

3.19 Plant Species

3.19.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) 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 California Endangered Species Act (CESA). Please see Section 3.21, Threatened and Endangered Species, in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including CDFG 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 United States Code 16 (USC), Section 1531 et seq. See also 50 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 California Environmental Quality Act (CEQA) Public Resources Code Sections 2100–21177.

3.19.2 Affected Environment

The analysis of the potential for the project to result in adverse impacts on special-status plant species is described in detail in the NES (June 2010). The findings of the NES are discussed in this section. A description of the BSA is provided in Section 3.17.2.1, Biological Study Area.

3.19.2.1 Biological Conditions in the Biological Study Area

Vegetation communities in the BSA are: chaparral, riparian forest, riparian scrub, deepwater aquatic, oak woodland, developed areas, nonnative grassland, and mixed ruderal and ornamental vegetation.

Elevations range from approximately 380 to 890 ft amsl across the BSA. The topography is moderately rolling adjacent to SR-91, with steep canyons and hillsides

from the Santa Ana Mountains and Chino Hills bordering the westernmost part of the BSA. Canyons and washes associated with tributaries of the Santa Ana River also occur throughout the BSA.

The BSA is in the Santa Ana River Watershed, which covers 2,800 sq mi. The Santa Ana River Watershed is divided into upper and lower watersheds at Prado Dam. From the Santa Ana Mountains, the Santa Ana River flows southwest to the Pacific Ocean.

3.19.2.2 Special-Status Plant Species in the Biological Study Area

The natural communities in the BSA include a variety of plant species considered sensitive by federal, State, or local governments and organizations regulating and/or monitoring their development; limited distributions; and/or the habitat requirements. The BSA supports suitable habitat for a variety of special-status plant species. After the literature review, it was determined that 35 special-status plant species have the potential to occur in the BSA or in the immediate vicinity of the BSA. Focused botanical surveys were conducted during the appropriate blooming period in 2008 and 2009. In November 2008, the Freeway Complex fire consumed a small portion of vegetation in the BSA. Plant species in those areas that require fire for germination would have been observed during the botanical surveys conducted during the 2009 blooming period.

Eight of the 35 special-status plant species are federally and/or State-listed endangered, threatened, or candidate species, which are discussed in detail in Section 3.21. The remaining special-status species identified in the literature review are discussed below.

Southern California Black Walnut

Southern California black walnut (*Juglans californica* var. *californica*) is not federally or State listed and has no official status. However, Southern California black walnut merits consideration under CEQA because of the relatively limited distribution of walnut woodland. Southern California black walnut is a species covered under the Western Riverside County MSHCP. This tree is only found in southern California. Recent construction has removed this tree from many areas, and its future is uncertain. Southern California black walnut prefers very loose, moist soil on steep hillsides with northern and eastern exposures at elevations below 900 ft although it is not confined to these preferences. Southern California black walnut occurs in many plant communities and is often a component of grassland, CSS, chaparral, riparian woodland, oak woodland, and mixed canyon woodland

communities. This species is a California Special Plant and a CNPS List 4 species. Suitable habitat exists for this species in the BSA, and it was observed along the south side of SR-91 west of Green River Road during the botanical surveys conducted in 2008 and 2009. Figure 3.19-1 shows the location of the observed Southern California black walnuts in the BSA in the 2008 and 2009 surveys. As shown on Figure 3.19-1, approximately 5 to 10 trees were observed on approximately 0.923 ac on the south side of SR-9.

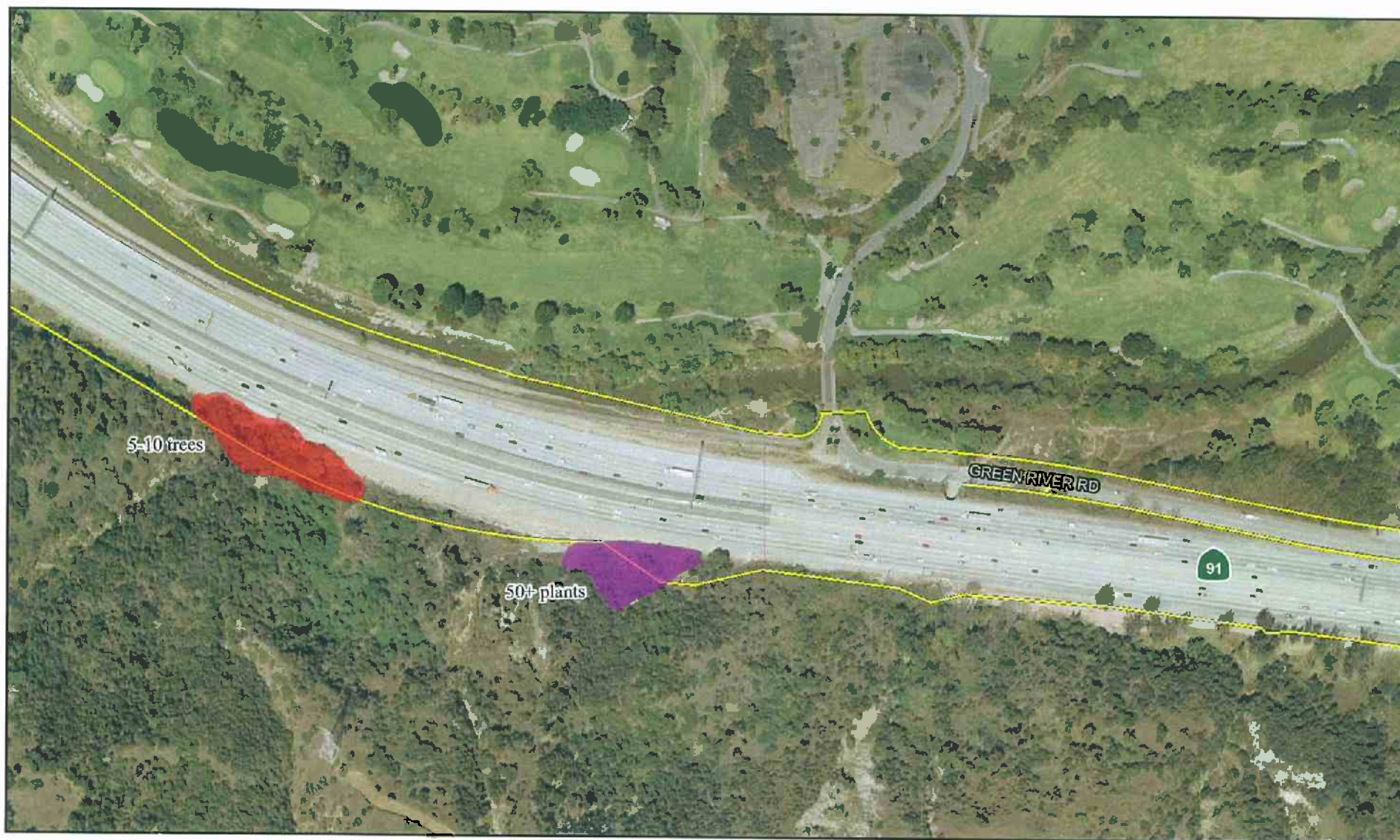
Coulter's Matilija Poppy

Coulter's matilija poppy (*Romneya coulteri*) is not federally and/or State listed and has no official status. However, Coulter's matilija poppy merits consideration under CEQA because of its relatively limited distribution in California. In addition, Coulter's matilija poppy is a species covered under the Western Riverside County MSHCP. Coulter's matilija poppy is a perennial shrub that grows up to 8 ft tall. It has large paper-maché-like white flowers with yellow centers. It occurs in CSS and chaparral habitats up to 4,000 ft in elevation. This species is a California Special Plant and a CNPS List 4 species. Suitable habitat exists for this species in the BSA, and it was observed in the BSA during the 2008 and 2009 botanical surveys. The Coulter's matilija poppies observed in the BSA were not in any conservation areas or Western Riverside County MSHCP Criteria Cells. Figure 3.19-1 shows the locations of the observed Coulter's matilija poppy in the BSA. As shown on Figure 3.19-1, this poppy was observed in two areas in the BSA in the botanical surveys. The first area, on the south side of SR-91 west of Green River Road, covers approximately 0.624 ac and included an estimated 50 plants. The second area, on the west side of I-15, covers approximately 0.075 ac, and includes an estimated 11 plants.

Other Special-Status Coastal Sage Scrub and Chaparral Plant Species

Other special-status species with the potential to occur in CSS and chaparral habitats in the BSA include chaparral sand-verbena (*Abronia villosa* var. *aurita*), Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), Tecate cypress (*Cupressus forbesii*), Plummer's mariposa lily (*Calochortus plummerae*), intermediate mariposa lily (*Calochortus weedii* var. *intermedius*), Parry's spineflower (*Chorizanthe parryi* var. *parryi*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), many-stemmed dudleya (*Dudleya multicaulis*), vernal barley (*Hordeum intercedens*), Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*), Parish's desert-thorn (*Lycium parishii*), chaparral nolina (*Nolina cismontana*), white rabbit-tobacco (*Pseudonaphalum leucocephalum*), San Miguel savory (*Satureja chandleri*), rayless

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LEGEND

- SR-91 Existing State Right-of-Way
- Coulter's matilija poppy (0.624ac)
- Southern California black walnut (0.923ac)

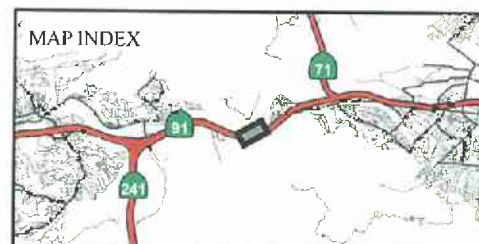


FIGURE 3.19-1

Sheet 1 of 2

SR-91 Corridor Improvement Project

Sensitive Plant Locations

12-Ora-91-R14.43/R18.91

08-Riv-91-R0.00/R13.04

08-Riv-15-35.64/45.14

EA 0F540



0 150 300
FEET

SOURCE: AirPhotoUSA (04/2007).

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LEGEND

- SR-91 Existing State Right-of-Way
- Coulter's matilija poppy (0.075ac)



FIGURE 3.19-1
Sheet 2 of 2

SR-91 Corridor Improvement Project Sensitive Plant Locations

12-Ora-91-R14.43/R18.91
08-Riv-91-R0.00/R13.04
08-Riv-15-35.64/45.14
EA 0F540

SOURCE: AirPhotoUSA (04/2007).

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ragwort (*Senecio aphanactis*), salt spring checkerbloom (*Sidalcea neomexicana*), and San Bernardino aster (*Aster bernardinus*). There is suitable habitat in the BSA that could support these species; however, none of these species were found in the BSA during the botanical surveys conducted during the appropriate blooming periods in 2008 and 2009. Therefore, these species are considered absent from the BSA.

Other Special-Status Riparian/Riverine Plant Species

Other special-status species with the potential to occur in riparian/riverine habitats in the BSA include southern tarplant (*Hemizonia parryi* ssp. *australis*), smooth tarplant (*Centromadia* [*Hemizonia*] *pungens* ssp. *laevis*), vernal barley, Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), mud nama (*Nama stenocarpum*), San Miguel savory, salt spring checkerbloom, and San Bernardino aster. None of these species were found in the BSA during the botanical surveys conducted during the appropriate blooming periods for these species in 2008 and 2009. Therefore, these species are considered absent from the BSA.

Other Special-Status Oak Woodland Plant Species

Other special-status species with the potential to occur in woodland and higher elevation habitats in the BSA include round-leaved filaree (*Erodium macrophyllum*), Tecate cypress, Plummer's mariposa lily, white rabbit-tobacco, San Miguel savory, rayless ragwort, salt spring checkerbloom, and San Bernardino aster. There is suitable habitat in the BSA that could support these species; however, none of these species were found in the BSA during the botanical surveys conducted during the appropriate blooming periods in 2008 and 2009. Therefore, these species are considered absent from the BSA.

Other Special-Status Grassland and Disturbed Area Plant Species

Other special-status species with the potential to occur in grassland habitats and disturbed areas in the BSA include round-leaved filaree, Plummer's mariposa lily, intermediate mariposa lily, southern tarplant, smooth tarplant, long-spined spineflower, many-stemmed dudleya, vernal barley, Coulter's goldfields, and San Miguel savory. There is suitable habitat in the BSA that could support these species. Although some of these plant species flourish in disturbed habitats, none of these species were found in the BSA during the botanical surveys conducted during the appropriate blooming periods in 2008 and 2009. Therefore, these species are considered absent from the BSA.

Orange County Natural Communities Conservation Plan

The nearest lands designated in the Orange County NCCP are approximately 2,000 ft south of the BSA near the County line. As a result, there are no special-interest plant species in the NCCP within the BSA. Therefore, the Orange County NCCP is not discussed further in this section.

Western Riverside County MSHCP-Covered Plant Species

According to the literature review, 16 plant species covered in the Western Riverside County MSHCP were identified as having the potential to occur in the BSA. The BSA supports suitable habitat for 15 of these species: Munz's onion (*Allium munzii*), San Diego ambrosia (*Ambrosia pumila*), Davidson's saltscall, thread-leaved brodiaea (*Brodiaea filifolia*), round-leaved filaree, smooth tarplant, many-stemmed dudleya, Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), vernal barley, Southern California black walnut, Coulter's goldfields, mud nama, Brand's phacelia (*Phacelia stellaris*), Coulter's matilija poppy, and San Miguel savory. Due to the lack of suitable habitat, Parish's brittlescale (*Atriplex parishii*) is considered absent from the BSA. Southern California black walnut and Coulter's matilija poppy were observed during the 2008 and 2009 botanical surveys as described earlier in this section.

Of the 15 covered plant species for which suitable habitat exists in the BSA, the Western Riverside County MSHCP Criteria Area plant species with the potential to occur in the BSA are Davidson's saltscall, thread-leaved brodiaea, round-leaved filaree, smooth tarplant, Coulter's goldfields, and mud nama. However, the BSA is not in any Criteria Area Species Survey Areas (CASSAs), so no surveys were required for these species.

The narrow endemic plant species with potential to occur in the BSA are: Munz's onion, San Diego ambrosia, many-stemmed dudleya, Brand's phacelia, and San Miguel savory. However, the BSA is only in Narrow Endemic Plant Species Survey Area (NEPSSA) 7, so surveys were only required for San Diego ambrosia, Brand's phacelia, and San Miguel savory. None of the NEPSSA species requiring surveys were observed in the BSA during the botanical surveys conducted in 2008 and 2009 during the appropriate blooming periods or when these species would have been conspicuous. Therefore, these species are considered absent from the BSA.

Summary

In summary, the special-status plant species documented as occurring in the BSA based on the 2008 and 2009 surveys are:

- Western Riverside County MSHCP-covered species: Southern California black walnut
- Western Riverside County MSHCP-covered species: Coulter's matilija poppy

No plant species in the following categories were documented in the BSA:

- Plants in NEPSSA 7
- Narrow endemic plants
- Western Riverside County MSHCP-covered plant species (three identified in the literature review: Coulter's saltbush [*Atriplex coulteri*], Parish's brittlescale, and Malibu baccharis [*Baccharis malibuensis*])
- Other special-status plant species described earlier in this section

3.19.3 Environmental Consequences

3.19.3.1 Summary of Impacts

The permanent and temporary project effects on plant species under Alternatives 1 and 2 are the same for all the design variations under those alternatives.

The Initial Phases of Alternatives 1 and 2 would not result in permanent impacts to Southern California black walnut or Coulter's matilija poppy.

The Ultimate Projects for Alternatives 1 and 2 would result in the permanent removal of a limited number of individual Southern California black walnut trees and Coulter's matilija plants. Alternatives 1 and 2 would result in the permanent removal of 0.735 ac on which black walnut trees were observed and the permanent removal of 0.331 ac on which the poppy was observed.

The Initial Phases and Ultimate Projects for Alternatives 1 and 2 would not result in temporary impacts to Southern California black walnut or Coulter's matilija plants.

The Initial Phases and Ultimate Projects for Alternatives 1 and 2 would not result in permanent or temporary impacts to any other special-status species in the BSA.

Summary of Impacts for Alternative 2f

Alternative 2f has been identified as the Preferred Alternative. The Initial Phase of Alternative 2f would not result in the permanent removal of any areas in which black walnut trees or Coulter's matilija poppy were observed.

The Ultimate Project under Alternative 2f would result in the permanent removal of 0.74 ac on which black walnut trees were observed and the permanent removal of 0.33 ac on which the Coulter's matilija poppy was observed, which are the same as discussed for Alternatives 1 and 2.

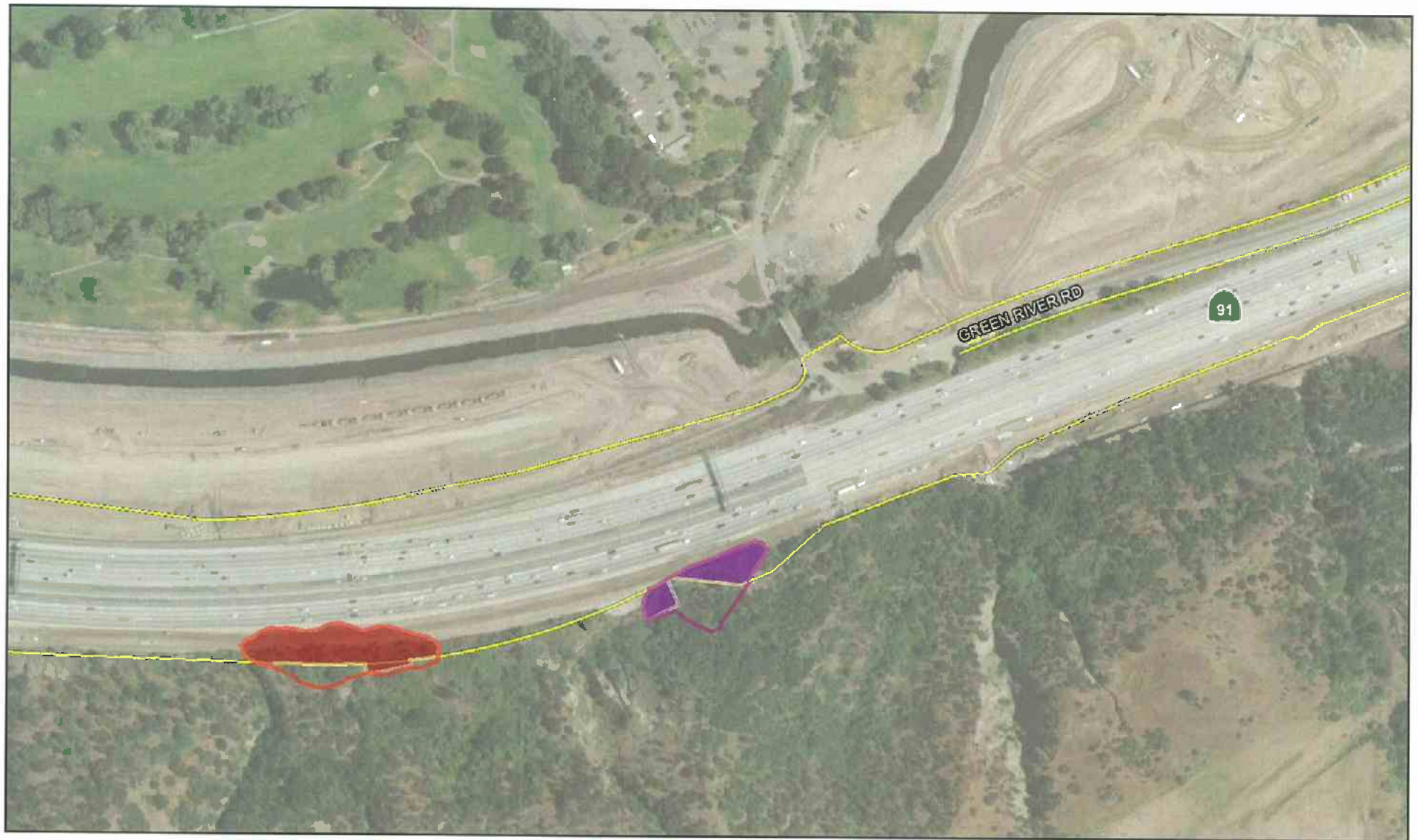
The Initial Phase and Ultimate Project under Alternative 2f would not result in temporary impacts to Southern California black walnut or Coulter's matilija poppy and would not result in permanent or temporary impacts to any other special-status plant species in the BSA.

3.19.3.2 Permanent Impacts Alternatives 1 and 2

The Initial Phases of Alternatives 1 and 2 would not result in permanent impacts to Southern California black walnut or Coulter's matilija poppy.

The Ultimate Projects for Alternatives 1 and 2 would permanently impact Southern California black walnut in Orange County and Coulter's matilija poppy in both Orange and Riverside Counties combined through the direct removal of individual plants. Figure 3.19-2 shows the permanent impacts of the Ultimate Projects under Alternatives 1 and 2 along SR-91 at the locations of the 5 to 10 Southern California black walnut trees and the approximately 50 Coulter's matilija poppy plants observed in the BSA. As shown, the permanent impacts under the Ultimate Projects for Alternatives 1 and 2 would result in the permanent removal of 0.74 ac on which black walnut trees were observed, representing approximately 80 percent of the total area occupied by the trees. The Ultimate Projects under Alternatives 1 and 2 would result in the permanent removal of 0.33 ac on which the poppy was observed, representing approximately 62 percent of the area occupied by the poppy south of SR-91.

The Initial Phases and Ultimate Projects for Alternatives 1 and 2 would not result in permanent impacts to the Coulter's matilija poppy population on the west side of I-15 shown on Sheet 2 of Figure 3.19-1.



LEGEND

- SR-91 Existing State Right-of-Way
- Coulter's matilija poppy (0.62ac)
- Southern California black walnut (0.92ac)
- Potential Impacts to Sensitive Plant Populations
- Coulter's matilija poppy (Permanent, 0.33ac)
- Southern California black walnut (Permanent, 0.74 ac)



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SOURCE: Bing Maps (2010)

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FIGURE 3.19-2

*SR-91 Corridor Improvement Project
Alternative 1 and 2 Impacts to
Sensitive Plant Locations*

12-Ora-91-R14.43/R18.91
08-Riv-91-R0.00/R13.04
08-Riv-15-35.64/45.14
EA 0F540

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However, because Southern California black walnut and Coulter's matilija poppy have no legal or regulatory protection beyond the level afforded by the Western Riverside County MSHCP or a CNPS watch list, and the few individuals potentially removed under Alternatives 1 and 2 are not in any Western Riverside County MSHCP conservation areas, the effects to the individual plants under the Build Alternatives would be negligible.

Alternatives 1 and 2 would not result in direct permanent impacts to Western Riverside County MSHCP-designated NEPSSAs, CASSAs, Criteria Areas, or narrow endemic and other sensitive plant species in those areas because none of those species were observed in the BSA.

No Build Alternative

The No Build Alternative would not result in construction along the project segments of SR-91 and I-15. Therefore, the No Build Alternative would not result in permanent impacts to Western Riverside County MSHCP-designated NEPSSAs, CASSAs, Criteria Areas, or narrow endemic and other special-status plant species.

3.19.3.3 Temporary Impacts

Alternatives 1 and 2

Because Southern California black walnut and Coulter's matilija poppy will not be replaced after construction, all impacts to these species are considered permanent. Therefore, no temporary impacts to Southern California black walnut and Coulter's matilija poppy are expected from the Build Alternatives in both Orange and Riverside Counties combined. All other special-status species are considered absent from the BSA.

No Build Alternative

The No Build Alternative would not result in construction along the project segments of SR-91 and I-15. Therefore, the No Build Alternative would not result in temporary impacts to special-status plant species.

3.19.4 Avoidance, Minimization, and/or Mitigation Measures

Mitigation for effects to Southern California black walnut and Coulter's matilija poppy within Riverside County would be achieved through project consistency with the Western Riverside County MSHCP. The Western Riverside County MSHCP was conceived, developed, and is being implemented specifically to address direct, indirect, permanent, and temporary effects on species and habitats in western Riverside County resulting from the build out of planned land uses and infrastructure,

including the SR-91 CIP. Therefore, compensatory mitigation in the western Riverside County part of the project for special-status plant species is not required.

In Orange County, the removal of a few isolated individual Southern California black walnuts and/or Coulter's matilija poppies would not substantially affect the population of this species. As a result, and because neither of these species are protected by any federal, State, or local regulations, no compensatory mitigation is required. In addition, because Southern California black walnut is associated with riparian habitats and Coulter's matilija poppy is associated with CSS, efforts to protect those two sensitive habitats will benefit these two special-status plant species as well.

The measures provided in Sections 3.17, Natural Communities, and 3.21, Threatened and Endangered Species, will adequately avoid and minimize impacts to special-status plant species during construction of the Build Alternatives. Although no additional avoidance, minimization, or mitigation is required, Measure PS-1 will be implemented as part of the project to minimize the loss of Southern California black walnut and Coulter's matilija poppy.

PS-1 As part of the SR-91 CIP Habitat Mitigation and Monitoring Plan, trees and shrubs will be planted at appropriate locations, and the species list to be used for those plantings will include Southern California black walnut and Coulter's matilija poppy. At a minimum, 30 Southern California black walnut trees will be planted.

