

**Final
Natural Environment Study (Minimal Impacts) for the
PROPOSED INTERSTATE 5 HOV LANE IMPROVEMENTS
(SR-55 TO SR-57) PROJECT**



12-ORA-5-30.20/34.20

12-0C8900

September 2013



Final Natural Environment Study

Minimal Impacts

I-5 High Occupancy Vehicle Lanes Improvements Project (SR-55 and SR-57)
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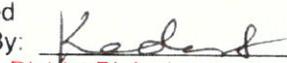
September 2013

STATE OF CALIFORNIA
Department of Transportation
ORANGE COUNTY TRANSPORTATION AUTHORITY

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1. Summary

The Orange County Transportation Authority (OCTA), in cooperation with the California Department of Transportation, District 12 (Caltrans), is proposing improvements to Interstate 5 (I-5) between State Route 55 (SR-55) and State Route 57 (SR-57), within the cities of Tustin, Santa Ana, and Orange, in Orange County, California. This report discusses the environmental setting and the biological resources considered to be present within the proposed project's direct limits of disturbance, as well as within the project's Biological Study Area (BSA). The BSA is defined as a 500-foot buffer area extending out from the edge of the Caltrans' right-of-way (ROW), which is examined in order to address potential indirect effects associated with the proposed project (see Figure 1).

No species or habitats of concern are known or suspected to occur within the BSA for the project. As would be expected in a completely urban setting, there are currently no native plant communities present within the BSA, or habitats that would be suitable for the majority of regional wildlife species. With the inclusion of avoidance and minimization measures (Section 6), potential adverse effects from the proposed project on biological resources are expected to be minimal.

2. Purpose and Need

Purpose

- To improve the operational characteristics of the high occupancy vehicle (HOV) facility on I-5 from north of SR-55 to south of SR-57.
- To improve operations at the bottleneck in the southbound (SB) general-purpose lanes between Fourth Street and SR-55.
- Add capacity to decrease congestion and travel delay.

Need

- The current one-lane HOV facility (in each direction) of the I-5 has insufficient capacity to accommodate existing and projected travel demands.
- Insufficient weaving lengths between ramps at First Street, Fourth Street and Newport Avenue, create congestion/bottlenecks contributing to decreased level of service (LOS) within the limits.

3. Introduction

The primary purpose of the proposed project is to improve traffic operations and reduce congestion on I-5 from north of SR-55 to south of SR-57. This will improve the safe and efficient local and regional movement of people and goods while minimizing environmental and community impacts. I-5 is the primary freeway route connecting Los Angeles, Orange, and San Diego counties. The project would extend along I-5 for approximately 4 miles through the urban core of Orange County. The land uses adjacent to the project include high, medium, and low density residential, mobile home park, professional and administration offices, general commercial, industrial, open space (urban parks), and general commercial development. In Orange County, I-5 continues to experience significant traffic, making the proposed project integral to the local community and the region.

