a
Air Quality PM Hot Spot Update
State Route 79 Realignment Project

DRAFT - NOT FOR PUBLIC CIRCULATION



Aerial Date: February 2011, Aero-Graphics, Inc

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0 7,000 Feet

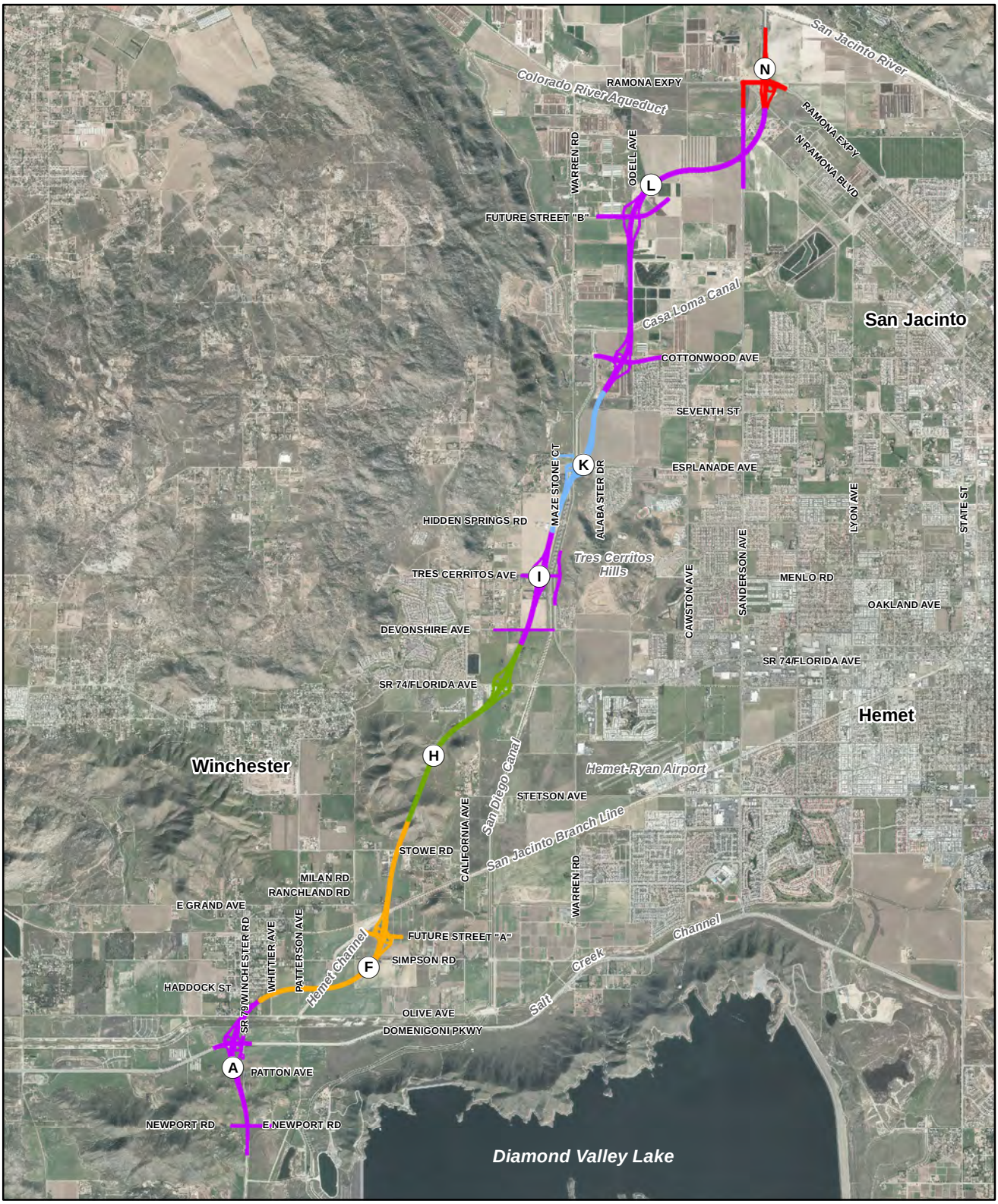
0 1,500 Meters

1:84,000

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

Figure 4
Build Alternative 1b and Design Option 1b1
Air Quality PM Hot Spot Update
State Route 79 Realignment Project

DRAFT - NOT FOR PUBLIC CIRCULATION



Aerial Date: February 2011, Aero-Graphics, Inc

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0 7,000 Feet

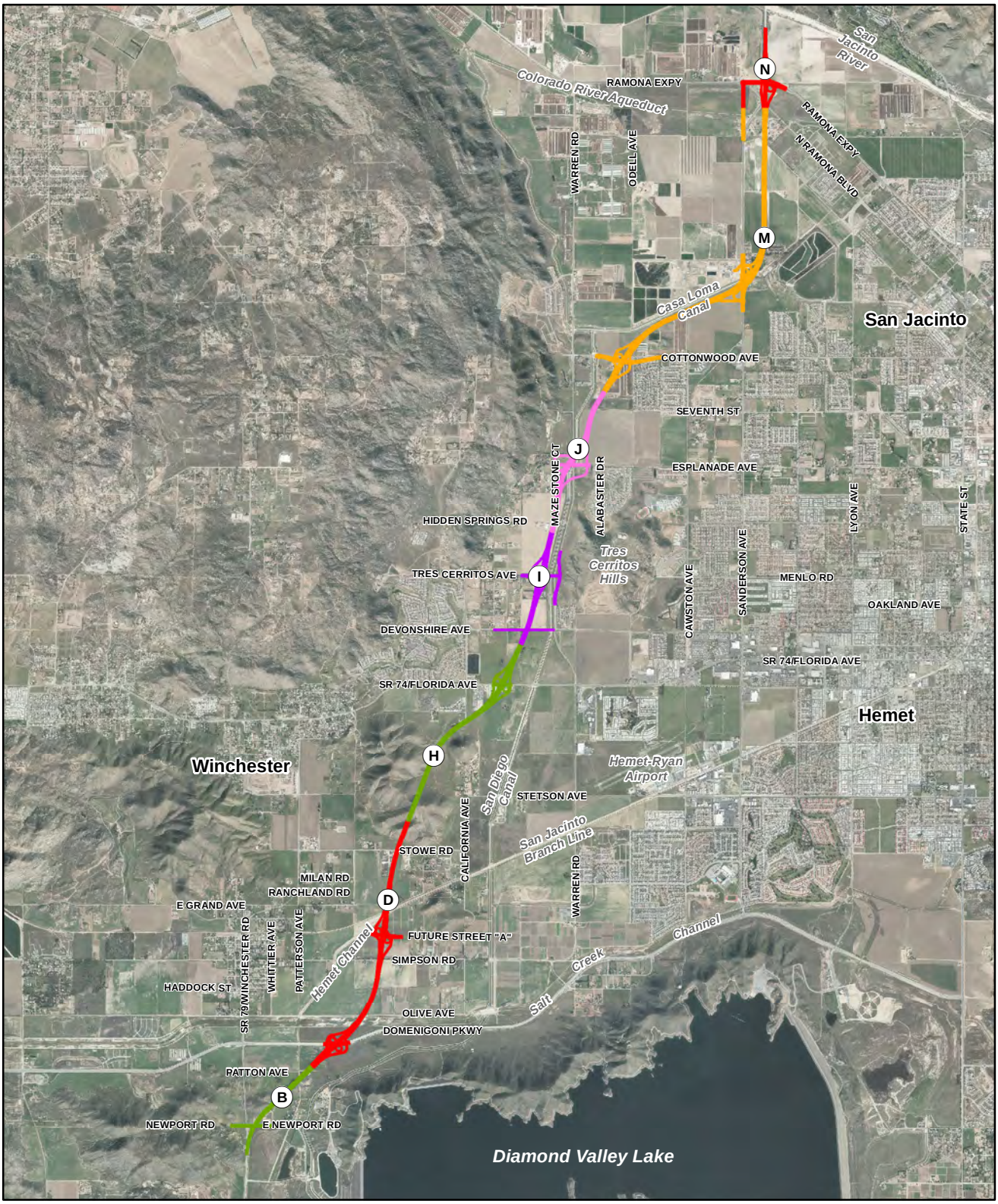
0 1,500 Meters

1:84,000

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

Figure 5
Build Alternative 2a
Air Quality PM Hot Spot Update
State Route 79 Realignment Project