3.20 Animal Species

3.20.1 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 Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the State or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 3.21, Threatened and Endangered Species below. All other special-status animal species are discussed here, including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600–1603 of the Fish and Game Code
- Sections 4150 and 4152 of the Fish and Game Code

In addition to the State and federal laws regulating impacts to wildlife, there are often local regulations (example: county or city) that need to be considered when developing projects. In the Riverside County part of the project area, the guidance and requirements of the Western Riverside County MSHCP apply to the project. The Western Riverside County MSHCP serves as a comprehensive, multijurisdictional Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of FESA, and an NCCP, focusing on the conservation of species and their associated habitats in western Riverside County. The Western Riverside County MSHCP is used to allow participating jurisdictions the “take” of both the plant and wildlife species identified in the Western Riverside County MSHCP area through an abbreviated authorization process with the wildlife resource agencies. Regulation of the “take” of threatened, endangered, and rare species is authorized by the wildlife resource agencies (the

USFWS and CDFG) under provisions of Section 7(a)(2) of FESA and California Fish and Game Code Section 2050–2089, respectively, which allow “take authorization” for otherwise lawful actions (e.g., public and private development) in exchange for the assembly and management of a coordinated Western Riverside County MSHCP Conservation Area. The Department is obligated to follow specific conditions, as described in Section 13.8 of the Western Riverside County MSHCP Implementation Agreement for the project.

3.20.2 Affected Environment

3.20.2.1 Identification of Special-status Animal Species

The analysis of the potential effects of the project on special-status animal species is based on the NES (June 2010). The findings of the NES are summarized in this section; detailed information, including the methodology for this analysis, is provided in the NES.

After a thorough literature review, it was determined that 76 special-status animal species occur or have the potential to occur in the BSA for the project or in the immediate vicinity of the BSA. The 76 special-status animal species that occur or have the potential to occur in the BSA are listed in Table 3.20.1. (The Latin names of the special-status animal species are provided in Table 3.20.1 but are not repeated in the text of this section.) Of these species, 19 are not discussed in this section because they are either federally and/or State-listed as endangered or threatened or proposed endangered or threatened, or are considered fully protected species by the State of California, lack suitable habitat, or both.

The remaining 57 special-status species are discussed in this section as follows (some species are discussed in more than one section):

- **Species that are Covered by the Western Riverside County MSHCP.** As shown in Table 3.20.1, 40 of the 76 identified species are covered by the Western Riverside County MSHCP. Twelve of these species are not discussed in this section due to the reasons stated above. Of the remaining 28 covered species, 6 were observed and 22 have suitable habitat in the BSA. These 28 species are discussed in Section 3.20.2.2, Western Riverside County MSHCP-Covered Species.

**Table 3.20.1 Special-Status Wildlife Species Potentially Occurring or
Known to Occur within and in the Vicinity of the BSA**

Common Name	Scientific Name	Status Listing	Habitat Present/Absent	Observed	Rationale
INVERTEBRATES					
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	FE CSA	A	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
Quino checkerspot butterfly	<i>Euphydryas editha quino</i>	FE CSA	A	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
Delhi sands flower-loving fly	<i>Rhaphiomidas terminatus abdominalis</i>	FE CSA MSHCP-Covered Species	A	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	FE CSA	A	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
FISH					
Santa Ana sucker	<i>Catostomus santaanae</i>	FT CSC MSHCP-Covered Species	A	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
Santa Ana speckled dace	<i>Rhinichthys osculus</i>	CSC	A	No	No suitable habitat is present in the BSA; therefore, this species is not discussed further in this section.
AMPHIBIANS					
Coast Range newt	<i>Taricha torosa torosa</i>	CSC MSHCP-Covered Species	HP	No	
Western spadefoot	<i>Spea hammondi</i>	CSC MSHCP-Covered Species	HP	No	
Arroyo toad	<i>Bufo californicus</i>	FE CSC MSHCP-Covered Species	A	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
REPTILES					
Southwestern pond turtle	<i>Actinemys marmorata pallida</i>	CSC MSHCP-Covered Species	HP	No	
San Diego banded gecko	<i>Coleonyx variegates abbotti</i>	CSA MSHCP-Covered Species	HP	No	
San Diego horned lizard	<i>Phrynosoma coronatum blainvillii</i>	CSC MSHCP-Covered Species	HP	No	
Orange-throated whiptail	<i>Aspidoscelis hyperythra</i>	CSC MSHCP-Covered Species	HP	No	
Coastal western whiptail	<i>Aspidoscelis tigris stejnegeri</i>	CSA MSHCP-Covered Species	HP	No	

**Table 3.20.1 Special-Status Wildlife Species Potentially Occurring or
Known to Occur within and in the Vicinity of the BSA**

Common Name	Scientific Name	Status Listing	Habitat Present/Absent	Observed	Rationale
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	CSC	HP	No	
Rosy boa	<i>Charina trivirgata</i>	CSA	HP	No	
Northern red-diamond rattlesnake	<i>Crotalus ruber ruber</i>	CSC MSHCP-Covered Species	HP	No	
San Bernardino ringneck snake	<i>Diadophis punctatus modestus</i>	CSA	HP	No	
San Diego mountain kingsnake	<i>Lampropeltis zonata pulchra</i>	CSC MSHCP-Covered Species	HP	No	
Two-striped garter snake	<i>Thamnophis hammondi</i>	CSC	HP	No	
Coast patch-nosed snake	<i>Salvadora hexalepis virgulata</i>	CSC	HP	No	
BIRDS					
Cooper's hawk (nesting)	<i>Accipiter cooperii</i>	CSA MSHCP-Covered Species	HP	Yes	
Tricolored blackbird (nesting colony)	<i>Agelaius tricolor</i>	CSC MSHCP-Covered Species	HP	No	
Southern California rufous- crowned sparrow	<i>Aimophila ruficeps canescens</i>	CSA MSHCP-Covered Species	HP	No	
Grasshopper sparrow (nesting)	<i>Ammodramus savannarum</i>	CSC MSHCP-Covered Species	HP	No	
Bell's sage sparrow (nesting)	<i>Amphispiza belli belli</i>	CSA MSHCP-Covered Species	HP	No	
Golden eagle	<i>Aquila chrysaetos</i>	CFP MSHCP-Covered Species	HP	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
Great egret (nesting)	<i>Ardea alba</i>	CSA	HP	Yes	
Great blue heron (nesting)	<i>Ardea herodias</i>	CSA MSHCP-Covered Species	HP	Yes	
Long-eared owl (nesting)	<i>Asio otus</i>	CSC	HP	No	
Burrowing owl (burrow sites)	<i>Athene cunicularia</i>	CSC MSHCP-Covered Species	HP	No	
Oak titmouse (nesting)	<i>Baeolophus inornatus</i>	CSA	HP	No	
Ferruginous hawk	<i>Buteo regalis</i>	CSA MSHCP-Covered Species	HP	No	
Costa's hummingbird (nesting)	<i>Calypte costae</i>	CSA	HP	No	
San Diego cactus wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	CSC MSHCP-Covered Species	A	No	No suitable habitat is present in the BSA; therefore, this species is not discussed further in this section.

**Table 3.20.1 Special-Status Wildlife Species Potentially Occurring or
Known to Occur within and in the Vicinity of the BSA**

Common Name	Scientific Name	Status Listing	Habitat Present/Absent	Observed	Rationale
Lawrence's goldfinch (nesting)	<i>Carduelis lawrencei</i>	CSA	HP	Yes	
Lark sparrow (nesting)	<i>Chondestes grammacus</i>	CSA	HP	No	
Northern harrier (nesting)	<i>Circus cyaneus</i>	CSC MSHCP-Covered Species	HP	No	
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FC CE MSHCP-Covered Species	HP	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
California yellow warbler (nesting)	<i>Dendroica petechia brewsteri</i>	CSC MSHCP-Covered Species	HP	Yes	
Snowy egret (nesting)	<i>Egretta thula</i>	CSA	HP	Yes	
White-tailed kite	<i>Elanus leucurus</i>	CFP MSHCP-Covered Species	HP	Yes	This species is discussed in Section 3.21, Threatened and Endangered Species.
Southwestern willow flycatcher (nesting)	<i>Empidonax traillii extimus</i>	FE CE MSHCP-Covered Species	HP	No	This species is discussed further in Section 3.21, Threatened and Endangered Species.
California horned lark	<i>Eremophila alpestris actia</i>	CSA MSHCP-Covered Species	HP	No	
Merlin	<i>Falco columbarius</i>	CSA MSHCP-Covered Species	HP	No	
Bald eagle	<i>Haliaeetus leucocephalus</i>	FD CE MSHCP-Covered Species	HP	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
Yellow-breasted chat (nesting)	<i>Icteria virens</i>	CSC MSHCP-Covered Species	HP	Yes	
Loggerhead shrike (nesting)	<i>Lanius ludovicianus</i>	CSC MSHCP-Covered Species	HP	No	
Black-crowned night heron (nesting)	<i>Nycticorax nycticorax</i>	CSA MSHCP-Covered Species	HP	Yes	
Double-crested cormorant (nesting)	<i>Phalacrocorax auritus</i>	CSA MSHCP-Covered Species	HP	Yes	
Nuttall's woodpecker (nesting)	<i>Picoides nuttallii</i>	CSA	HP	Yes	
Coastal California gnatcatcher	<i>Poliophtila californica californica</i>	FT CSA MSHCP-Covered Species	HP	Yes	This species is discussed in Section 3.21, Threatened and Endangered Species.
Allen's hummingbird (nesting)	<i>Selasphorus sasin</i>	CSA	HP	Yes	

**Table 3.20.1 Special-Status Wildlife Species Potentially Occurring or
Known to Occur within and in the Vicinity of the BSA**

Common Name	Scientific Name	Status Listing	Habitat Present/Absent	Observed	Rationale
Black-chinned sparrow (nesting)	<i>Spizella atrogularis</i>	CSA	HP	No	
Least Bell's vireo (nesting)	<i>Vireo bellii pusillus</i>	FE CE MSHCP-Covered Species	HP	Yes	This species is discussed in Section 3.21, Threatened and Endangered Species.
MAMMALS					
Pallid bat	<i>Antrozous pallidus</i>	CSC	HP	Yes	
Ringtail	<i>Bassariscus astutus</i>	CFP	HP	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
Northwestern San Diego pocket mouse	<i>Chaetodipus fallax fallax</i>	CSC MSHCP-Covered Species	HP	No	
Mexican long-tongued bat	<i>Choeronycteris mexicana</i>	CSC	A	No	No suitable habitat is present in the BSA; therefore, this species is not discussed further in this section.
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	CSC	HP	No	
San Bernardino kangaroo rat	<i>Dipodomys merriami parvus</i>	FE CSA	A	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
Stephens' kangaroo rat	<i>Dipodomys stephensi</i>	FE CT MSHCP-Covered Species	HP	No	This species is discussed in Section 3.21, Threatened and Endangered Species.
Western mastiff bat	<i>Eumops perotis californicus</i>	CSC	HP	No	
Western red bat	<i>Lasiurus blossevillii</i>	CSC	HP	No	
Hoary bat	<i>Lasiurus cinereus</i>	CSA	HP	Yes	
Southwestern yellow bat	<i>Lasiurus xanthinus</i>	CSA	HP	No	
Black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	CSC MSHCP-Covered Species	HP	No	
Western small-footed myotis	<i>Myotis ciliolabrum</i>	CSA	HP	Yes	
Long-eared myotis	<i>Myotis evotis</i>	CSA	HP	Presumed	
Long-legged myotis	<i>Myotis volans</i>	CSC	HP	No	
Yuma myotis	<i>Myotis yumanensis</i>	CSA	HP	Yes	
Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	CSC	HP	Presumed	
Big free-tailed bat	<i>Nyctinomops macrotis</i>	CSC	HP	No	
San Diego desert woodrat	<i>Neotoma lepida intermedia</i>	CSC MSHCP-Covered Species	HP	No	

**Table 3.20.1 Special-Status Wildlife Species Potentially Occurring or
Known to Occur within and in the Vicinity of the BSA**

Common Name	Scientific Name	Status Listing	Habitat Present/Absent	Observed	Rationale
Southern grasshopper mouse	<i>Onychomys torridus ramona</i>	CSC	HP	No	
American badger	<i>Taxidea taxus</i>	CSA	HP	No	

Source: *Final Natural Environment Study* (June 2010).

BSA = biological study area

MSHCP = Western Riverside County Multiple Species Habitat Conservation Plan

Status:

FC = Federal Candidate

FD = Federal Delisted

FE = Federal Endangered

FP, FPE, FPT = Federal Proposed Endangered/Threatened

FT = Federal Threatened

CE = California Endangered

CFP = California Fully Protected Species

CSA = California Special Animal

CSC = California Species of Special Concern

CT = California Threatened

Habitat Present/Absent:

A = Absent; no habitat present and no further work needed.

HP = Habitat present; habitat is or may be present.

- **Other Special-Status Species.** As shown in Table 3.20.1, there are 57 special-status species that have suitable habitat in the BSA and are not federally and/or State-listed as endangered or threatened or proposed endangered or threatened, or considered fully protected species by the State of California. Of these 57 species, 17 were observed or presumed present during the surveys and 40 have suitable habitat in the BSA. As discussed above, 28 of the 57 species are covered by the Western Riverside County MSHCP. However, because the part of the project in Orange County is not covered by the Western Riverside County MSHCP, all 57 species are included in this discussion.

A complete list of the observed animal species and species identified in the literature search review is provided in Appendix D to the NES.

A description of the BSA is provided in Section 3.17.2.1, Biological Study Area.

3.20.2.2 Western Riverside County MSHCP-Covered Species

Of the 76 special-status animal species originally identified in the literature search (California Natural Diversity Database [CNDDDB]) that have the potential to occur in the BSA or in the immediate vicinity of the BSA, 40 species are covered by the Western Riverside County MSHCP.

Twelve of these species are not discussed in this section because of the reasons stated in Section 3.20.2. Of the remaining 28 species, 6 were observed and 22 have suitable habitat in the BSA. The 6 species covered by the Western Riverside County MSHCP that were observed in the BSA during the 2008 field surveys are: Cooper's hawk, great blue heron, California yellow warbler, yellow-breasted chat, black-crowned night heron, and double-crested cormorant.

The remaining 22 special-status species identified in the literature search were not observed in the BSA during the surveys. Although they were not observed in the BSA during the surveys, surveys were not focused on any of these species, except burrowing owl. The remaining 21 species are coast range newt, western spadefoot, southwestern pond turtle, San Diego banded gecko, San Diego horned lizard, orange-throated whiptail, coastal western whiptail, northern red-diamond rattlesnake, San Diego mountain kingsnake, tricolored blackbird, southern California rufous-crowned sparrow, grasshopper sparrow, Bell's sage sparrow, ferruginous hawk, northern harrier, California horned lark, merlin, loggerhead shrike, northwestern San Diego pocket mouse, black-tailed jackrabbit, and San Diego desert woodrat.

Pursuant to the requirements of the Western Riverside County MSHCP, site surveys were conducted to determine the presence of burrowing owl. The burrowing owl is a California Species of Concern and is protected by the MBTA and California Fish and Game Code. Burrowing owls are found in open, dry grasslands, agricultural and range lands, and desert habitats often associated with burrowing animals. They also inhabit grass, forbs, and shrub stages of pinyon and ponderosa pine habitats. The Western Riverside County MSHCP identifies burrowing owl survey areas that must be assessed for the presence of this species. A habitat suitability assessment was conducted in 2008 for the Orange County section of the BSA and in the burrowing owl survey areas identified in the Western Riverside County MSHCP. A habitat suitability assessment was conducted at the Corps Prado Basin property in Riverside County in 2009. Nonbreeding season (2008) and breeding season (2009) focused surveys were conducted in all accessible properties with suitable owl habitat in the BSA. During the 2008 and 2009 surveys, no signs of owls were found (tracks, scat, potential burrows, perch sites), and no owls were observed in any of the potentially suitable areas in the Western Riverside County MSHCP-designated lands. While no burrowing owls were observed during surveys, it is possible for owls to move onto the site prior to construction.

3.20.2.3 Other Special-Status Species

As shown in Table 3.20.1, 19 of the 76 special-status animal species potentially occurring in the BSA are not discussed in this section for the reasons stated in Section 3.20.2. Of the remaining 57 species, the following 15 were observed in the BSA during the field surveys conducted in 2008: Cooper's hawk, great egret, great blue heron, Lawrence's goldfinch, California yellow warbler, snowy egret, yellow-breasted chat, black-crowned night heron, double-crested cormorant, Nuttall's woodpecker, Allen's hummingbird, pallid bat, hoary bat, western small-footed myotis, and Yuma myotis. In addition, because long-eared myotis and pocketed free-tailed bats could not be definitively identified with acoustical monitoring, and because there is a high probability of them occurring in the BSA, their presence is assumed.

Although the remaining 40 special-status species identified in the literature search were not observed in the BSA during surveys, those surveys were not focused on these species, and suitable habitat is present in the BSA for these species. As shown in Table 3.20.1, these species are: coast range newt, western spadefoot, southwestern pond turtle, San Diego banded gecko, San Diego horned lizard, orange-throated whiptail, coastal western whiptail, silvery legless lizard, rosy boa, northern red-

diamond rattlesnake, San Bernardino ringneck snake, San Diego mountain kingsnake, two-striped garter snake, coast patch-nosed snake, tricolored blackbird, southern California rufous-crowned sparrow, grasshopper sparrow, Bell's sage sparrow, long-eared owl, burrowing owl, oak titmouse, ferruginous hawk, Costa's hummingbird, lark sparrow, northern harrier, California horned lark, merlin, loggerhead shrike, black-chinned sparrow, northwestern San Diego pocket mouse, Townsend's big-eared bat, western mastiff bat, western red bat, southwestern yellow bat, black-tailed jackrabbit, long-legged myotis, big free-tailed bat, San Diego desert woodrat, southern grasshopper mouse, and American badger. While much of the habitat on site is disturbed, developed, or degraded by infestations of nonnative species, some suitable habitat exists in the BSA for these special-status species, and it is possible for them to move onto the site prior to construction.

3.20.2.4 Orange County Natural Communities Conservation Plan

The nearest lands in the Orange County NCCP are approximately 2,000 ft south of the BSA near the County line. As a result, there are no special-interest animal species in the NCCP within the BSA. Therefore, the Orange County NCCP is not discussed further in this section.

3.20.3 Environmental Consequences

3.20.3.1 Summary of Impacts

The Initial Phases and Ultimate Projects of Alternatives 1 and 2 would not result in permanent direct impacts on the burrowing owl but could result in indirect impacts to the owl as a result of the loss of potential habitat.

The Initial Phases and Ultimate Projects of Alternatives 1 and 2 would not result in permanent direct impacts to the other special-status animal species. However, the Initial Phases and Ultimate Projects of Alternatives 1 and 2 could result in permanent indirect impacts to those species as a result of habitat loss and fragmentation, and edge effects such as noise, litter, lighting, and human encroachment.

The Initial Phases and Ultimate Projects of Alternatives 1 and 2 would result in temporary effects to the burrowing owl and other special-interest animal species as a result of unavailability of potential habitat, noise, vibration, lighting, and other edge effects during construction.

Summary of Impacts for Alternative 2f

Alternative 2f has been identified as the Preferred Alternative. The Initial Phase and Ultimate Project under Alternative 2f would not result in permanent direct impacts on

the burrowing owl but could result in indirect impacts to the owl as a result of the loss of potential habitat.

The Initial Phase and Ultimate Project under Alternative 2f would not result in permanent direct impacts to the other special-status animal species, but could result in permanent indirect impacts to those species as a result of habitat loss and fragmentation, and edge effects such as noise, litter, lighting, and human encroachment.

The Initial Phase and Ultimate Project under Alternative 2f would result in temporary effects to the burrowing owl and other special-interest animal species as a result of unavailability of potential habitat, noise, vibration, lighting, and other edge effects during construction.

3.20.3.2 Permanent Impacts

Alternatives 1 and 2

Burrowing Owl

Although the project is not expected to directly affect any burrowing owls due to the low probability of this owl occurring in the BSA, the Initial Phases and Ultimate Projects under Alternatives 1 and 2 could result in indirect permanent effects to burrowing owls through the loss of potential habitat.

Other Special-Status Animal Species

No permanent direct effects on other special-status animal species would occur under the Initial Phases and Ultimate Projects for Alternatives 1 and 2. Permanent indirect effects to other nonlisted special-status species could occur as a result of habitat loss and habitat fragmentation under the Initial Phases and Ultimate Projects for Alternatives 1 and 2. For bridge and crevice-dwelling animal species, there is potential for the Build Alternatives to result in indirect permanent impacts through habitat loss from modifications to structures that may permanently exclude the future use of those structures by bridge and crevice-dwelling species or through the loss of adjacent foraging habitat (e.g., riparian habitat). The indirect effects of the Initial Phases and Ultimate Projects for Alternatives 1 and 2 on animal species in areas adjacent to the project footprint could also result from edge effects such as exotic plant and animal infestations, litter, fire, noise, vibration, dust, nighttime lighting, human encroachment, and pollutants associated with vehicle use. Edge effects are expected to extend into the surrounding natural habitat by approximately the same distance that SR-91 is being widened under each Build Alternative.

The Western Riverside County MSHCP provides a comprehensive, habitat-based approach to the protection of covered species by focusing on conservation and management of lands essential for their long-term conservation. This approach is consistent with USFWS regulations concerning the designation of critical habitat in providing for the protection of "... those physical and biological features essential to the conservation ..." of the species (Western Riverside County MSHCP, Volume 3, Section 14.2). In general, because of the limited amount of habitat involved and its relatively linear configuration, project effects on Western Riverside County MSHCP-covered animal species are considered minimal and are adequately addressed by the Western Riverside County MSHCP.

No Build Alternative

The No Build Alternative would not result in any improvements to SR-91 and I-15. Therefore, the No Build Alternative would not result in the loss of suitable habitat or other permanent adverse effects to Western Riverside County MSHCP-covered animal species and other special-status animal species.

3.20.3.3 Temporary Impacts

Alternatives 1 and 2

Temporary effects to several special-status animal species may occur during construction of the Initial Phases and Ultimate Projects for Alternatives 1 and 2, when habitats are temporarily disturbed during grading or other activities as described in the following sections. Because the project would be constructed in phases, project effects would be permanent if they would be disturbed longer than a single phase without replacement of habitat between phasing. No phase would take longer than 4 years to construct.

Burrowing Owl

Although the Build Alternatives are not expected to directly affect any western burrowing owls due to the low probability of this owl occurring in the BSA, the Initial Phases and Ultimate Projects for Alternatives 1 and 2 could result in temporary construction effects to burrowing owls through the unavailability of potential habitat during construction. These temporary effects to burrowing owl cannot be quantified because they depend on a number of uncontrollable factors. Temporary effects are expected as a result of noise, vibration, dust, nighttime lighting, and human encroachment. Because focused surveys conducted for the burrowing owl have been negative so far, and due to the limited suitability of the habitat within the temporarily affected areas, it is likely that burrowing owls would continue to utilize higher-quality

habitat in this area outside the BSA. Preconstruction surveys would confirm that no burrowing owls have moved into the project construction limits prior to construction.

Other Special-Status Animal Species

As discussed earlier in Section 3.20.2.3, 15 other special-status animal species were observed in the BSA. Inconclusive acoustic data from the 2008 surveys also suggest the potential presence of pocketed free-tailed bats and long-eared myotis.

Construction of the Build Alternatives is not expected to directly affect any of these species as a result of the avoidance and minimization measures described later in Section 3.20.4. However, the Initial Phases and Ultimate Projects for Alternatives 1 and 2 are expected to have indirect and temporary effects on these species similar to those described above for the burrowing owl. In addition, potential temporary effects on bat species may result from impeded access to existing and future roost sites in the crevices of bridges, culverts, and overhead structures during construction of Alternatives 1 and 2. Construction on each bridge, culvert, or overhead structure would occur only once during each single phase. Therefore, bat species would only have impeded access to existing and future roost sites for no longer than 4 years in any single construction phase.

No Build Alternative

The No Build Alternative would not result in any construction along the project segments of SR-91 and I-15. The No Build Alternative would not result in improvements to SR-91 and I-15 other than the routine maintenance of those freeways. Therefore, the No Build Alternative would not result in any adverse temporary effects related to Western Riverside County MSHCP-covered animal species or other special-status animal species in the BSA.

3.20.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures would be required in both Orange and Riverside Counties for the Initial Phases and Ultimate Projects under Alternatives 1 and 2 and their design variations to avoid and minimize effects to special-status animal species during construction.

- AS-1** During final design, RCTC's Project Engineer will coordinate with the Designated Qualified Biologist to identify all areas of potential burrowing owl (BUOW) habitat within the project footprint or in the immediately surrounding areas and will designate those areas on the project specifications.