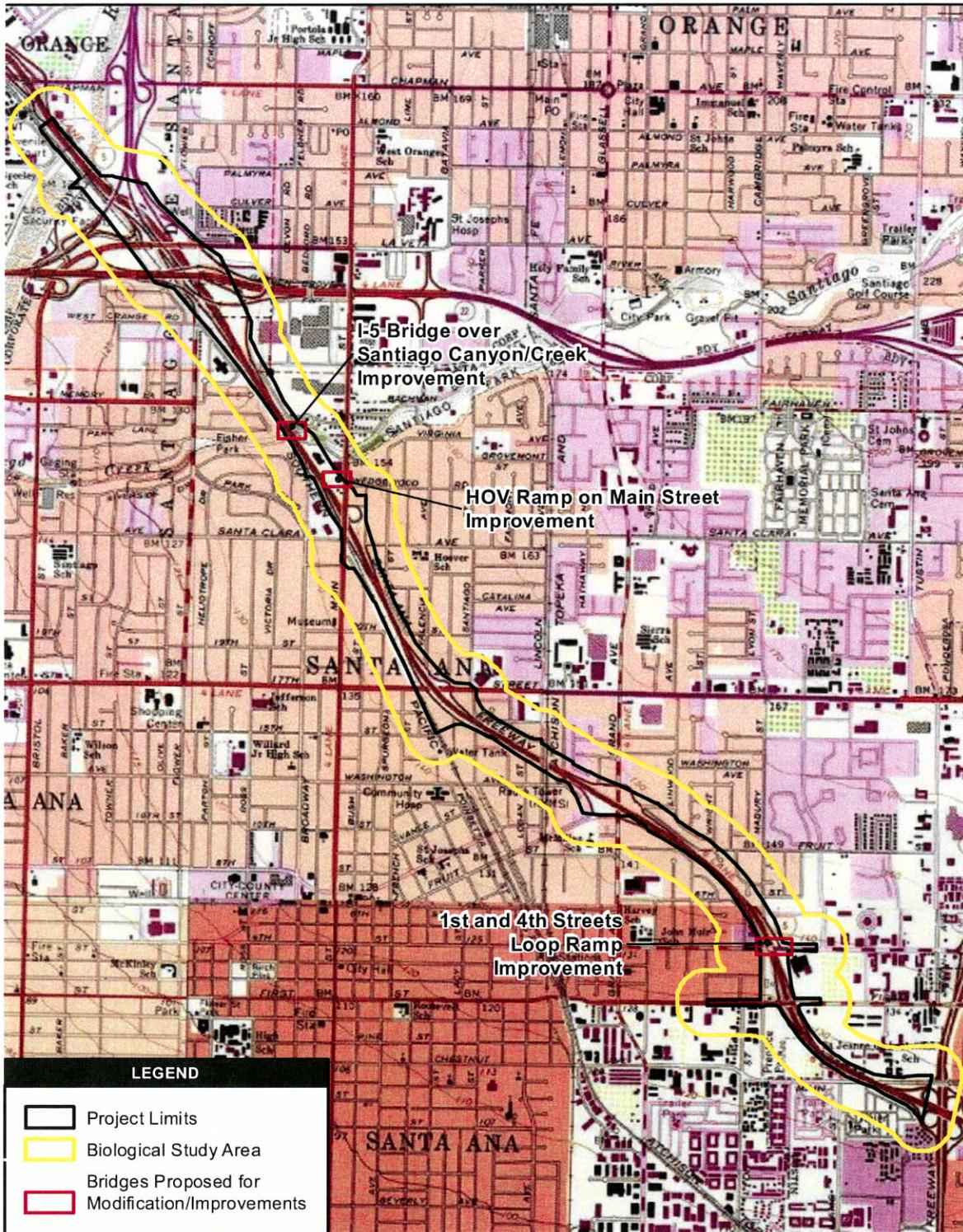


Figure 1
Biological Study Area

The proposed project is designed to address the following issues:

- Congestion and travel delay in the high occupancy vehicle (HOV) lanes within the project limits.
- Congestion in the SB general-purpose lanes between 4th Street and SR-55.

The traffic congestion results in substantial motorist delay, reduced traffic circulation and level of service (LOS), and increased air pollution from idling vehicles. The proposed improvements would provide additional HOV capacity in both I-5 directions, which would reduce traffic congestion in the HOV and general-purpose lanes within the project segment. I-5 ramp improvements would improve traffic operations in the general-purpose lanes of the project segment. In addition, improvements to the 1st Street Entrance ramp to SB I-5 is proposed to improve operations in the general-purpose lanes. Three bridges are proposed for operational improvements: Santiago Canyon/Creek, HOV drop ramp on Main Street, and the 1st/4th Street loop ramp. These three crossings are either part of I-5 main lanes or span I-5 and they provided local roadway access, within the BSA. All proposed improvements would be constructed within Caltrans' existing ROW limits. In addition, temporary construction-related activities (staging areas and easements) would also be located within Caltrans' ROW limits. The following are proposed project-related improvements that would be consistent across both of the proposed build alternatives along with the design options:

- Slight adjustments to 12 entrance/exit ramp gore areas adjusted to accommodate the HOV widening.
- Reconstruction or new construction of retaining walls to accommodate freeway widening and ramp reconstruction.
- Closure of HOV barrier gaps and relocation of existing HOV concrete barriers in specific areas.
- Relocation of existing center median concrete barriers at various locations to facilitate the HOV lane additions.
- Relocation of existing drainage inlets along the existing concrete barriers.
- Relocation of overhead sign structures to allow freeway widening and install new overhead sign structures that tailor the two HOV build alternatives.

All proposed improvements, including the two build alternatives, along with the design options, would be constructed within Caltrans' existing ROW limits. Temporary construction-related activities (staging areas and easements) would also be located within Caltrans' ROW limits.

4. Study Methods

The California Natural Diversity Database (CNDDDB 2011) was queried to identify occurrences of listed plant and animal species within the vicinity of the proposed project. Due to its length and location, the project crosses portions of three U.S. Geological Survey (USGS) Quadrangle maps (Orange, Tustin, and Anaheim). The Appendix in Section 9 summarizes the results of the CNDDDB data search. In addition, a letter was submitted to the U.S. Fish and Wildlife Service (USFWS), in March 2012, which requested a listing of federally endangered, threatened, and proposed species and critical habitats occurring in the vicinity of the proposed project.

AECOM biologist Doug Willick conducted site visits to inspect select areas within the BSA that may potentially support native plant communities or other biological resources. Mr. Willick visited the Santiago Creek crossing on September 12, 2011, and the Santa Ana River crossing on May 23, 2012. These areas were considered to have the greatest potential for biological resources to be present within the

BSA, along with two parks that lie within the BSA. Detailed aerial imagery of the entire project footprint was also examined.

