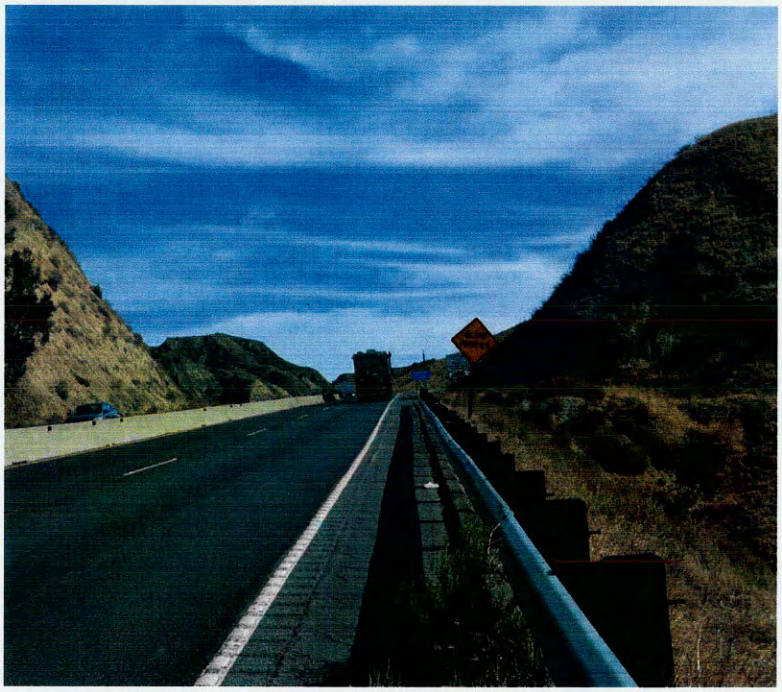
State Route 60 Truck Lanes Project

RIVERSIDE COUNTY, CALIFORNIA
DISTRICT 8 – RIV – 60 (PM 22.10 /26.50)
0N69U/0812000307

Initial Study [with Proposed Mitigated Negative Declaration]/ Environmental Assessment with Finding of No Significant Impact



Prepared by the
State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

Caltrans

June 2014

General Information about This Document

What's in this document:
The California Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), has prepared this Initial Study/Environmental Assessment (IS/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Riverside, California. The Department is the lead agency under the National Environmental Policy Act (NEPA). The Department is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document.
- Additional copies of this document and related technical studies are available for review at The Department of Transportation-District 8, 464 West 4th Street, 6th Floor, MS 823, San Bernardino CA 92401. Riverside County Transportation Commission 4080 Lemon Street, 3rd Floor, Riverside, CA 92501. This document may be downloaded at the following website http://www.dot.ca.gov/dist8/.
- We'd like to hear what you think. If you have any comments about the proposed project, please send your written comments to the Department by the deadline.
- Send comments via postal mail to:
  Kerrie Hudson, Environmental Branch Chief
  Department of Transportation, Environmental Planning
  464 West 4th Street, 6th Floor, MS 823, San Bernardino, CA 92401
- Send comments via email to: kerrie.hudson@dot.ca.gov
- Be sure to send comments by the deadline: July 16, 2014

What happens next:
After comments are received from the public and reviewing agencies, the Department, as assigned by the Federal Highway Administration (FHWA), may: (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is obtained, the Department could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Joy Sepulveda, Public Affairs, 464 West 4th Street, 6th Floor, 12th Floor, San Bernardino, CA 92401; (909) 383-4631 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

FHWA Highway ID No. #3TK04MA13

SCH#
08-RIV-60-PM 22.10/26.50
0N69U
0812000307

This project proposes to construct an eastbound truck climbing lane and westbound truck descending lane and inside and outside standard shoulders in both directions on State Route 60 (SR-60) in Riverside County between Gilman Springs Road, Post Mile (PM) 22.10 and Jack Rabbit Trail PM 26.50.

Draft INITIAL STUDY with (Proposed) Mitigated Negative Declaration/Environmental Assessment

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C)

THE STATE OF CALIFORNIA
Department of Transportation

6/12/14
Date of Approval

David Bricker
Deputy District Director
Environmental Planning
California Department of Transportation, District 8
CEQA & NEPA Lead Agency

The following persons may be contacted for more information about this document:

Kerrie Hudson,
Senior Environmental Planner
Branch Chief
Environmental Studies 'A'
Division of Environmental Planning
California Department of Transportation,
464 West 4th Street, 6th Floor, MS 823,
San Bernardino, CA 92401

SCH:

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (the Department) proposes to construct an eastbound truck climbing lane and a westbound truck descending lane, and inside and an outside standard shoulders in both directions on State Route 60 (SR-60) in Riverside County between Gilman Springs Road, Post Mile (PM) 22.10 and Jack Rabbit Trail PM 26.50.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is the Department's intent to adopt a MND for this project. This does not mean that the Department's decision regarding the project is final. This MND is subject to change based on comments received by interested agencies and the public.

The Department has prepared an Initial Study for this project, and pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on Land use, Growth, Farmland/Timberland, Community, Cumulative Impacts, Relocations, Environmental Justice, Bike, Pedestrian, Recreational, Park, Traffic and Transportation facilities.

In addition, the proposed project would have less than significant effects to Cultural, Hydrology, Floodplains, Water Quality, Stormwater Runoff, Geology/Soils/Seismic/Topography, Hazardous Waste and Materials, Noise, Construction Impacts and Air Quality/Climate Change resources.

With the following mitigation measures incorporated, the proposed project would have less than significant effect to Biological Environment, Visual/Aesthetics and Paleontology.

Biological Resources

WET-3: Permanent impacts to riparian/riverine habitat and Least Bell's Vireo (LBV) are proposed to be mitigated through purchase credits, in the form of habitat creation, from the Santa Ana Watershed Authority (SAWA) of the Riverside-Corona Resource Conservation at a 3:1 ratio for impacts to 0.184 acre of riparian habitat and 0 acre of wetlands (*i.e.*, acquire 0.552 acres) to compensate for the permanent loss of habitat. For impacts to streambed and non-wetland waters, credits will be purchased in the form of habitat enhancement, habitat creation, or a combination of habitat enhancement and habitat creation at a 2:1 ratio for impacts to 0.897 acre of streambed (*i.e.*, 1.794 acres). Please note that the 0.897 acre of streambed is inclusive of 0.713 acre of United States Army Corps of Engineers (ACOE) non-wetland waters of the US. Thus, the total mitigation to purchase for impacts to 0.184 acre of riparian habitat, 0.0 acre of wetlands, and 0.897 acre of streambed is 2.346 acres.

Draft

The proposed project will impact riparian/riverine habitat and may result in temporary indirect impacts to LBV. Although the proposed project will not avoid impacts, with the proposed design and compensation measures discussed below, the project will be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures.

WET-4: Temporary impact areas will be restored and the LBV would be expected to continue to occupy the BSA (Biological Study Area). The project will mitigate for temporary impacts through restoration and creation of onsite riparian habitat, and will also create wildlife crossings, as per the requirements of the Riverside Multi-Species Habitat Conservation Plan (MSHCP) Volume 1, Section 7, to ensure the connectivity of the landscape for various wildlife species. This will provide riparian habitat that is of equivalent or better quality to the impacted habitat and is contiguous with existing and anticipated conservation areas.

AS-2: If burrowing owls are found to be present in the BSA during subsequent pre-construction surveys, then the project-specific mitigation would be developed and authorized through consultation with the Western Riverside County Regional Conservation Authority, CDFW, and USFWS, as outlined in MSHCP Table 9.2 and Appendix D, Summary of MSHCP Species Survey Requirements.

Visual/Aesthetics:

AV-3: Cut/fill slopes will be re-vegetated using native plant materials to reduce erosion and facilitate vegetation growth.

AV-4: Trees removed as part of the project will be replaced at a ratio of 3:1 and an irrigation system will be installed to facilitate their survival.

Paleontology:

PA-1: Grading, excavation and other surface and subsurface excavation in defined areas of the proposed project have the potential to impact significant nonrenewable fossil resources. A Paleontological Mitigation Plan (PMP) shall be prepared during final project design by a qualified paleontologist. The PMP will detail monitoring and measures to be implemented in the event of paleontological discoveries. The PMP shall include, at a minimum, the following elements.

PA-7: A Paleontological Mitigation Report discussing finding and analysis will be prepared by a principal paleontologist upon completion of project earthmoving. The report will be included in the environmental project file and also submitted to the curation facility.

Draft

David Bricker
Deputy District Director
District 8
California Department of Transportation

6/12/14
Date

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Chapter 1 Proposed Project

Introduction

The Department of Transportation (Department) is the lead agency under the National Environmental Policy Act (NEPA). The Department is the lead agency under the California Environmental Quality Act (CEQA).

The Department of Transportation (Department) proposes to construct an eastbound truck climbing lane and westbound truck descending lane; along with an inside & outside standard shoulders in both directions on State Route 60 (SR-60), in Riverside County between Gilman Springs Road- Post Mile (PM) 22.10 and Jack Rabbit Trail PM 26.50. The total length of the project is 4.4 miles. Figure1 show project location and vicinity map. All work will occur within existing State Right-of-Way, and no new right-of-way will be needed at this time.

This project is included in the 2013 Federal Statewide Transportation Improvement Program (FSTIP). It is also included in the Southern California Association of Governments 2013 cost constrained Regional Transportation Improvement Program (RTIP) (Project ID#3TK04MA13).