To ensure that any BUOW that may occupy the site in the future are not affected by construction activities, RCTC's Resident Engineer will require the design/build contractor to have preconstruction BUOW surveys conducted by a Designated Qualified Biologist within 30 days prior to any phase of construction in the areas identified as potential BUOW habitat. These preconstruction surveys are also required to comply with the Western Riverside County MSHCP, the federal MBTA, and the California Fish and Game Code. If any of the preconstruction surveys determine that BUOW are present, one or more of the following mitigation measures will be required: (1) avoidance of active nests/burrows and surrounding buffer area during construction activities; (2) passive relocation of individual owls; (3) active relocation of individual owls; and (4) preservation of on-site habitat with long-term conservation value for the owl. Because any documented presence of BUOW will have unique site characteristics, the RCTC Project Manager will coordinate with the Department District Biologist, RCTC's Resident Engineer, the design/build contractor, the design/build contractor's Designated Qualified Biologist, CDFG, and USFWS to determine which specific measure(s) will be implemented.

RCTC's Resident Engineer will ensure that any BUOW measures determined to be required based on the results of the preconstruction surveys and the required coordination described above are properly implemented by the design/build contractor prior to and during construction in the BUOW areas identified in the surveys.

AS-2 During final design, RCTC's Project Engineer will coordinate with the Designated Qualified Biologist to identify all areas of potential bat habitat within and immediately adjacent to the project footprint and will designate those areas on the project specifications.

RCTC's Project Manager will require the design/build contractor to have a Designated Qualified Bat Biologist survey all potential bat habitat in June, prior to construction, to assess the potential for the presence of maternity roosts because maternity roosts are generally formed in late spring. The Designated Qualified Bat Biologist will also perform preconstruction surveys because bat roosts can change

seasonally. The surveys will include structure inspection, sampling, exit counts, and acoustic surveys.

- AS-3** To avoid direct mortality to bats roosting in areas subject to effects from construction activities, RCTC's Resident Engineer will require the design/build contractor to ensure that any structure with potential bat habitat will have temporary bat exclusion devices installed under the supervision of the Designated Qualified Bat Biologist prior to construction. The installation of the exclusion devices will be conducted during the fall (September or October) to avoid trapping flightless young inside during the summer months or hibernating individuals during the winter. Such exclusion efforts must be continued to keep the structures free of bats until the completion of construction. Replacement roosting habitat may also be needed to minimize effects to excluded bats. All bat exclusion techniques and replacement roosting habitat will be coordinated among the Department District 8 Biologist, the Department District 12 Biologist, RCTC's Project Manager, RCTC's Resident Engineer, the design/build contractor, the design/build contractor's Designated Qualified Bat Biologist, CDFG, and USFWS.
- AS-4** As required in Measure NC-10, RCTC's Resident Engineer will ensure that all construction work on bridges will take place during the day to the best extent feasible. Limited evening and/or night construction may be required for operational reasons. The RCTC Project Engineer will require the design/build contractor to include construction management measures to direct lighting and noise away from bat night roosting areas in the project specifications. The RCTC Resident Engineer will require the design/build contractor to implement those measures during evening and night construction. Operational reasons may include the desire to conduct certain construction activities, such as closing multiple ramps or travel lanes, during night hours to minimize delays to the traveling public. Any night construction must be approved in writing by the RCTC Resident Engineer.
- AS-5** RCTC's Project Engineer will ensure that the final design specifically addresses keeping riparian vegetation delineated on the project specifications that is adjacent to bat roosting sites (which include

crevices on bridges, culverts, and overhead structures) intact during construction per measures included in the project specifications.

Prior to and during construction, RCTC's Resident Engineer will require the design/build contractor to properly implement the measures in the project specifications to keep riparian vegetation adjacent to bat roosting sites intact.

AS-6 To prevent project effects to bridge- and crevice-nesting birds (i.e., swifts and swallows), RCTC's Resident Engineer will require the design/build contractor to ensure that all work on existing bridges with potential habitat that is conducted between February 15 and October 31 includes removal of all bird nests prior to construction under the guidance and observation of the Designated Qualified Biologist prior to February 1 of that year, before the swallow colony returns to the nesting site. Removal of swallow nests that are under construction must be repeated as frequently as necessary to prevent nest completion or until a nest exclusion device is installed (such as netting or a similar mechanism that keeps birds from building nests). Nest removal and exclusion device installation will be monitored by the Designated Qualified Biologist. Such exclusion efforts must be continued to keep the structures free of swallows until September or completion of construction. All nest exclusion techniques will be coordinated among the Department District 8 Biologist, the Department District 12 Biologist, RCTC's Project Manager, RCTC's Resident Engineer, the design/build contractor, the design/build contractor's Designated Qualified Biologist, CDFG, and USFWS.

AS-7 During final design, RCTC's Project Manager, the Department District 8 Biologist, the Department District 12 Biologist, and the Designated Qualified Biologist will determine whether structural features providing existing bat roosting habitat cannot be permanently retained following construction. If that is the case, RCTC's Project Manager, RCTC's Project Engineer, the Department District 8 Biologist, the Department District 12 Biologist, and the Designated Qualified Biologist will identify alternative roosting habitat to be installed during project construction. The project specifications will

include suitable designs and specifications for bat exclusion and habitat replacement structures.

Prior to and during construction, RCTC's Resident Engineer will require the design/build contractor to properly implement the designs and specifications for bat exclusion and habitat replacement structures included in the project specifications. The installation and maintenance of those structures will be monitored by the Designated Qualified Biologist.

AS-8

RCTC's Resident Engineer will require the design/build contractor to install and maintain silt fence barriers at all staging or construction areas at Coal Canyon and areas within CHSP to prevent small animals from entering those areas.

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3.21 Threatened and Endangered Species

3.21.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (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 is a Biological Opinion or an Incidental Take statement. 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 Game (CDFG) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

The Biological Opinion for the SR-91 CIP was received from the USFWS on November 30, 2011. The Biological Opinion is provided in Appendix N, Biological

Opinion, and is discussed in detail in the subsection titled “Summary of the Findings of the Biological Opinion” later in this section.

3.21.2 Affected Environment

The analysis of the potential impacts of the project on threatened and endangered species is based on the NES (June 2010) and the *Biological Assessment* (June 2011). The NES includes a number of individual technical studies, including studies focused on sensitive species. The findings of the analyses in the NES and the individual technical studies included in the NES related to threatened and endangered species are summarized in this section. Additional details not included in this summary are available in the NES and *Biological Assessment*.

The USFWS provided a letter that listed threatened, endangered, or candidate plant and wildlife species that may be present in the BSA and/or the surroundings. This letter is provided in Appendix I, USFWS Species List. The USFWS species list will be validated and updated, if necessary, as part of the Section 7 Consultation process for the project, which specifically allows for updating the species list at that time.

Other sources used in preparation of the analysis summarized in this section included the CNDDDB, the CNPS On-Line Electronic Inventory of Rare and Endangered Vascular Plants of California (2008), and the Western Riverside County MSHCP. In addition, resource agency coordination meetings were held on August 12 and September 25, 2008, December 10 and December 21, 2009, and January 19, 2010, to involve resource agencies in the environmental process and to discuss the environmental surveys and possibility of an agreement for a comprehensive mitigation program.

Table 3.21.1 shows the 21 threatened and endangered species identified in the USFWS letter and/or the literature review as occurring or potentially occurring in the BSA and/or the surrounding area, and the determination regarding project effects to each species expected to be received from the USFWS. These species may also be State listed as threatened or endangered, as shown in Table 3.21.1.

Table 3.21.1 Summary of Threatened and Endangered Plant and Animal Species

Common Name	Scientific Name	Status	Habitat Potential	Determination
Plant Species				
Munz's onion	<i>Allium munzii</i>	FE CT Western Riverside County MSHCP Narrow Endemic Plant Species	There is potential habitat for this species in the BSA. This species was not observed during surveys.	No effect
San Diego ambrosia	<i>Ambrosia pumila</i>	FE Western Riverside County MSHCP Narrow Endemic Plant Species	There is potential habitat for this species in the BSA. This species was not observed during surveys.	No effect
Braunton's milk-vetch	<i>Astragalus brauntonii</i>	FE	There is potential habitat for this species in the BSA, including USFWS designated critical habitat.	May affect
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	FT CE Western Riverside County MSHCP Criteria Area Species	There is potential habitat for this species in the BSA. The closest area of revised designated critical habitat, approved on February 7, 2011, is approximately 20 miles away from the BSA. This species was not observed during surveys.	No effect
San Fernando Valley spineflower	<i>Chorizanthe parryi</i> var. <i>fernandina</i>	FC CE	There is potential habitat for this species in the BSA. This species was not observed during surveys.	No effect
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	FE CE	There is potential habitat for this species in the BSA. This species was not observed during surveys.	No effect
Santa Ana River woollystar	<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	FE CE Western Riverside County MSHCP-Covered Species	There is potential habitat for this species in the BSA. This species was not observed during surveys.	No effect
Brand's phacelia	<i>Phacelia stellaris</i>	FC Western Riverside County MSHCP Narrow Endemic Plant Species	There is potential habitat for this species in the BSA. This species was not observed during surveys.	No effect

Table 3.21.1 Summary of Threatened and Endangered Plant and Animal Species

Common Name	Scientific Name	Status	Habitat Potential	Determination
Animal Species				
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	FE	There is no potential habitat for this species in the BSA.	No effect
Arroyo toad	<i>Bufo californicus</i>	FE Western Riverside County MSHCP-Covered Species	There is no potential habitat for this species in the BSA.	No effect
Santa Ana sucker	<i>Catostomus santaanae</i>	FT Western Riverside County MSHCP-Covered Species	Although previous discussions with the USFWS indicated the belief that this species was extirpated below Prado Dam, in a study conducted earlier in 2010, an 8-inch sucker was found (email from Christine Medak on March 12, 2010, forwarded by Sally Brown)	May affect
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FC CE Western Riverside County MSHCP-Covered Species	There is potential habitat for this species in the BSA. This species was not observed during surveys.	No effect
San Bernardino kangaroo rat	<i>Dipodomys merriami parvus</i>	FE	There is no potential habitat for this species in the BSA.	No effect
Stephens' kangaroo rat	<i>Dipodomys stephensi</i>	FE CT Western Riverside County MSHCP-Covered Species	There is potential habitat for this species in the BSA in Riverside County. The BSA is not located in any SKR HCP Core Reserves.	No effect
Southwestern willow flycatcher (nesting)	<i>Empidonax traillii extimus</i>	FE CE Western Riverside County MSHCP-Covered Species	There is potential habitat for this species in the BSA. However, nesting habitat is limited.	May affect
Quino checkerspot butterfly	<i>Euphydryas editha quino</i>	FE	There is no potential habitat for this species in the BSA.	No effect
Bald eagle	<i>Haliaeetus leucocephalus</i>	FD CE	There is potential habitat for this species in the BSA. However, nesting habitat is limited.	No effect
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	FT Western Riverside County MSHCP-Covered Species	There is potential habitat for this species in the BSA, including USFWS-designated critical habitat.	May affect

Table 3.21.1 Summary of Threatened and Endangered Plant and Animal Species

Common Name	Scientific Name	Status	Habitat Potential	Determination
Delhi sands flower-loving fly	<i>Rhaphiomidas terminatus abdominalis</i>	FE Western Riverside County MSHCP-Covered Species	There is no potential habitat for this species in the BSA.	No effect
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	FE	There is no potential habitat for this species in the BSA.	No effect
Least Bell's vireo (nesting)	<i>Vireo bellii pusillus</i>	FE CE Western Riverside County MSHCP-Covered Species	There is potential habitat for this species in the BSA.	May affect

Source: *Final Natural Environment Study* (June 2010) and the *Biological Opinion* (November 2011).

Status:

CE = California endangered
CT = California threatened
FC = federal candidate
FD = federal delisted
FE = federal endangered
FT = federal threatened

BSA = biological study area

HCP = Habitat Conservation Plan

MSHCP = Multiple Species Habitat Conservation Plan

SKR = Stephens' kangaroo rat

USFWS = United States Fish and Wildlife Service

Of the 21 threatened, endangered, and candidate plant and animal species listed that may occur in the BSA, 6 animal species were determined to lack either suitable habitat or distribution in the BSA and are considered to be absent from the BSA at this time. Those species are San Diego fairy shrimp, Quino checkerspot butterfly, Delhi sands flower-loving fly, Riverside fairy shrimp, arroyo toad, and San Bernardino kangaroo rat. The 8 plant species and 7 animal species occurring or potentially occurring in the BSA are described in detail in the following sections.

3.21.2.1 Threatened and/or Endangered Plant Species

As indicated in Table 3.21.1, there is potential habitat in the BSA for eight threatened and/or endangered plant species. Focused botanical surveys for these species were conducted in 2008 and 2009 in the BSA during the appropriate blooming period for each species. In November 2008, the Freeway Complex fire consumed a small amount of vegetation in the BSA. Plant species in those areas requiring fire for germination would have been observed during the botanical surveys conducted during the 2009 blooming period. The survey results for all eight species were negative. Therefore, all eight plant species are considered absent from the BSA and are not discussed further in this section, with the exception of Braunton's milk-vetch. In 2006, the USFWS designated critical habitat for Braunton's milk-vetch. One of these critical habitat units is in Coal Canyon, adjacent to the BSA in Orange County. The nearest known population of Braunton's milk-vetch had been identified along SR-91 between SR-241 and SR-71, in the main channel of Coal Canyon and in the State rights-of-way for those freeways. The 2008 and 2009 survey results of the BSA were negative for this plant. Based on communications with Department biologists, the previously documented plants in the State rights-of-way are believed to have been washed away. Although the plants are believed to have been washed away, Braunton's milk-vetch requires heat or physical scarification to germinate. Because Coal Canyon was not affected by the Freeway Complex fire in the BSA, seeds for this species may still be present in the designated Coal Canyon critical habitat. This species is considered absent from the Riverside County part of the BSA.

Critical habitat was designated for thread-leaved brodiaea on February 8, 2011. There is no designated critical habitat for thread-leaved brodiaea within the BSA.

3.21.2.2 Threatened and/or Endangered Animal Species

As shown in Table 3.21.1, there is potential habitat in the BSA for seven threatened and/or endangered animal species: western yellow-billed cuckoo, southwestern willow flycatcher (SWWF), bald eagle, CAGN, least Bell's vireo (LBV), Santa Ana

sucker, and Stephens' kangaroo rat (SKR). As a result, focused protocol surveys were conducted in suitable habitat areas in the BSA for those species. The survey results for these species are described below:

- **Western Yellow-billed Cuckoo:** This is a slender, medium-sized bird that feeds on large insects, frogs, and other insectivorous birds. No western yellow-billed cuckoos were observed during the 2008 surveys, and there is a limited amount of suitable nesting habitat present for this species in the BSA. Consequently, there is little probability for the western yellow-billed cuckoo to occur in the BSA.
- **Southwestern Willow Flycatcher:** The SWWF is a migratory songbird that occurs in the region surrounding the BSA only during the breeding season. It is the only subspecies of willow flycatcher that nests in southern California. Eighteen critical habitat units for the SWWF, totaling approximately 599 mi of streams and rivers, have been designated by the USFWS. Fourteen counties in Arizona, California, and New Mexico are affected by this designation, including Riverside and San Bernardino Counties. There is no designated critical habitat for SWWF in Orange County. No SWWF were observed during the 2008 surveys. In addition, there is limited suitable habitat for this species in the BSA. The Santa Ana Water Association (SAWA) has been monitoring sensitive bird species such as the SWWF in the Santa Ana River Watershed since 1986. There have been no SWWF documented downstream of Prado Dam since that monitoring began. Therefore, the SWWF is considered absent from the BSA.
- **Bald Eagle:** The bald eagle nests in large trees and on platforms, most commonly within 1 mi of water. The bald eagle was not observed in the BSA during the 2008 and 2009 surveys, which did not focus on this species. There is marginally suitable foraging habitat in the BSA for the bald eagle, but no suitable nesting habitat. Therefore, the probability of the bald eagle occurring in the BSA is low.
- **Coastal California Gnatcatcher:** The CAGN is a nonmigratory songbird that typically nests and forages in moderately dense stands of CSS below an elevation of 2,500 ft in southern California. There is suitable CSS habitat for CAGN in the BSA. The majority of that suitable habitat in the BSA is along SR-91 just east of the SR-91/SR-241 interchange in Orange County. During the 2008 focused surveys, at least five CAGN were either observed or heard calling in the BSA. A pair of CAGN and at least two juveniles were observed on several occasions in the Coal Canyon area of the BSA in Orange County, and on two occasions a

CAGN was either observed or heard in the BSA near Wardlow Wash in Riverside County.

- **Least Bell's Vireo:** LBV is a small migratory songbird that nests in southern California. LBV were identified at a total of 27 locations in the BSA and at another 8 locations just outside of the BSA during the 2008 surveys. LBV is known to use riparian forest as nesting habitat, and riparian scrub and deepwater aquatic are known to be suitable forage habitat for LBV and to provide corridors between higher-quality areas. LBV were found during the 2008 surveys from the Gypsum Canyon Road bridge to Prado Dam. Suitable habitat for the LBV extends along SR-91 just east of the SR-71/SR-91 interchange. Of the 27 locations in the BSA, 20 are judged to have been territories and successful nesting was confirmed at 6 of those locations. The other 7 locations in the BSA hosted singing males on one or more occasions, but long-term territories were not identified at those locations. There is no LBV-designated critical habitat in the BSA. After the 2008 focused surveys, part of the riparian/riverine habitat identified as suitable for LBV was either burned in the November 2008 Freeway Complex fire or subsequently removed by the Corps' Santa Ana River Reach 9 Phase 2B Realignment project. Although the vegetation was essentially destroyed and/or removed, LBV could still use the area for foraging and as a corridor between higher-quality areas. In addition, it is likely that some of the vegetation may not have been totally destroyed and is expected to come back as riparian/riverine habitat.
- **Santa Ana Sucker:** The Santa Ana sucker (sucker) is federally listed as a threatened fish species. The sucker is endemic to coastal streams in the Los Angeles Basin and is typically found in cool, clear, flowing water and gravel, rubble, or boulder substrate. It was once believed by the USFWS that the Santa Ana sucker had been extirpated from the Santa Ana River below Prado Dam due to the lack of observation during several years of fish studies; therefore, no fish surveys were conducted. However, in early 2010, prior to a diversion of the Santa Ana River for the Corps embankment project, an 8-inch sucker was found during preconstruction surveys. No suitable habitat for the Santa Ana sucker occurs in the BSA outside of the Santa Ana River. The Santa Ana River is the only area in the BSA with constituent elements for the Santa Ana sucker.

On December 14, 2010, the USFWS issued the final rule for revised critical habitat for the Santa Ana sucker. This revised rule includes approximately 9,331 ac of habitat in the Santa Ana River in San Bernardino, Riverside, and Orange Counties. The BSA is within Subunit 1C, which includes 10.7 mi of the

main Santa Ana River channel from below Prado Dam in Corona to 0.6 mi downstream of Imperial Highway in Anaheim Hills.

- **Stephens' Kangaroo Rat:** The SKR is a small rodent that occurs primarily in annual and perennial grasslands, but also in CSS with sparse canopy cover. The SKR is a fully covered species in the Western Riverside County MSHCP and is also addressed by the SKR HCP. The SKR HCP core reserves were incorporated into the Western Riverside County MSHCP conservation areas and contribute to the conservation of the species in the Western Riverside County MSHCP. Although part of the BSA is in SKR HCP fee areas in Riverside County, there is limited suitable habitat for this species in the BSA. There is no suitable habitat for SKR in the Orange County part of the BSA. No SKR were observed in the BSA during 2008 surveys, which did not focus on this species.

Focused surveys were not conducted for the other threatened, endangered, or candidate wildlife species listed earlier because there is no suitable habitat for these species in the Western Riverside County MSHCP-designated survey areas and the Orange County part of the BSA.

3.21.3 Environmental Consequences

3.21.3.1 Summary of Impacts

The Alternative 1 Ultimate Project would result in 6.56 ac of permanent direct impacts to CAGN-designated critical habitat and permanent indirect impacts to 0.94 ac of LBV habitat. The Alternative 2 Ultimate Project would result in 6.32 ac of permanent direct impacts to CAGN-designated critical habitat and permanent indirect impacts to 0.94 ac of LBV habitat. There are no permanent impacts to these habitats in the Initial Phases of Alternatives 1 and 2.

The Alternative 1 and 2 Ultimate Projects would result in similar permanent indirect impacts to CAGN.

The Initial Phases of Alternatives 1 and 2 would not result in direct permanent impacts to the SKR HCP fee area because the footprints do not extend far enough east to conflict with the fee area.

The Ultimate Project under Alternative 1 would result in direct permanent impacts to 1.23 ac and temporary impacts to 2.6 ac of the SKP HCP fee area.

The Ultimate Project under Alternative 2 would result in direct permanent impacts of 5.72 ac and temporary impacts to 18.88 ac of the SKR HCP fee area.

The Initial Phases and Ultimate Projects for Alternatives 1 and 2 would not result in permanent impacts to Braunton's milk vetch, the Santa Ana sucker, western yellow-billed cuckoo, SWWF, and bald eagle.

The Alternative 1 Ultimate Project would result in a temporary direct impact to 1.08 ac of CAGN-designated critical habitat. The Alternative 2 Ultimate Project would result in temporary direct impacts to 2.09 ac of CAGN-designated critical habitat. The Initial Phases and Ultimate Projects for Alternatives 1 and 2 are not expected to result in direct temporary impacts to LBV.

The Initial Phases and Ultimate Projects for Alternatives 1 and 2 would result in similar temporary indirect impacts to Braunton's milk vetch, CAGN, LBV, Santa Ana sucker, western yellow-billed cuckoo, SWWF, and bald eagle.

Summary of Impacts for Alternative 2f

Alternative 2f has been identified as the Preferred Alternative. Alternative 2f would result in the same permanent and temporary impacts to threatened and endangered species as described above for Alternative 2. This is because there are no design variations in the areas where these impacts would occur and, therefore, the impacts of Alternative 2, with any design variation, including design variation f, would be the same as described above for Alternative 2.

Summary of the Findings of the Biological Opinion

The Biological Opinion for the project was received from the USFWS on November 30, 2011. A copy of the Biological Opinion is provided in Appendix N.

Based on the Biological Opinion, the USFWS has concurred with the Department's determination that the project will have permanent and temporary (direct and indirect) impacts to Braunton's milk-vetch and its designated critical habitat (in Orange County), CAGN, Santa Ana sucker, southwestern willow flycatcher, LBV (in Riverside County), and SKR (in Riverside County) as described above for Alternatives 1 and 2.

The USFWS has concurred with the Department's determination that the project will have permanent and temporary impacts on CAGN as described above for Alternatives 1 and 2. The USFWS has concurred with the Department's determination that the project "may affect, but is not likely to adversely affect" Braunton's milk-vetch and its designated critical habitat (in Orange County), LBV (in Riverside County), SKR

(in Riverside County), southwestern willow flycatcher, and Santa Ana sucker, and would have “no effect” on LBV (in Orange County) and SKR (in Orange County).

The USFWS has concurred with the Department’s determination that the Ultimate Project would likely adversely affect CAGN but the level of anticipated take is not likely to result in “jeopardy” to the recovery of CAGN. The USFWS has authorized the “incidental take” of CAGN, based on the effects of the project, as follows:

Incidental take in the form of harm, as defined in 50 CFR Section 17.3, of one CAGN pair is authorized due to the permanent removal of 4.25 ac of CSS and 4.17 ac of vegetation communities used by CAGN for essential behaviors, including nesting, roosting, foraging, and dispersal, and the temporary removal of 1.29 ac of CSS and 1.72 ac of vegetation used by CAGN for foraging and dispersal. The take threshold will be exceeded if more than the amount of habitat identified above is graded or grubbed or if more than one pair of CAGN is killed or injured.

The USFWS has concurred with the Department’s determination that the project will have permanent and temporary impacts to CAGN, LBV, and SKR in Riverside County. The adverse project impacts to CAGN, LBV, and SKR in Riverside County are addressed through compliance with the Western Riverside County MSHCP and the SKR HCP. As part of the Biological Opinion, the SR-91 CIP was determined to be consistent with the relevant Western Riverside County MSHCP policies and procedures, and with the SKR HCP and its associated implementing agreement and permit.

3.21.3.2 Permanent Impacts

Alternatives 1 and 2

As described in Section 2.0, the Build Alternatives include design variations. Those design variations would be in developed areas, and there are no biological resources in the areas in and around those design variations. As a result, there is no difference in the impacts of the Build Alternatives on threatened, endangered, and candidate species and their habitats as a result of the design variations. Therefore, the analyses in the following sections do not discuss impacts for the individual design variations in Alternatives 1 and 2.

As discussed earlier on page 3-1 and as shown on Figures 3-1 through 3-4, the majority of construction that would disturb habitat in the Initial Phases of Alternatives

1 and 2 would occur generally between SR-71 and I-15. The additional improvements for the Ultimate Projects would be largely west of SR-71 and east of I-15. As a result, the direct impacts of Alternatives 1 and 2 described in this analysis would not occur in the same areas during construction of the Initial Phases and Ultimate Projects.

Federal Section 7 Consultation between the Department (acting on behalf of FHWA) and the USFWS was conducted for potential impacts to Braunton's milk-vetch-designated critical habitat, Santa Ana sucker, LBV, CAGN, and CAGN-designated critical habitat as described in this section. Although Braunton's milk-vetch is believed to be absent from the BSA, there is designated critical habitat for this species in the BSA, but it is outside the disturbance limits for the Build Alternatives.