No jurisdictional or wetland delineations were conducted at the Santiago Creek or Santa Ana River crossings, or along any other portions of the proposed project. However, as all proposed improvements would be constructed within Caltrans' existing ROW limits, no impacts to drainages would be expected throughout the project. At the Santa Ana River and the Santiago Creek crossings, all construction activity will be limited to the bridge surfaces, and no widening will occur to the existing bridge structures where they cross the drainages. No work activities will occur in the bed, bank, or channel of these drainage crossings.

To address the potential presence of bats in the project site, a focused survey was conducted by independent bat biologist Stephanie Remington. Ms. Remington, and up to eight assistants, conducted a day-time inspection of the bridge structures over Santiago Creek on July 23, 2012, and a night-time survey was conducted of the same location on July 25. During the night survey, eight ultrasonic bat detectors were deployed to record and identify bat calls. The bat survey report is provided as an attachment (Attachment 1) to this document. In addition, using Google Maps street view, Ms. Remington viewed the HOV drop ramp on Main Street and the 1st/4th Street loop-ramp structures to determine if they could potentially serve as bat roosting habitat. Due to safety considerations, it was not possible to physically examine these structures. The corresponding letter report summarizing this evaluation is provided as Attachment 2 to this document along with a figure illustrating the structure locations within the project corridor.

5. Environmental Setting

5.1 Description of the Existing Biological and Physical Conditions

The majority of the ROW within the proposed project consists of the existing I-5 corridor, including freeway lanes, retaining and sound walls, median strips and other barriers, on-ramps and off-ramps, two freeway interchange systems (with SR-55 and SR-57), connector lanes, arterial roadway under- and over-crossings, and various infrastructure associated with I-5. These developed areas do not support any vegetation or provide resources that would be of value to wildlife in general.

Within portions of the ROW, however, are limited areas that support vegetation. These areas include broader sections of freeway shoulders, as well as the open areas adjacent to on- and off-ramps. These areas are typically landscaped with a variety of ornamental tree, shrub, and ground cover plantings within the ROW. These plantings are typical of landscaping along most Caltrans' ROWs in southern California. Although this vegetation may on occasion provide cover or foraging opportunities for a very limited variety of wildlife species, species would generally be restricted to those that have adapted to human-altered and highly-disturbed environments. These areas do not support any native plant communities, have relatively minor vegetative structure and diversity, and are routinely pruned and otherwise maintained. In addition, these areas are immediately adjacent to substantial disturbances from noise and motion effects associated with vehicular traffic. These areas do not provide habitat that would support a diverse assemblage of native wildlife species or that would be considered unique habitat for special-status species. Therefore, the vegetation within the project's ROW is not considered to have substantial biological resource value.

Areas within the 500-foot buffer BSA support more extensive and diverse assortment of vegetation. However, these areas are also characterized by ornamental vegetation, such as that typically associated with urban, commercial, and residential landscaping. Due to conditions similar to those described above,

plantings within the 500-foot buffer area provide minimal habitat value, especially for native plant or wildlife species.

The I-5 corridor crosses over Santiago Creek in the City of Santa Ana, approximately 1 mile southeast of the I-5 junction with SR-57. Santiago Creek is one of the more substantial tributaries to the Orange County portion of the Santa Ana River, draining the west flank of the Santa Ana Mountains. The upper reaches of Santiago Creek have little to no flood control improvements and are bordered by predominately native plant communities over a relatively substantial portion of the length of the creek. However, Santiago Creek becomes channelized, with minimal to no remaining native habitat value along its banks, at approximately 5 to 6 miles upstream (i.e., northeast) of its crossing by the proposed project. Santiago Creek remains channelized through the BSA (e.g., via concrete retaining walls or rock revetment), until its confluence with the Santa Ana River, a little over 1 mile downstream (i.e., west) of the I-5 crossing.

Where it is crossed by the I-5 corridor, Santiago Creek varies from approximately 75 to 100 feet in width, at the top of the banks. The creek remains dry for most of the year, although it can receive high flows during substantial winter storm events. Due to channelization, annual winter scouring by storm flows, and occasional flood control maintenance, minimal vegetation generally occurs in the creek bed and banks. What vegetation may be present is generally dominated by nonnative species, although some native species can be present as well. A public bike trail follows the south side of Santiago Creek, beginning at the I-5 corridor and extending east through the BSA. This trail continues into Santiago Park, a City of Santa Ana facility that begins at Main Street just 100 feet east of the BSA boundary. Native trees and shrubs have been planted along portions of the bike trail, including the portion that lies within the BSA.

At the northern terminus of the proposed project, I-5 crosses the Santa Ana River in the City of Orange, about 0.5 mile north of the junction with SR-22. The Santa Ana River is the most substantial drainage in Orange County, and in the BSA it is approximately 300 to 350 feet wide at the top of the banks. However, the Santa Ana River is channelized through most of Orange County, including the stretch from several miles upstream of I-5 to its mouth. Due to the flood control improvements, and urbanization immediately bordering the Santa Ana River in this area, there are no native plant communities associated with the river within the BSA. Through the BSA, the Santa Ana River is channelized, with concrete retaining walls utilized around storm drain outlets. Public bike trails line both sides of the river in this area. The Santa Ana River bottom within the BSA is sandy.