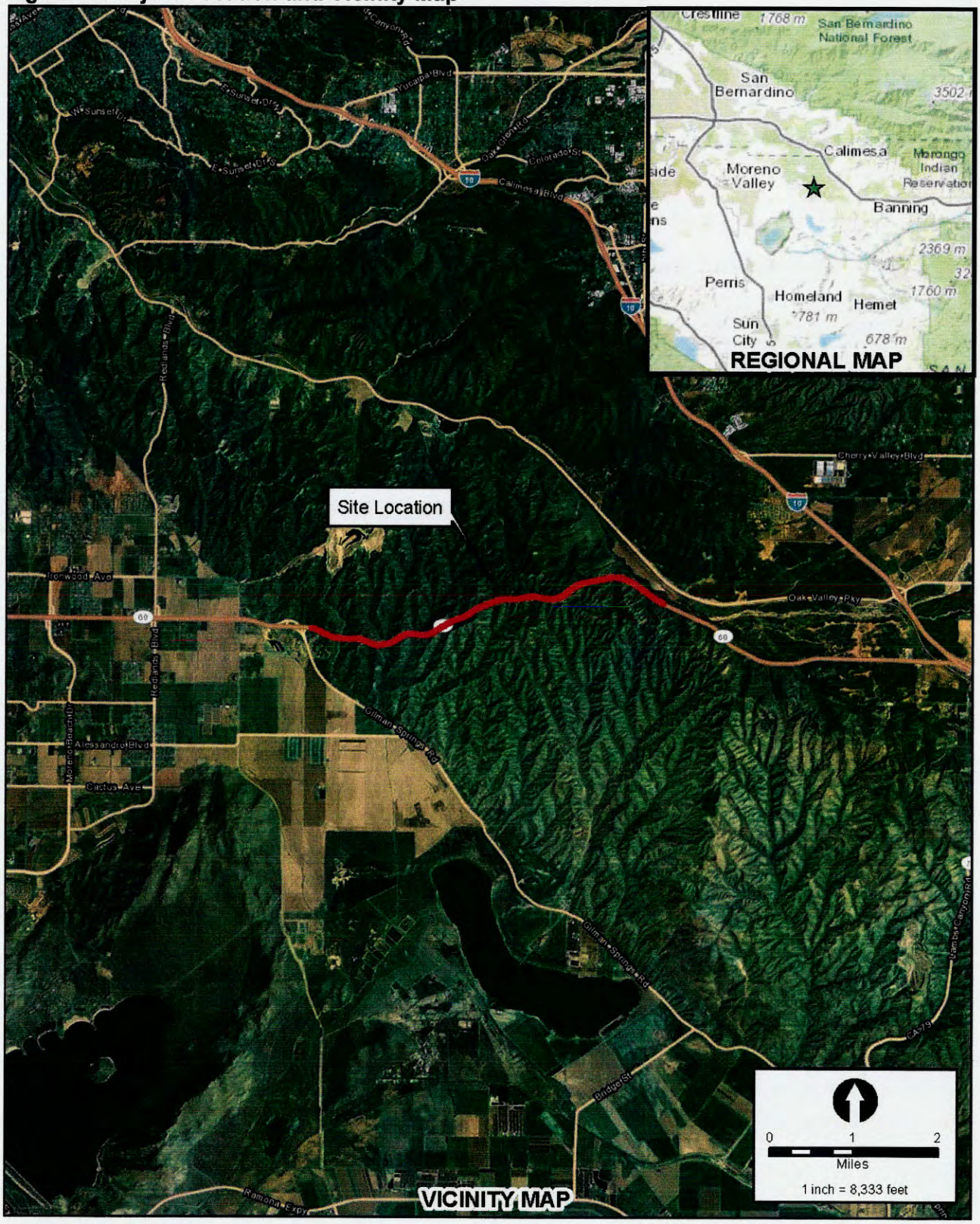
The total project capital construction cost varies between $72.5 million and $98.5 million. This is a Mixed Funded Project using Local Funds from Riverside County Transportation Commission (RCTC) as the main Project Sponsor and with participation from the Department, designated as the Lead Agency. Local Measure A (1/2 cent sales tax) funds will fund most of the capital construction project cost along with Federal and State funds drawing from Safety and Potential Roadway Rehabilitation programs under the State Highway Operation Performance Program (SHOPP). This proposed project is scheduled for delivery into construction in the 2015/16 Fiscal year.

Table 1: Proposed Funds for Proposed Project Includes State, Federal and Local Funds

	Fiscal Year Estimate							
	Prior	2012/13	2013/14	2014/15	2015/16	2016/17	Future	Total
Component	In thousands of dollars ($1,000)							
PA&ED Support	3038				2000			5038
PS&E Support				7000	1500			8500
Right-of-Way Support				350	200			550
Construction Support					9500			9500
Right-of-Way				1247	250			1497
Construction					104269			104269
Total	3038			8597	117719			129354

Project Report, May 2014

Figure 1: Project Location and Vicinity Map



Source: State Route 60 Truck Lanes Project Jurisdictional Delineation Report, August 2013

Chapter 1 Proposed Project

SR-60 is an east-west freeway traversing urbanized and rural areas of Los Angeles, San Bernardino, and Riverside Counties. The facility begins at its junction with Interstate 10 (I-10) in the City of Los Angeles in the County of Los Angeles, and ends at the junction with I-10 in the City of Beaumont in the County of Riverside. The total length of SR-60 is 70.9 miles.

SR-60 serves intraregional, interregional, and interstate travel. Section 253.1 of the California Streets and Highway Code lists SR-60 in the State Freeway and Expressway System. As part of the National Highway System (NHS), SR-60 is classified as an "other NHS route" for its entire length. "Other NHS routes" are the highways in rural and urban areas that other inter-modal transportation facility. The entire route is included in the National Network for Federal Surface Transportation Assistance Act (STAA) for Oversized Trucks.

SR-60 is classified as a Transportation Gateway of Major Statewide Significance in the Caltrans June 1998 Interregional Transportation Strategic Plan (ITSP). ITSP gateways are principal centers or transportation facilities that provide access to major state, national, or international trade and commerce, goods movement, and inter-modal transfer.

SR-60 is a major truck route. The California 2013 Annual Average Daily Truck Traffic on the State Highway System data indicates that 16 percent of the Annual Average Daily Traffic (AADT) on SR-60 was truck traffic. Additional information is contained in Table 2.

PURPOSE AND NEED

Need

The proposed project area is in mountainous terrain with numerous tight radius horizontal curves, short tangent or connecting sections, steep grades, and swift changes in elevation. The sustained uphill grade exceeds 2.9 percent. A few locations have uphill grades that exceed 6 percent. The overall change of elevation from one end of the project to the other is a little greater than 500 feet over a distance of 2.5 miles[1]. Due to the mountainous terrain and the presence of a concrete median barrier, the horizontal alignment of the roadway is also restricted with little or no existing shoulder width. This is true particularly on the left side of the travelled way where there is no inside shoulder for much of the project limits.

The vehicle mix within the project limits contains 16 percent trucks. Because of the steep grades, automobiles with trailers, trucks and buses, have difficulty maintaining a reasonable speed throughout the entire segment.

Approximately 17.9 percent of the accidents in the eastbound direction involve trucks with trailers, and 28.4 percent of accidents involve pickup/panel trucks, because of the speed differential between high-speed passenger vehicles and slow-moving trucks. Approximately 13 percent of the accidents in the eastbound direction involve trucks with trailers, and 21.3 percent of accidents involve pickup/panel trucks.

Approximately 38.8 percent of the hitting-object accidents in the eastbound direction involve vehicles striking either the median barrier on the left or the guardrail or embankment slope on the right because of the horizontal restrictions. In the westbound direction, this number was increased, with approximately 50 percent of vehicles striking either the median barrier or guardrail/embankment slope[2].

Purpose

The purpose of this project is to improve safety, reduce traffic congestion, and improve operational characteristics along this segment of SR-60. This project would improve freeway operations by providing for trucks and other slow vehicles that face challenges on this segment and increase delays. Safety problems may arise when the reduction in speed of heavy trucks exceeds 10 mph along the grade. Trucks characteristically exhibit the lowest level of hill-climbing performance of all vehicles on highways and freeways. Thus, at uphill grades of sufficient length and steepness, their speed loss may be great enough that they impede the flow of traffic, reducing the capacity of the highway to carry traffic. Truck-climbing and/or truck-descending lanes would separate the slow moving trucks from passenger vehicles. It is anticipated that truck involvement in accidents will decrease as a result.

Standard shoulders throughout the limits of the project would provide some recovery room for errant vehicles that may leave the travelled way, and would allow slow vehicles to pull over safely.

[1] Highway Design Manual Topic 204.5
[2] Traffic Accident Surveillance and Analysis System (TASAS)-Transportation System Network (TSN) Reports within the three-year period from April 1, 2008 to March 31, 2011.

Roadway Deficiencies

In its current condition, this segment of SR-60 is in need of improvements. A truck climbing lane, descending lane, and standard shoulders would improve safety and operational characteristics. Large volumes of commercial trucks traverse the segment. Slower moving trucks, without passing lanes on the long stretches, create conflict between autos and trucks. The 2040 forecasted Volume to Capacity (V/C) would improve from 1.37 for the No-Build Alternative to 0.91 for the Build Alternative 2.

Table 2: Traffic Data Information

Years	2013		2018		2040	
Alternatives	**1 (No Build)**	**2**	**1 (No Build)**	**2**	**1 (No Build)**	**2**
Annual Average Daily Traffic (AADT)	47,600	47,600	56,200	56,200	105,800	105,800
Design Hour Volume (DHV)	4,230	4,230	4,880	4,880	8,470	8,470
Peak Hour Volume (PHV)	2,410	2,410	2,780	2,780	4,830	4,830
Directional Split	57%	57%	57%	57%	57%	57%
Truck ADT%	16%	16%	16%	16%	16%	16%
Truck DHV%	9%	9%	9%		9%	9%
Level of Service (LOS)	C	B	D	C	F	E
Volume/ Capacity (V/C) Ratio	0.68	0.45	0.79	0.52	1.37	0.91

May 2013 TASAS: Traffic Data Memo

Accident Data

The Traffic Accident Surveillance and Analysis System-Transportation Systems Network (TASAS)-(TSN) in Table B shows the following accident summaries for the segment of SR-60 in Riverside County between Post Miles 22.10 and 26.50 within the three-year period from April 1, 2008 to March 31, 2011.