Therefore, Braunton's milk-vetch was also included in the federal Section 7 Consultation. Formal Section 7 Consultation was initiated on June 23, 2011. The Biological Opinion was received from the USFWS on November 30, 2011. Additional information regarding the Biological Opinion is provided later in Section 3.21.3.4, Biological Opinion.

In addition, a Joint Project Acquisition/Review Process (JPARP), as outlined in Section 6.6.2 of the Western Riverside County MSHCP, was conducted among the RCTC, Western Riverside County RCA, and the wildlife agencies to address project impacts in the Riverside County part of the BSA. This process required joint review of the project's consistency with the Western Riverside County MSHCP by the RCA, the Permittee (i.e., RCTC), and the resource agencies. A copy of the Joint Project Review (JPR) was submitted by the RCA to the USFWS on April 4, 2011. Per Section 6.6.2 of the Western Riverside County MSHCP, the USFWS had 10 days from receipt of the JPR to submit any comments in writing. No comments were received. As part of the Biological Opinion for the Western Riverside County MSHCP, the SR-91 CIP was determined to be consistent with the relevant Western Riverside County MSHCP policies and procedures.

Braunton's Milk-vetch

Although this species is believed to be absent from the BSA, there is designated critical habitat for this plant in Coal Canyon, the Orange County part of the BSA. However, this critical habitat unit would not be permanently impacted by Alternatives 1 and 2 and their design variations. The permanent project features are outside the boundary of the designated critical habitat. Therefore, Alternatives 1 and 2 would not result in direct permanent impacts to Braunton's milk-vetch.

Coastal California Gnatcatcher

Direct and indirect permanent impacts to CAGN and CAGN-designated critical habitat would occur under Alternatives 1 and 2, although Alternatives 1 and 2 are not expected to result in the direct take of CAGN or CAGN occupied habitat. Alternatives 1 and 2 would result in a take of CSS habitat within CAGN-designated critical habitat along SR-91 from just east of the SR-241/SR-91 interchange to just west of the SR-91/SR-71 interchange. Alternatives 1 and 2 would also take other non-CSS communities that contain constituent elements of CAGN critical habitat; therefore, those communities were included in this impact analysis. Table 3.21.2 shows the amounts of the designated critical CSS and other habitats impacted by Alternatives 1 and 2. Occupied CSS habitat is also CSS within CAGN-designated critical habitat. Permanent impacts to CSS are shown in Table 3.17.2 in Section 3.17, Natural Communities.

Table 3.21.2 Permanent Impacts to Coastal California Gnatcatcher-Designated Critical Habitat (acres)

Habitat Type	Alternative 1	Alternative 2
Coastal sage scrub	0.14	1.24
Chaparral	1.70	1.97
Riparian forest	0.18	0.01
Nonnative grassland	1.20	0.60
Mixed ruderal and ornamental	3.34	2.50
Total	6.56	6.32

Source: *Final Natural Environment Study* (June 2010), *Biological Assessment* (June 2011), and *Biological Opinion* (November 2011).

Note: There are no permanent impacts to these habitats in the Initial Phases of Alternatives 1 and 2.

As discussed in detail in the NES, the Build Alternatives are expected to reduce congestion during peak hours in the project limits and are not expected to increase indirect impacts due to automobile traffic and litter in the area. Furthermore, noise levels associated with the Build Alternatives would be essentially the same in the vicinity of the CSS communities, with the exception of a few locations where an increase in noise of between 4 and 7 decibels (dB) may be expected as a result of the Build Alternatives. All these locations are adjacent to developed areas in which CAGN was not observed and CAGN is not likely to occur in the future.

Section 7 consultation was conducted to obtain authorization for potential impacts of the Build Alternatives to CAGN and CAGN-designated habitat within Orange County. Because the project is a Western Riverside County MSHCP-covered project

that is federally funded, the Western Riverside County MSHCP provides for an abbreviated Section 7 consultation process for the part of the project in Riverside County for the issuance of an incidental take permit.

Least Bell's Vireo

Direct and indirect permanent effects to LBV may occur as a result of project construction. The LBV is likely to occur within or near the disturbance limits at the time of construction. Due to the other areas of occupied and nesting habitat being removed by the Corps, the only take of occupied habitat expected to occur as a result of project construction is in two locations, both of which are located in Riverside County. One is in the vicinity of Wardlow Wash/Fresno Canyon, and the other is north of SR-91 and east of SR-71. The location north of SR-91 and east of SR-71 is in small isolated stands of riparian vegetation in an upland setting. Both Build Alternatives are expected to result in a total of 0.94 ac of permanent impacts to occupied habitat as a result of project implementation. No loss of individual LBV is expected as a result of the avoidance and minimization measures described above, and there are no effects expected on LBV-designated critical habitat.

Because Alternatives 1 and 2 will impact LBV habitat in Riverside County only, project impacts have been addressed by demonstrating project consistency with the Western Riverside County MSHCP. A JPR was issued by the Western Riverside County RCA on April 4, 2011.

Santa Ana Sucker

No direct or indirect permanent impacts to the Santa Ana sucker or Santa Ana sucker-designated critical habitat are expected as a result of the Build Alternatives. Because the Corps is currently relocating the Santa Ana River far enough away from SR-91 to accommodate the widening of SR-91, the Build Alternatives will not affect any areas designated as critical habitat that also contain constituent elements for the Santa Ana sucker.

Stephens' Kangaroo Rat

Direct and indirect impacts to SKR and potential habitat are expected to occur as a result of Alternatives 1 and 2. Although no direct take of SKR is expected after avoidance and minimization measures, take of SKR potential habitat within the SKR HCP fee area would occur as a result of the Build Alternatives. Under the SKR HCP, this take is offset by the establishment of a core reserve system to maintain the long-term survival of the species.

It was determined by the parties involved in establishing the Western Riverside County MSHCP that take of SKR outside the boundaries of the SKR HCP is covered under the Western Riverside County MSHCP. Therefore, the take of SKR outside the SKR HCP boundaries but within the Western Riverside County MSHCP plan area is authorized by the Western Riverside County MSHCP. Although SKR is a covered species under the Western Riverside County MSHCP, part of the project is located within the SKR HCP fee area within Riverside County. For the Initial Phases of Alternatives 1 and 2, there are no impacts to the SKR HCP fee area because the Initial Phase footprints do not extend far enough east to conflict with the fee area. Alternative 1 would result in direct permanent impacts to approximately 1.23 ac of the SKR HCP fee area. Alternative 2 would result in direct permanent impacts to approximately 5.72 ac of the SKR HCP fee area. The project would not result in any impacts to the SKR core reserve system.

Western Yellow-billed Cuckoo, Southwestern Willow Flycatcher, and Bald Eagle

Alternatives 1 and 2 are not expected to directly affect the western yellow-billed cuckoo, bald eagle, or SWWF due to the low probability of these species occurring in the BSA. These species are known to forage in the riparian/riverine communities.

The permanent loss of suitable riparian habitat under Alternatives 1 and 2 would reduce the potential habitat for these species in the area. These impacts to these species would be similar to those described above for LBV.

No Build Alternative

The No Build Alternative would not result in any improvements to SR-91 and I-15 other than routine facility maintenance. Therefore, the No Build Alternative would not result in permanent impacts to threatened, endangered, or candidate species or the habitats used by those species.

3.21.3.3 Temporary Impacts

Alternatives 1 and 2

Braunton's Milk-vetch

Even though Braunton's milk-vetch is believed to be absent from the BSA, part of the BSA south of SR-91, between SR-241 and SR-71, is designated critical habitat for this plant. Alternatives 1 and 2 would not directly affect this critical habitat area for this plant species. However, due to the proximity of the project construction to this

critical habitat, project construction activities may result in indirect impacts (e.g., noise, vibration, dust, human presence) to this designated critical habitat.

Coastal California Gnatcatcher

CAGN is likely to occur in or near the disturbance limits during construction of Alternatives 1 and 2; however, it is expected to move out of the area during construction. The project is expected to have temporary effects on CAGN as a result of the temporary loss of designated critical habitat. Because the project would be constructed in phases, project effects to CAGN habitat are considered permanent if they would be disturbed longer than a single phase without replacement of habitat between phasing. The Initial Phases of Alternatives 1 and 2 would take 4 years to construct. The Ultimate Project would take no more than 2 years to complete.

Table 3.21.3 shows the amount of designated critical habitat in Orange County that would be temporarily affected by Alternatives 1 and 2. In Riverside County, there is no critical habitat in the disturbance limits for any of the Build Alternatives.

Therefore, there would be no temporary impacts to CAGN-designated critical habitat in Riverside County during construction of Alternatives 1 and 2. Temporary impacts to CSS are shown in Table 3.17.3 in Section 3.17, Natural Communities.

Table 3.21.3 Temporary Impacts to Coastal California Gnatcatcher-Designated Critical Habitat (acres)

Habitat Type	Initial Phases of Alternatives 1 and 2	Alternative 1 Ultimate Project	Alternative 2 Ultimate Project
Coastal sage scrub	0.02	0.02	0.72
Chaparral	0.40	0.40	0.59
Riparian forest	0.27	0.27	0.27
Nonnative grassland	0.39	0.39	0.51
Total	1.08	1.08	2.09

Source: *Final Natural Environment Study* (June 2010), *Biological Assessment* (June 2011), and *Biological Opinion* (November 2011).

Note: The impacts of Alternatives 1 and 2 that are shown here are the total impacts for the Ultimate Project. Those impacts include those from the Initial Phase and the additional impacts that would occur beyond the Initial Phase to construct each Alternative.

Potential indirect temporary impacts from construction include the increased exposure of CAGN to noise, vibration, dust, and human presence. Without minimization measures, those indirect impacts could potentially impact CAGN in the immediate vicinity of construction activities. However, implementation of the minimization measures would substantially reduce the potential indirect impacts to CAGN.

Least Bell's Vireo

Alternatives 1 and 2 are not expected to result in direct temporary impacts to LBV or LBV habitat.

Because LBV is likely to occur in or near the disturbance limits at the time of construction, Alternatives 1 and 2 would result in potential indirect temporary impacts to LBV during construction. Potential indirect temporary impacts from construction include the increased exposure of LBV to noise, vibration, dust, and human presence. Without minimization measures, those impacts could potentially impact LBV in the immediate vicinity of construction activities; however, implementation of the minimization measures would substantially reduce potential indirect impacts to LBV. Because the project would be constructed in phases, project impacts to LBV habitat are considered permanent if they would be disturbed longer than a single phase without replacement of habitat between phasing.

Santa Ana Sucker

The Santa Ana River is the only area within the BSA that contains potential habitat for Santa Ana sucker. The project would not directly affect the Santa Ana River. However, all the drainages within the project footprint eventually drain into the Santa Ana River. Therefore, indirect and temporary impacts to the Santa Ana sucker may occur due to changes to water quality. The Department's SWMP is the guidance for compliance with the NPDES permit requirements for discharge. Compliance with the NPDES program is considered sufficient to mitigate impacts to water quality. As part of the Department's Project Delivery Storm Water Management Program described in the SWMP, selected Construction Site, Design Pollution Prevention, and Treatment BMPs will be incorporated into the final design of the project. On implementation of Minimization Measures WQ-1 through WQ-3 in Section 3.10, Water Quality, and compliance with the standard requirements of the SWMP and NPDES permits, the Build Alternatives would substantially reduce those potential indirect impacts.

Stephens' Kangaroo Rat

For the Initial Phases of Alternatives 1 and 2, there are no impacts to the SKR HCP fee area because the Initial Phase footprints do not extend far enough east. Alternative 1 would result in temporary impacts to approximately 2.6 ac of the SKR HCP fee area. Alternative 2 would result in temporary impacts to approximately 18.88 ac of the SKR HCP fee area. The project would not result in any temporary impacts to the SKR core reserve system.

Western Yellow-billed Cuckoo, Southwestern Willow Flycatcher, and Bald Eagle

Alternatives 1 and 2 are not expected to directly affect any western yellow-billed cuckoos, SWWF, or bald eagles due to the low probability of these species occurring in the BSA. However, Alternatives 1 and 2 would result in indirect temporary effects on these species as a result of the temporary loss of potential habitat. Because these species either occupy or forage in the same habitat as LBV (riparian/riverine habitat), the effects to these species would be the same as those described for LBV above.

No Build Alternative

The No Build Alternative would not result in any construction along the project segments of SR-91 and I-15. The No Build Alternative would not result in improvements to SR-91 and I-15 other than routine maintenance of those freeways. Therefore, the No Build Alternative would not result in temporary impacts to threatened, endangered, and candidate plant and wildlife species.

3.21.3.4 Biological Opinion

FESA directs all federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of FESA. Section 7 of FESA, “Interagency Cooperation,” is the mechanism by which federal agencies ensure that the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. When a project that will use federal funding or require federal approval has the potential to affect species listed as threatened or endangered under FESA, or a designated Critical Habitat for such species, a Biological Assessment (BA) must be prepared. In addition to providing background information on the project and the species potentially affected by the proposed project, the BA must document the results of all surveys conducted for threatened and endangered species for the project. All potential project effects on these species or designated Critical Habitats for these species are identified in the BA. Potential cumulative effects must also be considered. Proposed avoidance, minimization, and mitigation measures are discussed in the BA.

Based largely on the BA, the USFWS prepares its Biological Opinion concerning the potential effects of a project on listed and proposed threatened and endangered species and/or their Critical Habitats. The Biological Opinion includes the project description and assessment of impacts, and sets forth the opinion of the USFWS as to whether the proposed federal action (project) will jeopardize the continued existence of a listed or threatened species or adversely modify Critical Habitat. If a Jeopardy

Opinion is issued, the federal agency must attempt to identify project modifications that avoid jeopardy or the adverse modification of Critical Habitat. Otherwise, the USFWS may identify conservation measures and include an authorization for incidental take of the listed species or impacts to Critical Habitat. It is the responsibility of the federal action agency to ensure compliance with any measures in the Biological Opinion.

As a permittee under the Western Riverside County MSHCP, the RCTC received a consistency conclusion from the Western Riverside County RCA as part of the JPR on April 4, 2011, that the SR-91 CIP demonstrates consistency with the requirements for covered road projects and with other requirements of the MSHCP for the Riverside County part of the project. The JPR was submitted by the RCA to the USFWS on April 4, 2011. Per Section 6.6.2 of the Western Riverside County MSHCP, the USFWS had 10 days from receipt of the JPR to submit any comments on the JPR in writing to the RCA. No comments were received. As part of that Biological Opinion for the Western Riverside County MSHCP, the SR-91 CIP was determined to be consistent with the relevant Western Riverside County MSHCP policies and procedures.

A letter was sent to the USFWS on June 23, 2011, requesting initiation of formal Section 7 consultation to address potential impacts of the SR-91 CIP on threatened and endangered species and/or their Critical Habitats. The BA for the SR-91 CIP was submitted to the USFWS on June 21, 2011. On July 19, 2011, a letter was received from the USFWS acknowledging the receipt of the BA and request for initiation of Section 7 consultation. A No Jeopardy Biological Opinion was issued by the USFWS on November 30, 2011, and is included in Appendix N, Biological Opinion.

Based on the Biological Opinion, the USFWS has concurred with the Department's determination that the project "may affect, but is not likely to adversely affect" Branton's milk-vetch and its designated critical habitat (in Orange County), LBV (in Riverside County), SKR (in Riverside County), CAGN, southwestern willow flycatcher, and Santa Ana sucker. In addition, the USFWS has concurred with the Department's determination that the project would have "no effect" on LBV (in Orange County) and SKR (in Orange County).

Adverse impacts to CAGN, LBV, and SKR in Riverside County are addressed through compliance with the Western Riverside County MSHCP and SKR HCP. As part of the Biological Opinion, the SR-91 CIP was determined to be consistent with

the relevant Western Riverside County MSHCP policies and procedures, and the SKR HCP and its associated implementing agreement and permit.

The Biological Opinion has authorized the SR-91 CIP the “incidental take” of CAGN as follows:

- Incidental take in the form of harm, as defined in 50 CFR Section 17.3, of one CAGN pair is authorized due to the permanent removal of 4.25 ac of CSS and 4.17 ac of vegetation communities used by CAGN for essential behaviors, including nesting, roosting, foraging, and dispersal, and the temporary removal of 1.29 ac of CSS and 1.72 ac of vegetation used by CAGN for foraging and dispersal. The take threshold will be exceeded if more than the amount of habitat identified above is graded or grubbed or if more than one pair of CAGN is killed or injured.

The USFWS has further determined that the level of anticipated take is not likely to result in jeopardy to the recovery of CAGN.

3.21.4 Avoidance, Minimization, and/or Mitigation Measures

In addition to measures provided in Sections 3.17 (Natural Communities), 3.18 (Wetlands and Other Waters), 3.19 (Plant Species), and 3.20 (Animal Species), the measures listed below would be required to avoid and minimize temporary and permanent impacts to threatened, endangered, and candidate species of Alternatives 1 and 2.

The following measures would be required for the Initial Phases and Ultimate Projects under the SR-91 CIP Build Alternatives.

- TE-1** Prior to any ground disturbing activities, an individual will be identified as the Designated Biologist by the RCTC Project Manager. A qualified Designated Biologist must have a Bachelor’s degree with an emphasis in ecology, natural resource management, or related science; 3 years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; previous experience with applying the terms and conditions of a Biological Opinion; and the appropriate permit and/or training if conducting focused or protocol surveys for listed species.

RCTC will ensure the Designated Biologist position is filled throughout the construction period. Each successive Designated Biologist (if applicable) will be approved by the USFWS and CDFG (hereafter referred to as the Wildlife Agencies). The Designated Biologist will have the authority to ensure compliance with conservation measures and will be the primary agency contact for the implementation of these measures. The Designated Biologist will have the authority and responsibility to halt activities that are in violation of the conservation measures.

- TE-2** To minimize adverse effects from dust during all site disturbance, grading, and construction activities, the design/build contractor will water all active parts of the construction site a minimum of twice daily or more often when needed due to dry or windy conditions to prevent excessive amounts of dust. Additionally, the design/build contractor will sufficiently water or cover all stockpiled material to prevent excessive amounts of dust.
- TE-3** All erosion and sediment control devices during project construction and operation, 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.
- TE-4** During all site disturbance, grading, and construction activities, the design/build contractor will control noise from construction activity consistent with Caltrans Standard Specifications, Section 14-8.02, “Noise Control,” and the Caltrans Standard Special Provisions S5-310. Noise levels from construction operations within the State right-of-way between the hours of 9:00 p.m. and 6:00 a.m. will not exceed 86 dBA at a distance of 50 ft from the noise source. The noise level requirement will apply to the equipment on the job site or related to the job, including, but not limited to, trucks, transit mixers, or transient equipment that may or may not be owned by the contractor.
- TE-5** During all site disturbance, grading, and construction activities in and immediately adjacent to biologically sensitive areas, Western Riverside County MSHCP Conservation Areas, vegetated drainages, and coastal sage scrub in CAGN-designated critical habitat, the

design/build contractor will control noise from construction activity by using an alternative warning method instead of a sound signal unless required by safety laws. In addition, the contractor will equip all internal combustion engines with the manufacturer-recommended mufflers and will not operate any internal combustion engine on the job site without the appropriate mufflers. As directed by the RCTC Resident Engineer, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

TE-6 In accordance with the Municipal Codes of the Cities of Anaheim, Corona, Riverside, and Norco, the design/build contractor will limit construction activities to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, excluding weekends and holidays. If construction is needed outside those hours or days, the design/build contractor will be required to coordinate with the affected local jurisdiction. If the local jurisdiction approves construction hours that are different from those imposed by this measure, then the design/build contractor will immediately request that RCTC consider a modification to this measure to allow construction during the new hours that the local jurisdiction approved.

TE-7 In the major wildlife movement corridors at Coal Canyon, Wardlow Wash, and Fresno Canyon, and areas adjacent to LBV- and CAGN-occupied areas (approximately PM ORA-91-R17.16 to PM ORA-91-R18.74), construction activities will be limited to the hours between 7:00 a.m. and 7:00 p.m., Monday through Friday. Should an exception to this measure be necessary, RCTC and the Department will consult with the Wildlife Agencies to determine effective measures to avoid and minimize adverse impacts to these species and movement corridors.

3.21.4.1 Braunton's Milk-vetch Conservation Measure

TE-8 A pre-construction survey will be conducted prior to ground disturbing activities in the vicinity of the historical occurrence in Coal Canyon in

Orange County. This survey will be conducted by a biologist familiar with the species and during the appropriate time of year to optimize detection. Should Brauntton's milk-vetch be found during surveys, the Designated Biologist will consult with the USFWS to determine effective measures to avoid and minimize adverse impacts to this species.

3.21.4.2 Coastal California Gnatcatcher Conservation and Compensatory Measures

Measures TE-9 through TE-13 apply to the Initial Phases and Ultimate Projects for Alternatives 1 and 2 in Orange County.

- | | |
|--------------|---|
| TE-9 | The Designated Biologist (or his/her designee) will monitor construction in Orange County within the vicinity of CAGN-designated critical habitat areas prior to and during site preparation, grading, and construction activities, to flush any wildlife species present prior to construction and to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly implemented and followed. |
| TE-10 | RCTC will offset the permanent loss of 8.42 ac of occupied CAGN habitat in Orange County, including 6.32 ac of designated critical habitat, by restoring 16.03 ac of habitat suitable for CAGN breeding, dispersal, and foraging in CHSP to be conducted during the Initial Phase of the project. If restoration is unable to be conducted in CHSP, another location will be selected on approval of the Wildlife Agencies. |
| TE-11 | RCTC will offset the temporary loss of 3.01 ac of occupied CAGN habitat in Orange County, including 2.09 ac of CAGN-designated critical habitat, with in-kind, or better, on-site restoration after the completion of project construction. |
| TE-12 | Prior to site preparation, grading or construction activities, a restoration plan will be developed by a qualified biologist for the permanent and temporary impacts to occupied CAGN habitat in Orange County, including designated critical habitat in Orange County. The plan will be submitted to the USFWS for review and approval. This plan will include, at a minimum, a detailed description of restoration methods, slope stabilization/erosion control, criteria for |

restoration to be considered successful, and monitoring and reporting protocol(s). The restoration plan will be implemented for a minimum of 5 years, unless success criteria are met earlier and all artificial watering has been off for at least 2 years.

TE-13 During all site preparation, grading, and construction activities in Orange County, the RCTC Resident Engineer will require the design/build contractor to use shielded lighting for any nighttime construction adjacent to CSS in CAGN-designated critical habitat.

3.21.4.3 Riparian Birds Conservation Measure

TE-14 During the bird breeding season (i.e., February 15–September 15), the Designated Biologist (or his/her designee) will monitor riparian and riverine areas within 500 ft of active construction areas for the duration of the construction in those areas to survey for active nests and/or nesting activity to ensure breeding activities are not disrupted and to ensure vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly implemented.

3.21.4.4 Measure for Light Intrusion and Wildfires

TE-15 To minimize adverse effects from light intrusion from vehicle headlights and the potential threat of increased fires from the operation of SR-91, during final design, the Department and RCTC will work with the USFWS to investigate the possibility of adding features along SR-91 in the vicinity of the Coal Canyon wildlife crossing in Orange County. For example, consideration can be given to the placement of K-rail, concrete walls, and/or hardscaping barriers along the shoulder of SR-91. In investigating these features, consideration must be given to motorist safety, freeway operations, vehicle headlight mitigation, and the potential fire threat.

3.21.4.5 Santa Ana Sucker Conservation Measures

TE-16 The Corps is in the process of constructing the SAR Reach 9 Phase 2 Green River Golf Club Embankment Protection Project within the action area. Following completion of the embankment construction, perennial stream habitat for the Santa Ana sucker will be reestablished within the construction footprint. The Department and RCTC will coordinate with the Corps during construction of the SR-91 CIP to

ensure these restoration areas will not be temporarily or permanently impacted during construction of the SR-91 CIP.

TE-17 The Department and RCTC will coordinate with the Corps during construction to ensure that the SR-91 CIP will not affect releases from Prado Dam or result in a permanent reduction of acreage within the Santa Ana River Canyon Habitat Management Area.

Measures for water quality and storm water runoff, natural communities, wetlands and other waters, plant species, and animal species, provided in other sections of this EIR/EIS, would also mitigate project effects to threatened and endangered species.

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3.22 Invasive Species

3.22.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999, directs the use of the State’s invasive species list currently maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a project.

3.22.2 Affected Environment

This section is based on the California Invasive Plant Council’s (Cal-IPC) California Invasive Plant Inventory (Inventory), which lists noxious weeds and invasive plants of California, and the NES (June 2010) for the project. The Inventory provides ratings (high, moderate, limited) designated for invasive plant species. Plants with a high rating have severe ecological impact. Plants with a moderate rating have substantial and apparent, but not severe, ecological impacts. Plants with a limited rating are invasive, but their ecological impacts are minor on a statewide level. These ratings reflect the Cal-IPC view of the statewide importance of the invasive species, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest within the State.