The Santa Ana River remains dry for most of the year in this portion of Orange County, although it often receives high flows during substantial storm events. Due to channelization, annual winter scouring during storm flows, and occasional flood control maintenance, very minimal vegetation is present within the bed of the Santa Ana River. Some landscaping occurs along the bike trail, although in general the BSA is very open, with minimal vegetation where it crosses over the Santa Ana River.

No jurisdictional delineations were conducted for this project, although Santiago Creek and the Santa Ana River are considered “waters of the U.S.,” as defined by the federal Clean Water Act.

Two parks occur within the proposed project’s BSA; both are well vegetated with tree and shrub plantings. In the City of Santa Ana, near the northwestern portion of the BSA, William W. Eldridge Park lies entirely within the BSA. This small, linear park is bordered immediately on the east by I-5 and a residential area on the west. The park is landscaped with a variety of ornamental trees and shrubs that are typical of those planted in an urban park. At the southeastern end of the proposed project, the Prentice Park/Santa Ana Zoo complex lies partially within the BSA. This triangular-shaped park is bordered by I-

5 on the east, Main Street on the south, and Elk Lane on the west. It has been planted with a wide variety of ornamental and exotic vegetation. No native plant communities are associated with this site.

5.2 Regional Species and Habitats of Concern

No listed species of concern are known or suspected to occur within the BSA for the proposed project. The Appendix in Section 9 includes all listed species that appear on the CNDDDB report for the three quadrangles described in Section 3, Study Methods. Included in the appendix are one plant and five wildlife species, the latter includes one invertebrate, one fish, two birds, and one mammal species. None of the six species, however, were found to occur within approximately 5 miles of the proposed project, and none were specifically associated with Santiago Creek. In addition, vegetative communities and site conditions currently present within the proposed project were not suitable for any of the species that appear on the CNDDDB query. Following a formal request for information concerning listed species, the USFWS responded they were unaware of any federally listed species in the vicinity of the proposed project. The USFWS also confirmed that there was no critical habitat in the vicinity of the proposed project.

A small population of least Bell's vireo (*Vireo bellii pusillus*) (LBV) is known to breed along the upper portions of Santiago Creek. These portions occur approximately 8 miles upstream of the proposed project, where extensive and well-developed willow riparian forest habitat is present. Although some riparian tree plantings are found along Santiago Creek in the BSA, as stated in Appendix in Section 9, no typical breeding habitat for LBV is present. This portion of the creek does not support a functioning riparian habitat.

All vegetation within the BSA for the proposed project is associated with landscape and ornamental plantings. Although some native trees and shrubs are present along the periphery of Santiago Creek, most appear to have been planted and are intermixed with a wide variety of nonnative species. No local or regional habitats of concern are present within the BSA.

A few species of bats that occur in southern California are known to use bridges for roosting. Some of these species are California Mammal Species of Special Concern, per the California Department of Fish and Wildlife (CDFW), such as pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*).

5.3 Vegetation

All vegetation (e.g., trees, shrubs, and ground cover) present within the proposed project and BSA is characteristic of landscaping and ornamental plantings associated with Caltrans' ROWs and urban/residential settings. As described in Sections 4.1 and 4.2 above, a few native trees and shrubs were noted within the BSA (i.e., along the Santiago Creek bike trail on the south side of Santiago Creek, and east of I-5). Examples of species that were identified included Fremont cottonwood (*Populus fremonti*), coast live oak (*Quercus agrifolia*), California sycamore (*Platanus racemosa*), toyon (*Heteromeles arbutifolia*), and Mexican elderberry (*Sambucus mexicanus*). A few scattered mulefat (*Baccharis salicifolia*) shrubs were observed in the creek bed itself, mixed in with a wide variety of nonnative, weedy annuals. Due presumably to periodic scour events and flood control maintenance, however, vegetation in the creek bottom is highly disturbed and minimal in extent and maturity.

A variety of trees and shrubs narrowly border Santiago Creek, extending west from I-5, with backyards of residential properties extending down to the upper bank of the creek. Although a few native trees (primarily Fremont cottonwoods) were noted here, the majority of the vegetation consists of ornamental,

nonnative plantings or colonizing species that have spread from the surrounding residential areas. Due to the predominance of nonnative trees and shrubs and the degree of disturbance within the creek bed itself, the vegetation along Santiago Creek west of I-5 would not be considered a native riparian plant community.

Along the Santa Ana River, the BSA is generally very open and largely unvegetated. Some landscaped areas exist along the bike trail, although these are primarily restricted to the west side of the Santa Ana River, north of I-5. These plantings include both native and nonnative species, such as coast live oak, Peruvian pepper (*Shinus molle*) and a variety of scrub species, such as white sage (*Salvia apiana*) and California buckwheat (*Eriogonum fasciculatum*). These plantings are sparse, very limited in extent, and adjacent to areas of existing disturbance. Though native plantings are present, they do not constitute native plant communities.