DRAFT - NOT FOR PUBLIC CIRCULATION



Aerial Date: February 2011, Aero-Graphics, Inc

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0 7,000 Feet

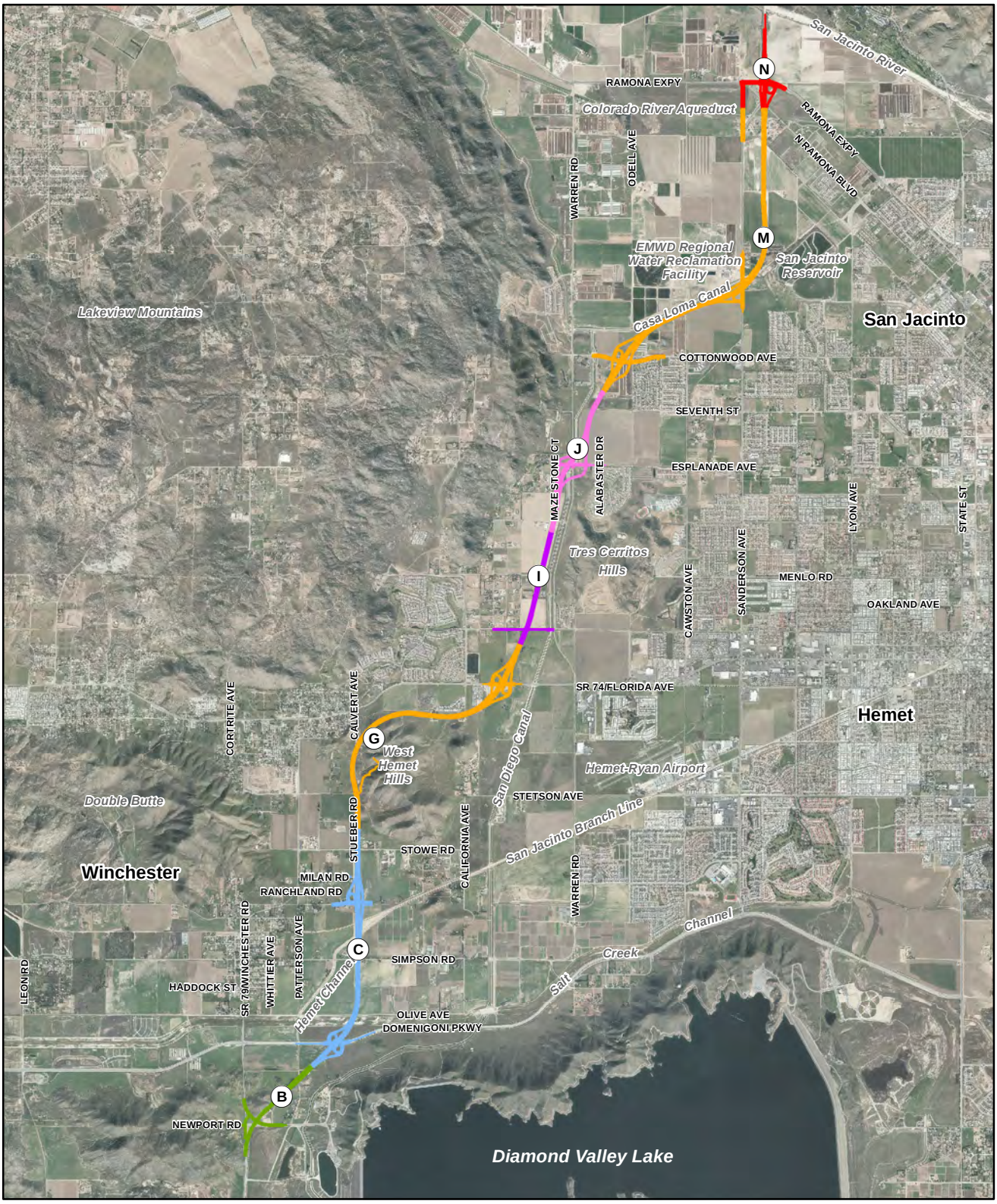
0 1,500 Meters

1:84,000

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

Figure 6
Build Alternative 2b and Design Option 2b1
Air Quality PM Hot Spot Update
State Route 79 Realignment Project

DRAFT - NOT FOR PUBLIC CIRCULATION



Aerial Date: February 2011, Aero-Graphics, Inc

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0 7,000 Feet

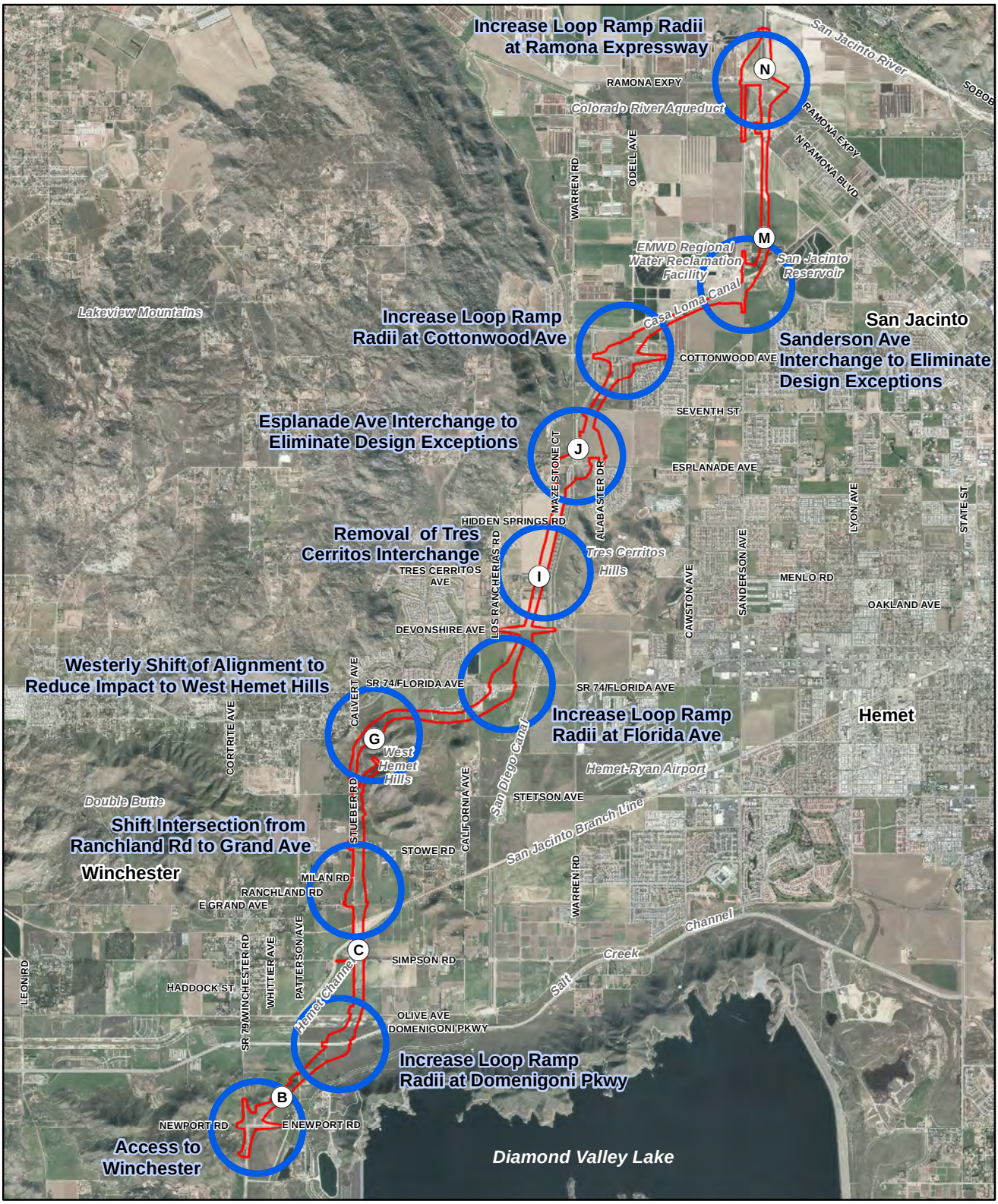
0 1,500 Meters

1:84,000

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

Figure 7
Build Alternative 1b with Refinements
Air Quality PM Hot Spot Update
State Route 79 Realignment Project

DRAFT - NOT FOR PUBLIC CIRCULATION



Aerial Date: February 2011, Aero-Grphics, Inc

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LEGEND

Right-of-Way

0 7,000 Feet

0 1,500 Meters

1:84,000

Figure 8
Preferred Alternative 1B with Refinements
Air Quality PM Hot Spot Update
State Route 79 Realignment Project