Table 3: TASAS_TSN Selective Accident Rate Calculation (TABLE B)

	SR-60 PM 2.20-26.50 Actual (Per Million Vehicle Miles)			Statewide Average (Per Million Vehicle Miles)		
	Fatal	**Fatal +Injury**	**Total**	**Fatal**	**Fatal +Injury**	**Total**
EB	0.019	0.23	.65	0.007	0.18	0.52
WB	0.000	0.34	1.04	0.007	0.18	0.52

May 2013 TASAS_TSN Accident Table B: Traffic Data Memo

Total EB accident rates are slightly higher than the statewide average accident rates and the percentage of fatal accidents are double than the statewide average. Total WB accident rates are double the rate of total statewide accident rates. Fatality plus injury accidents within the project area are nearly double the percentage of the statewide average.

Table 4: Summary of Types of Collisions		
Type of Collision	**EB Mainline Percent (%)**	**WB Mainline Percent (%)**
Head-On	0.0	0.9
Sideswipe	19.4	12.0
Rear End	28.4	28.7
Broadside	3.0	3.7
Hit Object	40.3	49.1
Overturn	6.0	3.7
Auto-Pedestrian	0.0	0.0
Other	3.0	1.9
August 2013 TSAR- Accident Summary Report		

40.3 percent of EB and 49.1 percent of WB collisions were related to Hitting Object Collisions, showing the need for adding standard shoulders. 28.4 percent of EB and 28.7 percent of WB were related to Rear End Collisions were caused by slowing vehicles, showing the need for dedicated Truck lanes.

Table 5: Summary of Primary Collision Factors		
Primary Factors	**EB Mainline Percentage (%)**	**WB Mainline Percentage (%)**
Influence of Alcohol	9.0	5.6
Following Too Closely	1.5	0.9
Improper Turn	25.4	25.0
Speeding	29.9	40.7
Other Violations	23.9	19.4
Other Than Driver	9.0	1.9
August 2013 TSAR- Accident Summary Report		

Project Description

This section describes the proposed action and the project alternatives that were developed to meet the identified purpose and need of the project, while avoiding or minimizing environmental impacts. The viable alternatives are Alternative 1 and Alternative 2. Alternative 3 and Alternative 4 were considered but eliminated from further discussion before preparation of the environmental document began.

The project is located in Riverside County on SR-60 between Gilman Springs Road, Post Mile (PM) 22.10 and Jack Rabbit Trail PM 26.50. The total length of the project is 4.4 miles. Within the limits of the proposed project, SR-60 is a conventional two-lane, undivided highway with two 12-foot lanes and 2- to 4- foot non-standard shoulders. The purpose of the proposed project is to improve safety, reduce traffic congestion, improve freeway operational problems resulting from trucks travelling uphill grades losing speed impeding traffic flow reducing the capacity of the highway to carry traffic. The project would also address the non-existence of

standard shoulders at numerous locations throughout the project area by providing standard shoulders.

PROJECT ALTERNATIVES

There are two viable alternatives under consideration, and two alternatives that were withdrawn from consideration during preliminary studies. Alternatives 3 and 4 were withdrawn from consideration during preliminary studies because they did not adequately address the purpose and need of the project. The total project capital construction cost varies between $72.5 million and $98.5 million. More information on project costs is included in Table 1 on p. 1.The alternatives under consideration include the following:

Alternative 1: No-Build:

The No-Build alternative would maintain the facility in its current condition. No improvements would be implemented at this time; therefore, no capital cost is associated with this alternative. As development continues and traffic demand increases, traffic operational characteristics will further deteriorate resulting in an increase in congestion, vehicle delay, safety issues, and vehicle-operating costs. The No-Build alternative would not address or alleviate the forecasted operational and safety issues along this segment of SR-60.

Alternative 2:

- Construct an eastbound truck-climbing lane, a westbound truck-descending lane and construct standard inside and outside shoulders.
- Widen and grade the area adjacent to the truck lanes and shoulders to the ultimate freeway condition.
- Rehabilitate the existing #1 and #2 lanes as well as the inside shoulder, in each direction. The rehabilitation effort will be designed under a separate contract, and funded under a separate State Highway Operation Performance Program (SHOPP) project under Expenditure Authorization (EA) (1C090). Both contracts are to be combined prior to commencing the construction phase.
- Reconstruct the existing concrete median barrier for the entire project.
- Most of the widening for this alternative would be to the outside of the existing roadbed. However, for the portion of the freeway between PM 24.3 and PM 25.7, consideration would be given to widen to the median, if feasible.
- The project design will include shifting the horizontal alignment within the widened portion to improve design sight distances, where feasible.
- The project design will include modifying vertical profiles at feasible locations to improve sight distances.

DESIGN OPTIONS

The proposed improvements are expected to enhance the operational efficiency of the facility by separating truck traffic, and other slow moving vehicles, from the rest of the traffic stream. In addition, maintenance expenses will be lower over the life of the pavement, because of the durability of the proposed long life Portland Cement Concrete Pavement, resulting in reduced inconvenience to the traveling public. The preferred design type will be selected during the final design process.

Design Option 1:

- The outside truck lanes will each be 12' wide and constructed out of Jointed Plane Concrete Pavement (JPCP).
- The adjacent outside shoulders will each consist of JPCP and will be 12' wide. The slopes will remain identical to the lane slopes.

Design Option 2:

- Construct 14' wide outside truck lanes out of JPCP
- 8' wide outside shoulders will be constructed out of Hot Mix Asphalt (HMA).

Design Option 3:

- Construct a 12' outside lane and 10' outside shoulder in each direction out of HMA

SLOPE OPTIONS

Three options are under consideration for the cut and fill slopes. The preferred slope option will be selected during the final design process.

- **Slope Option A: 2:1 (H:V) cut and fill slopes with benches (additional right of way required)**

  It is recommended that all slopes be cut back 2:1 (H: V) with mid-slope benches and terrace drains to control slope drainage and minimize surface erosion.

  Slopes that are greater than 60 feet in height should have an 8 foot wide bench for every 30 feet of slope height, with a 12 foot wide bench mid-slope. All benches must have a self-cleaning, 5 foot wide gunite-paved "V"- ditches with a minimum of a 2% down slope gradient. These slopes must also have paved drainage "V' ditches at both the top and bottom of slopes.

  For slopes that are between 30 and 60 feet in height, it is recommended that an 8 foot wide bench incorporating a 5 feet wide gunite-paved "V" –ditch, with a minimum of a 2% down slope gradient, be placed at mid-slope. These slopes should also have paved drainage "V" ditches at both the top and bottom of slope.

  For all slopes that are less than 30 feet in height, paved drainage "V" ditches are required at both the top and bottom of the slopes.

  For all of the 2:1 (H:V) fill slopes, the mid-slope benches and terrace drain requirements are as described under the cut-slope condition to control surface drainage and minimize surface erosion on the slope face. Subject to geotechnical slope stability analysis, geotextile materials may be utilized to steepen the gradient of these fill-slopes. Nevertheless, the slopes should still have the mid-slope drainage benches and terrace drains as discussed.

- **Slope Option B: Combination of 2:1(H:V) cut and fill slopes and retaining walls (no additional right of way)**

  Retaining walls for the cut-slopes are not recommended at the toe of slope due to the potential for unrestrained debris above the retaining wall falling onto the roadway. Additionally, the slope above the retaining wall would still have to be cut back 2:1 (H:V) or some other geologically stable inclination with mid slope benches and terrace drains to control drainage and minimize surface erosion.

  Retaining walls for the fill-slopes may be used at either the top or toe of the slope to reduce the need for additional right-of way to accommodate the new fill catch points and to reduce the potential of extending existing drainages. This procedure will greatly reduce drainage area impacts and is expected to cut down on the effort and time needed to gain the regulatory permits. Geotextile or similar types of soil reinforcement may also be used, instead of retaining walls, to steepen the fill-slope gradient to reduce the need for additional right of way acquisition.

- **Slope Option C: Combination of 1:1 (H:V) slopes or steeper cut slopes and 2:1 fill slopes (no additional right of way)**

  For cut-slopes intended to be 1:1 (H:V) or steeper, additional studies will be needed to assure geological stability, as well as implementing slope stabilization techniques accompanied with the incorporation of a permanent erosion control plan for the slope surface.

  A debris catchment area and fencing will also be constructed at the bottom the slopes to prevent contact with traffic and to facilitate removal by maintenance forces.

  The recommendations for the fill-slopes are as stated in options A and B above.

Alternatives Considered but Eliminated from Further Discussion

The following alternatives were considered but eliminated from further discussion because they do not address the need and purpose of the project.

Alternative 3 (Project Study Report): Construct a truck climbing lane with standard inside and outside shoulders in the eastbound direction

This alternative consists of constructing 12-foot truck climbing lane plus standard (10 feet) inside and outside shoulders in the eastbound direction of SR-60 within the limits of this project. This alternative only alleviates the problem in the eastbound direction; leaving westbound with safety, congestion, and freeway operational issues. Therefore, it does not satisfy the complete need and purpose of this project.

Alternative 4 (Project Study Report): Construct Standard Inside/Outside Shoulders in the Westbound Direction

This Proposed improvement consists of constructing a 5-foot standard inside shoulder and a 10-foot standard outside shoulder in the westbound direction of SR-60 freeway within the limits of this project. This alternative only considers building a shoulder on the westbound direction. Therefore, it does not satisfy the full need and purpose of this project.