Highway corridors can provide opportunities for the movement of invasive species through the landscape. Invasive species can move on vehicles and in the loads they carry. Invasive plants can be moved from site to site during spraying and mowing operations. Weed seed can be inadvertently introduced into a corridor on equipment during construction and through the use of mulch, imported soil or gravel, and sod. Some invasive plant species might be deliberately planted in erosion control, landscape, or wildflower projects. Transportation corridor rights-of-way provide ample opportunity for weeds in adjacent land to spread along corridors which, on a national scale, span millions of miles of highway.

SR-91 and I-15 are areas that provide habitat for a variety of plant and animal species. Several plant communities and numerous plant species were observed during the surveys in the BSA for the project. The BSA and the plant communities in the BSA

are shown in Appendix K in the NES. A list of the plant and animal species observed in the BSA is also provided in the NES.

Exotic plant species exist within nonnative plant communities throughout the BSA, within patches of native plant communities, and in areas that have been disturbed by human uses. Exotic species are typically more abundant adjacent to roads and existing developed areas along the project segments of SR-91 and I-15 and frequently border ornamental landscaping. In the past, these areas along the project segments of SR-91 and I-15 likely supported grasslands, oak woodland, CSS, chaparral, and riparian habitats. Consequently, scattered plant species associated with these plant communities are often found in these areas.

A total of 34 exotic plants among the observed plant species in the BSA are identified in the Cal-IPC California Invasive Plant Inventory. Of those 34 species, there are 5 with an overall high rating, 16 with a moderate rating, and 13 with a limited rating. The 5 species with a high rating identified in the BSA are sweet fennel (*Foeniculum vulgare*), yellow star-thistle (*Centaurea solstitialis*), Mediterranean tamarisk (*Tamarix ramosissima*), giant reed (*Arundo donax*), and foxtail chess (*Bromus madritensis ssp. rubens*).

3.22.3 Environmental Consequences

3.22.3.1 Summary of Impacts

Revegetation and landscaping under the Initial Phases and Ultimate Projects for Alternatives 1 and 2 would be similar, would not include any plants with high or moderated ratings in the Inventory, and therefore would help to inhibit the spread of invasive species.

Construction activities for the Initial Phases and Ultimate Projects for Alternatives 1 and 2 have similar potential to spread invasive species.

Summary of Impacts for Alternative 2f

Alternative 2f has been identified as the Preferred Alternative. Construction of the Alternative 2f Initial Phase and Ultimate Project would have the potential to spread invasive species. The permanent revegetation and landscaping under the Alternative 2f Initial Phase and Ultimate Project would not include any plants with high or moderated ratings in the Inventory. Therefore, the Alternative 2f Initial Phase and Ultimate Project would not result in long-term adverse impacts related to invasive species.

3.22.3.2 Permanent Impacts

Alternatives 1 and 2

The Initial Phases and Ultimate Projects for Alternatives 1 and 2 would require the revegetation of temporarily impacted areas. That revegetation would not include plant species listed in the California Invasive Plant Inventory, which would prevent the introduction and spread of invasive plant species. Because invasive plants with a high or moderate rating listed on the Inventory would not be used, the Initial Phases and Ultimate Projects for Alternatives 1 and 2 are anticipated to help inhibit the spread of invasive species. Further, the Initial Phases and Ultimate Projects for Alternatives 1 and 2 have no design features that would promote the spread of invasive species of plants or animals in the BSA because none of the invasive plant species would be used as part of the landscaping plans adjacent to native habitat or conservation areas. Therefore, the Alternative 1 and 2 Initial Phases and Ultimate Projects and their design variations would not result in long-term adverse impacts related to the spread of invasive species.

No Build Alternative

The No Build Alternative would not result in any construction along the project segments of SR-91 and I-15. Therefore, this alternative would not result in long-term impacts related to the introduction or spread of invasive species to or from the BSA and would not cause permanent direct or indirect adverse impacts regarding invasive species.

3.22.3.3 Temporary Impacts

Alternatives 1 and 2

The construction of the Initial Phases and Ultimate Projects for Alternatives 1 and 2 has the potential to spread invasive plant species via entering and exiting construction equipment contaminated with invasive species, the inclusion of invasive species in the seed mixtures and mulch, and the improper removal and disposal of invasive species so that the seeds are spread along the highway.

In addition, none of the species with a high or moderate rating on the Cal-IPC California Invasive Plant Inventory list is currently used by the Department for erosion control or landscaping and would not be used in the Build Alternatives. The seed mixtures used for the project would be approved by a Department District Landscape Architect and Department District Biologist.

No Build Alternative

The No Build Alternative would not result in any construction along the project segments of SR-91 and I-15. Therefore, this alternative would not result in temporary impacts related to the introduction or spread of invasive species to or from the BSA and would not cause temporary direct or indirect adverse impacts regarding invasive species.

3.22.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures will be required during the design and construction of the Initial Phases and Ultimate Projects under the SR-91 CIP Build Alternatives.

IS-1 During final design, RCTC's Project Engineer will direct a qualified landscape architect to develop a Weed Abatement Program/Non-Standard Special Provisions (Program/NSSP) for inclusion in the project specifications. That Program/NSSP will be developed in compliance with EO 13112 to minimize the potential for intrusion or export of invasive plant species to and from the BSA during project construction. At a minimum, the following will be included in the Weed Abatement Program/NSSP and implemented prior to and during construction to address potential effects associated with invasive species. The Weed Abatement Program/NSSP will define the specific details, frequency, and, if applicable, performance standards for the following individual activities and requirements:

- RCTC's Resident Engineer will require the design/build contractor to inspect and clean construction equipment at the beginning and end of each day and prior to transporting equipment from one project location to another.
- RCTC's Resident Engineer will require the design/build contractor to limit soil and vegetation disturbance to those areas specifically required for the project construction.
- RCTC's Resident Engineer will require the design/build contractor to obtain soil, gravel, and rock from weed-free sources.
- RCTC's Resident Engineer will require the design/build contractor to use only certified weed-free straw, mulch, and/or fiber rolls for erosion control during construction.

- Prior to the completion of construction, RCTC's Resident Engineer will require the design/build contractor to revegetate affected areas adjacent to native vegetation with plant species that are native to the vicinity and approved by the Department's District 8 and District 12 Biologists.
- RCTC's Resident Engineer will require the design/build contractor to not use any species listed in the Cal-IPC California Invasive Plant Inventory with a high or moderate rating in revegetation.
- After construction, RCTC's Resident Engineer will ensure that erosion control and revegetation sites are monitored until achievement of the project-specific performance standards defined in the Program/NSSP or a period of 3 years, whichever is greater, after installation to detect nonnative species prior to the establishment of the native vegetation.
- RCTC's Resident Engineer will require the design/build contractor and the post-construction monitors to implement eradication procedures (e.g., spraying and/or hand weeding) should an infestation occur. The use of herbicides will be prohibited within and adjacent to native vegetation, except as specifically authorized and monitored by the Department District 8 and District 12 Biologists during and after project construction.
- During construction, RCTC's Resident Engineer will require the design/build contractor to reduce indirect impacts of exotic plant infestations and litter by roadside maintenance at least once daily during construction to remove litter and weeds from the right-of-way.

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3.23 Relationship Between Local Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

3.23.1 Alternatives 1 and 2

Implementation of the Initial Phases and Ultimate Projects under Alternatives 1 and 2 and their design variations would result in attainment of short- and long-term transportation objectives while resulting in some adverse short- and long-term impacts, including economic losses from land use displacements; construction impacts related to air quality, lighting, noise, and traffic delays and detours; and permanent loss of farmlands and biological and paleontological resources. The project's transportation improvements are based on comprehensive State and local planning efforts that consider the need for present and future traffic requirements within the context of present and future land use development.

The short- and long-term losses and impacts summarized in the following sections would occur as a result of the Initial Phases and Ultimate Projects under Alternatives 1 and 2. The short- and long-term benefits and gains also summarized in the following sections would occur under Alternatives 1 and 2 as well. These short- and long-term losses, impacts, benefits, and gains would also occur under Alternative 2f, which has been identified as the Preferred Alternative.

3.23.2 Short-term Losses and Impacts

Potential short-term losses and impacts of the Initial Phases and Ultimate Projects under Alternatives 1 and 2 and their design variations, including Alternative 2f, include:

- Economic losses experienced by businesses from temporary displacements, relocations, and traffic detours;
- Temporary construction impacts to residents and visitors, such as increased noise, impaired air quality from dust and debris, increased nighttime light, blocked viewsheds, and construction in recreation areas;
- Temporary construction impacts to residents and visitors, such as disruption of local traffic patterns (traffic diversions due to local road, and temporary ramp and mainline lane closures) and access to residences, businesses, and community facilities, including transit services and increased traffic congestion;
- Temporary construction impacts to utility services, such as service interruptions or damage to facilities;

- Temporary construction impacts to sensitive viewers, including viewers along the segment of SR-91 designated as a scenic highway and views of demolition of existing structures, clearing of existing vegetation, grading of cut-and-fill slopes, construction of road improvements and structures, construction vehicles, and construction staging areas;
- Temporary impacts to natural communities, wetlands and other waters of the United States, bird and bat species, and threatened and endangered species;
- Temporary construction impacts to the Santa Ana River Trail/Bike Lane, including possible temporary detours of the trail; and
- Temporary loss of productivity on and near sites used as temporary construction staging areas.

3.23.3 Short-term Benefits

Short-term benefits of the Initial Phases and Ultimate Projects under Alternatives 1 and 2 and their design variations include:

- Increased jobs and revenue generated during construction.

3.23.4 Long-term Losses and Impacts

Long-term losses and impacts of the Build Alternatives and their design variations include:

- Permanent losses of farmland and other existing land uses;
- Permanent impacts on wetlands and other waters of the United States, Southern California black walnut and Coulter's matilija poppy, habitats for threatened and endangered species, and biological resource habitat areas;
- Permanent consumption of materials and energy during construction;
- Permanent removal of residential and nonresidential uses and possible permanent loss of those uses in the communities along the SR-91 and I-15 alignments if those uses cannot be relocated in the immediate project vicinity;
- Permanent loss of paleontological resources and the values associated with those sites;
- Permanent use of 0.48 ac of land in CHSP;
- Permanent subsurface easement of land in CHSP (a 1.65 ac subsurface easement under the Alternative 1 Ultimate Project and a 1.88 ac subsurface easement under the Alternative 2 Ultimate Project); and
- Permanent subsurface easements in the New OC Park (NNL) (0.5 ac for two permanent subsurface easements under the Alternative 1 Ultimate Project and

2.2 ac for two permanent subsurface easements under the Alternative 2 Ultimate Project).

3.23.5 Long-term Gains and Benefits

Long-term gains and benefits of the Initial Phases and Ultimate Projects under Alternatives 1 and 2 and their design variations compared to the No Build Alternative include:

- Improvement of the regional transportation network (including HOV lanes) between Riverside and Orange Counties, including improved access to transit services and facilities;
- Improvement of vehicle, person, and goods movement travel times on SR-91 and I-15 to more effectively serve existing and future travel demand between and within Riverside and Orange Counties;
- Improvements on SR-91, I-15, and intersecting local roads to more effectively serve existing and forecast intraregional travel demand and to reduce diversion of regional traffic from the freeways into the surrounding communities;
- Improvements to storm water management facilities along SR-91 and I-15;
- Improvement to storm water runoff by providing treatment for some currently untreated runoff from the existing highway facilities;
- Improvements to utility facilities crossing or within the right-of-way for SR-91 and I-15;
- Increased economic gain for the public from the use of toll revenue bonds to construct the toll facility;
- Reduced regional air quality emissions in the Basin;
- Increased jobs and revenue generated from operation of the new toll facility under Alternative 2;
- Slight decrease in overall daily fuel consumption in the SR-91 study area with Alternatives 1 and 2 in 2015 and 2035, and a slight decrease in fuel consumption in the SCAG region with Alternatives 1 and 2 in 2035;
- Improved relocated Santa Ana River Trail/Bike Lane;
- Use of a theme for architectural and landscape features to provide aesthetically attractive improvements;
- Improved access to and from local roads; and
- Improvement to the CHSP trail entrance at Prado Road.

In summary, implementation of the Initial Phases and Ultimate Projects under Alternatives 1 and 2 and their design variations would result in trade-offs between addressing short- and long-term transportation needs and goals and adverse short- and long-term environmental impacts. Specifically, the Build Alternatives and their design variations, including Alternative 2f, would provide increased capacity and improved regional transportation connecting major population and employment centers between Orange and Riverside Counties. The long-term benefits to the community of those transportation improvements would be weighed against the short- and long-term adverse environmental impacts of the Build Alternatives and their design variations, including Alternative 2f.

3.23.6 No Build Alternative

The No Build Alternative would not change the existing conditions on SR-91 and I-15. Therefore, the No Build Alternative would not result in the losses or offer any of the benefits/gains that would occur under the Build Alternatives. The No Build Alternative would not address existing and worsening congestion on SR-91 and I-15. As discussed in Section 3.6, Traffic and Transportation/Pedestrian and Bicycle Facilities, traffic conditions in the 2015 and 2035 No Build Alternative conditions would be worse than under Alternatives 1 and 2. As a result, the No Build Alternative would not result in any benefits to users of the project segments of SR-91 and I-15.

3.24 Irreversible and Irretrievable Commitments of Resources That Would Be Involved in the Proposed Project

3.24.1 Alternatives 1 and 2

The construction of the Build Alternatives and their design variations would involve a commitment of a range of natural, physical, human, and fiscal resources.

Implementation of the Build Alternatives would occur in several phases over a 20-year period from 2015 through 2035. Land used in the construction of Alternatives 1 and 2 and their design variations would be considered to result in an irreversible commitment of that land during the time period the land is used for the highway facilities. However, if a greater need arises for use of the land or if the highway facilities are no longer needed in the future, that land could be converted to another use. At present, there is no reason to believe such a conversion would ever be necessary or desirable.

Alternatives 1 and 2 and their design variations would respectively result in the conversion of designated farmlands to nonagricultural uses. This would be considered an irreversible commitment of farmlands for use as a highway facility.

Alternatives 1 and 2 and their design variations would result in an irreversible commitment of biological resource habitat areas to transportation uses. This includes take of occupied CSS, chaparral, and riparian/riverine habitats.

Excavation associated with Alternatives 1 and 2 and their design variations could encounter paleontological resources. That excavation could result in permanent irretrievable adverse impacts to paleontological resources in the following sediments: all types of Pleistocene alluvium, Norco Pliocene sediments, the Fernando Formation, Chino Hills Pliocene sediments, the Puente Formation, the Topanga Formation, the Sespe and Vaqueros Formations (interfingering), the Santiago Formation, the Silverado Formation, the Williams Formation, and the Ladd Formation.

Considerable amounts of fossil fuels, labor, public capital, and construction materials (e.g., cement, aggregate, and bituminous material) would be expended for construction of Alternatives 1 and 2 and their design variations and would not be retrievable. Additionally, large amounts of labor and natural resources would be used in the making of construction materials, and these are generally not retrievable. However, labor and natural resources are not in short supply, and their use for the

project would not have an adverse effect on the continued availability of these resources in southern California. Construction of Alternatives 1 and 2 and their design variations would also require substantial expenditures of anticipated funds from local, State, and federal sources. Those funds are not retrievable. However, savings in travel time and improved transportation system efficiency would offset this use of materials, labor, resources, and funds. In addition to the costs of construction and right-of-way for the Build Alternatives, there would be increased ongoing costs for facility maintenance, including pavement, roadside litter/sweeping, signs and markers, electrical, and storm water control.

The commitment of these resources to Alternatives 1 and 2 and their design variations is based on the concept that residents, workers, travelers, and others in the immediate area, region, and State would benefit from the improved quality of the regional transportation system that connects Orange and Riverside Counties. These benefits would consist of improved accessibility, travel time, and safety, and a potentially reduced demand for fossil fuels to operate vehicles on SR-91 and I-15. These benefits of Alternatives 1 and 2 and their design variations are expected to outweigh the commitment of these resources to this project.

3.24.2 No Build Alternative

The No Build Alternative would not result in any irretrievable commitment of resources because the No Build Alternative would not result in the construction of improvements to the project segments of SR-91 and I-15. The No Build Alternative would not provide any reduction in travel times or increased efficiency and therefore would not provide benefits related to reduced demand for fossil fuels to operate cars, buses, and trucks on the project segments of SR-91 and I-15.

3.25 Cumulative Impacts

3.25.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this 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 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 NEPA, can be found in 40 CFR, Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

3.25.2 Methodology

The potential for the project to contribute to cumulative impacts was evaluated based on the following methodology:

- Identification/definition of the resources to be considered in the cumulative effect analysis, based on whether the project would result in direct or indirect impacts to the resources. The analyses contained in Sections 3.1 through 3.22 were used as the basis for determining whether the project, after any required mitigation, would potentially contribute to cumulative impacts. Resources for which the project is not expected to contribute to cumulative impacts are listed in Table 3.25.3 at the

end of this section. Resources for which the project would or could contribute to cumulative impacts are listed in Section 3.25.4.

- Definition of the geographic boundary or resource study area (RSA) for each resource evaluated in the cumulative impact analysis, based on an area appropriate to assess the overall health and status of that resource as well as the potential for the project to contribute to cumulative impacts related to that resource. The RSAs for each resource are described by resource in Section 3.25.4.
- Description of the current health and historical context of each resource as well as its status within the resource specific RSA. This information is provided in Section 3.25.4 by resource.
- Identification of the direct and indirect impacts of the proposed project that might contribute to a cumulative impact on the identified resources.
- Identification of current and reasonably foreseeable future actions or projects and their associated environmental impacts that have, would, or could contribute to cumulative impacts for the resources identified for the cumulative impacts analysis. Cumulative projects considered in this analysis are described in Tables 3.25.1 and 3.25.2, and are shown on Figure 3.25-1. (All tables and figures are provided following the last page of text in this section to minimize disruptions to the reader.)
- Assessment of the potential for the project and the other cumulative projects to contribute to cumulative adverse impacts to the identified resources. That evaluation is provided by resource in Section 3.25.4.
- Assessment of the need for the project to provide mitigation or other recommended actions to address its potential contribution to cumulative impacts. That assessment is provided by resource in Section 3.25.4.

Although this methodology was followed, the information is presented in a different order below to consolidate the discussions relevant to each resource in Section 3.25.4.

The discussion of cumulative impacts in this section considers the effects of the Alternative 1 and 2 Ultimate Projects. Because the Initial Phases of Alternatives 1 and 2 are merely parts of the respective Ultimate Projects, this approach adequately captures the potential contributions of the Initial Phases of Alternatives 1 and 2.

Due to fact that work areas for the Initial Phases and the Ultimate Projects generally differ (as described in Chapter 2), the impacts would typically occur only once in a specific area (during either the Initial Phases or the Ultimate Projects). The one exception is the area at the interchange of SR-91 and I-15, where there would be

construction in both the Initial Phases and Ultimate Projects. Impacts to a specific resource still could occur in both the Initial Phases and Ultimate Projects, but those impacts would not be occurring in the same specific area, except for the area at the interchange of SR-91 and I-15.

The construction of the Initial Phases of Alternatives 1 and 2, including the Preferred Alternative 2f, is estimated to take approximately 4 years and is expected to begin in 2013. As a result, the construction of the Initial Phases of Alternatives 1 and 2 and the temporary and permanent impacts of those improvements are expected to occur from 2013 to 2017. Those impacts would potentially contribute to cumulative impacts when considered with other projects that would be constructed and operational in the same time period. The impacts of the Initial Phases of Alternatives 1 and 2 would occur in the near future, largely along the segment of SR-91 from SR-71 to I-15.

The construction of the additional improvements in the Alternative 1 and 2 Ultimate Projects is estimated to take approximately 2 years. It is not known at this time when construction of the Ultimate Projects would occur, although those improvements are forecast to be operational by 2035. Because the timing of construction of the additional improvements in the Alternative 1 and 2 Ultimate Projects is not known, the timing of the contribution to cumulative impacts by the construction and operation of those improvements is unknown (but they would at least occur by 2035). The impacts of the Ultimate Projects of Alternatives 1 and 2 would occur on SR-91 west of SR-71 and east of I-15, and on I-15 north and south of SR-91.

The potential for the project to contribute to cumulative impacts is evaluated in detail in the *Final Cumulative Impacts Analysis Report* (July 2010). The findings of that cumulative impact analysis are summarized in this section.

3.25.3 Identification of the Resources to be Considered in the Cumulative Impact Analysis

If a potential impact of the project related to a specific environmental topic is fully mitigated or offset, with no net impact, or if there are no impacts related to that topic, then it was determined that there is no contribution to cumulative impacts from the project for that topic and is not discussed further in this section. As the potential effects of the Build Alternatives include Alternatives 1 and 2 and their design variations, these determinations also apply to the Preferred Alternative (Alternative 2f).

The environmental topics for which the Build Alternatives would not contribute to cumulative impacts are listed in Table 3.25.3; including summaries of why the Build Alternatives would not contribute to cumulative impacts related to those topics. (Table 3.25.3 is provided along with the other tables in this section immediately following the last page of text.)

Environmental topics for which the project may contribute to cumulative impacts are:

- **Human Environment**
- Farmlands (Section 3.25.4.1)
- Community Character and Cohesion, and Property Acquisition (Section 3.25.4.2)
- Traffic – Construction (Section 3.25.4.3)
- Visual and Aesthetics – Permanent Impacts (Section 3.25.4.4)
- **Physical Environment**
- Water Quality and Storm Water Runoff (Section 3.25.4.5)
- Paleontology (Section 3.25.4.6)
- Air Quality – Construction (Section 3.25.4.7)
- Noise – Operations (Section 3.25.4.8)
- **Biological Environment**
- Natural Communities, Plant Species, and Animal Species (Section 3.25.4.9)
- Wetlands and Other Waters of the United States (Section 3.25.4.10)
- Threatened and Endangered Species (Section 3.25.4.11)
- Invasive Species (Section 3.25.4.12)

Adopted plans that guide local and regional land use were reviewed in the vicinity of the project to determine which projects are currently being implemented or are reasonably foreseeable and may contribute to cumulative impacts. These plans include General Plans, Specific Plans, Area Plans, Community Plans, and other land use planning documents for the Cities of Anaheim, Corona, Riverside, Norco, and Temecula, and unincorporated areas in Orange and Riverside Counties.

Adopted plans that will direct future growth, development, and open space preservation in the area include the Mountain Park Specific Plan (Orange County), the Riverside County General Plan, the City of Corona General Plan, the Western Riverside County MSHCP, and individual Area and Specific Plans.

Approved and planned transportation improvements in northeastern Orange County and western Riverside County include various highway improvements, bus transit

projects, rail grade separation projects, and passenger rail service and facility improvements. These projects are described in detail in Table 3.25.1 and are shown on Figure 3.25-1. Approved and planned land use and nontransportation infrastructure projects are shown in Table 3.25.2 and on Figure 3.25-1. The potential environmental impacts of those projects, if known, are also summarized in Tables 3.25.1 and 3.25.2. The information provided in Tables 3.25.1 and 3.25.2 and on Figure 3.25.1 is the most current information available at the time the research and analyses for the cumulative impacts assessment were conducted.

The transportation and land use projects are within a large geographic area that includes all RSAs for resources of concern that could experience cumulative impacts associated with the Build Alternatives and the other cumulative projects described here. These projects are in various phases (planning, design, and construction). The majority of the cumulative transportation and land use projects considered in this analysis are within approximately 2 mi of the project segments of SR-91 and I-15.

3.25.4 Cumulative Impacts Analysis

As discussed in Chapter 2, Project Alternatives, the implementation of the SR-91 CIP Build Alternatives would occur in an Initial Phase, with the remaining improvements implemented after that phase to provide the Ultimate Project. As a result, project-related construction activities would occur in both the Initial Phase and Ultimate Project, with the short-term construction impacts occurring in both periods. The potential contribution of those short-term construction impacts would then be considered in combination with other cumulative short-term impacts during two different time periods: when the Initial Phase is constructed, and when the remaining project components are constructed later for the Ultimate Project. Although construction will not occur throughout the entire project alignment during construction of both the Initial Phase and Ultimate Project, the short-term impacts assessed in this section typically consider an area including all of the project alignments on both SR-91 and I-15. As a result, the potential contributions of the short-term project impacts to cumulative impacts in the study area described in this section are considered to occur in both the Initial Phase and Ultimate Project construction periods.

Similarly, the potential traffic-related benefits of the SR-91 CIP Build Alternatives would also occur in both the Initial Phase and the Ultimate Project. Although project improvements will not occur throughout the entire project alignment in both the Initial Phase and Ultimate Project, the beneficial project effects assessed in this

section typically consider an area including all of the project alignments on both SR-91 and I-15. As a result, the potential contributions of the beneficial effects of the project to cumulative traffic impacts in the study area described in this section are considered to occur after both the Initial Phase and the Ultimate Project are implemented.

Alternatives 1 and 2 and their design variations include project design features (PDFs) and avoidance, minimization, mitigation, and compensation measures to avoid or reduce impacts identified for those alternatives, as described in detail in Sections 3.1 through 3.24 of Chapter 3. In addition, the other cumulative projects generally include or are anticipated to include PDFs and measures to address the impacts of those projects. This section describes those avoidance, minimization, and/or mitigation measures and considers whether additional measures should be added to the Build Alternatives to assist in reducing or avoiding the identified cumulative impacts of the project and the other cumulative projects.