DRAFT - NOT FOR PUBLIC CIRCULATION

Appendix B:
Traffic Conditions in Project Area

Appendix B

Table 1: LOS, AADT, and % Trucks - Opening Year 2020

	No Build 2020				Build 2020			
Roadway	LOS	AADT	% Truck	Truck AADT	LOS	AADT	% Truck	Truck AADT
Winchester Road between:								
1. Newport Road and Domenigoni Parkway*	D	32,100	8.5%	2,729	C or Better	1,000	8.5%	85
2. Domenigoni Parkway and Simpson Avenue*	F	23,700	8.5%	2,015	C or Better	9,100	8.5%	774
3. Simpson Avenue and Florida Avenue*	F	22,000	8.5%	1,870	C or Better	9,400	8.5%	799
Florida Avenue (SR 74) between:								
4. Amanda Avenue and Winchester Road	D	36,200	8.5%	3,077	C or Better	24,500	8.5%	2,083
5. Winchester Road and Warren Road*	C or Better	44,100	8.5%	3,749	C or Better	22,400	8.5%	1,904
6. Warren Road and Sanderson Avenue*	E	38,500	8.5%	3,273	C or Better	26,100	8.5%	2,219
7. Sanderson Avenue and State Street*	F	34,700	8.5%	2,950	F	34,300	8.5%	2,916
8. State Street and San Jacinto Street*	D	29,800	8.5%	2,533	D	29,000	8.5%	2,465
9. San Jacinto Street and Columbia Street	C or Better	26,000	8.5%	2,210	C or Better	25,400	8.5%	2,159
San Jacinto Street between:								
10. Mayberry Street and Florida Avenue	C or Better	14,900	8.5%	1,267	C or Better	15,000	8.5%	1,275
11. Florida Avenue and Menlo Avenue*	C or Better	16,800	8.5%	1,428	C or Better	15,400	8.5%	1,309
12. Menlo Avenue and Esplanade Avenue*	D	22,100	8.5%	1,879	C or Better	20,200	8.5%	1,717
13. Esplanade Avenue and Seventh Street*	C or Better	17,800	8.5%	1,513	C or Better	15,800	8.5%	1,343
14. Seventh Street and Main Street*	C or Better	15,100	8.5%	1,284	C or Better	13,500	8.5%	1,148
Ramona Boulevard between:								
15. Main Street and State Street*	D	11,000	8.5%	935	D	11,100	8.5%	944
16. State Street and Sanderson Avenue	C or Better	5,500	8.5%	468	C or Better	5,900	8.5%	502
State Street between:								
17. Mayberry Street and Florida Avenue	C or Better	14,100	8.5%	1,199	C or Better	13,900	8.5%	1,182
18. Florida Avenue and Menlo Avenue	C or Better	19,400	8.5%	1,649	C or Better	14,900	8.5%	1,267
19. Menlo Avenue and Esplanade Avenue	C or Better	17,900	8.5%	1,522	C or Better	17,100	8.5%	1,454
20. Esplanade Avenue and Cottonwood Avenue	C or Better	16,900	8.5%	1,437	C or Better	13,600	8.5%	1,156
21. Cottonwood Avenue and Ramona Boulevard	C or Better	18,600	8.5%	1,581	C or Better	18,900	8.5%	1,607
22. Ramona Boulevard and Ramona Expressway*	C or Better	20,000	8.5%	1,700	C or Better	20,400	8.5%	1,734
Ramona Expressway between:								
23. San Jacinto Street and State Street	F	23,400	8.5%	1,989	F	24,500	8.5%	2,083
24. State Street and Sanderson Avenue*	C or Better	28,700	8.5%	2,440	C or Better	29,700	8.5%	2,525
25. Sanderson Avenue and Warren Road	C or Better	24,500	8.5%	2,083	C or Better	39,600	8.5%	3,366
26. Warren Road and Bridge Street	C or Better	20,800	8.5%	1,768	C or Better	47,600	8.5%	4,046
Warren Road between:								
27. Domenigoni Parkway and Simpson Road	C or Better	7,400	8.5%	629	C or Better	7,000	8.5%	595
28. Simpson Road and Mustang Way	F	14,200	8.5%	1,207	C or Better	6,600	8.5%	561
29. Mustang Way and Stetson Avenue	E	12,400	8.5%	1,054	C or Better	5,000	8.5%	425
30. Stetson Avenue and Florida Avenue	F	14,600	8.5%	1,241	C or Better	8,400	8.5%	714
31. Florida Avenue and Esplanade Avenue	E	12,800	8.5%	1,088	C or Better	1,500	8.5%	128
32. Esplanade Avenue and Cottonwood Avenue	C or Better	14,700	8.5%	1,250	C or Better	5,500	8.5%	468
33. Cottonwood Avenue and Ramona Expressway	C or Better	13,100	8.5%	1,114	C or Better	8,800	8.5%	748
Sanderson Avenue between:								
34. Domenigoni Parkway and Mustang Way	C or Better	22,000	8.5%	1,870	C or Better	4,300	8.5%	366
35. Mustang Way and Stetson Avenue	C or Better	24,300	8.5%	2,066	C or Better	9,100	8.5%	774
36. Stetson Avenue and Florida Avenue	E	31,000	8.5%	2,635	C or Better	15,900	8.5%	1,352
37. Florida Avenue and Menlo Avenue	D	30,700	8.5%	2,610	C or Better	18,200	8.5%	1,547
38. Menlo Avenue and Esplanade Avenue	C or Better	26,700	8.5%	2,270	C or Better	19,700	8.5%	1,675
39. Esplanade Avenue and Cottonwood Avenue	F	20,700	8.5%	1,760	F	20,600	8.5%	1,751
40. Cottonwood Avenue and Ramona Boulevard	F	18,500	8.5%	1,573	F	21,500	8.5%	1,828
41. Ramona Boulevard and Ramona Expressway	F	17,900	8.5%	1,522	C or Better	1,000	8.5%	85
42. Ramona Expressway and Gilman Springs Road*	F	39,000	8.5%	3,315	F	37,700	8.5%	3,205

	No Build 2020				Build 2020			
Roadway	LOS	AADT	% Truck	Truck AADT	LOS	AADT	% Truck	Truck AADT
Lamb Canyon Road (SR 79)								
43. Gilman Springs Road and Interstate 10*	F	42,000	8.5%	3,570	F	46,400	8.5%	3,944
Domenigoni Parkway between:								
44. Winchester Road and Warren Road	C or Better	27,400	8.5%	2,329	C or Better	6,400	8.5%	544
45. Warren Road and Sanderson Avenue	C or Better	23,500	8.5%	1,998	C or Better	10,500	8.5%	893
Cottonwood Avenue between:								
46. Warren Road and Sanderson Avenue	C or Better	1,800	8.5%	153	C or Better	3,500	8.5%	298
47. Sanderson Avenue and State Street	C or Better	6,600	8.5%	561	C or Better	5,900	8.5%	502
SR 79 (Freeway) between:								
48. Newport Road and Domenigoni Parkway	NA	NA	NA	NA	E	75,600	8.5%	6,426
49. Domenigoni Parkway and Florida Avenue	NA	NA	NA	NA	D	65,700	8.5%	5,585
50. Florida Avenue to Esplanade Avenue	NA	NA	NA	NA	F	54,400	8.5%	4,624
51. Esplanade Avenue to Cottonwood Avenue	NA	NA	NA	NA	F	50,600	8.5%	4,301
52. Cottonwood Avenue to Sanderson Avenue	NA	NA	NA	NA	F	45,600	8.5%	3,876
53. Sanderson Avenue to Ramona Expressway	NA	NA	NA	NA	C or Better	61,100	8.5%	5,194
54.north of Ramona Expressway	NA	NA	NA	NA	C or Better	56,400	8.5%	4,794

*Roadway is part of existing SR 79

Note:

1. LOS and AADT are from SR 79 Realignment Supplemental Traffic Report (CH2M HILL, 2014), Table 7.
2. Truck AADT data are derived from the traffic study for the SR 79 Realignment Supplemental Traffic Report (CH2M HILL, 2014).
3. For the new SR79 (freeway) alignment segments #48 to #54, the traffic study conservatively used the 2040 Build Alternatives AADT as the 2020 Build Alternatives AADT (CH2M HILL, 2014) .