Permits and Approvals Needed

Table 6: Permits and Approvals Needed

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Formal Section 7 Consultation for Threatened and Endangered Species	Department will apply in June 2014.
United States Army of Engineers	Section 404 Permit for filling or dredging waters of the United States.	Department will apply during the Project Specifications and Estimates (PS&E) phase.
California Department of Fish and Wildlife	Section 2080.1 Agreement for Threatened and Endangered Species	Department will apply during the Project Specifications and Estimates (PS&E) phase.
California Department of Fish and Wildlife	1602 Agreement for Streambed Alteration Section 2080.1 Agreement for Threatened and Endangered Species	Department will apply during the Project Specifications and Estimates (PS&E) phase.
California Department of Fish and Wildlife	Determination of MSHCP compliance	Department will apply in June 2014.
California Regional Water Quality Control Board	401 Certification	Department will apply during the Project Specifications and Estimates (PS&E) phase.
California Water Resources Board	Water Discharge Permit	Registered Engineer and/or Contractor will apply prior construction.
State Historic Preservation Office	Concurrence with Finding of No Eligible Resources for National Register of Historic Places.	Received May 19, 2014.

Natural Environment Study, April 2014
Historic Properties Survey Report, May 2014

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

As part of the scoping and environmental analysis carried for the project, the following environmental issues were considered but no adverse impacts were identified.

As a result, there is no further discussion about these issues in this document.

Land Use: This proposed project is located within the County of Riverside General Plan Reche Canyon/Badlands Area Plan, October 2011 (RCBAP).

According to the Riverside County Land Information System land uses for properties adjacent to the project area include a combination of Open Space-Rural (OS-RUR), Rural Residential (RR), Rural Mountainous (RM), Open Space-Conservation Habitat (OS-CH), and Public Facility (PF) . Based on the preliminary design no right of way will be required for this project. All work will occur within the State Right-of-Way. Please see the Biological Resources section for more discussion on the open space conservation habitat area.

Coastal Zone: The project is not located within or near a coastal zone.

Wild and Scenic Rivers: There are no wild and scenic rivers within or near the project area.

Parks and Recreation Facilities: According to the County of Riverside General Plan Reche Canyon/Badlands Area Plan, October 2003 there are no park and/or recreation facilities located within the proposed project area.

Relocations: Currently no right of way is required for this proposed project and there are no residents located within the proposed project area.

Environmental Justice: All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2014, this was 23,850 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. The Department's commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

There are no residents located within the project area.

Community Impacts: There are no residents or businesses located within the project area.

Growth: First Cut Screening: The potential growth-related impacts of the proposed project were evaluated according to the Department's first-cut screening analysis, to assess the likely growth-inducing effect, and to determine whether further analysis is necessary:

1. Does the proposed project have the potential to change accessibility?

   The Build Alternative does not redesign the accessibility of the freeway. There will be no reconnections or impacts to the regional area that would occur in the vicinity of the project mainline per the design options. The purpose of this proposed project is to improve safety, reduce traffic congestion, and improve operational efficiency along this segment of SR-60.

2. How, if at all, do the project type, project location, and growth-pressure potentially influence growth?

   The proposed project is consistent with the Regional Transportation Plan (RTP), the goals and policies of the Riverside County General Plan, and the regional mobility goals of the Department and Riverside County Transportation Commission Measures A Program (1/2 Sales Tax). Since the project would not substantively increase the capacity along the SR-60, it would not influence the amount, timing, or location of growth in the area. The *State Route 60 Truck Lanes Project* area already has existing transportation facilities. Pressure for growth is typically a result of a combination of factors including economic, market, and land use demands and conditions.

3. Determine whether project-related growth is "reasonably foreseeable" as defined by NEPA.

   There are no reasonably foreseeable direct or indirect growth-related impacts. The project will improve safety, reduce traffic congestion, and improve operational efficiency. There will be no additional capacity added, change in adjacent land use, or other potential growth-inducing activities.

4. If there is project-related growth, how, if at all, will that affect resources of concern?

   There will be no project-related directly-related or indirectly-related growth.

Farmland/ Timberland:

According to the Department of Conservation (DOC's) Farmland Mapping and Monitoring Program, there are no farmlands or vacant lands that are mapped as Prime Farmlands, Unique Farmlands, Farmlands of Statewide Importance, or Farmlands of Local Importance within the study area. In addition, there are no areas within the study area under Williamson Act contract.

The build alternative would not result in the conversion or impact of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), to nonagricultural use, nor would they conflict with existing zoning for agricultural use or conflict with a Williamson Act contract.

The RCBAP allows for, "...limited animal keeping and agricultural uses. (RCBAP 2011)" within RR and RM properties, however, there no properties of these types that will be impacted by the project. More information is included in the Land Use Section above.

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Traffic and Transportation:

Within the proposed project area there is no access to local streets and absolutely no intention of providing for pedestrian or bicycle transportation. Please see Chapter 1 Roadway Deficiencies section for traffic data details.

Air Quality:

The project is outside of the current (2010) Census Urbanized Area. On December 3, 2013, Southern California Association of Governments (SCAG) Transportation Conformity Working Group (TCWG) has determined that this project is exempt from all air emissions analyses pending on the concurrence from Federal Highway Administration (FHWA). On December 9 2013, TCWG received via email the concurrence from FHWA. Subsequently, TCWG and FHWA reaffirmed the project as an Exempt Project on February 25, 2014 based on the latest details of the project description, purpose/need and project alternatives. (See Appendix B: Agency Letters).

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Human Environment

UTILITIES/EMERGENCY SERVICES

Affected Environment

On February 21, 2014, the Department approved the Right of Way Datasheet (RWDS) determined that no permanent right of way (ROW) take is required. However, there may be a need for a small portion of land within the of ROW for the total 13 parcels to facilitate construction.

There are no potential displacements required for this proposed project; therefore, the Relocation Assistance Program (RAP) will not be required.

There are no railroad facilities located within or near the project area; therefore, is no potential for railroad involvement relinquishments and/or abandonments.

There are no potential impacts for the proposed project to affect utility facilities because they are not located within the Department's ROW. Information obtained from the RWDS states the following utility companies may have activities in the project vicinity: The Gas Company, Verizon, Kinder Morgan, Eastern/Western Municipal Water Districts, Edgemont, Charter Communications, Southern California Edison, Burlington North Santa Fe Railroad, Williams Communication, Sprint Communications, SEMRA, City of Riverside Water, COR-Public Works, RPU-Energy, Department of Water Resources, AT&T and SUNESYS.

California Highway Patrol (CHP), the California Department of Forestry and Fire Protection (Cal Fire), the Riverside County Sheriff's Department (Sheriff's Department) provide emergency services within the project vicinity.

Environmental Consequences

Alternative 2 – Build Alternative:

At this time, preliminary design data for the proposed project has not found a need for ROW acquisition. The environmental footprint was developed based on the largest potential area of environmental impact. Additional in depth analysis of new ROW and potential impacts to any infrastructures, law enforcement, fire, emergency services, temporary and/or long-term impacts to utilities and emergency services, potential impacts caused by detours and roadway closures, and/ or positive impacts (improvements to access for emergency services) will be performed as part of the final design process during the early stages of the PS&E.

According to the Draft Traffic Management Plan (TMP) dated February 25, 2014, the Department and RCTC will conduct extensive public outreach prior and during construction of the project. This will entail Pre-closure Meetings that will be occurring several days to meet advance notification requirements for the CHP, Cal Fire, towing services, local agencies and emergency response services within the project area.

The TMP will be developed during the PS&E phase of the project to minimize traffic impacts during construction activities. Construction will be scheduled so that freeway mainline traffic flow will not be impeded. K-rail will be placed to allow grading and paving of the new lane and shoulders. The installation and removal of the K-rail will require freeway striping removal, re-striping, and lane closures.

Alternative 1: No-Build: No permanent or temporary effects to traffic would occur.

Avoidance, Minimization, and/or Mitigation Measures

UT-1: During the early stages of PS&E the Department will determine if utility relocation is required.

UT-2: The Department and RCTC will conduct extensive public outreach prior and during construction by providing press releases well in advance to warn the travelling public and emergency services.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

VISUAL/AESTHETICS

Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with...enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (CA Public Resources Code [PRC] Section 21001[b]).

Affected Environment

On March 27, 2014, the Department approved the Visual Impact Assessment (VIA). The purpose of this visual impact assessment (VIA) is to document potential visual impacts caused by the proposed project in compliance with both federal and state requirements and to propose measures to lessen any detrimental impacts that are identified. Visual impacts are demonstrated by identifying visual resources in the project area, measuring the amount of change that would occur as a result of the project, and predicting how the affected public would respond to or perceive those changes. The proposed project is located within the County of Riverside and within the sphere of influence for the City of Moreno Valley. Applicable policies and objectives relating to aesthetics and visual quality from these agencies' general and area plans were reviewed and considered in the preparation of this analysis. The project is also within the sphere of influence for the City of Beaumont; however, no applicable aesthetic or visual policies were found within available City sources.

Project Location and Setting:

The project location and setting provides the context for determining the type of changes to the existing visual environment. SR-60 is located in the Inland Valley/Desert Region of Riverside County between the cities of Beaumont and Moreno Valley, and is designated as a State Scenic Highway (SSH). Riverside County is essentially divided into eastern and western halves by the San Jacinto and Santa Rosa Mountains. The San Gorgonio Pass, a deep valley between the San Jacinto and San Gorgonio Mountains, links these two halves and abuts the eastern side of the project area. Western Riverside County is roughly half the size of eastern Riverside County yet contains most of the populated cities.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Despite the more urbanized nature of this portion of the County, the area incorporates a fairly wide range of diverse geographic features, including valleys, mountains, forests, and lakes. Framed by mountains and forests (Santa Ana Mountains and Cleveland National Forest to the west, San Jacinto Mountains and San Bernardino National Forest to the east) western Riverside County hosts views of natural open space, rolling hills, and mountain ridgelines (Figure 2).