5.4 Animals

Native wildlife is expected to be minimal within the project site, due to the lack of native plant communities, the degree of disturbance, and the minimal habitat value. In some portions of the BSA, such as along Santiago Creek, the Santa Ana River, or in the two parks, wildlife that may occur is expected to be those species that typically adapt to human-altered landscapes and urban/residential environments. Examples of native wildlife that would likely be adapted to conditions present within the BSA include western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinata*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), western scrub-jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), California ground squirrel (*Otospermophilus beecheyi*), and Audubon's cottontail (*Sylvilagus audubonii*).

Various bat species are known to roost in artificial structures, such as bridges, and therefore a focused bat survey was conducted at the Santiago Creek crossing. Four bat species were detected foraging in the vicinity of the bridges at Santiago Creek, including western red bat (*Lasiurus blossevilli*), big brown bat (*Eptesicus fuscus*), Yuma myotis (*Myotis yumanensis*) and Mexican free-tailed bat (*Tadarida brasillensis*). No evidence was found, however, of any day-roosting bats in the bridges at this location. It is possible that a few bats (for three of the four species detected during the survey) night-roost in or on the surveyed bridges, but there was no evidence of the presence of any large colony of day-roosting or night-roosting bats, or of any maternity roosts. The Main Street HOV drop ramp and the 1st/4th Street loop ramp were noted to contain weep holes and expansion joints. As no physical examination of these structures could be conducted (due to safety considerations), the status of bats potentially roosting at these sites could not be determined.

6. Project Impacts

The following discussion analyzes the potential impacts of the proposed project on biological resources within the BSA. This analysis treats all build alternatives and associated design options as comparable in their potential for impacts on biological resources. Potential impacts are based on the limits of direct disturbance, regardless of build alternative or design option, being confined to the Caltrans ROW limits. The potential indirect effects extending into the BSA are also expected to be comparable between all build alternatives and design options.

Although direct impacts may occur to some vegetation within the ROW, all impacts would be limited to landscape plantings. There would be no impacts to any vegetation outside of the ROW. The proposed

project is not expected to have any direct or indirect impacts on native plant communities, as none are known to be present within the BSA. No habitats of concern are present within the BSA and no listed plant or animal species are expected to be present within the BSA. Therefore, no impacts are expected to these resources.

The proposed project may potentially impact common wildlife species, although these impacts are expected to be minimal, due to the absence of any native or high-quality wildlife habitat within the BSA and no construction activities within Santiago Creek or the Santa Ana River. The highest potential for project-related impacts on wildlife would be expected at the Santiago Creek crossing, where construction noise and activity may result in temporary, indirect disturbance to wildlife. These disturbances, however, would be considered negligible in comparison to the existing conditions (e.g., ambient noise levels) typically present within the BSA. Wildlife species occurring within the BSA would be expected to have a relatively high tolerance to noise disturbance, due to prevailing conditions within the area. Potential impacts to native wildlife are anticipated to be extremely minimal due to the absence of any native plant communities in the BSA.

Depending on the time period when construction activities take place, direct or indirect impacts may occur on active nests of nesting birds. Per the federal Migratory Bird Treaty Act of 1918, and the California Fish and Game Code (Sections 3503 and 3513), it is unlawful to harm or kill native North American birds, including the destruction of their active nests (i.e., those containing eggs or chicks). Active nests could potentially be impacted during removal of shrubs and trees within the disturbance limits or during the demolition of structures (e.g., bridges). To avoid potential impacts on active nests, a measure addressing nest avoidance is provided in Section 6.

As several southern California bat species are known to roost in a variety of artificial structures, including bridges, and individuals from three of these species were recorded during the bat survey, the proposed project has the potential for direct or indirect impacts on roosting bats. Direct impacts may occur as a result of bridge demolition, such as is proposed for the bridges associated with the northbound exit ramp to Mabury/1st Street and the Main Street HOV drop ramp. If bats are found roosting in any bridges proposed for demolition, or where penetration or demolition of cavities within the bridge would occur, mitigation measures will be necessary to avoid direct mortality of bats. Indirect impacts on bats may occur from noise, lights, and shaking, when construction activities take place on bridge surfaces. However, these indirect effects would be temporary and minimal, and would not require mitigation.

The proposed project would not result in any impacts to wetlands, or waters of the United States, such as would potentially be associated with Santiago Creek or the Santa Ana River. This is because all construction activity will be limited to the bridge surfaces, and no widening will occur to the existing bridge structures where they cross Santiago Creek or the Santa Ana River. No work activities will occur in the bed, bank, or channel of these drainage crossings.

7. Mitigation Measures

The following measures are provided to avoid and reduce potential impacts on biological resources that may be associated with the proposed project.