Appendix B

Table 2: LOS, AADT, and % Trucks - Horizon Year 2040

	No Build 2040				Build 2040			
Roadway	LOS	AADT	% Truck	Truck AADT	LOS	AADT	% Truck	Truck AADT
Winchester Road between:								
1. Newport Road and Domenigoni Parkway*	F	40,400	8.5%	3,434	C or Better	1,300	8.5%	111
2. Domenigoni Parkway and Simpson Avenue*	F	42,000	8.5%	3,570	C or Better	3,700	8.5%	315
3. Simpson Avenue and Florida Avenue*	F	38,600	8.5%	3,281	C or Better	4,300	8.5%	366
Florida Avenue (SR 74) between:								
4. Amanda Avenue and Winchester Road	C or Better	45,400	8.5%	3,859	C or Better	30,800	8.5%	2,618
5. Winchester Road and Warren Road*	F	63,200	8.5%	5,372	C or Better	32,400	8.5%	2,754
6. Warren Road and Sanderson Avenue*	D	53,200	8.5%	4,522	C or Better	36,000	8.5%	3,060
7. Sanderson Avenue and State Street*	F	39,900	8.5%	3,392	F	39,400	8.5%	3,349
8. State Street and San Jacinto Street*	F	34,300	8.5%	2,916	E	33,400	8.5%	2,839
9. San Jacinto Street and Columbia Street	D	29,900	8.5%	2,542	D	29,200	8.5%	2,482
San Jacinto Street between:								
10. Mayberry Street and Florida Avenue	C or Better	18,500	8.5%	1,573	C or Better	18,600	8.5%	1,581
11. Florida Avenue and Menlo Avenue*	D	20,800	8.5%	1,768	C or Better	19,000	8.5%	1,615
12. Menlo Avenue and Esplanade Avenue*	E	31,400	8.5%	2,669	D	28,700	8.5%	2,440
13. Esplanade Avenue and Seventh Street*	C or Better	22,900	8.5%	1,947	C or Better	20,300	8.5%	1,726
14. Seventh Street and Main Street*	C or Better	18,000	8.5%	1,530	C or Better	16,200	8.5%	1,377
Ramona Boulevard between:								
15. Main Street and State Street*	C or Better	13,300	8.5%	1,131	C or Better	13,400	8.5%	1,139
16. State Street and Sanderson Avenue	C or Better	6,800	8.5%	578	C or Better	7,400	8.5%	629
State Street between:								
17. Mayberry Street and Florida Avenue	C or Better	17,500	8.5%	1,488	C or Better	17,200	8.5%	1,462
18. Florida Avenue and Menlo Avenue	E	24,100	8.5%	2,049	C or Better	18,500	8.5%	1,573
19. Menlo Avenue and Esplanade Avenue	C or Better	20,500	8.5%	1,743	C or Better	19,700	8.5%	1,675
20. Esplanade Avenue and Cottonwood Avenue	C or Better	19,400	8.5%	1,649	C or Better	15,600	8.5%	1,326
21. Cottonwood Avenue and Ramona Boulevard	C or Better	21,400	8.5%	1,819	C or Better	21,800	8.5%	1,853
22. Ramona Boulevard and Ramona Expressway*	C or Better	23,000	8.5%	1,955	C or Better	23,400	8.5%	1,989
Ramona Expressway between:								
23. San Jacinto Street and State Street	C or Better	35,300	8.5%	3,001	C or Better	36,900	8.5%	3,137
24. State Street and Sanderson Avenue*	C or Better	39,600	8.5%	3,366	C or Better	41,000	8.5%	3,485
25. Sanderson Avenue and Warren Road	C or Better	34,900	8.5%	2,967	C or Better	56,500	8.5%	4,803
26. Warren Road and Bridge Street	C or Better	28,000	8.5%	2,380	C or Better	64,200	8.5%	5,457
Warren Road between:								
27. Domenigoni Parkway and Simpson Road	C or Better	9,100	8.5%	774	C or Better	8,600	8.5%	731
28. Simpson Road and Mustang Way	C or Better	17,600	8.5%	1,496	C or Better	8,100	8.5%	689
29. Mustang Way and Stetson Avenue	C or Better	15,300	8.5%	1,301	C or Better	6,200	8.5%	527
30. Stetson Avenue and Florida Avenue	C or Better	17,500	8.5%	1,488	C or Better	10,000	8.5%	850
31. Florida Avenue and Esplanade Avenue	C or Better	17,000	8.5%	1,445	C or Better	2,000	8.5%	170
32. Esplanade Avenue and Cottonwood Avenue	C or Better	23,100	8.5%	1,964	C or Better	8,700	8.5%	740
33. Cottonwood Avenue and Ramona Expressway	C or Better	19,200	8.5%	1,632	C or Better	12,900	8.5%	1,097
Sanderson Avenue between:								
34. Domenigoni Parkway and Mustang Way	F	35,000	8.5%	2,975	C or Better	6,900	8.5%	587
35. Mustang Way and Stetson Avenue	D	29,000	8.5%	2,465	C or Better	10,900	8.5%	927
36. Stetson Avenue and Florida Avenue	F	39,300	8.5%	3,341	C or Better	20,200	8.5%	1,717
37. Florida Avenue and Menlo Avenue	F	40,000	8.5%	3,400	C or Better	23,700	8.5%	2,015
38. Menlo Avenue and Esplanade Avenue	F	36,900	8.5%	3,137	C or Better	27,200	8.5%	2,312
39. Esplanade Avenue and Cottonwood Avenue	C or Better	29,700	8.5%	2,525	C or Better	29,600	8.5%	2,516
40. Cottonwood Avenue and Ramona Boulevard	C or Better	24,800	8.5%	2,108	C or Better	28,900	8.5%	2,457
41. Ramona Boulevard and Ramona Expressway	C or Better	25,600	8.5%	2,176	C or Better	1,400	8.5%	119
42. Ramona Expressway and Gilman Springs Road*	D	53,600	8.5%	4,556	D	51,900	8.5%	4,412

	No Build 2040				Build 2040			
Roadway	LOS	AADT	% Truck	Truck AADT	LOS	AADT	% Truck	Truck AADT
Lamb Canyon Road (SR 79)								
43. Gilman Springs Road and Interstate 10*	C or Better	54,500	8.5%	4,633	C or Better	60,200	8.5%	5,117
Domenigoni Parkway between:								
44. Winchester Road and Warren Road	C or Better	37,700	8.5%	3,205	C or Better	8,800	8.5%	748
45. Warren Road and Sanderson Avenue	C or Better	32,900	8.5%	2,797	C or Better	14,600	8.5%	1,241
Cottonwood Avenue between:								
46. Warren Road and Sanderson Avenue	C or Better	2,600	8.5%	221	C or Better	5,200	8.5%	442
47. Sanderson Avenue and State Street	C or Better	9,300	8.5%	791	C or Better	8,300	8.5%	706
SR 79 (Freeway) between:								
48. Newport Road and Domenigoni Parkway	NA	NA	NA	NA	E	75,600	8.5%	6,426
49. Domenigoni Parkway and Grand Avenue	NA	NA	NA	NA	E	72,700	8.5%	6,180
50. Grand Avenue and Florida Avenue	NA	NA	NA	NA	C or Better	61,000	8.5%	5,185
51. Florida Avenue to Esplanade Avenue	NA	NA	NA	NA	C or Better	54,400	8.5%	4,624
52. Esplanade Avenue to Cottonwood Avenue	NA	NA	NA	NA	C or Better	50,600	8.5%	4,301
53. Cottonwood Avenue to Sanderson Avenue	NA	NA	NA	NA	C or Better	45,600	8.5%	3,876
54. Sanderson Avenue to Ramona Expressway	NA	NA	NA	NA	C or Better	61,100	8.5%	5,194
55. north of Ramona Expressway	NA	NA	NA	NA	C or Better	56,400	8.5%	4,794

*Roadway is part of existing SR 79

Note:

1. LOS and AADT are from SR 79 Realignment Supplemental Traffic Report (CH2M HILL, 2014), Table 10.
2. Truck AADT data are derived from the traffic study for the SR 79 Realignment Supplemental Traffic Report (CH2M HILL, 2014).