During the winter, the snow-capped San Jacinto and San Bernardino Mountains are visible from the valley floor. SR-60 is located in an area known as the Badlands. The Badlands, originally part of an inland sea, are characterized by steep ravens and sparse vegetation. The Badlands, including the Norton Younglove Preserve and Reche Canyon (located north of the project corridor) border the project area and are considered unique features within Riverside County. These areas provide dramatic views and are home to several wildlife species.

The proposed project passes through the tail end of the San Jacinto Mountains. East of this tail is the San Timoteo Creek, which runs along the eastern project area boundary. North of SR-60 is an area known as Reche Canyon and east is the Badlands. Both areas are under the jurisdiction of Riverside County and represent natural preservation zones. The Badlands and Reche Canyon provide the backdrop for views from SR-60. These two undeveloped areas provide views of natural grasslands and riparian and woodland habitats. Areas adjacent to the proposed project are primarily undeveloped with no signage or lighting. There are some developed areas about a mile to two miles from the western and eastern ends of the alignment. These developed areas contain a few rural residential houses, a golf course, planned residential development, and a large warehouse development.

Corridor views from the project site include the valley floor and surrounding mountain ridges (Figure 3). These views are more prominent from the eastern and western ends of the project alignment where the terrain is flatter allowing for wider and more distant views. The project's eastern extent supports several large trees and riparian habitat associated with the San Timoteo Creek.

Also visible are electrical power lines and poles, as well as other small structures and buildings. Views of the surrounding mountains and valley floor are also visible. The western project extent also provides some views of the surrounding mountains and valley floor. A majority of the project corridor is within the steep hillsides associated with the San Jacinto Mountains. Views are limited to adjacent slopes and the corridor itself with sight distances being reduced due the winding nature of the roadway. Occasionally, glimpses of the mountains and valley floor are caught between ridges, but opportunities to appreciate these limited views are minimal because of the challenging drive and limited right-of-way.

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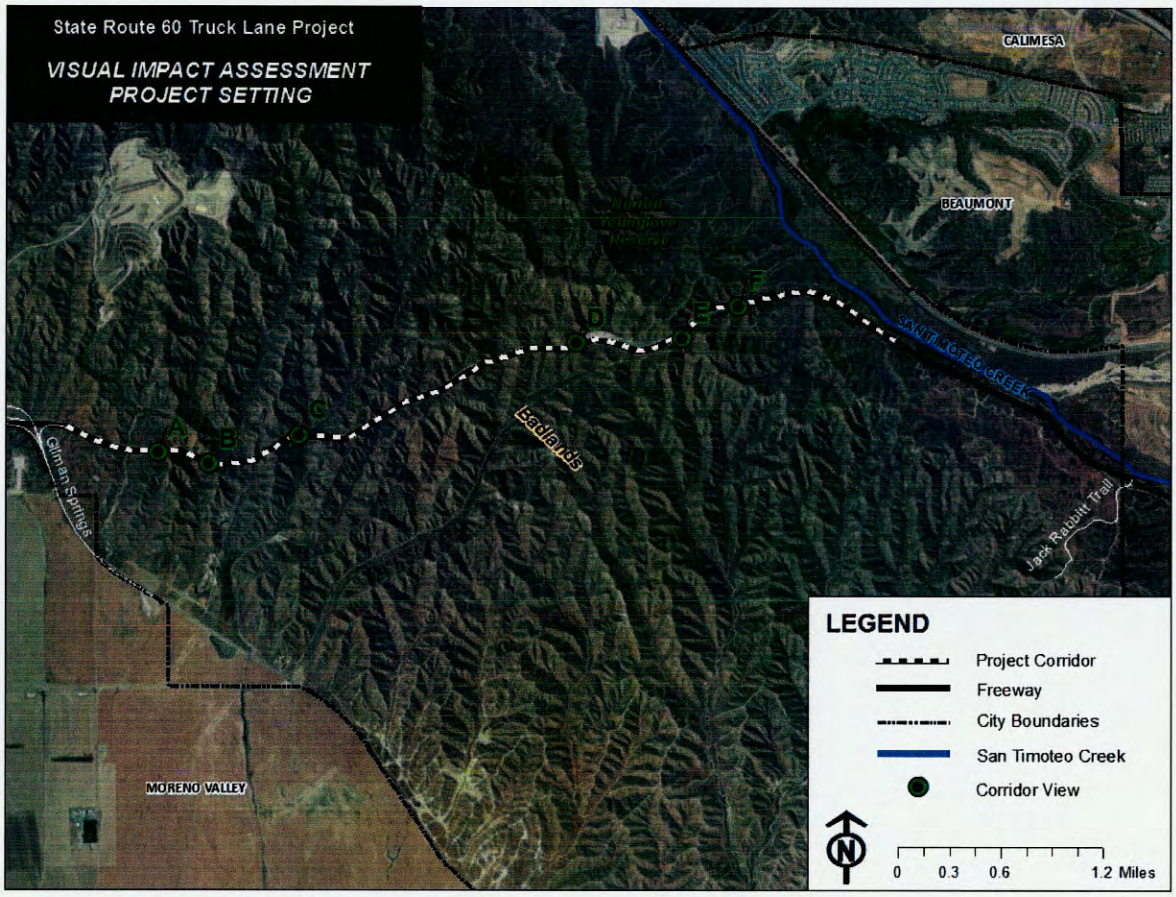
Figure 2: VIA Project Setting

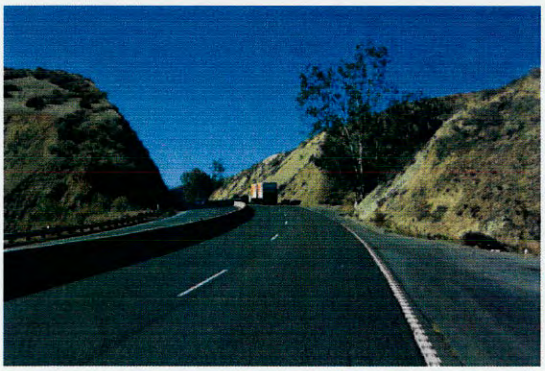


Source: VIA, April 2014

Figure 3: VIA Corridor Views(Current Views)

1. Eastbound lane looking east

2. Eastbound lane looking southeast towards Mount San Jacinto



3. Westbound lane looking west

4. Westbound lane looking southwest towards Lake Perris

5. Views east towards San Bernardino Mountains

6. Views northeast towards San Gorgonio Pass and San Timoteo Creek

VIA April 2014

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

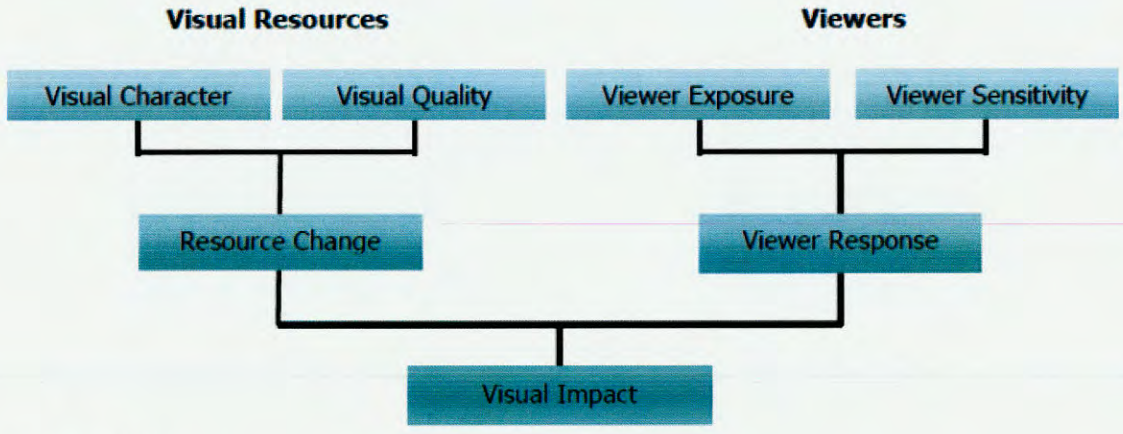
Assessment Method:

This visual impact assessment follows the guidance outlined in the publication Visual Impact Assessment for Highway Projects published by the Federal Highway Administration (FHWA) in March 1981. The FHWA visual impact assessment methodology is the accepted methodology used by federal and state transportation agencies for analyzing both visual quality impacts and viewer response for projects within transportation corridors. Chapter 27 of the Department Standard Environmental Reference provides an overview, approach, and terminology for the visual and aesthetics review process that the Department uses. Chapter 27 references the FHWA methodology for visual impact assessment. The purpose of this methodology is to define the visual character or quality of a landscape and objectively evaluate whether the project has a substantial adverse impact on a scenic vista or substantially degrades the existing visual character or quality of a landscape. The FHWA methodology also addresses viewer response to visual changes, which is combined with resource changes to determine the overall visual impact. The conceptual model for this method, as presented in the FHWA handbook, is shown in Figure 4.

The assessment method includes an analysis of the following elements:

- Visual assessment units and key views
- Visual resources and resource change
- Viewers and viewer response

Figure 4: FHWA Visual Assessment Model



VIA April 2014

Visual Assessment Units and Key Views:

Although a majority of the project corridor exhibits similar characteristics with regard to vegetation and topography, there are slight changes in the overall character of the corridor as motorists approach the project area from either the eastern or the western extents. The corridor was divided into three distinct areas or 'visual assessment units' based on these slight changes in visual character and quality. A key view, or scene observable from driver's point-of-view, was developed for each area.

Visual Resources and Resource Change:

Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project corridor before and after construction of the proposed project. Resource change is one of two major variables in the equation that determines visual impacts. The other is *viewer response* (discussed below in Section VIII Viewers and Viewer Response). These two variables determine the extent of visual impacts that will be caused by the construction and operation of the proposed project.