- To avoid disturbance and potential impacts to active bird nests, any removal of existing shrubs and trees required by the proposed project should be conducted outside the nesting season. The nesting season for this project is defined as February 15 through August 31. If vegetation removal is necessary during the nesting season, or if substantial work activities are planned to occur immediately adjacent to vegetation where active nests may be present (potentially resulting

in substantial indirect impacts to nests), a qualified avian biologist will conduct nesting bird surveys prior to the onset of these activities. Nesting bird surveys will be conducted no more than 7 days prior to the onset of work activities that would potentially impact active nests. If active nests are found within the proposed project's direct limits of disturbance, or in areas where nests may potentially incur substantial indirect effects (e.g., nests immediately adjacent to areas where work activity is planned), a protection buffer will be temporarily established around the nest. Work activity will be excluded from within the nest buffer. The size of the nest buffer will be determined based on the species of bird involved, proximity to work activity, and potential disturbance buffers already present. Other factors will also be considered, such as acclimation to existing noise and activity levels, and type of work activity expected to occur by the nest. When the nest is determined to be no longer active (e.g., the young are fledged or the nest has failed due to predation, abandonment, etc.), the nest buffer will be removed. To avoid indirect impacts from work activities during the nesting season, monitoring for nesting bird activity immediately adjacent to the ROW (in areas where suitable vegetation is present) will be continued on a weekly basis. This would be most applicable to specific locations where no work activities had been occurring, and thus where active nests would have a greater potential to be present.

- A qualified biologist will conduct a bat assessment survey no more than 1 year prior to the beginning of project construction, to assess the potential for use of the project area by maternity, day- or night-roosting bats. The survey shall include a combination of suitable habitat inspection, exit counting, and acoustic surveys.
- If any bridge structures or sections of bridges are proposed to be demolished or penetrated by construction activities, a survey will be conducted within 2 weeks of the demolition or disturbance. The survey will evaluate the current status of bats potentially occupying the bridges proposed to be disturbed. If the bridges are determined to be occupied, procedures will be taken, if during the appropriate season, to immediately exclude bats. A bat exclusion typically involves the installation of one-way doors appropriate to the structure and surrounding conditions of the roost. The one-way doors allow the bats to leave, but prevent them from returning to the roost sites. This procedure will be overseen by a bat biologist with experience in this process. Exclusion procedures must be postponed, however, if it is determined that a maternity roost is present. Bat maternity season occurs from approximately April through August. If an active maternity colony is identified, the exclusion procedure may not be conducted until September 1 to avoid trapping adults or flightless young inside.
- Dust generated from project-related activities will be controlled on a daily basis.
- Excess materials, debris, and trash will be controlled within the project work areas and removed as soon as possible.
- A post-construction landscape planting plan will be reviewed by a biologist, before installation of any plantings, to ensure that no invasive plant material is included in the planting plan.

8. Permits Required

The proposed project would not result in any impacts to wetlands or waters of the United States, such as those associated with the Santiago Creek and Santa Ana River crossings. Therefore, regulatory permits such as a Section 404 Permit (from the U.S. Army Corps of Engineers), a Section 401 Water Quality Certification (from the Regional Water Quality Control Board), and a 1602 Streambed Alteration Agreement (from CDFW) would not be required.

9. References

California Natural Diversity Database (CNDDB). 2011. Biogeographic Data Branch, California Department of Fish and Game. Commercial Version, dated September 3, 2011. Report printed on September 13, 2011. Sacramento, Ca.

10. Appendix

Appendix. California Natural Diversity Database Results for the OCTA I-5 HOV Project Area State and Federally Listed Plant and Wildlife Species ¹			
Scientific Name-Common Name	Sensitivity Status ²	General Habitat Description	Potential to Occur within the Project's BSA
PLANTS			
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> Santa Ana River Woollystar	CDFW: Endangered USFWS: Endangered	Open scrub habitats, in sandy soils within river floodplains and alluvial deposits, in southern California.	Not expected due to lack of suitable habitat.
<i>Nasturtium gambelii</i> Gambel's Water Cress	CDFW: Threatened USFWS: Endangered	Freshwater and brackish marshes at the margins of lakes and streams. Possibly extirpated from the Orange County area.	Not expected due to lack of suitable habitat and apparent extirpation from the region.
INVERTEBRATES			
<i>Branchinecta sandiegonensis</i> San Diego Fairy Shrimp	USFWS: Endangered	Vernal pools, between Santa Barbara County and northwest Baja California.	Not expected due to lack of suitable habitat.
FISH			
<i>Catostomus santaanae</i> Santa Ana Sucker	USFWS: Threatened	Streams and rivers, with sand, cobble, and boulder substrates. Primarily restricted to a few river systems in southern California,	Not expected due to lack of suitable habitat.
BIRDS			
<i>Polioptila californica californica</i> Coastal California Gnatcatcher	USFWS: Threatened	Obligate resident of coastal sage scrub, from Ventura County south to northwest Baja California.	Not expected due to lack of suitable habitat
<i>Vireo bellii pusillus</i> Least Bell's Vireo	CDFW: Endangered USFWS: Endangered	Summer resident in willow-dominated riparian and floodplain communities; requires a well-developed understory of mulefat, young willows, etc., for nest concealment. Breeding range primarily includes southwest California and northwest Baja California.	Not expected due to lack of suitable habitat. Although some native riparian trees are present in the BSA, along Santiago Creek, these have been planted along a bike trail. The vegetation is unsuitable for this species due to minimal native riparian vegetation, vegetation not associated with the creek bed, and the lack of a suitable understory component required by this species.