3.25.4.1 Farmlands

Resource Study Area for Farmlands

The RSA for farmlands was defined as areas in northern Orange County, specifically the areas now in the New OC Park (NNL), CHSP, and areas in western Riverside County, specifically in the Cities of Corona and Norco north and south of SR-91 and east and west of I-15; those areas are shown on Figure 3.3-1.

Historically, agriculture has been practiced throughout much of southern California, including Orange and Riverside Counties. Cattle ranching, row crops, and citrus have all been part of the agricultural history of northern Orange County and western Riverside County. Within the RSA for farmlands, as discussed in the *Historic Resources Evaluation Report*, agriculture (and specifically the citrus industry) was the dominant land use in the Corona area from the late 1880s to the late 1940s, when the citrus groves gradually gave way to new housing developments and in more recent decades, new commercial development. Today, there are no commercial citrus groves within or near the RSA for farmlands.

Much of the area within the RSA for farmlands has either been developed in nonagricultural uses or is within protected lands (CHSP, New OC Park [NNL]) that are no longer used for agriculture. Figure 3.3-1 in Section 3.3 shows there are only limited amounts of designated farmlands along the alignments of SR-91 and I-15 and in the RSA in northern Orange County and western Riverside County. In addition,

many of those designated farmlands, such as the lands along the project segment of SR-91, are currently vacant or developed in nonfarmland uses. Although agriculture was a major land use in this area historically, past and present development has substantially reduced the amount of agricultural activity in the RSA, and future development is expected to continue to convert designated farmlands in the RSA to nonagricultural uses. As a result, agriculture is no longer a substantial land use, part of the environment, or a major component in the economy in the RSA. The County of Orange, County of Riverside, the City of Corona and the City of Norco have no commitments in their General Plans to long-term agricultural uses along SR-91 and I-15 in the RSA for farmlands. As shown on Figure 3.3-1, the majority of lands along SR-91 and I-15 are designated as Urban and Built-up lands in the Farmland Mapping Database.

Impacts of the Build Alternatives on Farmlands

The analysis in the *Final Cumulative Impacts Analysis Report* indicates the Build Alternatives and their design variations would result in the permanent conversion of designated farmlands to nonagricultural transportation uses as shown in Table 3.3.2 in Section 3.3. Alternative 1 will convert approximately 17 acres of designated farmland, and Alternative 2 will convert approximately 20.7 acres of designated farmland within the project limits.

No mitigation has been proposed to replace land converted to nonagricultural uses by Alternatives 1 and 2 and their design variations.

Impacts of the Other Cumulative Projects on Farmlands

As noted earlier, past and present development has resulted in the conversion of a substantial amount of land in northern Orange County and western Riverside County used for agricultural uses to nonagricultural uses. Large areas of mapped farmlands within CHSP and the New OC Park (NNL) are now designated for recreational use and are no longer used or available for agricultural purposes. In addition, because there are areas designated for agricultural uses throughout western Riverside County, including both incorporated cities and unincorporated areas, other cumulative projects would result in the permanent conversion of designated agricultural lands to nonagricultural uses. For example, the *Riverside County General Plan* defines and identifies designated agricultural lands in unincorporated Riverside County. The *General Plan Final Program Environmental Impact Report* (Final EIR) identifies the General Plan policies to support protection of agricultural uses but acknowledges that the establishment of any program to accomplish that is uncertain. No additional

mitigation was proposed beyond these policies to protect agricultural uses. That Final EIR further concluded that even with implementation of the policies for protection of agricultural uses, the *Riverside County General Plan* would result in significant unavoidable impacts under CEQA related to the loss of designated agricultural lands, including areas in western Riverside County.

Of the projects listed in Tables 3.25.1 and 3.25.2 for which environmental impact information was available, six of them identified specific impacts to existing farmlands. Five of these projects [SR-79 Realignment (Gilman Springs Road to Domenigoni Parkway), Mid County Parkway Project (I-215 to SR-79), I-15/State Route 79 (SR-79) (Temecula Parkway) South Interchange Improvement Project, SR-79 (Winchester Road) Project between Thompson Road and Domenigoni Parkway, and The Villages of Lakeview] are over 20 miles away from the SR-91 CIP study area and RSA for farmlands]. The fourth project [The Ranch at Eastvale Specific Plan No. 358 – ID Number 44 (Sheet 5 of Figure 3.25-1)] was approved in 2009 and will convert a 119 acre dairy parcel into a mixed use development including light industrial and commercial retail uses.

Potential for Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects on Farmlands

As discussed above, past projects, the Build Alternatives, and some of the other cumulative projects would have already or would result in the future permanent conversion of designated agricultural lands to nonagricultural uses. Therefore, Alternatives 1 and 2 and their design variations and the other cumulative projects are considered to contribute to a cumulative adverse impact related to the conversion of designated agricultural lands to nonagricultural uses.

Potential Mitigation for Project's Contribution to Cumulative Impacts on Farmlands

The Department does not have the land use authority that would allow it to implement farmland conservation measures or encourage the creation of new agricultural land that would avoid or mitigate its contribution to this cumulative impact. Also, the Final EIR for the *Riverside County General Plan* discussed the difficulty of establishing a farmland protection and stewardship program and concluded that such a program was unlikely to be developed. Even if implemented by a local jurisdiction, such a program would only protect existing agricultural land but would not create new agricultural land, and there would still be a net loss of designated agricultural lands in the long term. As a result, Alternatives 1 and 2 and their design variations are considered to

contribute to a cumulative adverse impact – related to the conversion of designated agricultural lands to nonagricultural uses – that cannot be avoided or mitigated.

3.25.4.2 Community Character and Cohesion, and Property Acquisition *Resource Study Area for Community Character and Cohesion, and Property Acquisition*

The RSA for the cumulative impacts analysis for community impacts is defined as the area covered by the cities of Anaheim, Yorba Linda, Corona, Norco, and Riverside, as well as parts of unincorporated Orange and Riverside Counties that are contiguous with those cities.

Historically, the land use in this RSA was agriculture and now includes a wide range of urban and suburban uses as well as parks and open space. As a result, the community character of the RSA varies. In some areas, such as in the cities of Corona and Riverside, the community character is suburban/urban with a wide range of land uses, including residential, commercial, industrial, and manufacturing uses. SR-91 is a major feature crossing these cities. Areas along I-15 are lower density and include more rural areas such as the city of Norco. Areas on the western part of SR-91 include substantial open space in CHSP, the New OC Park (NNL), CNF, and the Green River Golf Club. As a result, the character of the RSA spans a wide range from open space to urban uses.

The cities encompassed by the RSA developed over time. There has been a substantial shift in the community character from predominantly agricultural to many areas that are essentially built out or approaching build out in urban/suburban uses. The cities and communities along the project segments of SR-91 have their own identities that include fairly strong community cohesion based on the demographics evaluated in Section 3.4. That sense of community cohesion has likely changed over time as new roads, freeways, and major developments have been constructed.

Overall, the demographics show fairly strong community cohesion at the census tract level, but major roads and freeways such as SR-91 and I-15 have likely contributed to a reduction in cohesion between the parts of the cities and communities on either side of these transportation facilities.

Impacts of the Build Alternatives on Community Character and Cohesion, and Property Acquisition

The findings of the analysis of potential impacts of the Build Alternatives and their design variations related to community character and cohesion provided in

Section 3.4, Community Impacts, indicate that Alternatives 1 and 2 would result in impacts on community character and cohesion as a result of the acquisition of property in areas adjacent to SR-91 and I-15, changes in views, and changes to pedestrian and bicycle facilities at their crossings of SR-91 and I-15. Based on indicators of community cohesion evaluated at the census tract level, including the long tenure of many of the residents in the study area (many of the rural neighborhoods in the project study area have been in existence for decades), ethnic homogeneity, a high percentage of persons aged 65 and over, and a large number of residents who are pedestrians (based on the high percentages of transit-dependent persons), there is a high degree of community cohesion in different parts of the project study area. The City of Corona, where all the property acquisition under Alternatives 1 and 2 would occur, has a high degree of ethnic homogeneity, almost 40 percent of the population is transit-dependent, and nearly 60 percent of the residents have lived in their homes since before 1999.

Nearly all the property acquisitions for Alternatives 1 and 2 will occur in the Initial Phases and will occur in the City of Corona. As a result, the majority of the project effects on community character and cohesion in the City would occur in the Initial Phases of Alternatives 1 and 2. Property acquisition would result in the removal of existing residential and nonresidential uses along SR-91 between SR-241 and SR-71, between Auto Center Drive and Maple Street in Corona. The area between SR-241 and SR-71 is predominantly less developed than the other areas along SR-91 or is in CHSP, New OC Park (NNL), and CNF, which is land protected from future development. Table 3.4.6 in Section 3.4 summarizes the potential acquisition and removal of homes and nonresidential parcels for Alternatives 1 and 2 and their design variations. Alternative 1 would result in the acquisition and removal of 21 single-family homes under all design variations, and 72 to 96 multifamily homes, depending on the design variation. Alternative 2 would result in the acquisition and removal of 18 to 24 single-family homes and 81 to 129 multifamily homes, depending on the design variation. Alternative 2f would result in the acquisition and removal of 18 single-family homes and 127 multifamily homes. As a result, Alternative 2f would acquire and remove the lowest number of single-family homes and nearly the highest number of multifamily homes, compared to the other Alternative 2 design variations. The majority of the homes acquired and removed under Alternatives 1 and 2 are in the City of Corona along SR-91 between Green River Road and I-15.

As shown in Table 3.4.9, Alternative 1 would displace between 110 and 189 businesses, depending on the design variation. Alternative 2 would displace between

88 and 275 businesses, depending on the design variation. Alternative 2f would displace 88 businesses, the lowest number of businesses impacted by a Build Alternative.

Because of Corona's demographics and the commercial and residential resources available in the immediate areas surrounding the project limits, it is anticipated that there would be ample relocation sites, homes, and business resources for all residential and commercial owners and tenant displacees. However, the removal of homes and business would change the community character of the affected areas. Measures CI-1 through CI-3 would only partially minimize the effects of Alternatives 1 and 2 to community character and cohesion as a result of property acquisition and the removal of the existing land uses on those properties.

Community character would also be affected by the improvements provided under Alternatives 1 and 2. Specifically, the project would result in expanded right-of-way, which would add additional hardscape, graded slopes, modified and new ramps, overcrossings and bridges, concrete barriers, and new retaining, tieback, and sound walls. The heights of the retaining walls under Alternatives 1 and 2 would range from 3 to 40 ft, depending on the location. These changes would modify the visual quality of the project study area by introducing more urbanized and hardscape elements and, as a result, would affect the existing community character. However, with the consideration of aesthetic features for retaining walls, sound walls, and bridge structures during final design as required in Measures V-1 to V-3, some of the project visual impacts to community character would be minimized. Additional landscaping consistent with the 215/91 Corridor Master Plan would be implemented where existing landscaping is removed during construction and/or where the expanded right-of-way allows. The additional landscaping would further minimize potential visual impacts of Alternatives 1 and 2 to community character. Although Measures V-1 through V-3 would minimize some of the impacts to community character in the City of Corona, the widened freeway facilities would contribute to continued urbanization of the area. As a result, not all the impacts of Alternatives 1 and 2 related to community character can be mitigated.

On the local streets that cross SR-91 and I-15, the widened freeway cross sections would result in wider overcrossings and undercrossings. As a result, the amount of time pedestrians and bicyclists spend on the overcrossings or in the undercrossings would increase compared to existing conditions. The new parts of the undercrossings would include lighting for vehicles and pedestrians consistent with local standards.

However, the segments of those roads under the existing overcrossings would experience a reduction in the amount of natural light, which could be perceived by pedestrians and bicyclists as adversely affecting their experiences crossing under SR-91. Measure T-4, provided in Section 3.6, addresses lighting in the undercrossings during final design that includes the provision of appropriate lighting in the new parts of the undercrossings and additional lighting in the existing parts of the undercrossings, if it is determined to be necessary. Measure V-1, provided in Section 3.7, provides for aesthetic treatments on paved slopes at undercrossings. Nonetheless, some pedestrians and bicyclists may perceive the modified overcrossings and undercrossings as negatively affecting their experiences as they cross the freeways and may inhibit their desire to cross the freeways, which would be an adverse effect on community cohesion.

Measures CI-1 through CI-3, T-1, T-4, and V-1 to V-3 would partially minimize the effects of Alternatives 1 and 2 and their design variations, including Alternative 2f, related to community character and cohesion.

Impacts of the Other Cumulative Projects on Community Character and Cohesion, and Property Acquisition

Tables 3.25.1 and 3.25.2 list a substantial number of approved and planned projects in the cities and unincorporated areas in northeast Orange County and western Riverside County. As discussed in Section 3.4, Community Impacts, the SR-91 CIP's impact to community character and cohesion is within the City of Corona due to the removal of homes and businesses under Alternatives 1 and 2. Based on the review of available information for the transportation projects shown on Figure 3.25-1 and listed in Table 3.25-1, none of the projects in the Corona area (Transportation Project Map ID Numbers 3, 5, 12, 13, 14, 15, 16, 18, 21, 25, 26, 57, 58, and 59) would result in removal of homes and businesses or would otherwise impact community cohesion through loss of access within the affected community. The I-15 Corridor Improvement Project (Transportation Project Map ID Number 17) could result in removal of some homes or businesses along I-15, but specific impacts are unknown at this time until the range of alternatives is finalized. The Elevated 4-Lane Facility (MIS Corridor A) would be elevated to minimize right of way impacts, but project development has not been initiated so no specific information is available. Based on the review of available information for the Land Development and Non-Transportation Infrastructure projects shown on Figure 3.25-1 and listed in Table 3.25-2, none of the projects in the Corona area (Land Development Project Map ID Numbers 23, 32, 33, 35, 36, 37, and 39, and Public Infrastructure Map ID Numbers

47 and 48) would result in removal of homes and businesses or would otherwise impact community cohesion through loss of access within the affected community. Based on the above review of cumulative projects that would impact the area within Corona that is impacted by the SR-91 CIP, the cumulative projects listed in Tables 3.25.1 and 3.25.2 would result in limited impacts related to the acquisition of homes and the displacement of residents, and would therefore not contribute to changes in community character in the RSA.

The majority of the cumulative transportation projects in the RSA would be expected to enhance mobility and community cohesion, but some of those projects could result in degradation of community cohesion if they result in more difficult travel paths or modified opportunities for pedestrians and bicyclists, similar to the effects under Alternatives 1 and 2.

Potential Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects on Community Character and Cohesion, and Property Acquisition

As discussed above, Alternatives 1 and 2 and their design variations would result in the acquisition and removal of homes and the displacement of residents. Some of the other cumulative projects are also expected to result in the acquisition and removal of homes and the displacement of residents in the RSA. As a result, Alternatives 1 and 2, including Alternative 2f, would contribute incrementally to cumulative impacts to community character related to the removal of homes and the displacement of residents in the RSA. However, this potential cumulative effect would be substantially offset by the implementation of the approved and planned residential land development projects listed in Table 3.25.2.

As discussed above, Alternatives 1 and 2, including Alternative 2f, would result in changes in the visual character of the area and changes in community cohesion associated with the wider overcrossings and undercrossings at SR-91 and I-15. Some of the cumulative transportation projects in the RSA could result in degradation of community cohesion if they result in more difficult travel paths or modified opportunities for pedestrians and bicyclists, similar to the effects under Alternatives 1 and 2.

As a result, Alternatives 1 and 2, including Alternative 2f, would contribute incrementally to continuing changes in community character and cohesion in the RSA.

Potential Mitigation for Project's Contribution to Cumulative Impacts on Community Character and Cohesion, and Property Acquisition

The acquisition of property, including homes and the removal of the existing land uses on those properties, for the Build Alternatives would comply with the requirements of the Uniform Act (Public Law 91-646, 84 Statute 1894). The Uniform Act mandates that certain relocation services and payments be made available by a project proponent to eligible residents, businesses, and nonprofit organizations displaced by its project. The Uniform Act provides for uniform and equitable treatment by federal or federally assisted programs of persons displaced from their residences, businesses, or farms, and establishes uniform and equitable land acquisition policies. In addition, if a Build Alternative is selected for implementation, design refinements to avoid or minimize impacts to existing land uses, including residential uses, would also be incorporated in the final design of that alternative.

Other projects with federal assistance, including many of the transportation projects listed in Table 3.25.1, would also be required to comply with the requirements of the Uniform Act for any property acquisition. The private projects listed in Table 3.25.2 would likely result in far fewer displacements of residential uses. The acquisition of land, the removal of the existing land uses, and the displacement of any residents on those properties for private projects would be subject to individual negotiations with each property owner and may also be subject to local regulations regarding displacement of tenants in rented units.

Additional measures for the Build Alternatives, beyond compliance with the Uniform Act, are not warranted because compliance with the Uniform Act would substantively reduce or mitigate the effects of the Build Alternatives related to the acquisition and removal of residential uses and the displacement of residents.

Measures T-4 and V-1 provide mitigation to reduce adverse community cohesion impacts of Alternatives 1 and 2 on pedestrians and bicyclists using undercrossings to cross SR-91 and I-15. Other transportation projects that increase the lengths of undercrossings may also include similar mitigation. Land use projects would not affect the undercrossings and, therefore, would not require mitigation related to effects at undercrossings.

Measures V-1 through V-3 would address many of the visual impacts of Alternatives 1 and 2 and would mitigate some of the changes related to visual impacts on community character. The other cumulative projects would be expected to include

similar mitigation to address visual impacts of new/expanded hardscape, new development, and other changes to the visual environment. However, even with mitigation, Alternatives 1 and 2 and the other cumulative projects would contribute to continuing changes in community character and cohesion in the RSA.

3.25.4.3 Short-Term Impacts on Traffic Circulation

Resource Study Area for Short-Term Impacts on Traffic Circulation

The RSA for evaluating the potential for cumulative short-term traffic impacts during construction of the SR-91 CIP and other cumulative project focuses on the length of time a specific area would be under construction. These areas would include the roads and intersections in the vicinity of the construction zone, and other projects under construction in the same area. Cumulative short-term traffic impacts could occur if the SR-91 CIP was under construction at the same time as other projects in the same area.

As shown in Table 3.6.5 in Section 3.6, nine GP segments on SR-91 operated deficiently under Baseline/Existing (2007) conditions, with five segments operating at LOS F for both peak directions of travel. More than half the study segments on SR-91 operated deficiently in the westbound direction, which is the peak direction of travel during the a.m. peak-hour period. The segments adjacent to the SR-71 interchange were among those LOS F interchanges that experienced the highest traffic densities in 2007. All the toll/HOV segments on SR-91 operated at acceptable LOS in 2007.

All segments on I-15 operated at acceptable LOS during both peak hours, with the exception of two southbound segments that operated deficiently during the p.m. peak hour.

Impacts of the Build Alternatives Related to Short-Term Impacts That Are Related to Traffic Congestion

The construction of Alternatives 1 and 2 and their design variations and the potential short-term effects of that construction on traffic circulation are discussed in the Preliminary TMP. The Preliminary TMP acknowledges that the construction of Alternatives 1 and 2 and their design variations, including Alternative 2f, may result in temporary delays, temporary detours and/or lane, street, ramp and/or freeway closures. The TMP addresses the short-term traffic impacts during project construction on travelers, emergency service providers, local businesses, local jurisdictions, pedestrians, and others affected by traffic impacts during construction. Although the TMP includes substantial measures to address short-term traffic

impacts, there still may be a considerable public perception that those short-term traffic impacts during construction are substantial and not fully mitigated by the TMP.

Impacts of the Other Cumulative Projects Related to Short-Term Impacts on Traffic Circulation

Construction of the other cumulative transportation projects, including rail and rail-associated projects, may also result in some or all of the same kinds of short-term traffic impacts as would occur under the Build Alternatives. The Initial Phase of the SR-91 CIP is scheduled to start construction in 2013 and be completed by late 2017. A specific construction schedule has not been identified for the Ultimate Project of the SR-91 CIP. The transportation projects shown on Figure 3.25-1 and listed in Table 3.25-1 were reviewed to determine which projects may be under construction at the same time as the SR-91 CIP. Of the projects listed, eight of the projects are complete and would not be under construction at the same time as the SR-91 CIP (Transportation Project Map ID Numbers 1, 2, 3, 13, 14, 15, 19, and 21) and nine projects either have unknown schedules or are programmed to be constructed after 2017 (Transportation Project Map ID Numbers 11, 12, 18, 25, 26, 52, 57, 58, and 59).

The following five projects would be under construction at the same time as the SR-91 CIP:

- **SR-91 Widening Between the SR-91/State Route 55 (SR-55) Separation and the SR-91/SR-241 Separation – ID Number 4 (Sheets 1 and 2 of Figure 3.25-1):** This project is currently under construction and is scheduled to be completed in 2015. Because the easterly limit of this project is at SR-241, it would not directly conflict with the construction area of the SR-91 CIP Initial Phase (westerly limit at SR-241), but traffic management activities such as lane closures will need to be coordinated between the two projects.
- **SR-71/SR-91 Interchange Improvements – ID Number 5 (Sheet 3 of Figure 3.25-1):** This project is scheduled to start construction in 2015; therefore, traffic management activities such as lane closures will need to be closely coordinated with the SR-91 CIP construction.
- **SR-241/SR-91 HOV/High-Occupancy Toll (HOT) Connector – ID Number 9 (Sheet 2 of Figure 3.25-1):** This project is scheduled to complete construction by 2018; therefore, traffic management activities such as lane closures will need to be closely coordinated with the SR-91 CIP construction.

- **I-15/Cajalco Road Interchange Improvement Project – ID Number 16 (Sheet 6 of Figure 3.25-1):** This project is scheduled to complete construction by 2015, but it is located south of the southerly terminus of the SR-91 CIP on I-15 at El Cerrito Road; therefore, construction of this project should not conflict with SR-91 CIP construction.
- **I-15 Corridor Improvement Project – ID Number 17 (Sheets 4, 5, and 6 of Figure 3.25-1):** This project is scheduled to start construction in 2015; therefore, traffic management activities such as lane closures will need to be closely coordinated with the SR-91 CIP construction.

These five projects would also have TMPs specific to each project and the local conditions in the area of each project. Similar to the SR-91 CIP, those TMPs would address the short-term traffic impacts during construction on travelers, emergency service providers, local businesses, local jurisdictions, pedestrians, and others affected by traffic impacts during construction.

The construction of the majority of land development projects does not typically result in substantial short-term traffic impacts. Larger projects or projects with substantial materials transport needs may require traffic controls on and near the project sites to minimize impacts to local traffic. Projects that result in the construction of new driveways or the modification of existing driveways may also need site-specific traffic control in those areas during the construction of those project components. However, the short-term traffic impacts associated with land use projects are typically very site-specific and are not likely to result in impacts very far from the individual project sites.

Potential Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects Related to Short-Term Impacts on Traffic Circulation

As discussed above, five transportation projects or may be under construction at the same time as the Initial Phase of the SR-91 CIP. The TMP for the SR-91 CIP Initial Phase will specifically address coordination of lane closures and detours required for the SR-91 CIP with those five projects.

As discussed above, most land development projects result in short-term needs for traffic control only in the immediate vicinity of the individual project sites. Therefore, none of the land development projects listed in Table 3.25-2 would result in cumulative short-term traffic impacts.

Potential Mitigation for Project and Cumulative Short-Term Impacts on Traffic Circulation

The appropriate measure to address short-term traffic impacts is a TMP specific to each project. A key component of most TMPs is appropriate coordination with local jurisdictions and area emergency service providers to ensure that traffic effects are minimized based on ongoing coordination and appropriate provision of signing and advance information to keep those parties informed as to the status of street, ramp, freeway, and lane closures, detours, and other conditions in the study area. In addition, to minimize the potential for short-term cumulative traffic impacts, coordination of the TMPs with local jurisdictions for projects that are under construction concurrently will be required. No further measures would be necessary to address the project's contribution to short-term cumulative traffic impacts during construction of the Build Alternatives.

3.25.4.4 Visual and Aesthetics – Permanent Impacts

Resource Study Area for Visual and Aesthetics – Permanent Impacts

Section 3.7, Visual/Aesthetics, describes the visual environment along the project segments of SR-91 and I-15. That environment includes views of open space, recreational, residential, industrial, and commercial uses. The visual environment in the project study area also includes a substantial amount of infrastructure, including local roads and freeways. The freeways include interchanges, overhead structures, embankments, and highway ramps within those highway segments.

The RSA for visual/aesthetics is defined as the areas along the project segments of SR-91 and I-15, areas that can be seen from those freeways, and areas from which those freeways or components of those freeways can be seen.

The RSA includes two major landscape units centered along SR-91 and I-15:

- **Open Space/Recreational Landscape Unit:** This unit is on either side of SR-91 in the Cities of Anaheim, Yorba Linda, and Corona, and in unincorporated areas of Orange and Riverside Counties. It includes views of SR-91 and the open space and recreational areas adjacent to the freeway. This area is in the foothills of the Santa Ana Mountains, with elevations ranging from 401 to 800 ft amsl. Scenic features in this landscape unit from which SR-19 is visible and that are visible from SR-91 include CHSP, Featherly Regional Park, CNF, the New OC Park (NNL), the Santa Ana River, and the Green River Golf Club.