Visual Resources:

A visual resource is a site, object, or landscape feature that contributes to the visual character of the surrounding area or is important because of its visual characteristics or scenic qualities. For this discussion, visual resources also include state designated scenic routes and views towards and within natural areas, and notable landmarks.

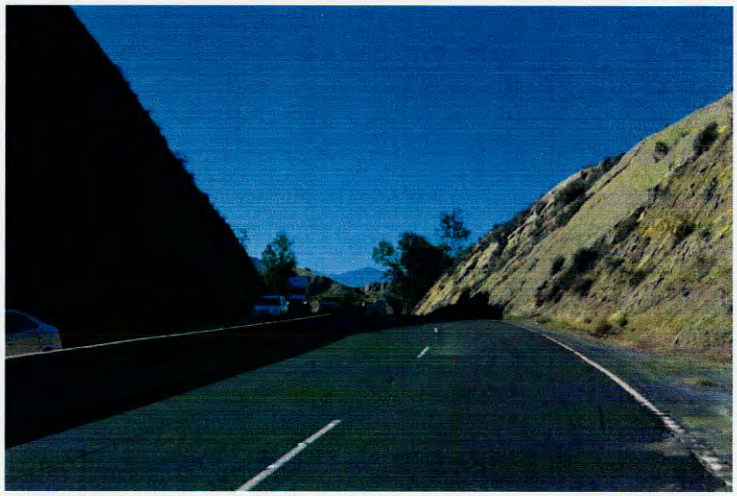
Visual resources of the project setting are defined and identified below by assessing visual character and visual quality in the project corridor.

Visual Character:

Visual character includes attributes such as form, line, color, texture, and is used to describe, not evaluate; that is these attributes are neither considered good nor bad. However, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as an indicator.

Western Assessment Unit (City of Moreno Valley Sphere of Influence):

The Western Assessment Unit is generally located between Gilman Springs Road and Mc Ghee Drive within the western extent of the project corridor. The topography within this portion of the project corridor exhibits gentle slopes with some horizon views and glimpses of the valley floor. The Western Assessment Unit provides a slightly less constrained feeling with some shoulders and pull-out areas provided. Vegetation includes desert grasses and low-lying shrubs.



Central Assessment Unit (County of Riverside):

The Central Assessment Unit is generally located between Mc Gehee Drive and Timothy Lane within the central portion of the project corridor. This segment of the corridor consists of steeper slopes and a more "enclosed" roadway section. The roadway through this segment of the corridor is limited to two lanes in each direction and a center barrier with hills and valleys abutting the roadway edges. This landscape unit has limited views of surrounding areas as sight distances are reduced due to the mountainous terrain and curvilinear roadway. Travel speed and challenging topography create a more focused, condensed view of the corridor that encourages the motorist to pay close attention to variations in the road and topography. Vegetation consists primarily of grasses, yet occasionally a single tree or cluster of trees appears encourages the motorist to pay close attention to variations in the road and topography. Vegetation consists primarily of grasses, yet occasionally a single tree or cluster of of grasses, yet occasionally a single tree or cluster of trees appears

Eastern Assessment Unit (City of Beaumont Sphere of Influence)

The Eastern Assessment Unit Unit is generally located between Timothy Lane and Jack Rabbit Trail, This unit encompasses an area about a quarter mile from the project's eastern boundary. As motorists approach the project corridor from the west, they can see the landscape transition from steeper, more constrained terrain to open, gentle hillsides. Signs of development become visible as motorists approach the City of Beaumont. The landscape vegetation is more verdant than the other assessment units due the presence of the San Timoteo Creek and its associated riparian habitat. Trees and large shrubs are visible, as well as distant horizon views of the surrounding mountains.

Figure 5 shows the location of the visual assessment units and key views for the project.

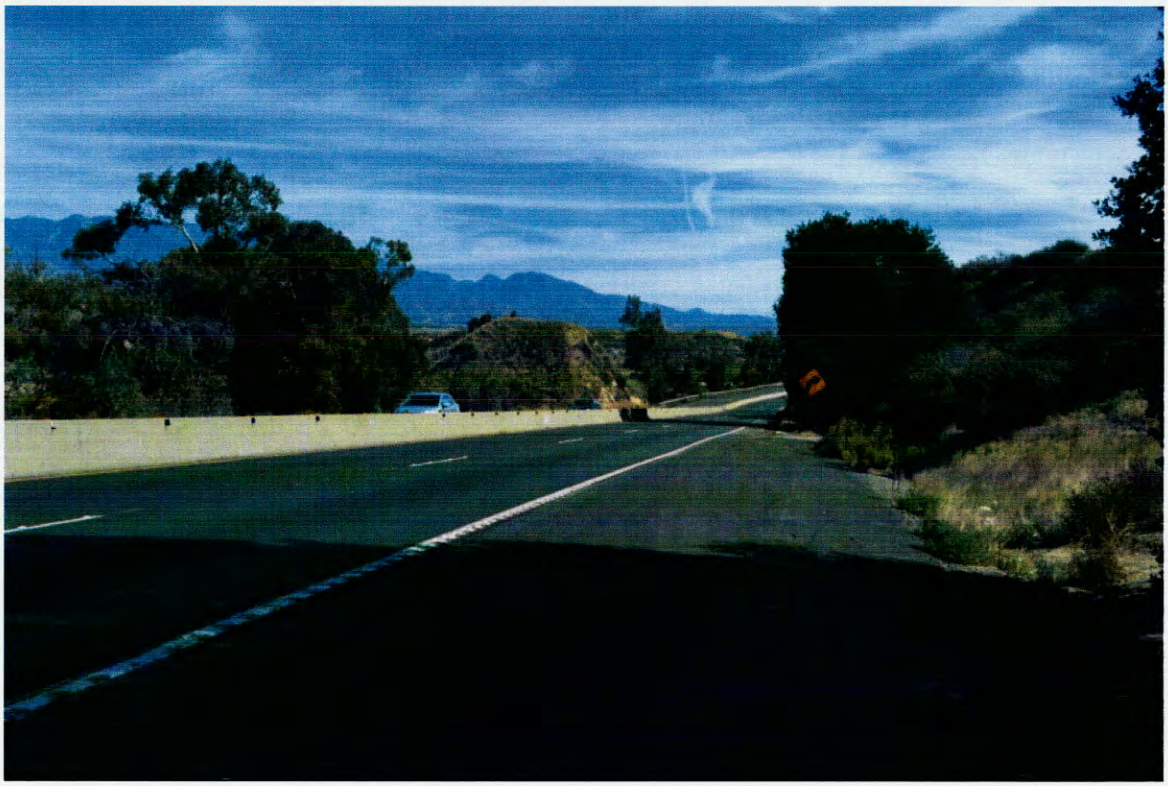
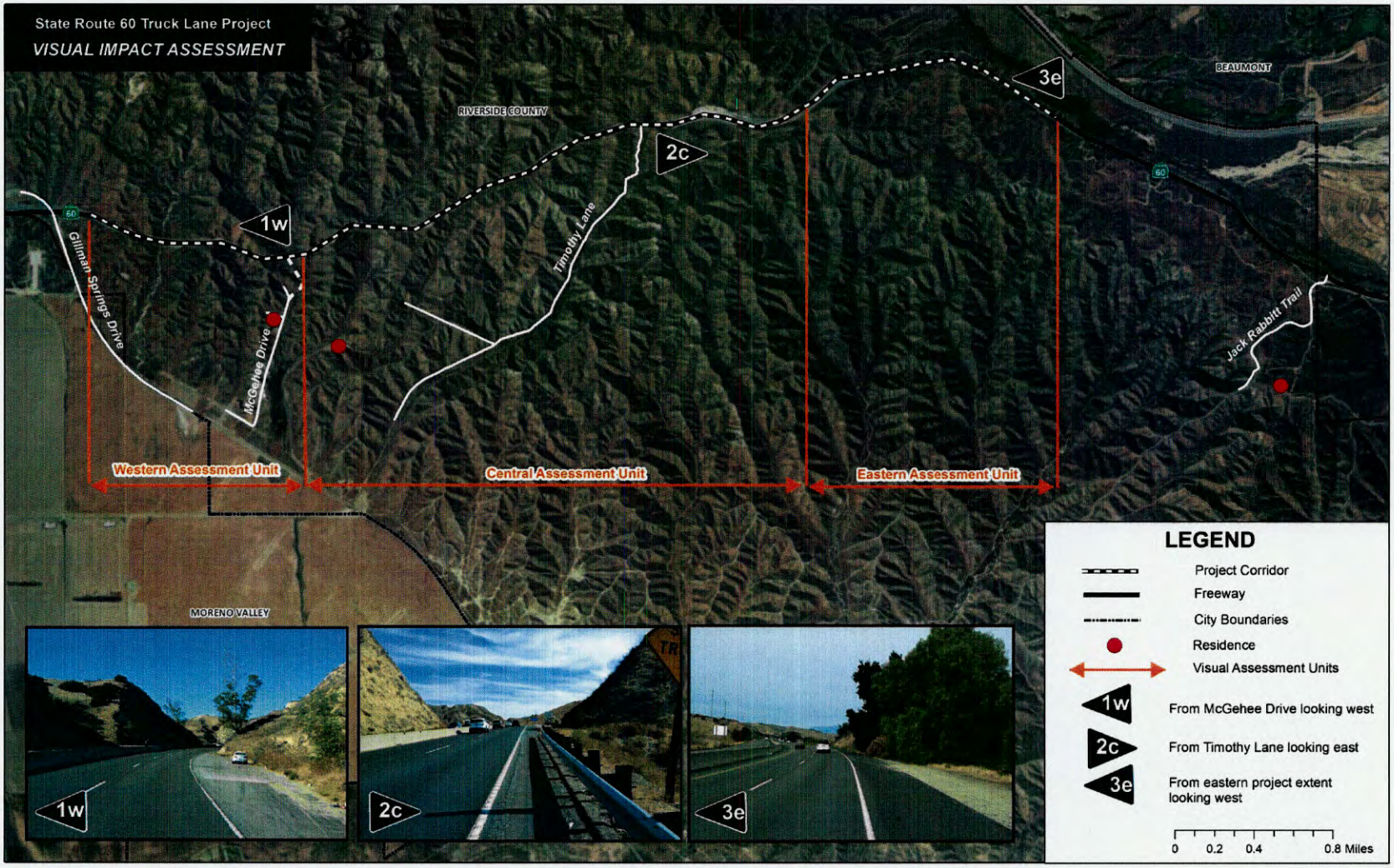


Figure 5: Visual Assessment Units and Key Views



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SR-60 through the project corridor provides high quality views of surrounding areas, as well as scenic character within the corridor itself. The corridor is well maintained with distinctive topography, horizon views, and limited urban encroachments (signs, telephone poles, utility lines, etc.). The surrounding hills are a dominant feature within the corridor and provide the main context for the route. Views are simple in nature incorporating the roadway, hillsides, skyline, and occasionally a horizon view. The occasional cluster of trees adds some variety to the otherwise relatively sparse and low-lying vegetation.