Appendix. California Natural Diversity Database Results for the OCTA I-5 HOV Project Area State and Federally Listed Plant and Wildlife Species ¹			
Scientific Name-Common Name	Sensitivity Status ²	General Habitat Description	Potential to Occur within the Project's BSA
MAMMALS			
<i>Perognathus longemembris pacificus</i> Pacific Pocket Mouse	USFWS: Endangered	Restricted to narrow coastal plains, with fine alluvial sands, historically from Los Angeles County to the Mexican border. Currently only known from a few relatively small sites in southern California.	Not expected due to lack of suitable habitat and noncoastal location.
¹ Source: U.S. Fish and Wildlife Service; California Natural Diversity Data Base query, for the Anaheim, Orange and Tustin Quadrangles. ² Abbreviations CDFW: California Department of Fish and Wildlife USFWS: U.S. Fish and Wildlife Service			

Attachment 1

Bat Survey

Stephanie Remington

P.O. Box 12383 • Costa Mesa, CA 92627 • (949) 233-0765 • stremington@earthlink.net

2 August 2012

AECOM

Attn: Anne Pietro, Senior Project Manager, Transportation
999 Town & Country Road, 4th Floor
Orange, California 92868

Dear Anne,

The methods and results of the initial site inspection and follow-up night-time bat survey of the I-5 bridge over Santiago Creek are as follows:

Initial Site Inspection

On 23 July 2012, a day-time inspection of the bridge was made to evaluate its potential for housing roosting bats and to check for bat sign. A smaller bridge and footbridge immediately to the east of the I-5 bridge were also evaluated.

The I-5 bridge contains rows of weep holes that bats are known to use for roosting habitat. None of the weep holes had noticeable accumulations of guano beneath them at the time of the site inspection.

Large quantities of human trash littered the ground beneath the weep holes over the creek and extensive human use of the bike trail on the north side of the creek left the dirt along the trail highly compacted. Both could have obscured or obliterated guano that fell below.

The other two bridges had very low potential for housing day-roosting bats, although the abutments of the footbridge contained crevices that could be used by roosting bats.

All three bridges contained appropriate habitat for night-roosting bats.

Night-time survey

On 25 July, seven observers were stationed around the I-5, and two at the other two bridges, from 20 minutes before sunset until 40 minutes after sunset. Six observers remained until three hours after sunset to search for night-roosting bats. Eight ultrasonic detectors were deployed to record bat calls.

No bats were observed emerging from the I-5 or the other two bridges. Four bat species were observed and/or recorded acoustically all forty minutes or more after sunset (a timing that indicates the bats recorded day-roosted elsewhere).

The earliest bat recorded was a foliage-roosting species (western red bat) that is not known to use bridges for roosting. The other three species detected (big brown bat, Yuma myotis, and Mexican free-tailed bat) are all known to day and night roost in bridges, but no bats were observed entering the I-5 weep holes.

It is possible that a few bats night-roosting in or on the I-5 bridge, but there is no evidence of the presence of a large colony of bats day roosting there or of large numbers of night-roosting bats.

Stephanie Remington

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Recommendations

If the entire bridge, or sections of it, will be demolished, a pre-demolition survey should be conducted within two weeks of demolition to evaluate any potential changes in occupancy. If the bridge is determined to be occupied at that time, an exclusion should be conducted immediately if it is not a maternity colony (NOTE: an exclusion of bats from weep holes will also exclude swallows, if present). An exclusion involves the installation of one-way door(s) appropriate to the structure, and surrounding conditions, of the roost. This procedure should be overseen by a bat biologist with experience in the process. Maternity season for bats occurs from approximately April through August. If a maternity colony is identified, an exclusion may not be conducted until after September 1st to avoid trapping flightless young inside.

If the area around any of the weep holes will be demolished by construction activities, those particular holes should be surveyed within two weeks prior to onset of construction. If bats are found present, the procedures described above apply.

If construction activities are localized and limited to noise, lights, and shaking, involving no penetration of cavities within the bridge, then potential impacts will likely be temporary.

Potential impacts of surface construction to night roosting bats can be avoided if construction activities are confined to the day time. If construction occurs during the night, impacts to night roosting bats are unknown. However, there is no evidence that large numbers of bats would be affected and impacts of surface construction would likely be temporary, therefore no mitigation is required unless demolition is involved and there is evidence of a maternity colony or substantial numbers of roosting bats found during the pre-demolition survey.