- **Urban Use Landscape Unit:** This landscape unit is in the Cities of Corona, Riverside, and Norco, and unincorporated areas of Riverside County. It includes views of SR-91, I 15, and commercial, industrial, and residential areas adjacent to those freeways. The primary features visible in this landscape unit are urban/suburban features and include substantial amounts of hardscape such as buildings, walls, freeway and road surfaces, and freeway structures.

Impacts of the Build Alternatives Related to Visual and Aesthetics

As discussed earlier, Alternatives 1 and 2 would result in expanded right-of-way, which would add additional hardscape, graded slopes, modified and new ramps, overcrossings and bridges, concrete barriers, and new retaining, tieback, and sound walls. The heights of the retaining walls under Alternatives 1 and 2 would range from 3 to 40 ft, depending on the location. These changes would modify the visual quality of the RSA by introducing more urbanized and hardscape elements and, as a result, would affect the existing community character. However, with the consideration of aesthetic features for retaining walls, sound walls, and bridge structures during final design, some of the project impacts to community character would be minimized. Additional landscaping consistent with the *215/91 Corridor Master Plan* would be implemented where existing landscaping is removed during construction and/or where the expanded right-of-way allows. The additional landscaping would further minimize potential impacts of Alternatives 1 and 2 to community character. Although Measures V-1 and V-2 would minimize some of the impacts to community character in the City of Corona, the widened freeway facilities would contribute to continued urbanization of the RSA. As a result, not all the visual impacts of Alternatives 1 and 2 and their design variations, including Alternative 2f, can be mitigated.

Impacts of the Other Cumulative Projects Related to Visual and Aesthetics

The cumulative transportation and development projects listed in Tables 3.25.1 and 3.25.2 would also contribute to changes in the visual environment in the communities along SR-91 and I-15 in the RSA as a result of property acquisition, development of new land uses, and overall increasing urbanization in the area. Where the CEQA (and NEPA, if applicable) documents for the cumulative projects identify significant visual and aesthetic impacts, the cumulative projects would include mitigation to address visual impacts of new/expanded hardscape, new development, and other changes to the visual environment similar to the measures included in Alternatives 1 and 2.

Potential Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects Related to Visual and Aesthetics

The project, combined with other transportation and development projects, would contribute incrementally to the increasing urbanization in the area that changes the visual environment along SR-91 and I-15 in the RSA.

Potential Mitigation for Project and Cumulative Impacts Related to Visual and Aesthetics

Measures V-1 through V-3 would partially mitigate the project's contribution to visual impacts with the RSA. The other cumulative projects would be expected to include mitigation to address visual impacts of new/expanded hardscape, new development, and other changes to the visual environment similar to the measures included in Alternatives 1 and 2. However, even with mitigation, Alternatives 1 and 2 would contribute to the continuing changes in the visual environment in the RSA.

3.25.4.5 Water Quality and Storm Water Runoff

Resource Study Area for Water Quality and Storm Water Runoff

The RSA is the same as the study area for the water quality analysis discussed in Section 3.10, Water Quality and Storm Water Runoff: the Santa Ana River Watershed. The Santa Ana River extends about 96 mi from its headwaters to the Pacific Ocean. The headwaters for the Santa Ana River and its tributaries are in the San Gabriel and San Bernardino Mountains to the north and the San Gorgonio and San Jacinto Mountains to the east. From the San Bernardino and San Gabriel Mountains, the Santa Ana River flows through the Santa Ana Valley, Prado Basin, and a narrow pass in the Santa Ana Mountains, and then southwest to the Pacific Ocean. The Santa Ana River Watershed is divided into upper and lower watersheds at Prado Dam.

Water quality in this watershed has been affected historically by past and present runoff from agricultural and urban land uses. The current health and historic context of water resources in this region are discussed in Section 3.10.2.6, Water Quality Impairments.

Pollutants of concern during operation of a transportation facility include sediments, trash, and debris that can be generated from facility maintenance and vehicles operating on the facility. In addition to sediments and trash, pollutants of concern during operation of a transportation facility include petroleum products, metals, nutrients, solvents, waste paint, herbicides, and pesticides. These pollutants of

concern can be generated from maintenance activities as well as vehicles operating on the facility, and thus have the potential for accidental spills and discharges to receiving waters. Increased impervious areas associated with urbanizing development increase the volume of runoff during a storm, which more effectively transports pollutants to receiving waters and may lead to adverse effects on water quality and downstream erosion. Reach 3 of the Santa Ana River is listed as impaired for lead, copper, and pathogens. Santa Ana River Reach 2 is listed as impaired for indicator bacteria. Temescal Creek Reach 1 is listed as impaired for pH.

The potential impacts of construction activities on water quality focus primarily on sediments, turbidity, and pollutants that might be associated with sediments (e.g., phosphorus and pesticides) and how these may impact water quality objectives and/or beneficial uses. Construction-related activities that are primarily responsible for sediment releases are related to exposing soils to potential erosion by rainfall/runoff and wind. Non-sediment-related pollutants of concern during construction include waste construction materials; chemicals, liquid products, and petroleum products (such as paints, solvents, and fuels) used in construction or the maintenance of heavy equipment; and concrete-related waste streams. These construction-related pollutants may be spilled, leaked, or transported via storm runoff into receiving waters and may potentially impair water quality objectives and/or beneficial uses.

Impacts of the Build Alternatives Related to Water Quality and Storm Water Runoff

Alternative 1 would increase the impervious surface area by 117 ac (i.e., 27.0 percent) compared to the existing freeway facilities. Alternative 2 would increase the impervious surface area by 173 ac, a 39.6 percent increase, compared to the existing freeway facilities. As part of the Build Alternatives, BMPs will be implemented to target constituents of concern in runoff from the additional freeway facilities under Alternatives 1 and 2. All the runoff from the new net impervious surface areas (117 ac under Alternative 1 and 173 ac under Alternative 2) and some parts of the existing freeway facilities would be treated by BMPs such as biofiltration swales, infiltration basins, detention basins, and/or media filters. The BMPs would be implemented in accordance with NPDES Permit requirements and would reduce the impact to existing water quality.

During construction of Alternatives 1 and 2, excavated soil would be exposed and there would be increased potential for soil erosion compared to existing conditions. Additionally, during a storm event, soil erosion could occur at an accelerated rate.

There is also potential for construction-related pollutants to be discharged into storm drains and surface waters during construction. The total area estimated to be disturbed during construction under Alternatives 1 and 2 is approximately 351 ac and approximately 503 ac, respectively. Under the Construction General Permit, a SWPPP would be prepared and implemented, including implementing specific erosion and sediment control BMPs detailed in the SWPPP during construction activities. Appropriate construction site BMPs for work in high-risk areas would be identified in the SWPPP and implemented during construction. Construction BMPs would be properly designed, implemented, and maintained during all construction activities under Alternatives 1 and 2.

Impacts of the Other Cumulative Projects Related to Water Quality and Storm Water Runoff

The other cumulative projects in Tables 3.25.1 and 3.25.2 would all result in increases in impervious areas in the RSA and, as a result, would result in increases in storm water and other runoff from those project sites during construction and operations in the Santa Ana River Watershed. That water could include a number of pollutants of concern. The cumulative projects would be required to provide for control and treatment of storm water and other runoff on those project sites prior to discharge of the water off site. Those controls could include a wide range of BMPs during both construction and operations.

Potential Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects Related to Water Quality and Storm Water Runoff

The Build Alternatives and the cumulative projects would result in a cumulative increase in impervious surfaces in the RSA and in the amount of storm water and other runoff from the sites of all the projects in the Santa Ana River Watershed. That water could include a wide range of pollutants of concern. Even with construction and operations BMPs, there is no certainty that 100 percent of all new storm water and other runoff from those sites would be captured and treated prior to release off site. As a result, in the long-term, the Build Alternatives and the other cumulative projects would result in an adverse impact on water quality in the Santa Ana River Watershed.

Potential Mitigation for Project's Contribution to Cumulative Impacts Related to Water Quality and Storm Water Runoff

As noted above, the Build Alternatives and the other cumulative projects would be required—during both construction and operations—to capture and treat storm water and other runoff prior to discharge off the project sites. Nonetheless, the Build

Alternatives and the other cumulative projects would result in a cumulative adverse impact on water quality in the Santa Ana River Watershed because there is no certainty that 100 percent of all new storm water and other runoff generated in the RSA during construction and operation of those projects can be captured and properly treated prior to release off site. This potential cumulative adverse impact on water quality in the RSA would be minimized based on implementation of BMPs, and compliance with applicable NPDES Permit conditions and other water quality regulations by the Build Alternatives and the other cumulative projects.

3.25.4.6 Paleontology

Resource Study Area for Paleontology

The project segments of SR-91 and I-15 are located in the northwestern Peninsular Range Province of southern California. This Province is bounded on the north by the Transverse Ranges, on the east by the Colorado Desert, and on the west by the Pacific Ocean, and extends south to include the entire Baja California Peninsula. Igneous, metamorphic, and sedimentary rocks are exposed throughout the Province. The project segments of SR-91 and I-15 pass through the Santa Ana Mountains and a structural feature known as the Perris Block. The Santa Ana Mountains contain exposures of Jurassic to Cretaceous (145 to 65 mya) metamorphic and igneous rocks covered by limited exposures of younger sediments dating from the Cretaceous to the present. There are 21 formally named sedimentary formations or unnamed sedimentary units in the project study area.

The RSA for paleontology covers northern Orange County and western Riverside County, including the Santa Ana Mountains and the Santa Ana River Valley, as this is the area where the SR-91 CIP could contribute to cumulative impacts to paleontological resources.

As discussed in Section 3.12.2, Affected Environment, which describes the historical context for paleontological resources, many of the formations and rock types in this area are considered moderately to highly sensitive for paleontological resources. Any removal or destruction of paleontological resources during construction on projects in the RSA would contribute to a cumulative loss of paleontological resources.

Impacts of the Build Alternatives on Paleontology

The analysis of the potential impacts of Alternatives 1 and 2 and their design variations, including Alternative 2f, on paleontological resources is provided in Section 3.12, Paleontology. That analysis indicated construction of the project would

result in permanent impacts to paleontological resources in the following sediments: all types of Pleistocene alluvium, sedimentary rocks of the Norco area, the Fernando Formation, sandstone of the Norco area, Chino Hills Pliocene sediments, the Puente Formation, the Topanga Formation, the Sespe and Vaqueros Formations, the Santiago Formation, the Silverado Formation, the Williams Formation, and the Ladd Formation. While there would be minor differences in areas actually disturbed during construction, the impacts of Alternatives 1 and 2 and their design variations on these sediments would be very similar because the construction of these alternatives would use similar techniques and would disturb approximately the same areas along the alignments.

In summary, excavation for Alternatives 1 and 2 would potentially disturb two fossiliferous Cretaceous Formations, nine fossiliferous Tertiary Formations, and four fossiliferous early to late Pleistocene sediments. These potential permanent impacts would be partially reduced based on the implementation of the PMP stipulated in Measure PAL-1, described in Section 3.12.4.

Impacts of the Other Cumulative Projects on Paleontology

The cumulative projects would also be expected to result in permanent impacts to paleontological resources when excavation for those projects extends into fossiliferous formations. The following sediments in the area would be expected to be impacted during construction of most of the cumulative projects, to varying degrees: all types of Pleistocene alluvium, sedimentary rocks of the Norco area, the Fernando Formation, sandstone of the Norco area, Chino Hills Pliocene sediments, the Puente Formation, the Topanga Formation, the Sespe and Vaqueros Formations, the Santiago Formation, the Silverado Formation, the Williams Formation, and the Ladd Formation. The quantity and severity of those impacts would be related to the amount (acres) of soil disturbed, the depth of excavation, and the resources, if any, encountered during construction. Where significant impacts to paleontological resources are identified in the CEQA (and NEPA, where applicable) documents for the cumulative projects, the cumulative projects would be required to include mitigation measures to address potential impacts to paleontological resources encountered during construction.

Potential for Cumulative Impacts of the Build Alternatives and Other Cumulative Projects on Paleontology

The construction of Alternatives 1 and 2 and many of the cumulative projects in the RSA would occur in sediments sensitive for paleontological resources, which would

The RSA for paleontology covers the areas in Orange County and western Riverside County north and south of the project segment of SR-91 and east and west of the project segment of I-15. The RSA includes parts of the Santa Ana Mountains and the Santa Ana River Valley.

As discussed in Section 3.12.2, Affected Environment, many of the formations and rock types along the project segments of SR-91 and I-15 are considered moderately to highly sensitive for paleontological resources. Any removal or destruction of paleontological resources during construction on projects in the RSA would contribute to a cumulative loss of paleontological resources.

Impacts of the Build Alternatives on Paleontology

The analysis of the potential impacts of Alternatives 1 and 2 and their design variations, including Alternative 2f, on paleontological resources is provided in Section 3.12, Paleontology. That analysis indicated construction of the project would result in permanent impacts to paleontological resources in the following sediments: all types of Pleistocene alluvium, sedimentary rocks of the Norco area, the Fernando Formation, sandstone of the Norco area, Chino Hills Pliocene sediments, the Puente Formation, the Topanga Formation, the Sespe and Vaqueros Formations, the Santiago Formation, the Silverado Formation, the Williams Formation, and the Ladd Formation. While there would be minor differences in areas actually disturbed during construction, the impacts of Alternatives 1 and 2 and their design variations on these sediments would be very similar because the construction of these alternatives would use similar techniques and would disturb approximately the same areas along the alignments.

In summary, excavation for Alternatives 1 and 2 would potentially disturb two fossiliferous Cretaceous Formations, nine fossiliferous Tertiary Formations, and four fossiliferous early to late Pleistocene sediments. These potential permanent impacts would be partially reduced based on the implementation of the PMP stipulated in Measure PAL-1, described in Section 3.12.4.

Impacts of the Other Cumulative Projects on Paleontology

The cumulative projects would also be expected to result in permanent impacts to paleontological resources when excavation for those projects extends into fossiliferous formations. The following sediments in the area would be expected to be impacted during construction of most of the cumulative projects, to varying degrees: all types of Pleistocene alluvium, sedimentary rocks of the Norco area, the Fernando

Formation, sandstone of the Norco area, Chino Hills Pliocene sediments, the Puente Formation, the Topanga Formation, the Sespe and Vaqueros Formations, the Santiago Formation, the Silverado Formation, the Williams Formation, and the Ladd Formation. The quantity and severity of those impacts would be related to the amount (acres) of soil disturbed, the depth of excavation, and the resources, if any, encountered during construction. Where significant impacts to paleontological resources are identified in the CEQA (and NEPA, where applicable) documents for the cumulative projects, the cumulative projects would be required to include mitigation measures to address potential impacts to paleontological resources encountered during construction.

Potential for Cumulative Impacts of the Build Alternatives and Other Cumulative Projects on Paleontology

The construction of Alternatives 1 and 2 and many of the cumulative projects in the RSA would occur in sediments sensitive for paleontological resources, which would result in adverse impacts to those resources. A PMP would require appropriate fieldwork, monitoring during construction, and specimen collection, identification, and curation. However, the impacts of the Build Alternatives and the other cumulative projects would result in a net loss of paleontological resources in the RSA because the mitigation for the impacts on the affected resources would not create new paleontological resources to replace those impacted during construction. As a result, the SR-91 CIP, including Alternative 2f, would contribute to a permanent cumulative impact related to paleontological resources in the RSA.

Potential Mitigation for Project's Contribution to Cumulative Impacts on Paleontology

There is no mitigation that would replace paleontological resources impacted during construction. However, the Build Alternatives and most other construction projects would require appropriate preconstruction fieldwork to identify potential areas of resources; measures during construction in areas identified as sensitive for paleontological resources; and the collection, identification, and curation of specimens from the affected sediments and formations. This work would partially reduce impacts to paleontological resources. However, because the impacts are permanent even with these measures, Alternatives 1 and 2 and their design variations would incrementally contribute to cumulative impacts to paleontological resources in the RSA.

3.25.4.7 Air Quality – Construction

Resource Study Area for Short-Term Air Quality

The project's only potential contribution to cumulative air quality impacts are temporary construction related impacts that can result from equipment operations as well as dust generated during grading or travel on unpaved surfaces. The RSA for short-term air quality impacts focuses on areas in proximity to active construction areas for the project and other nearby cumulative projects under construction at the same time.

Over time, the air quality in the Basin, including the RSA for short-term air quality impacts, has been substantially degraded by short- and long-term emissions of pollutants and dust generated by a wide variety of land uses, including agricultural, urban, industrial, and manufacturing uses.

Impacts of the Build Alternatives Related to Short-Term Air Quality

The analysis of the potential air quality impacts of Alternatives 1 and 2 and their design variations, including Alternative 2f, is provided in Section 3.14. That analysis indicated that construction of the Build Alternatives would result in substantial short-term air quality impacts associated with fugitive dust and construction equipment emissions. Section 3.14 identified several measures that would substantially reduce these short-term impacts during project construction: compliance with SCAQMD Rule 403, maintaining equipment engines in good condition and in proper tune per the manufacturer specifications, control of truck loads to avoid material spilling on public roads by compliance with California Vehicle Code (CVC) Section 23114, and compliance with Department Standard Construction Specifications, Sections 10 and 18 (dust control) and 39-3.06 (asphalt concrete plant emissions).

Impacts of the Other Cumulative Projects Related to Short-Term Air Quality

Construction of the other cumulative projects would also result in short-term air quality impacts associated with fugitive dust and construction equipment emissions. As described above in Section 3.25.4.3, Short-Term Impacts on Traffic Circulation, there are five transportation projects that would be under construction at the same time as the SR-91 CIP. It is these five projects that have the potential to result in cumulative short-term air quality impacts related to construction activities.

The quantity and severity of those impacts would be related to the amount of soil disturbed, the types and numbers of pieces of construction equipment, weather

conditions, and other factors specific to each project. The five concurrent construction projects are required to comply with some or all of the applicable SCAQMD rules as well as local jurisdictions' requirements for dust and emission controls during construction. In addition, all projects on State highways are required to comply with the Department's Standard Construction Specifications, Sections 10 and 18 (dust control) and 39-3.06 (asphalt concrete plant emissions). All construction material hauling is required to comply with CVC Section 23114 to avoid material spilling on public roads.

Potential Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects Related to Short-Term Air Quality

With the construction of Alternatives 1 and 2 and the five other cumulative transportation projects listed in Section 3.25.4.3¹ occurring concurrently and in proximity to each other, there is potential for cumulative impacts related to short-term fugitive dust and construction equipment emissions in the RSA. The cumulative short-term air quality impacts of the SR-91 CIP and the five other cumulative projects could be substantial, depending on the specific construction activities on any specific day, weather and climatic conditions, and other factors. Therefore, Alternatives 1 and 2 and their design variations, including Alternative 2f, have potential to contribute to cumulative short-term air quality impacts in the RSA during construction, even with minimization measures.

Potential Mitigation for Project's Contribution to Cumulative Impacts on Short-Term Air Quality

As noted above, the Build Alternatives include substantial measures to address short-term dust and equipment emissions. These types of measures are typically required of most major construction projects in the Basin by the SCAQMD and/or the local jurisdictions. As a result, the potential short-term cumulative air quality impacts of the Build Alternatives and the five other cumulative projects that would be constructed concurrently would be substantially reduced based on compliance with SCAQMD regulations.

¹ These five projects are the SR-91 Widening between the SR-91/SR-55 Separation and the SR-91/SR-241 Separation, SR-71/SR-91 Interchange Improvements, SR-241/SR-91 HOV/HOT Connector, I-15/Cajalco Road Interchange Improvement Project, and I-15 Corridor Improvement Project.

3.25.4.8 Noise – Operations

Resource Study Area for Long-Term Noise Impacts

The RSA for long-term noise impacts focuses on areas in proximity to SR-91 and I-15 where long-term noise exposure increases as a result of the SR-91 CIP Build Alternatives. As discussed in Section 3.15, Noise, the study area for the project was centered along the alignments of SR-91 and I-15 and focused on those areas in the vicinity of the freeways with potentially noise-sensitive uses, including residential uses, parks, and open space uses, or areas of frequent human activity. Noise in this area is generated by traffic on the freeways and area roads, equipment operations, urban uses, aircraft, and other noise sources typical in urban and developed areas.

As discussed earlier, much of this area was historically used for agriculture; therefore, there were only limited sources of high noise levels. As development occurred, the background levels of noise in much of the RSA have increased and can, in some areas, already exceed the applicable noise standards.

Long-Term Noise Impacts of the Build Alternatives

The analysis of the potential for operations-related noise impacts of the Build Alternatives and their design variations is provided in Section 3.15. The study area for the noise impacts analysis considered the effects of the Build Alternatives on sensitive land uses adjacent to or very close to the project segments on SR-91, I-15, and the intersecting local streets. The findings of that analysis indicate that operation of the project improvements would result in increased noise levels at sensitive receptors compared to the No Build Alternative. Existing noise levels in the area range from 53 to 79 dBA at residential uses. As expected, the majority of that noise is generated by traffic on SR-91, I-15, and local streets. Alternatives 1 and 2 are predicted to result in noise levels ranging from 56 to 84 dBA at residential uses.

Long-Term Noise Impacts of the Other Cumulative Projects

As shown in Table 3.25.1, a large number of transportation projects are proposed in the RSA in northeast Orange County and western Riverside County. The following projects shown on Figure 3.25-1 could result in increases in the ambient noise levels in the long term that cannot be avoided or substantially mitigated: Transportation Project Map ID Numbers 1, 2, 3, 4, 5, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 25, 26, 52, 57, 58, and 59. Because all of these projects (except Number 11, MIS Corridor A) were included in the traffic modeling for the SR-91 CIP which was used as the traffic data input for the noise studies for the SR-91 CIP, the cumulative noise impacts of these projects have been accounted for in the SR-91 noise analysis.

Table 3.15.13 in Section 3.15, Noise, indicates that the noise levels at monitored and modeled locations along the alignments of the project segments of SR-91 and I-15 will not increase between the Existing (2007) and 2035 No Build Alternative conditions. This is not unexpected because those monitored and modeled locations are focused on the freeways and not in areas away from the freeways that might experience increased noise generated by land development or other projects farther away from the freeways. However, as Table 3.15.13 shows, Alternative 1 would result in the following:

- Noise levels in 2035 greater than 67 dBA at up to 38 locations, depending on the design variation.
- Noise level increases from existing levels to 2035 by 12 or more dBA at 6 or 7 receivers, depending on the design variation.
- Noise levels in 2035 at 75 dBA or greater at 34 to 37 receivers depending on the design variation.

Alternative 2 would result in the following as shown in Table 3.15.12:

- Noise levels in 2035 greater than 67 dBA at up to 41 locations, depending on the design variation.
- Noise level increases from existing levels to 2035 by 12 or more dBA at 6 or 7 receivers, depending on the design variation.
- Noise levels in 2035 at 75 dBA or greater at 37 to 41 receivers depending on the design variation.

The increases in noise levels by 2035 described above are related to the increased traffic volumes on the project segments of SR-91 and I-15 which include traffic generated by the cumulative land development projects listed in Table 3.25.1 and shown on Figure 3.25-1. As a result, the noise effects described above reflect the effects of long-term noise generated by Alternatives 1 and 2 and the cumulative land development projects.

In addition, some of the cumulative land use projects shown in Table 3.25.1 would result in development in areas that are currently largely rural or very low-density development and, as a result, have lower ambient noise levels than more developed areas. New land uses in those areas are anticipated to result in increases in ambient noise levels that likely would not be fully mitigated.

Potential for Cumulative Long-Term Noise Impacts of the Build Alternatives and the Other Cumulative Projects

As discussed above, Alternatives 1 and 2 and their design variations would result in increased noise levels in the project study area compared to the No Build Alternative, and some of those increases cannot feasibly be mitigated. It is also expected that many of the other cumulative transportation and land use projects in the area would also result in increases in long-term noise levels in the RSA, some of which may also not be substantially or feasibly mitigated. As a result, it is possible that Alternatives 1 and 2 and their design variations, including Alternative 2f, when considered with other cumulative projects, would contribute to long-term cumulative noise impacts in the RSA.

Although there are areas in northeast Orange County and western Riverside County that would not be developed in urban/suburban uses (such as CHSP and other protected open spaces), the general trend in this area is toward urban/suburban uses based on adopted transportation and land use plans. As a result, it is expected that ambient noise levels in much of this area would increase over time as additional land uses are developed and transportation facilities and improvements are implemented. As a result, the incremental contribution of Alternatives 1 and 2 and their design variations to cumulative increases in ambient noise levels in the RSA would likely be small when considered against a background of substantial existing, adopted, and planned land development and other transportation improvements in northeast Orange County and western Riverside County. With the implementation of noise barriers, the increased noise levels under Alternatives 1 and 2 would be minor. As a result, the operation of Alternatives 1 and 2 and their design variations would result in only a minor contribution to cumulative noise impacts in the RSA.