The visual character of the proposed project would be somewhat compatible with the existing visual character of the corridor. The natural open space, dominant hillsides, and narrow roadway create an existing rural character to this segment of SR-60. The proposed project would have a more urban character due to the wider roadway profile. The wider roadway would become an equally dominant feature within the context of the adjacent hillsides and open skyline. It would change the visual character from a smaller-scale roadway with enclosed views to a larger, multi-lane highway with more open views.

Visual Quality:

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project corridor. Public attitudes validate the assessed level of quality and predict how changes to the project corridor can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur as a result of the project. The three criteria for evaluating visual quality are defined below:

Vividness is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.

Intactness is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.

Unity is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

This portion of the SR-60 is unique because of its location within the foothills of the San Jacinto Mountain range. The rolling topography and winding roadway make an interesting yet challenging drive and provide viewers with unusual views that differ from the rest of the route. Views within the corridor are vivid due to the unusual terrain for this segment of the route. With the exception of the radio tower and high-power lines the landscape is generally free from encroaching elements and even these components are well balanced against the dominant features of the surrounding hills, thus the landscape is relatively intact. The simplicity of the landscape, which incorporates the hillsides, roadway, and distant views, forms a unified and harmonious visual pattern.

The visual quality of the existing corridor will not be altered by the proposed project. The corridor's main attributes that provide high quality views include the hillsides, distant vistas, and horizon views. These attributes would not be substantially affected by the proposed project,

and in some cases, distant vistas and horizon views may be made more accessible to motorists within the corridor. The proposed project would be compatible with the County's and City's policies for preserving scenic vistas, minimizing elements that would degrade visual quality, and protecting scenic highways from change that would diminish their aesthetic value. The proposed changes would have a minimal affect on the visual quality of resources within the corridor.

Environmental Consequences
Resource Change:

The visual character of the proposed project would be mostly compatible with the existing visual character of the corridor. The proposed project would not change the land type or use of the corridor. The proposed project would remove existing vegetation, including individual trees and tree clusters, along the sides of the roadway to accommodate the additional lanes.

The project would also require cut and fill of existing hillsides and valleys in order to accommodate the wider roadway profile; however, these changes would not result in flatter terrain or a change in the overall character of the hillsides. The cut/fill slopes would be contoured to reduce the effects of engineered slopes and naturalize their appearance. Over time the slopes would continue to naturalize both in vegetation and contours as volunteer vegetation, weathering, and minor erosion occur.

To accommodate the wider roadway profile, and as a result of cut/fill slopes, 64 trees along the westbound lanes and 47 trees along the eastbound lanes would need to be removed. These include trees with trunks ranging in size from 4 feet in diameter (diameter at body height - dbh) to a half foot dbh, and tree canopies ranging in size from 40 feet in diameter (drip line diameter – dld) to 3 feet dld. A variety of trees would be affected including Oak, Pepperwood, Acacia, Eucalyptus, Palo Verde, and others.

Table 6 is a summary of the tree survey conducted for the project, which identifies the number and type of trees that would be removed as a result of the project. A majority of the trees to be removed are Eucalyptus and Oak. None of the trees to be removed were identified as superior examples of native trees. To reduce the effects of vegetation loss, trees would be replaced at a ratio of 3:1 and an irrigation system will be installed to facilitate their survival. In addition, the slopes would be re-vegetated using native plant materials as an erosion control measure and to assist in re-naturalizing the landscape.

Table 7: Summary of Tree Survey

Species	Westbound	Eastbound	Total
Oak	13	25	38
Pepperwood	0	15	15
Acacia	4	0	4
Eucalyptus	27	2	29
Palo Verde Cluster	0	1	1
Cluster, Other	9	1	10
Cluster	4	3	7
Other	7	0	7
Total	**64**	**47**	**111**

VIA April 2014

Depending on the slope design option selected, the project may include retaining walls or geotextile soil reinforcements to steepen fill slope gradients and minimize right-of-way needs. These features would be designed to minimize their incompatibility with the existing character of the corridor by incorporating color, texture, or design to reduce glare, enhance appearance, and blend materials. Paved drainage "V" ditches are required at both the top and bottom of the slopes. Structures such as "V" ditches, over side drains, and headwalls would be stained to blend with the native vegetation and slopes. These elements would not block views as they would be incorporated into the slopes themselves.

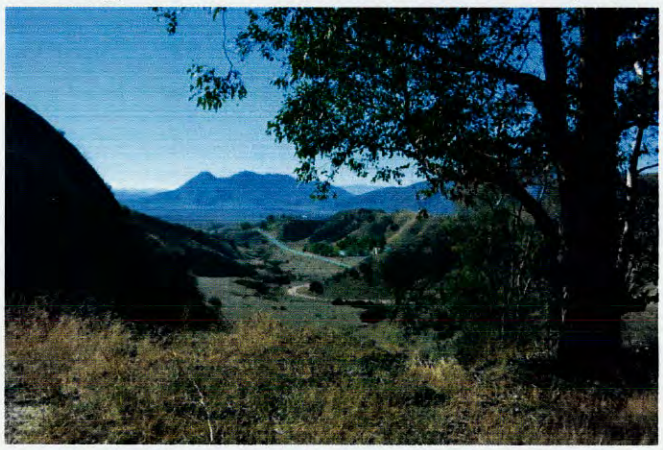
The visual character of the existing corridor would be altered by the proposed project. The components of the corridor (hillsides, roadway, skyline, and distant vistas) would not change. However, the roadway would be wider through the entire length of the project changing the character of its appearance. The existing route is primarily a narrow, two-lane configuration and exhibits a rural character. Once widened, the roadway would lose its rural character with the addition of the truck climbing and descending lanes, standard inside and outside shoulders, and wider, graded shoulders, which would accommodate the ultimate freeway condition. The wider roadway would still be balanced by the dominant hillsides and skyline, but would slightly reduce the existing rural character of views within the corridor. In addition, the project would re-grade portions of the corridor minimizing the horizontal and vertical curves to some degree and reducing the uniqueness of the terrain. The proposed project would not reduce or block views and would be consistent with the overall character of the route as a transportation facility. Overall, the proposed project would be consistent with the policies and objectives from the County and City general plans as it would not affect the corridor's scenic quality, block views, remove protected vegetation or diminish the aesthetic value of a scenic route. Trees removed as part of the project will be replaced at a ratio of 3:1 and cleared slopes will be re-vegetated

reducing impacts associated with vegetation loss to less than significant. The proposed project would result in a moderate-low resource change.

Viewers and Viewer Response: Viewers:

The population affected by the project is composed of *viewers*. Viewers are people whose views of the landscape may be altered by the proposed project, either because the landscape itself has changed or their perception of the landscape has changed.

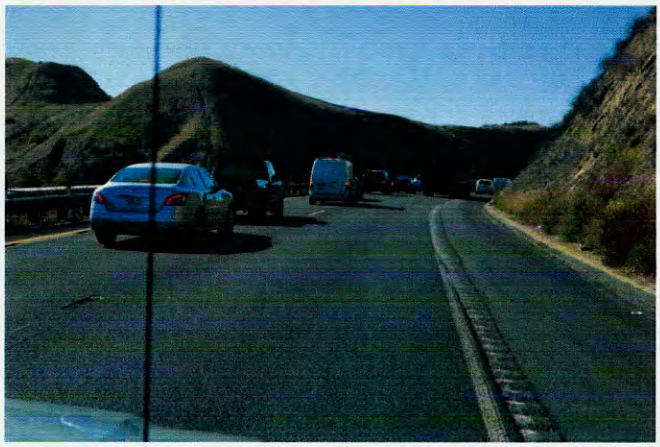
Viewers are groups of people who are engaged in similar activities (commuting, recreating, traveling) or have similar characteristics (business owners, homeowners, workers). These groups can be further distinguished by those that have views of the project (project neighbors) and those who have views from the project (project users).



There are two major types of viewer groups for highway projects: highway users and highway neighbors. Each viewer group has their own particular level of *viewer exposure* and *viewer sensitivity*, resulting in distinct and predictable visual concerns for each group which help to assess their responses to visual changes.

Highway Neighbors (Views *to* the Road)

Development within the project area consists of warehouse, retail, and residential areas located one to three miles from the project corridor. Most of the development is separated by roads, rail, and natural topography with trees and other vegetation serving as a visual barrier between the adjacent development and SR-60. The project area is visible from off-site, but details of the corridor itself are limited. There are a few residences located off Gilman Springs Road that may have views of the corridor; however, due to distance (approximately one quarter to a half mile away) and sightlines (intervening topography and vegetation) details of the corridor are limited.