Appendix B

Table 3: LOS, Volume, and Delay at Intersections

AM Peak Hour - Opening Year

#	Opening Year 2020						
	Intersection Name	No Build			Build		
		LOS	Volume	Delay	LOS	Volume	Delay
1	Winchester Road/Newport Road	F	2800	**	A	340	9
2	Winchester Road/Domenigoni Parkway	C	4310	25	C	2380	31
3	Winchester Road/Simpson Road	B	2600	19	C	1430	23
4	Winchester Road/Florida Avenue	D	4100	46	B	2390	14
5	Warren Road /Domenigoni Parkway	C	2230	29	B	1020	19
6	Warren Road/Mustang Way	A	1300	10	B	630	13
7	Warren Road/Stetson Avenue	F	1610	59	B	1090	13
8	Warren Road/Florida Avenue	C	3720	29	B	3020	19
9	Warren Road/Esplanade Avenue	E	1380	47	B	860	12
10	Warren Road/Cottonwood Avenue	A	850	8	B	550	13
11	Warren Road/Ramona Expressway	B	1920	19	B	2110	19
12	Sanderson Avenue/Domenigoni Parkway	C	2190	25	B	1080	18
13	Sanderson Avenue/Mustang Way	B	2620	15	B	1560	15
14	Sanderson Avenue/Stetson Avenue	D	4720	44	D	4150	39
15	Sanderson Avenue/Florida Avenue	F	5410	87	D	4190	40
16	Sanderson Avenue/Esplanade Avenue	C	3550	26	C	3070	22
17	Sanderson Avenue/Cottonwood Avenue	B	2690	12	B	2950	15
18	Sanderson Avenue/Ramona Boulevard	F	2360	320	B	630	10
19	Sanderson Avenue/Ramona Expressway	D	4930	37	C	1810	23
20	Sanderson NB Avenue/Gilman Springs Road	B	1030	15	B	1030	14
21	Sanderson SB Avenue/Gilman Springs Road	B	530	12	B	440	11
22	Lyon Avenue/Cottonwood Avenue	B	620	10	A	550	10
23	State Street/Florida Avenue	C	3420	23	C	3050	22
24	State Street/Esplanade Avenue	C	2260	24	C	1890	23
25	State Street/Cottonwood Avenue	B	1670	13	B	1590	12
26	State Street/Ramona Boulevard	C	2890	28	C	2940	29
27	State Street/Ramona Expressway	C	3630	28	C	3890	31
28	San Jacinto Street/Florida Avenue	C	2810	34	C	2830	33
29	San Jacinto Street/Esplanade Avenue	C	2500	25	C	1950	25
30	San Jacinto Street/Ramona Blvd./Main Street	F	2030	190	F	2050	194
31	SR 79/Newport Road	n/a	n/a	n/a	A	2790	7
32	SR 79/Domenigoni Parkway SB Ramps	n/a	n/a	n/a	F	6080	223
33	SR 79/Domenigoni Parkway NB Ramps	n/a	n/a	n/a	C	4360	31
34	SR 79/Florida Avenue SB Ramps	n/a	n/a	n/a	C	5600	29
35	SR 79/Florida Avenue NB Ramps	n/a	n/a	n/a	B	4880	11
36	SR 79/Esplanade Avenue	n/a	n/a	n/a	B	4780	17
37	SR 79/Cottonwood Avenue	n/a	n/a	n/a	C	4650	24
38	SR 79/Sanderson Avenue EB Ramps	n/a	n/a	n/a	C	2410	25
39	SR 79/Sanderson Avenue WB Ramps	n/a	n/a	n/a	B	1530	18
40							
41							
42							
43							

Source: SR 79 Realignment Supplemental Traffic Report (CH2M HILL, 2014), Tables 8 and 9, and Figures 9, 12, and 14.
Delay is expressed in average seconds of delay per vehicle

Table 3: LOS, Volume, and Delay at Intersections

PM Peak Hour - Opening year

#	Opening Year 2020						
	Intersection Name	No Build			Build		
		LOS	Volume	Delay	LOS	Volume	Delay
1	Winchester Road/Newport Road	F	3150	**	A	360	10
2	Winchester Road/Domenigoni Parkway	C	5580	34	C	3390	27
3	Winchester Road/Simpson Road	B	2660	17	C	1730	26
4	Winchester Road/Florida Avenue	E	4470	75	B	2600	13
5	Warren Road /Domenigoni Parkway	B	2550	19	B	930	19
6	Warren Road/Mustang Way	A	1260	5	A	550	6
7	Warren Road/Stetson Avenue	F	1690	81	C	1250	16
8	Warren Road/Florida Avenue	C	4570	30	B	3540	17
9	Warren Road/Esplanade Avenue	F	1800	152	B	1070	15
10	Warren Road/Cottonwood Avenue	A	1380	8	B	930	13
11	Warren Road/Ramona Expressway	C	2630	23	C	2900	24
12	Sanderson Avenue/Domenigoni Parkway	C	2360	22	B	1060	19
13	Sanderson Avenue/Mustang Way	B	2190	10	B	1080	15
14	Sanderson Avenue/Stetson Avenue	F	5630	91	D	4030	42
15	Sanderson Avenue/Florida Avenue	F	7780	182	D	4720	46
16	Sanderson Avenue/Esplanade Avenue	E	4620	56	D	3650	36
17	Sanderson Avenue/Cottonwood Avenue	B	3100	15	B	3400	20
18	Sanderson Avenue/Ramona Boulevard	F	2720	501	B	680	11
19	Sanderson Avenue/Ramona Expressway	C	4950	29	C	2280	23
20	Sanderson NB Avenue/Gilman Springs Road	C	990	17	C	930	16
21	Sanderson SB Avenue/Gilman Springs Road	C	720	18	B	570	14
22	Lyon Avenue/Cottonwood Avenue	B	920	13	B	810	12
23	State Street/Florida Avenue	C	4740	29	C	4070	25
24	State Street/Esplanade Avenue	C	3000	26	C	2610	25
25	State Street/Cottonwood Avenue	B	1990	12	B	1720	12
26	State Street/Ramona Boulevard	C	2970	27	C	2720	27
27	State Street/Ramona Expressway	C	4080	32	C	3950	32
28	San Jacinto Street/Florida Avenue	D	3690	42	D	3480	35
29	San Jacinto Street/Esplanade Avenue	C	3610	28	C	2870	26
30	San Jacinto Street/Ramona Blvd./Main Street	F	3160	466	F	3180	470
31	SR 79/Newport Road	n/a	n/a	n/a	A	3140	7
32	SR 79/Domenigoni Parkway SB Ramps	n/a	n/a	n/a	E	5410	55
33	SR 79/Domenigoni Parkway NB Ramps	n/a	n/a	n/a	F	5320	81
34	SR 79/Florida Avenue SB Ramps	n/a	n/a	n/a	C	6150	34
35	SR 79/Florida Avenue NB Ramps	n/a	n/a	n/a	F	6360	90
36	SR 79/Esplanade Avenue	n/a	n/a	n/a	B	4800	13
37	SR 79/Cottonwood Avenue	n/a	n/a	n/a	B	4690	14
38	SR 79/Sanderson Avenue EB Ramps	n/a	n/a	n/a	C	2580	26
39	SR 79/Sanderson Avenue WB Ramps	n/a	n/a	n/a	B	1820	18
40							
41							
42							
43							

Source: SR 79 Realignment Supplemental Traffic Report (CH2M HILL, 2014), Tables 8 and 9, and Figures 9, 12, and 14.
Delay is expressed in average seconds of delay per vehicle