Potential Mitigation for the Project's Contribution to Cumulative Long-Term Noise Impacts

Alternatives 1 and 2 and their design variations include some new sound walls as well as increases in heights in existing sound walls along the project segments of SR-91 and I-15 and would result in only a minor increase in ambient noise levels. Where the other cumulative transportation and land use projects in the RSA result in substantial, direct noise impacts, the cumulative projects would also include appropriate noise mitigation for long-term impacts on sensitive receptors, which could include new sound walls, increases in heights of existing sound walls, other buffers, and/or structural features (sound proofing, double pane windows, etc.), as appropriate for each project. However, it is not expected that all the increases in noise levels in the

RSA associated with those projects can be mitigated to levels equivalent to those under no project conditions. As a result, the SR-91 CIP and the other cumulative projects will contribute to a long-term increase in ambient noise levels in the RSA with the likelihood that some of those effects cannot be substantially mitigated.

3.25.4.9 Natural Communities, Plant Species, and Animal Species **Resource Study Area for Natural Communities, Plant Species, and** **Animal Species**

As discussed earlier in Sections 3.17, Natural Communities, through 3.22, Invasive Species, the BSA for the project included parts of the Santa Ana River Watershed, Santa Ana Mountains, Puente-Chino Hills, Prado Basin, and Lake Mathews-Estelle Mountain Reserve. The RSA for biological resources, which includes these areas, was defined as northeastern Orange County, western Riverside County, and southern San Bernardino County.

As described in *The Jepson Manual* (Hickman, J.C., ed. 1993), the BSA and the RSA are located in the South Coast subregion of the Southwestern California region of the California Floristic Province. That subregion is characterized by valleys and small hills extending from the coast inland to the foothills of the Transverse and Peninsular Mountain Ranges. Historically, the natural vegetation communities in this subregion consisted primarily of chaparral, CSS, annual grasslands, and some riparian scrub and woodland, along with the special-status plants and wildlife associated with these vegetation communities. However, much of the area has been modified from these natural plant communities as a result of agriculture and the development of urban and suburban uses.

As noted in the NES, cumulative impacts to wildlife movement across Santa Ana Canyon have developed over many years, beginning with substantial road improvements and increases in traffic in the area after World War II. Land development and increases in road capacity continued to contribute to wildlife movement impacts well into the 1980s, until information about the wildlife movement issue and research on the importance of Santa Ana Canyon in particular became well known. Since that time, there have been substantial efforts to reverse the trend toward increasing impacts on wildlife movement, most notably the acquisition and/or dedication of open space in Santa Ana Canyon and the decommissioning of the Coal Canyon Road freeway access ramps to provide a dedicated wildlife undercrossing at SR-91 near Coal Canyon.

Much of the area in the RSA for biological resources is within lands (CHSP, Western Riverside County MSHCP Reserve, County of Orange Central & Coastal Subregion NCCP/HCP) that are protected from development to preserve biological resources and natural habitat. Much of the remaining areas of natural vegetation in the RSA and the plant and wildlife species associated with that natural vegetation occur in lower quality, scattered, often fragmented patches on hills or in other areas not easily developed. The RSA for biological resources described here is applicable to the resources discussed in Sections 3.25.4.9, 3.25.4.10, 3.25.4.11, and 3.25.4.12.

Biological Environment: Natural Communities, Plant Species, and Animal Species

The potential for the Build Alternatives and their design variations to result in cumulative impacts on biological resources is provided in the *Cumulative Impacts Analysis Report*. The potential impacts of Alternatives 1 and 2 that may contribute to cumulative impacts on biological resources are discussed in this section and the following sections for the following topics:

- Natural Communities, Plant Species, and Animal Species
- Wetlands and Other Waters
- Threatened and Endangered Species
- Invasive Species

There is some overlap among these categories, as noted in the following discussions. In addition, the avoidance, minimization, mitigation, and compensation measures described here frequently address impacts to multiple categories of biological resources.

Impacts of the Build Alternatives on Natural Communities, Plant Species, and Animal Species

The impacts of the Initial Phases of Alternatives 1 and 2 would occur predominantly on SR-91 between SR-71 and I-15, and the impacts of the Alternative 1 and 2 Ultimate Projects would occur predominantly west of SR-71 and east of I-15 and on I-15 north and south of SR-91. As a result, direct construction-related impacts to resources, including biological resources, would occur only once in a given area. However, biological resources in the vicinity of SR-91 could be subject to indirect impacts such as air quality and noise during and after construction of both the Initial Phases and Ultimate Projects for Alternatives 1 and 2.

The *Cumulative Impacts Analysis Report* concluded that Alternatives 1 and 2 and their design variations, including Alternative 2f, would potentially contribute to cumulative impacts on a number of natural communities of special concern and the plant and animal species associated with those natural communities. As discussed in Sections 3.17.3, 3.19.3, and 3.20.3, Alternatives 1 and 2 and their design variations would result in the permanent and/or temporary removal of CSS, riparian/riverine, and oak woodland habitats within the project disturbance limits and would result in impacts to plant and animal species which inhabit these natural communities.

As discussed in Section 3.17, Natural Communities, Alternatives 1 and 2, including Alternative 2f, would not result in substantive temporary impacts on the Coal Canyon wildlife crossing and would retain effective openness ratios at the crossing where the undercrossing would be permanently widened. The openness of the Coal Canyon undercrossing with the widening would still be sufficient to allow large mammals to move between the Santa Ana Mountains and the Puente-Chino Hills areas.

The Build Alternatives would result in temporary adverse impacts on wildlife movement during construction. Those temporary impacts would be mitigated through implementation of Measures NC-6 through NC-16, and NC-20. The Build Alternatives, including Alternative 2f, would not result in adverse impacts related to wildlife movement after the completion of construction. The improvements to the Coal Canyon undercrossing would provide more cover for the wildlife crossing.

As discussed in detail in Section 3.20, Alternatives 1 and 2, including Alternative 2f, include design features to improve wildlife crossings at a number of locations along SR-91. As a result, Alternatives 1 and 2 would beneficially affect wildlife movement in the area.

The only cause of indirect effects such as noise and lighting at Coal Canyon would be traffic. As described in Table 3.6.22, the total daily traffic volumes will be the same in 2035 with or without the project. Because traffic levels will remain relatively the same, indirect effects caused by traffic (e.g., noise and lighting) will remain relatively the same with or without the project. The noise level at the Coal Canyon undercrossing is not expected to increase as a result of the proposed project. Although noise, in general, will not increase as a result of the SR-91 CIP, noise impacts are expected to extend into the surrounding natural habitat by approximately the same distance that SR-91 is being widened.

Because many wildlife corridor improvements have already been implemented at Coal Canyon (e.g., closure of the Coal Canyon interchange and installation of wildlife fencing to guide animals toward the wildlife undercrossing on either side of SR-91), construction and operation of the Build Alternatives, including Alternative 2f, are not expected to result in substantial temporary, permanent or indirect effects on wildlife movement, and would not contribute to an adverse cumulative impact on wildlife corridors.

Impacts of the Other Cumulative Projects on Natural Communities, Plant Species, and Animal Species

Although detailed environmental analyses were not available for many of the cumulative projects in the RSA, it is very likely that some of those projects would result in the permanent and/or temporary removal of natural communities, specifically the three natural communities in the BSA for the Build Alternatives. Because many of those projects are in the same approximate geographic area as the project, it is reasonable to assume that they would impact the same types of natural communities as the project. Therefore, it is reasonable to conclude that some of the cumulative projects listed in Tables 3.25.1 and 3.25.2 would result in impacts related to the permanent and/or temporary removal of the following natural communities and the various plant and animal species associated with CSS, riparian/riverine, and oak woodland habitats in the RSA.

As shown in Tables 3.25.1 and 3.25.2, quantified information on the impacts of many of the other cumulative projects to these natural communities is not available. However, based on the types and locations of these cumulative projects, it is reasonable to assume they would result in the removal of limited amounts of CSS, riparian/riverine, and oak woodland habitats because these natural communities are themselves limited in the RSA. Past transportation and land use projects in the RSA, including historical agricultural and grazing activities, have resulted in a substantial reduction in the total amounts of these natural plant communities in northeast Orange County and western Riverside County. As a result, the cumulative past, present, and future projects have contributed to a cumulative adverse impact on these natural communities in the RSA.

In addition, depending on the location and design of the other cumulative projects, some of those projects could include design features that beneficially affect wildlife movement and some could adversely affect wildlife movement.

Potential for Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects on Natural Communities, Plant Species, and Animal Species

Alternatives 1 and 2, including Alternative 2f, would result in the permanent and temporary removal of small amounts of CSS, riparian/riverine habitat, and oak woodland habitat, and therefore would result in impacts to the plant and animal species that inhabit those natural communities. The Build Alternatives include extensive measures to address impacts on natural communities, and the project is a covered project in the Western Riverside County MSHCP.

Some of the other cumulative projects, because they are in the same geographic areas, would also result in the permanent and/or temporary removal of CSS, riparian/riverine, and oak woodland habitats and would also result in impacts on the plant and animal species associated with those natural communities in the RSA. Therefore, Alternatives 1 and 2 and their design variations would contribute incrementally to cumulative impacts on these natural communities in the RSA.

Potential Mitigation for Project and Cumulative Impacts on Natural Communities, Plant Species, and Animal Species

As discussed in Sections 3.17.2, 3.19.2, and 3.20.2, Alternatives 1 and 2 and their design variations are covered projects in the Western Riverside County MSHCP. The Western Riverside County MSHCP provides a comprehensive, habitat-based approach to the protection of covered species by focusing on conservation and management of lands essential for their long-term conservation. The Western Riverside County MSHCP provides mitigation for cumulative impacts to covered species and their habitats. Project consistency with the Western Riverside County MSHCP ensures that cumulative and indirect impacts to those species are effectively mitigated.

As permittees under the Western Riverside County MSHCP, the RCTC and Department are obligated to implement specific conditions as described in Sections 13.7 and 13.8 of the Western Riverside County MSHCP Implementation Agreement and to abide by the Section 10(a)(1) permit conditions. These requirements include compliance with the policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools in Section 6.1.2 of the Western Riverside County MSHCP, compliance with the policies for the Protection of Narrow Endemic Plant Species as set forth in Section 6.1.3 of the Western Riverside County MSHCP, conduct of surveys as described in Section 6.3.2 of the Western Riverside County

MSHCP, compliance with the Urban/Wildlands Interface Guidelines in Section 6.1.4 of the Western Riverside County MSHCP, and compliance with the BMPs and the siting and design criteria in Section 7.0 and Appendix C of the Western Riverside County MSHCP.

In addition to compliance with the Western Riverside County MSHCP, substantial avoidance, minimization, mitigation, and compensation measures are included in the Build Alternatives to address the permanent and temporary impacts on natural communities and other biological resources. Similarly, it is expected that other cumulative projects in the area that impact natural communities would also include appropriate measures to address the permanent and temporary impacts of those projects on natural communities. Some of the other cumulative projects in the RSA may also be covered projects under the Western Riverside County MSHCP.

Additional measures for Alternatives 1 and 2 and their design variations, beyond those described in Sections 3.17.4, 3.19.4 and 3.20.4, are not warranted because those measures already substantively reduce or mitigate the effects of the Build Alternatives on natural communities and the plant and animal species associated with those communities.

The project, the SR-91/71 Interchange Improvement Project, and other projects in Santa Ana Canyon, would provide minor incremental improvements to wildlife movement as a result of widening of bridges and extensions of culverts. The impacts due to the project are described in detail in the NES and Appendix H of the NES. Avoidance, minimization, and mitigation measures for these impacts are provided in Chapter 3, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures. One of those mitigation measures includes RCTC participation in the Western Riverside County MSHCP, as discussed above, including substantial funding contributions. As part of its participation, RCTC is committed to cooperating with the Western Riverside County MSHCP RCA, USFWS, CDFG, and the Department for all its projects. Through this cooperation, and in light of recent information about the importance of the B Canyon culvert, this multi-agency group has begun development of a separate project to increase the effectiveness of the B Canyon culvert for wildlife movement. Similarly, the same group is working with the Corps to improve the effectiveness of the north end of the Fresno Canyon/Wardlow Wash bridge undercrossing. These separate projects would offset some of the past contributions to cumulative effects on wildlife movement in the Santa Ana Canyon.

Specifically, past and present SR-91 transportation improvements and other development in the RSA have contributed incrementally to the reduction of opportunities for wildlife to move north and south between the Santa Ana Mountains and Chino Hills. The conversion of the Coal Canyon interchange on SR-91 to a wildlife crossing and acquisition of adjacent lands have greatly increased wildlife movement opportunities across SR-91. However, cumulative impacts remain that stem from the original construction of SR-91 and other development projects in the RSA. Recent studies by the USGS have shown that B Canyon, which is approximately 0.4 mi east of the Riverside/Orange County line, may be more important as a wildlife corridor between the Santa Ana Mountains, the Puente-Chino Hills, and the Prado Basin than was once believed. Future development along Green River Road, the Green River Ranch, and Fresno Canyon would further constrain Proposed Constrained Linkage (PCL) 1 and PCL 2, thereby increasing the importance of B Canyon for wildlife movement.

It is not reasonable for any one project such as the project or a private development project to mitigate for these cumulative impacts. As such, the RCTC has proposed, as a separate project, to improve the existing B Canyon culvert beneath SR-91 as a wildlife crossing to replace PCL 1. PCL 1 is identified in the Western Riverside County MSHCP as crossing SR-91 east of the Green River Road interchange to connect the CNF with the Santa Ana River, CHSP, and Prado Basin; however, its viability has been compromised. RCA, in conjunction with the USFWS and CDFG, has identified B Canyon as a suitable replacement location (approximately 0.8 mi to the west) for PCL 1. The B Canyon wildlife crossing is a holistic approach toward mitigating the cumulative impacts of projects on wildlife movement in this area.

Because of this, RCA and the wildlife agencies would like to amend the Western Riverside County MSHCP to relocate PCL 1 from its current location to B Canyon. In order for this to be a viable option, participation of the involved stakeholders is imperative. RCTC has committed to developing a separate project to improve B Canyon to accommodate more wildlife movement through widening the crossing under SR-91. This project is dependent on RCA's ability to amend the Western Riverside County MSHCP and to obtain the necessary property rights to ensure the corridor will be a successful long-term solution.

The B Canyon wildlife crossing is estimated to cost about \$7.5 million. RCTC intends to use \$2.35 million in Transportation Enhancement funds, supplemented by

additional RCTC-controlled funding for that project. In addition, USFWS has applied for a \$500,000 grant that would also be applied toward funding this wildlife crossing.

3.25.4.10 Wetlands and Other Waters of the United States

Impacts of the Build Alternatives on Wetlands and Other Waters of the United States

The analysis of the potential for Alternatives 1 and 2 and their design variations to impact wetlands and other waters of the United States is provided in the *Cumulative Impacts Analysis Report*. As shown in Tables 3.18.2 and 3.18.3 in Section 3.18, Wetlands and Other Waters, Alternatives 1 and 2 and their design variations, including Alternative 2f, would result in permanent and temporary impacts to waters under the jurisdiction of the Corps, other nonjurisdictional waters, and areas under the jurisdiction of the CDFG and RWQCB.

Those impacts will occur once in a given area, and those impacts would depend on whether the affected water resource is in the area that would be affected by the Initial Phases (SR-91 from SR-71 to I-15) or Ultimate Projects (SR-91 west of SR-71 and east of I-15, and I-15 north and south of SR-91) of Alternatives 1 and 2.

The Build Alternatives would require permits from the following agencies:

- Corps – pursuant to Section 404 of the federal CWA
- CDFG – pursuant to Section 1602 of the California Fish and Game Code
- RWQCB – pursuant to Section 401 of the federal CWA

In addition, compensatory mitigation for Alternatives 1 and 2 would be expected to result in a net increase in wetlands and other waters in the area.

Impacts of the Other Cumulative Projects on Wetlands and Other Waters of the United States

Although detailed environmental analyses were not available for many of the other cumulative projects described in Tables 3.25.1 and 3.25.2, it is very likely that some of those projects would result in permanent and/or temporary effects on wetlands and other jurisdictional waters in the RSA because of the presence of substantial water resources (Santa Ana River, creeks, drainages, etc.) in northeast Orange County and western Riverside County. As a result, it is reasonable to assume that some of those cumulative projects would impact various jurisdictional waters similar to the waters affected by the Build Alternatives. Therefore, it is reasonable to conclude that some of the cumulative projects listed in Tables 3.25.1 and 3.25.2 would result in impacts

related to waters under the jurisdiction of the Corps, CDFG, and/or RWQCB in the RSA.

Potential for Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects on Wetlands and Other Waters of the United States

As shown in Tables 3.18.2 and 3.18.3 in Section 3.18, Alternatives 1 and 2 would result in permanent and/or temporary impacts to jurisdictional and other waters. As shown in Tables 3.25.1 and 3.25.2, quantified information on the impacts of many of the other cumulative projects to wetlands and other waters is not available. However, based on the types and locations of these cumulative projects, it is reasonable to assume they would result in the removal of limited amounts of wetlands and other waters in the RSA because the water resources themselves are limited in this area. Past transportation and land use projects in the RSA, including historical agricultural and grazing activities, have resulted in a substantial reduction in the total amounts of wetlands and other waters in northeast Orange County and western Riverside County. Depending on the location and design of the other cumulative projects, some of those projects could include design features and/or compensatory mitigation that beneficially affect wetlands and other waters as well as some that could adversely affect wetlands and other waters. Nonetheless, the cumulative past, present, and future projects in the RSA have contributed and would continue to contribute to a cumulative adverse impact on wetlands and other waters. As a result, Alternatives 1 and 2 and their design variations would contribute incrementally to cumulative impacts on jurisdictional and other waters in the RSA.

However, as noted above, compensatory mitigation for Alternatives 1 and 2 would be expected to result in a net increase in wetlands and other waters in the RSA. As a result, Alternatives 1 and 2 would result in a slightly beneficial contribution to cumulative impacts on waters in the RSA.

Potential Mitigation for Project and Cumulative Impacts on Wetlands and Other Waters of the United States

Alternatives 1 and 2 and their design variations include compensatory measures to address the permanent and temporary project effects on jurisdictional and other waters under riparian/riverine communities, as discussed in Section 3.18.4. In addition, the Build Alternatives would require permits from the Corps, CDFG, and RWQCB, and the conditions from those permits will be included in the final design, construction, and operation of the project. Similarly, it is expected that other cumulative projects in the RSA that impact waters would also include appropriate

avoidance, minimization, mitigation, and compensation measures in those individual projects to address the permanent and temporary impacts on those projects.

Additional measures for Alternatives 1 and 2 and their design variations, beyond those described above, are not warranted because those measures already substantively reduce or mitigate the effects of the project on jurisdictional and other waters.

3.25.4.11 Threatened and Endangered Species

Impacts of the Build Alternatives on Threatened and Endangered Species

The analysis of the potential for the project to impact threatened and endangered species is provided in the *Cumulative Impacts Analysis Report*. Species observed or potentially occurring in the BSA for Alternatives 1 and 2 and their design variations, including Alternative 2f, that are protected under FESA and/or CESA are:

- **Braunton's milk-vetch:** Federal endangered; not observed in the project disturbance limits but critical habitat outside the project disturbance limits could experience indirect impacts;
- **Least Bell's vireo:** Federal and California endangered; observed in the BSA during the 2008 surveys;
- **Coastal California gnatcatcher:** Federal threatened; observed in the BSA during the 2008 surveys; and
- **Stephens' kangaroo rat:** Federal endangered, State threatened, fully covered under the Western Riverside County MSHCP; no suitable habitat in the BSA in Orange County.

Sections 3.17.2, 3.19.2 and 3.20.2 describe other special-interest plant and animal species potentially occurring in the BSA and in the three natural communities in the BSA.

The impacts of Alternatives 1 and 2 and their design variations to the four threatened and endangered species and the other special-interest species would include removal of individual plants, critical habitat, individual animals/birds, and/or indirect effects resulting in degradation of habitat as described in Sections 3.17.3, 3.19.3, 3.20.3, and 3.21.3.

Impacts of the Other Cumulative Projects on Threatened and Endangered Species

As shown in Tables 3.25.1 and 3.25.2, quantified information on the impacts of many of the other cumulative projects to threatened and endangered species and other special-status species is not available. However, based on the types and locations of these cumulative projects in the RSA, it is reasonable to assume they would result in the loss of limited amounts of threatened and endangered species and other special-status species because those species are themselves limited in this area. Past transportation and land use projects in the RSA, including historical agricultural and grazing activities, have resulted in a substantial reduction in the total amounts of habitat available for threatened and endangered species and other special-status species in northeast Orange County and western Riverside County. As a result, the cumulative past, present, and future projects in the RSA have contributed and would continue to contribute to a cumulative adverse impact on threatened and endangered species and other special-status species and their potential habitat.

Potential for Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects on Threatened and Endangered Species

As summarized in Section 3.21.3, Alternatives 1 and 2 and their design variations, including Alternative 2f, would potentially result in permanent and/or temporary impacts on threatened and endangered species and other special-interest species. Some of the other cumulative projects, because they are in the same geographic area, may also result in the permanent and/or temporary impacts to threatened and endangered species and other special-interest species in the RSA. As a result, Alternatives 1 and 2 and their design variations are anticipated to contribute incrementally to cumulative impacts on threatened and endangered species and other special-interest species in the RSA.

Potential Mitigation for Project and Cumulative Impacts on Threatened and Endangered Species

The project is a covered project in the Western Riverside County MSHCP. In addition, as discussed in Section 3.21.4, substantial avoidance, minimization, mitigation, and compensation measures are included in Alternatives 1 and 2 and their design variations to address the permanent and temporary project impacts on threatened and endangered species and other special-interest species. Similarly, it is expected that other cumulative projects in the area that impact threatened and endangered species and other special-interest species would also include appropriate avoidance, minimization, mitigation, and compensation measures to address the

permanent and temporary impacts on those projects. Some of the other cumulative projects may also be covered projects under the Western Riverside County MSHCP.

Additional measures for Alternatives 1 and 2 and their design variations, beyond those described above, are not warranted because those measures already substantively reduce or mitigate the effects of the project on threatened and endangered species and other special interest species.

3.25.4.12 Invasive Species

Impacts of the Build Alternatives Related to Invasive Species

The analysis of the potential for the project to result in impacts related to invasive species is provided in the *Cumulative Impacts Analysis Report*. That analysis indicates that 34 exotic plants in the Cal-IPC California Invasive Plant Inventory were identified in the BSA. Of those, there are 5 with an overall high rating, 16 with a moderate rating, and 13 with a limited rating. Invasive species that have severe ecological effects are given a high rating. The species with high ratings observed in the BSA are sweet fennel (*Foeniculum vulgare*), yellow star-thistle (*Centaurea solstitialis*), Mediterranean tamarisk (*Tamarix ramosissima*), giant reed (*Arundo donax*), and foxtail chess (*Bromus madritensis* ssp. *rubens*). The potential for Alternatives 1 and 2 to result in impacts related to invasive species would be partially mitigated based on the development and implementation of a detailed Weed Abatement Program that would be developed in compliance with EO 13112 during final design, would be implemented at the initiation of construction, and would end approximately 3 years after project operations are initiated, as required in Measure IS-1 provided in Section 3.22, Invasive Species. The primary activities and requirements that will be included in the Weed Abatement Program are summarized in Measure IS-1.

Impacts of the Other Cumulative Projects Related to Invasive Species

Because some of the other cumulative projects are near areas of natural plant communities or resources that provide protection to natural plant communities in the RSA, such as CHSP and CNF, those projects would potentially result in impacts related to invasive species. The number of potential invasive species of concern could be substantial, with the 34 exotic plants identified in the BSA by the Cal-IPC California Invasive Plant Inventory, and potentially more species in other parts of the RSA near the cumulative projects.

Potential for Cumulative Impacts of the Build Alternatives and the Other Cumulative Projects Related to Invasive Species

As discussed above, Alternatives 1 and 2 and their design variations, including Alternative 2f, would potentially result in impacts related to invasive species. Some of the other cumulative projects may also result in impacts related to invasive species in the RSA. As a result, Alternatives 1 and 2 and their design variations would contribute incrementally to cumulative impacts related to invasive species in the RSA in northeast Orange County and western Riverside County.

Potential Mitigation for Project and Cumulative Impacts Related to Invasive Species

The potential for the Build Alternatives to result in impacts related to invasive species will be partially mitigated based on the development and implementation of a detailed weed abatement program. In addition, after construction, impacted areas adjacent to native vegetation will be revegetated with plant species approved by the Department Biologist that are native to the vicinity. Similarly, it is expected that other cumulative projects in the RSA that may result in impacts related to invasive species would also include appropriate measures in those individual projects to address the potential impacts of those projects related to invasive species.

Additional measures for Alternatives 1 and 2 and their design variations, beyond those described above, are not warranted because those measures already substantively reduce or mitigate the effects of the project related to invasive species. However, there may be opportunities for the measures for the project to be integrated with measures from other projects to address invasive species on a larger scale. For example, invasive species removal in the Santa Ana River may be an appropriate measure for multiple projects, and combining those efforts could potentially result in more effective removal of invasive species than when conducted on a project-by-project basis.