Summary

- There was no evidence of day roosting bats in the I-5 bridge over Santiago Creek.
- Four bat species were detected in the vicinity of the bridge (Table 1). Three of these may be night roosting in the bridge.
- Potential impacts of surface construction to night-roosting bats can be avoided by confining construction activities to the day time.
- Impacts of night-time surface construction to night roosting bats will likely be temporary and not substantial.
- Demolition of all or part of the bridge should be preceded by an additional survey two weeks prior to construction. An exclusion, if necessary, should be conducted immediately if the season is appropriate.
- Results from these surveys reflect the conditions on the date of the surveys, and cannot be extrapolated to other times of the year.
- If construction is limited to the bridge surface, and involves no demolition, no mitigation is required.

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Table 1. Bat species detected at the I-5 bridge over Santiago Creek on 25 July 2012.

Common Name	Latin Name	Know to Roost in Bridges?	Evidence of day roosting on site?	Evidence of night roosting on site?
Western red bat	<i>Lasiurus blossevillii</i>	No	No	No
Big brown bat	<i>Eptesicus fuscus</i>	Yes	No	Possibly
Yuma myotis	<i>Myotis yumanensis</i>	Yes	No	Possibly
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>	Yes	No	Possibly

Please let me know if you have any questions.

Cordially,



Stephanie Remington

Attachment 2

Bat Roosting Habitat Evaluation

Stephanie Remington

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Anne Pietro
Senior Project Manager
AECOM
999 Town and Country Road, 2nd Floor
Orange, CA 92868

18 February 2013

Dear Ms. Pietro,

Regarding the potential for bat roosting habitat at the Main Street HOV Drop Ramp and the 1st/4th Street Loop Ramp of the I-5, I have viewed these structures in Google Maps street view and assessed the structures based on their location, data and historical records from the site, bridge features, and adjacent habitats.

With respect to location, four bat species were detected last year within 500 feet of the Main Street HOV Drop Ramp (see table below). Three of those are known to roost in bridges. Historical public health records document regular reports by the public of bats near this bridge. Identification of specimens submitted to public health indicate they were primarily *Tadarida brasiliensis* (Mexican free-tailed bats), and the regularity of public encounters with individuals of this species indicates a possible maternity colony in the vicinity at some point in the past. The bridge contains weep holes and expansion joints, both of which are known to be used by bats for roosting habitat. Google Maps street view does not permit adequate resolution to examine the quality of the expansion joints for roosting habitat or evaluate whether any of the potential roost structures appeared to be in use. Santiago Creek provides good foraging habitat for bats in the immediate vicinity of this bridge. Neither the current status of the Main Street HOV Drop Ramp as a roost nor the specific location of bat colonies in its vicinity is known.

The 1st/4th Street Loop Ramp contains weep holes and is adjacent to Prentice Park and sports fields. Both parks and sports fields are known foraging habitat for bats. No data on bat occurrence exists for the immediate vicinity of this bridge.

Mexican free-tailed bats and Yuma myotis both occur throughout Orange County in urban environments. Although neither bridge appears to provide optimal roosting habitat, bats are often found roosting in high-noise, high pollution conditions in the absence of suitable alternatives. The most likely impediment to roosting in these structures would be the height of the bridges. This was difficult to determine from Google Maps, but avoiding traffic when emerging and re-entering the bridge may be problematic for bats from at least some of the openings.

When assessing impacts to bats from noise, lights, vibration, and pollution it is necessary to consider how much construction levels will exceed baseline levels to which they are accustomed and whether

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alternative situations exist nearby where bats could move, if necessary. If onsite surveys to determine occupancy are not feasible a few steps may be taken to avoid direct mortality of bats that may be roosting in the structure. To avoid direct mortality to flightless pups and hibernating bats, construction should not begin either in the maternity season (March-September) or winter (approximately November through February). Fall is the best time to begin construction. If feasible, at least one emergence survey at each bridge should be conducted prior to the onset of construction/demolition.

Please let me know if you have any questions.

Regards,

Stephanie

Common Name	Latin Name	Know to Roost in Bridges?
Western red bat	<i>Lasiurus blossevillii</i>	No
Big brown bat	<i>Eptesicus fuscus</i>	Yes
Yuma myotis	<i>Myotis yumanensis</i>	Yes
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>	Yes



Source: AECOM 2012; SCAG Land Use 2005; USGS NED 2009; Aerials Express 2010

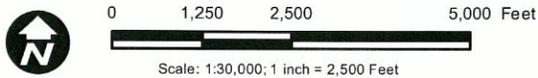


Figure 1
Biological Resources Map

Interstate 5 - SR 55 to SR 57 HOV Lane Project

Path: C:\Temp\ARNG\Fig 1_Bio Resources Map.mxd, 2/22/2013, LeeDA