Appendix B

Table 3: LOS, Volume, and Delay at Intersections

AM Peak Hour - Horizon year

#	Intersection Name	Horizon Year 2040					
		No Build			Build		
		LOS	Volume	Delay	LOS	Volume	Delay
1	Winchester Road/Newport Road	A	3850	6	A	520	10
2	Winchester Road/Domenigoni Parkway	C	6870	21	B	2740	13
3	Winchester Road/Simpson Road	D	4370	48	C	2010	25
4	Winchester Road/Florida Avenue	E	6290	75	C	3550	21
5	Warren Road /Domenigoni Parkway	C	3060	23	B	1380	20
6	Warren Road/Mustang Way	B	1660	16	B	820	18
7	Warren Road/Stetson Avenue	C	2350	29	C	1670	24
8	Warren Road/Florida Avenue	D	5170	36	C	3750	20
9	Warren Road/Esplanade Avenue	C	2170	20	C	1260	25
10	Warren Road/Cottonwood Avenue	A	1320	9	B	840	17
11	Warren Road/Ramona Expressway	C	2780	22	B	1600	14
12	Sanderson Avenue/Domenigoni Parkway	F	3320	157	B	1640	20
13	Sanderson Avenue/Mustang Way	B	3730	16	B	2280	15
14	Sanderson Avenue/Stetson Avenue	E	6400	56	D	5590	49
15	Sanderson Avenue/Florida Avenue	F	8360	116	D	6430	42
16	Sanderson Avenue/Esplanade Avenue	B	6570	19	B	5680	16
17	Sanderson Avenue/Cottonwood Avenue	B	5250	12	B	5650	17
18	Sanderson Avenue/Ramona Boulevard	B	4130	10	B	1070	13
19	Sanderson Avenue/Ramona Expressway	F	7480	101	B	4460	19
20	Sanderson NB Avenue/Gilman Springs Road	B	1650	13	B	1690	15
21	Sanderson SB Avenue/Gilman Springs Road	A	550	10	B	470	15
22	Lyon Avenue/Cottonwood Avenue	B	840	18	B	750	18
23	State Street/Florida Avenue	C	4180	26	C	3740	25
24	State Street/Esplanade Avenue	C	2980	22	C	2430	22
25	State Street/Cottonwood Avenue	B	1980	12	B	1900	11
26	State Street/Ramona Boulevard	C	3720	23	C	3720	25
27	State Street/Ramona Expressway	C	5170	23	C	5520	25
28	San Jacinto Street/Florida Avenue	C	3330	30	C	3330	29
29	San Jacinto Street/Esplanade Avenue	C	3410	25	C	2670	24
30	San Jacinto Street/Ramona Blvd./Main Street	F	2870	98	F	2890	101
31	SR 79/Newport Road	n/a	n/a	n/a	A	3830	10
32	SR 79/Domenigoni Parkway SB Ramps	n/a	n/a	n/a	D	4870	55
33	SR 79/Domenigoni Parkway NB Ramps	n/a	n/a	n/a	B	3410	16
34	SR 79/Grand Ave SB Ramps	n/a	n/a	n/a	E	4790	66
35	SR 79/Grand Ave NB Ramps	n/a	n/a	n/a	C	4320	26
36	SR 79/Florida SB Ramps	n/a	n/a	n/a	A	4840	7
37	SR 79/Florida NB Ramps	n/a	n/a	n/a	A	4240	6
38	SR 79/Esplanade SB Ramps	n/a	n/a	n/a	B	530	15
39	SR 79/Esplanade NB Ramps	n/a	n/a	n/a	B	760	16
40	SR 79/Cottonwood SB Ramps	n/a	n/a	n/a	A	970	5
41	SR 79/Cottonwood NB Ramps	n/a	n/a	n/a	B	1000	18
42	SR 79/Sanderson EB Ramps	n/a	n/a	n/a	C	2410	25
43	SR 79/Sanderson WB Ramps	n/a	n/a	n/a	B	1530	18

Source: SR 79 Realignment Supplemental Traffic Report (CH2M HILL, 2014), Tables 11 and 12, and Figures 17, 20, and 23.
Delay is expressed in average seconds of delay per vehicle

Table 3: LOS, Volume, and Delay at Intersections

PM Peak Hour - Horizon year

#	Intersection Name	Future Year 2040					
		No Build			Build		
		LOS	Volume	Delay	LOS	Volume	Delay
1	Winchester Road/Newport Road	A	4350	7	B	560	11
2	Winchester Road/Domenigoni Parkway	E	9350	56	A	4850	10
3	Winchester Road/Simpson Road	B	4410	17	C	2390	27
4	Winchester Road/Florida Avenue	F	6790	111	B	3740	18
5	Warren Road /Domenigoni Parkway	B	3510	17	B	1270	20
6	Warren Road/Mustang Way	B	1460	11	B	640	13
7	Warren Road/Stetson Avenue	C	2250	28	C	1740	25
8	Warren Road/Florida Avenue	C	6280	33	B	4300	19
9	Warren Road/Esplanade Avenue	B	2790	20	C	1560	24
10	Warren Road/Cottonwood Avenue	A	2040	10	B	1360	17
11	Warren Road/Ramona Expressway	C	3830	28	B	1870	14
12	Sanderson Avenue/Domenigoni Parkway	E	3540	70	C	1560	22
13	Sanderson Avenue/Mustang Way	A	3420	10	B	1650	15
14	Sanderson Avenue/Stetson Avenue	F	8370	126	D	5990	45
15	Sanderson Avenue/Florida Avenue	F	12340	262	E	7400	63
16	Sanderson Avenue/Esplanade Avenue	E	8630	56	C	6820	23
17	Sanderson Avenue/Cottonwood Avenue	B	6010	17	C	6470	30
18	Sanderson Avenue/Ramona Boulevard	B	4650	14	B	1160	14
19	Sanderson Avenue/Ramona Expressway	E	7340	58	C	5300	27
20	Sanderson NB Avenue/Gilman Springs Road	A	1370	7	A	1280	6
21	Sanderson SB Avenue/Gilman Springs Road	A	840	8	A	700	9
22	Lyon Avenue/Cottonwood Avenue	C	1240	24	C	1070	23
23	State Street/Florida Avenue	C	5580	33	C	4780	30
24	State Street/Esplanade Avenue	C	3760	23	C	3240	23
25	State Street/Cottonwood Avenue	A	2380	10	A	2090	10
26	State Street/Ramona Boulevard	C	3880	24	C	3490	23
27	State Street/Ramona Expressway	C	5680	24	C	5550	23
28	San Jacinto Street/Florida Avenue	D	4550	38	C	4260	34
29	San Jacinto Street/Esplanade Avenue	C	4910	29	C	3910	26
30	San Jacinto Street/Ramona Blvd./Main Street	F	4480	258	F	4500	261
31	SR 79/Newport Road	n/a	n/a	n/a	B	4340	10
32	SR 79/Domenigoni Parkway SB Ramps	n/a	n/a	n/a	B	4030	20
33	SR 79/Domenigoni Parkway NB Ramps	n/a	n/a	n/a	C	3870	25
34	SR 79/Grand Ave SB Ramps	n/a	n/a	n/a	C	4240	32
35	SR 79/Grand Ave NB Ramps	n/a	n/a	n/a	C	4290	32
36	SR 79/Florida SB Ramps	n/a	n/a	n/a	B	5320	16
37	SR 79/Florida NB Ramps	n/a	n/a	n/a	C	5490	34
38	SR 79/Esplanade SB Ramps	n/a	n/a	n/a	B	560	15
39	SR 79/Esplanade NB Ramps	n/a	n/a	n/a	B	760	16
40	SR 79/Cottonwood SB Ramps	n/a	n/a	n/a	B	680	11
41	SR 79/Cottonwood NB Ramps	n/a	n/a	n/a	B	770	17
42	SR 79/Sanderson EB Ramps	n/a	n/a	n/a	C	2580	26
43	SR 79/Sanderson WB Ramps	n/a	n/a	n/a	B	1820	18

Source: SR 79 Realignment Supplemental Traffic Report (CH2M HILL, 2014), Tables 11 and 12, and Figures 17, 20, and 23.
Delay is expressed in average seconds of delay per vehicle

Appendix C:
TCWG Determinations on the 2008 PM Hot Spot Analysis

http://www.scag.ca.gov/programs/Pages/ProjectLevel.aspx
MSN.com
Southern California Associa...

November 2008

TCWG Review of Qualitative Analyses

Qualitative PM Hot Spot Analysis Review

November, 2008	Determination
RIV62024 November 2008	Analysis deemed acceptable for NEPA circulation

TRANSPORTATION CONFORMITY WORKING GROUP
of the
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

November 25, 2008
Minutes

THE FOLLOWING MINUTES ARE A SUMMARY OF THE MEETING OF THE TRANSPORTATION CONFORMITY WORKING GROUP. AN AUDIOCASSETTE TAPE OF THE ACTUAL MEETING IS AVAILABLE FOR LISTENING IN SCAG'S OFFICE.

The Meeting of the Transportation Conformity Working Group was held at the SCAG office in Los Angeles.

In Attendance:

Alameida, Stacy	MTA
Alley, Brian	RBF Consulting
Gainor, Mike	MTA
Litschi, Michael	OCTA
Shavit, Avital	MTA
Torres, Eddie	RBF Consulting
Williams, Leann	Caltrans, District 7

SCAG Staff

Asuncion, John
Kuo, Ryan
Luo, Rongsheng
Sherwood, Arnie

Via Teleconference:

Alvarez, Grace	RCTC
Brady, Mike	Caltrans Headquarters
Clymo, Amy	CH2M
Fagan, Paul	Caltrans, District 8
Johnson, Sandy	Caltrans, District 11
Noch, Michelle	FHWA
Kratovil, Aimee	FHWA
Lopez, Rosa	IVAG
Luis, Monica	ARB
O'Connor, Karina	EPA, Region 9
Walecka, Carla	TCA
Yoon, Andrew	Caltrans, District 7

TRANSPORTATION CONFORMITY WORKING GROUP
of the
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

November 25, 2008
Minutes

1.0 CALL TO ORDER

Michael Litschi, Chair, called the meeting to order at 10:06 a.m.

2.0 PUBLIC COMMENT PERIOD

There were no comments.

3.0 CONSENT CALENDAR

3.1 Approval Item

3.1.1 TCWG October 28, 2008 Meeting Minutes
The minutes were approved.

4.0 INFORMATION ITEMS

4.1 RTP Update

Ryan Kuo, SCAG, reported the following:

- Staff has received and responded to comments on RTP Amendment #1 from three sources including the U.S. EPA, the City of Irvine, and Caltrans District 8. The comments were not related to conformity.
- The proposed final RTP Amendment will be presented on December 4th to SCAG's Transportation Committee (TC), Energy and Environment Committee (EEC), and Regional Council (RC) for approval and adoption.

4.2 RTIP Update

John Asuncion, SCAG, reported the following:

- The 2008 RTIP had been approved by the Federal Agencies.
- The 2008 RTIP Amendment #1 is expected to be approved on December 4th by SCAG's TC, EEC, and RC.
- Staff is currently working on 2008 RTIP Amendment #2 and the amendment is anticipated to be posted in December.

4.3 Review of PM Hot Spot Interagency Review Forms

1) **RIV031208 –** Reconstruction of the westbound ramps at the Interstate 10 and Monterey Avenue Interchange in the City of Palm Desert.

   It was determined that this is not a POAQC.

2) **RIV011212** – Pavement rehabilitation, restriping, sidewalk construction, curb and gutters, retaining wall, traffic signal interconnect cable, minor signal upgrades and synchronization, and limited widening/gap closure in Riverside County.

   It was determined that this is not a POAQC.

4.4 Review of Qualitative PM Hot Spot Analysis

State Route 79 Realignment Project: Domenigoni Parkway to Gilman Springs Road - The analysis has been updated to incorporate comments from TCWG.

It was determined that this is not a POAQC pending EPA confirmation.

4.5 SCWG Meeting Summary

Mike Brady, Caltrans Headquarters, reported the following highlights of the last SCWG meeting. The following summarizes the major points:

- SB375: SB 375 is not conformity and is supposed to not interfere with the normal conformity process. A lot of detail is still being worked out and many meetings are being held among Caltrans, ARB, and MPOs. The appropriate modeling tools are still not clear. The next RTP under SB375 will be in 2012.
- Federal updates: The new lead standards will not have impact on conformity in the SCAG region; PM2.5 implementation rule is expected to be ready by the end of the year; Quantitative Analysis Guide for PM Hot Spots will be synchronized with the MOVES (Motor Vehicle Emission Simulator Model) release sometime in later 2009. EPA is working with ARB about EMFAC transition so there may be guidance for California sooner; Guidance for conformity SIPs and TCM substitution may be

released at the end of the year; Sub-Part I area re-designations and classifications are due out sometime in December or January; No firm schedule for the 2008 Ozone Implementation Rule but the State's area recommendations are due in March 2009.

- SIP: ARB is planning a SIP revision in 2009 to reflect the truck rule implementation; The 2006 PM2.5 standards will trigger a need for new conformity determination in the SCAG region; Ozone and PM10 SIPS are being developed for Imperial County.
- The next SCWG meeting will be held on May 20th at the SCAG office in downtown Los Angeles

4.6 Conformity SIP Update

Karina O'Conner, EPA, stated that she had begun to review the MOU and rules for Ventura County. Ms. O'Conner suggested that SCAG review and update the Ventura County MOU to meet conformity requirements of SAFETEA-LU before submitting to EPA.

4.7 TCM Working Subgroup

Rongsheng Luo, SCAG, stated that 15 members had signed up for the subgroup. The purpose of the group is to discuss the more technical sides of TCM issues. The group will meet on an ad- hock basis and the first meeting will be held after January 1, 2009.

4.8 Next TCWG Meeting Date

The December meeting will be cancelled. The next meeting of the TCWG will be held on January 27, 2009.

5.0 INFORMATION SHARING

Michael Litschi announced that Sandy Johnson, Caltrans District 11, will be retiring at the end of the year.

Mike Brady informed the group of an interesting conference he had attended in Albany, New York which drew participants from 40 states. Mr. Brady stated that most states are doing more or less what California is doing in terms of PM Hot Spot analysis. However,

Virginia is doing it without inter-agency consultation because the inter-agency consultation is only in the guidance, not in the rule. Mr. Brady stated he would look more closely into that to see whether it would lead to any changes.

6.0 ADJOURNMENT

Michael Litschi adjourned the meeting at 10:50 a.m.

State Route 79 Realignment Project: Explanation of Differences in Opening and Horizon Year Roadway Level of Service

TO: Tony Louka/Caltrans

COPIES: Patti Castillo/RCTC
Marlin Feenstra/RCTC
Gustavo Quintero/RCTC-Bechtel
Meardey Tim/Caltrans
David Bricker/Caltrans
Hong Zhuang/CH2M HILL
Carlos Montez/CH2M HILL
Alicia Cannon/CH2M HILL
Tom Ionta/CH2M HILL

FROM: Jose Herrera/CH2M HILL
Jenny Roberts/CH2M HILL
Loren Bloomberg/CH2M HILL

DATE: January 28, 2015

The purpose of this memorandum is to clarify a question raised by the Environmental Protection Agency (EPA) during the Transportation Conformity Working Group (TCWG) meeting held on January 27, 2015. The focus of the question was the differences in roadway segment Level of Service (LOS) results for the opening year (2020) and horizon year (2040) along the proposed realignment of State Route 79 (SR 79).

There are two reasons that the LOS on some segments of SR 79 are better in 2040 than in 2020: 1. The configuration of SR 79 is different in 2020 & 2040 as outlined below (see attached Exhibits) and 2. Traffic volumes.

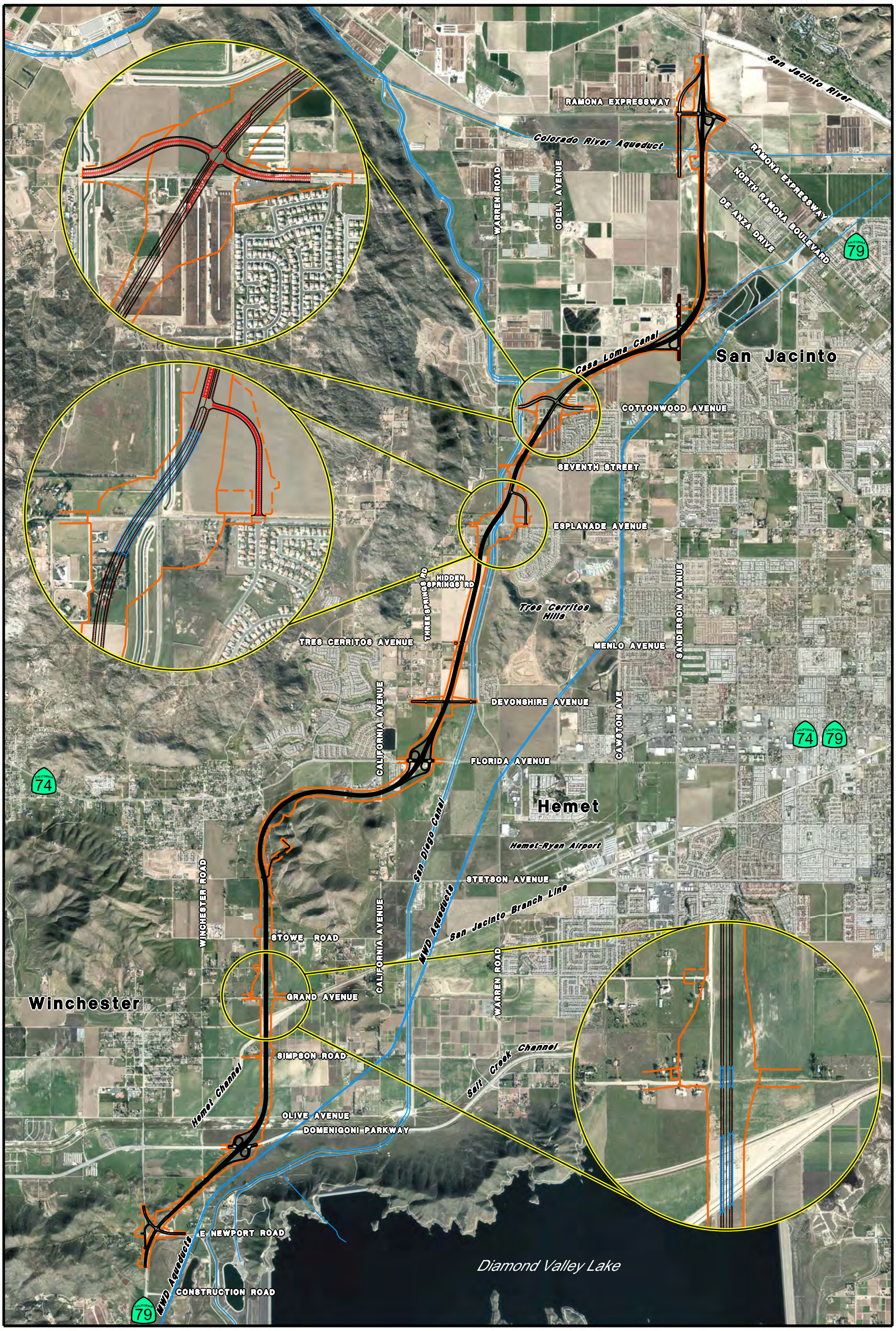
The construction of several interchanges are phased between 2020 and 2040 and there are other differences in capacity assumptions. The differences are summarized below:

- The Grand Avenue interchange will not be built for opening day (2020), but will be a full interchange at the planning horizon year (2040). Therefore volumes were adjusted and assigned to adjacent interchanges in 2020, which increases the volumes on the nearby cross-streets, which in turn lowers the LOS.
- The realigned SR 79 will have signalized at-grade intersections in 2020 at Esplanade Avenue and Cottonwood Avenue. These locations will have full interchanges by 2040, once traffic volumes warrant grade-separations. Therefore, the SR 79 segments near these cross-streets were coded with different capacities in 2020 and 2040. For

2020, these segments of SR 79 are coded as a four-lane expressway with a capacity of 32,700 vehicles per day. For 2040, these segments of SR 79 are coded as a four-lane freeway with a capacity of 61,200 vehicles per day. Because the capacities are nearly twice as high in 2040, the LOS on SR 79 improves in 2040.

A secondary reason for the LOS findings is that the traffic volumes on the segments of the realigned SR 79 are generally the same in 2020 and 2040.

With essentially the same volumes, and the lower 2020 capacities without interchanges at Esplanade Avenue and Cottonwood Avenue, the LOS results for opening year (2020) are lower than the LOS results for the horizon year (2040).



Aerial Date: February 2011

Exh-SR79-Ramps-OD.dgn

LEGEND:

- Right-of-Way Boundary
- MWD Aqueducts

0 1.0 Mile

0 1.0 Kilometer

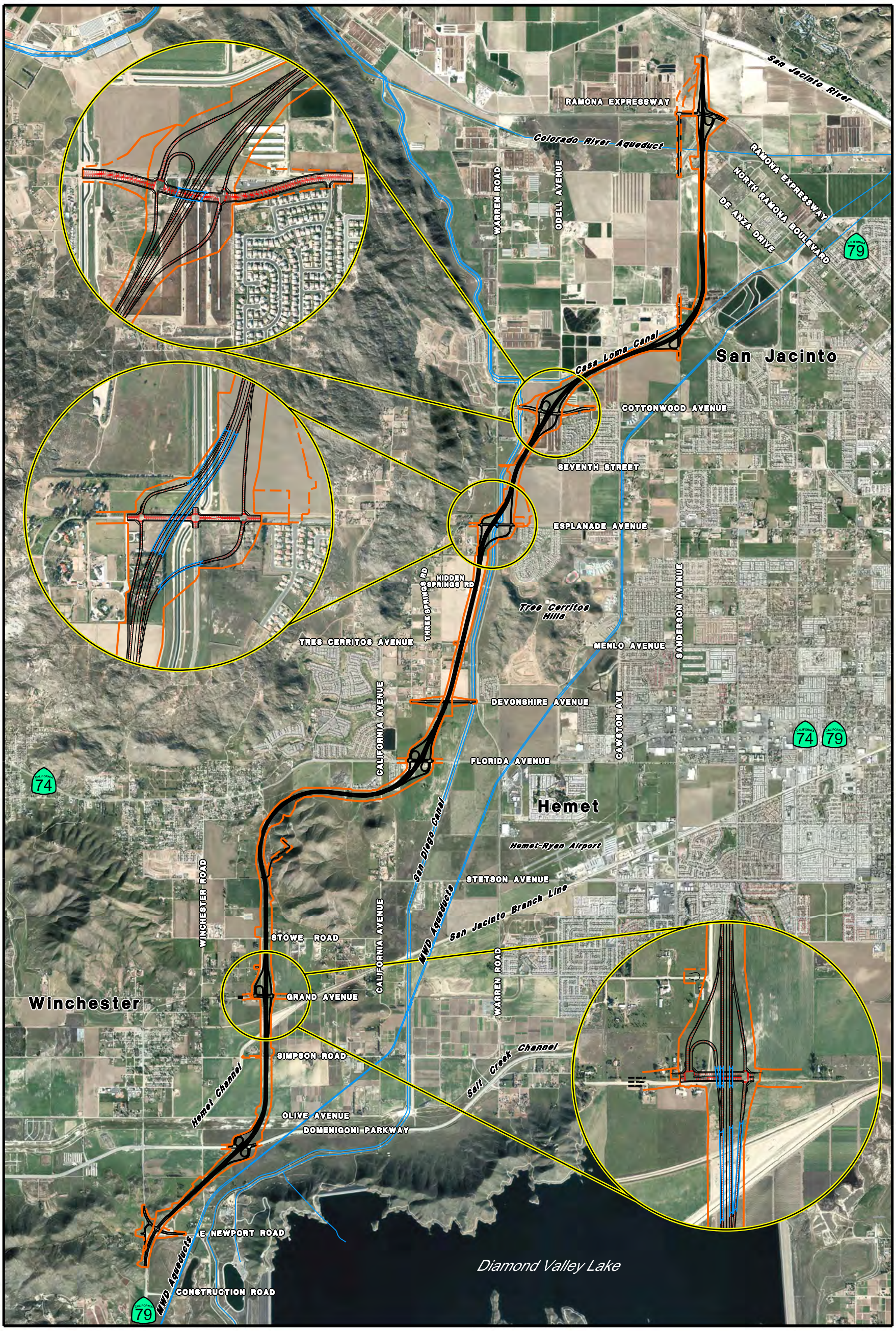
1:52,500

Alternative 1b with Refinements
Opening Day (2020)

State Route 79 Realignment Project

DRAFT - FOR DISCUSSION PURPOSES ONLY

CH2MHILL



Aerial Date: February 2011

Exh-SR79-Ramps-PH.dgn

LEGEND:

- Right-of-Way Boundary
- MWD Aqueducts

0 1.0 Mile

0 1.0 Kilometer

1:52,500

Alternative 1b with Refinements
Planning Horizon (2040)

State Route 79 Realignment Project

DRAFT - FOR DISCUSSION PURPOSES ONLY

CH2MHILL

FHWA Project-Level Conformity Determination

February 2016

U.S. Department of Transportation
Federal Highway Administration

Federal Highway Administration
California Division

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001
(916) 498-5008 (fax)

February 1, 2016

In Reply Refer To:
HDA-CA

Mr. John Bulinski
District Director
California Department of Transportation
District 8
464 W. 4th Street
San Bernardino, CA 92401

Attn: Mr. Tony Louka

SUBJECT: Project Level Conformity Determination for the State Route 79 Realignment Project (RIV 62024)

Dear Mr. Bulinski:

On January 13, 2016, the California Department of Transportation (Caltrans) submitted to the Federal Highway Administration (FHWA) a complete request for a project level conformity determination for the State Route 79 Realignment Project. The project is in an area that is designated Non-Attainment or Maintenance for Nitrogen Dioxide (NO_2) Carbon Monoxide (CO), Ozone and Particulate Matter (PM_{10}, $PM_{2.5}$).

The project level conformity analysis submitted by Caltrans indicates that the project-level transportation conformity requirements of 40 CFR Part 93 have been met. The project is included in the Southern California Association of Governments' (SCAG) current Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP), as amended. The design concept and scope of the preferred alternative have not changed significantly from those assumed in the regional emissions analysis.

As required by 40 CFR 93.116 and 93.123, the localized $PM_{2.5}$ and PM_{10} analyses are included in the documentation. The analyses demonstrate that the project will not create any new violations of the standards or increase the severity or number of existing violations.

Based on the information provided, FHWA finds that the State Route 79 Realignment Project conforms with the State Implementation Plan (SIP) in accordance with 40 CFR Part 93.

If you have any questions pertaining to this conformity finding, please contact Joseph Vaughn at (916) 498-5346 or by email at Joseph.Vaughn@dot.gov.

Sincerely,

For: Vincent P. Mammano
Division Administrator