Highway Users (Views *from* the Road)

There are three groups of motorists that travel on SR-60 which are classified by the viewer activity and means of transportation. This viewer group represents the 45,000 motorists who travel within the project vicinity daily.

Locals - Local motorists on SR-60 are generally commuters traveling between

home and work. They are expected to be more familiar with the route and accustomed to the hills and scenic landscape.

Truck Drivers - Approximately 7,200 trucks travel through the project area each day. Truck drivers are focused on transporting goods from point A to point B efficiently and safely. They are expected to have some familiarity with the route, but be primarily focused on navigating challenging terrain.

Travelers - Travelers are considered to have a more leisurely approach to traveling and tend to share their focus between reaching their destination and enjoying the visual aspects of the route. They are expected to be less familiar with the route yet have a good appreciation for its scenic qualities.

Viewer Response:

Viewer response is a measure or prediction of the viewer's reaction to changes in the visual environment and has two dimensions as previously mentioned, viewer exposure and viewer sensitivity.

Viewer Exposure:

Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration. *Location* relates to the position of the viewer in relationship to the object being viewed. The closer the viewer is to the object, the more exposure. *Quantity* refers to how many people see the object. The more people who can see an object or the greater frequency an object is seen, the more exposure the object has to viewers. *Duration* refers to how long a viewer is able to keep an object in view. The longer an object can be kept in view, the more exposure. High viewer exposure helps predict that viewers will have a response to a visual change.

Highway Neighbors have limited or no views of the actual project corridor and their views are from a distance (one to three miles). Although the duration of views would be long term, this group of viewers is considered to have "low viewer exposure" due to the limited number of viewers and the distance from which they are able to see the corridor.

Highway Users see the project corridor on a regular to irregular basis (depending on whether they are commuters or truck drivers and travelers). Their exposure is close proximity and for the duration of the alignment. This viewer group is considered to have high viewer exposure due to the number of viewers, the length of time they are exposed to the corridor, and the close proximity in which viewers are in relationship to proposed changes.

Viewer Sensitivity:

Viewer sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes: activity, awareness, and local values. *Activity* relates to the preoccupation of viewers—are they preoccupied, thinking of something else, or are they truly engaged in observing their surroundings. The more they are actually observing their surroundings, the

more sensitivity viewers will have of changes to visual resources. *Awareness* relates to the focus of view—the focus is wide and the view general or the focus is narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change. *Local values* and attitudes also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers will be more sensitive to visible changes. High viewer sensitivity helps predict that viewers will have a high concern for any visual change.

Viewer Response:

Highway Neighbors are a viewer group located at some distance from the project corridor and have limited to no views of SR-60. This group is considered to have low viewer sensitivity to visual changes.

Highway User is a viewer group consisting of both area residents (commuters) and infrequent users (truck drivers and travelers). Commuters have frequent exposure to the corridor and may have some sense of ownership over views. Travelers, although limited in their exposure to local views are considered to have some sensitivity to the aesthetic quality of those views. Truck drivers are considered to be primarily concerned and focused on navigating the narrow, steep terrain and therefore, are considered to have a low sensitivity to visual changes. Local policies indicate that communities in the area are sensitive to aesthetic resources offered by the local mountains, foothills, and natural vegetation. Therefore, overall the Highway User viewer group is considered to have a moderate sensitivity to visual changes.

Highway Neighbors is a viewer group considered to have a low viewer response due to their limited exposure to the project corridor, lack of or limited availability of views, and distance of views. Since this viewer group is small in number and has limited to no views of the corridor or the proposed changes, this group is not represented by a key view or discussed further in this assessment. The proposed changes would either not be visible to area residents or would be viewed from such a distance as to produce no or a limited response.

Highway User is a viewer group considered to have a moderate-high viewer response since they have high exposure, but moderate sensitivity.

Visual Impact:

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. Cumulative impacts and temporary impacts due to the contractor's operations are also considered.

Table 8 provides a reference for determining levels of visual impact by combining resource change and viewer response.

Table 8: Visual Impact Ratings Using Viewer Response and Resource Change

		Viewer Response (VR)				
Resource Change (RC)		Low (L)	Moderate-Low (ML)	Moderate (M)	Moderate-High (MH)	High (H)
	Low (L)	L	ML	ML	M	M
	Moderate-Low (ML)	ML	ML	M	M	MH
	Moderate (M)	ML	M	M	MH	MH
	Moderate-High (MH)	M	M	MH	MH	H
	High (H)	M	MH	MH	H	H

VIA April 2014

Visual Impacts by Visual Assessment Unit and Alternative:

Because it is not feasible to analyze all the views in which the proposed project would be seen, it is necessary to select key views associated with visual assessment units that would most clearly demonstrate the change in the project's visual resources. Key views also represent the viewer groups that have the highest potential to be affected by the project considering exposure and sensitivity.

Alternative 1: No Build Alternative:

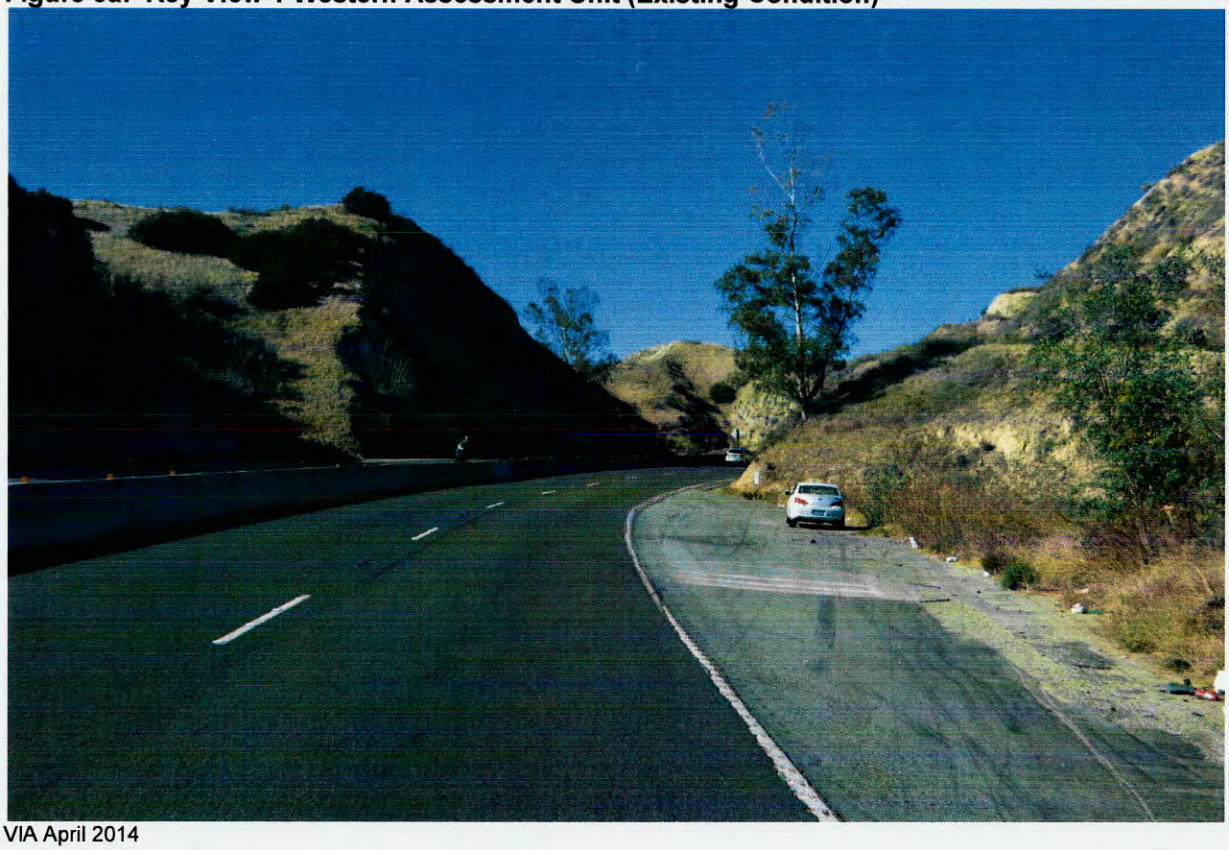
The No-Build Alternative (Alternative 1) represents SR-60 in its current condition. Under this alternative no improvements are proposed other than regular, on-going maintenance. Maintenance activities may include new signage, vegetation clearing or trimming for safety and operational purposes or grading to clear debris or stabilize slopes. These activities could result in some minor physical changes that will not affect the existing character or quality of the corridor. Therefore, Alternative 1 is expected to have no impact on the aesthetics or visual quality within the corridor. There would be no impacts to any of the visual assessment units or key views.

Alternative 2: Build Alternative:

The following section describes and illustrates visual impacts by visual assessment unit, compares existing conditions to the proposed project (Alternative 2), and includes the predicted viewer response. Three Key Views (KVs) were selected to represent each of three visual assessment units. The use of KVs helps to facilitate the evaluation of project changes as they relate to the Visual Assessment Units. KVs 1w and 2c represent the project scenario with the most changes. KVs 1w and 2c represent areas within the project corridor where large cut or fill

slopes are proposed. KV 3e represents the project scenario with the least changes. KV 3e represents an area within the corridor where cut or fill slopes would be less extensive. These KVs also represent existing views within the project corridor as seen by a majority of the significant viewer groups. The KVs were used to illustrate how the proposed project would change existing views and are illustrated in Figures 6a, 6b, 7a, 7b, and 8. Figure 5 shows the location of the selected key views.

Figure 6a: Key View 1 Western Assessment Unit (Existing Condition)



VIA April 2014

Western Assessment Unit:

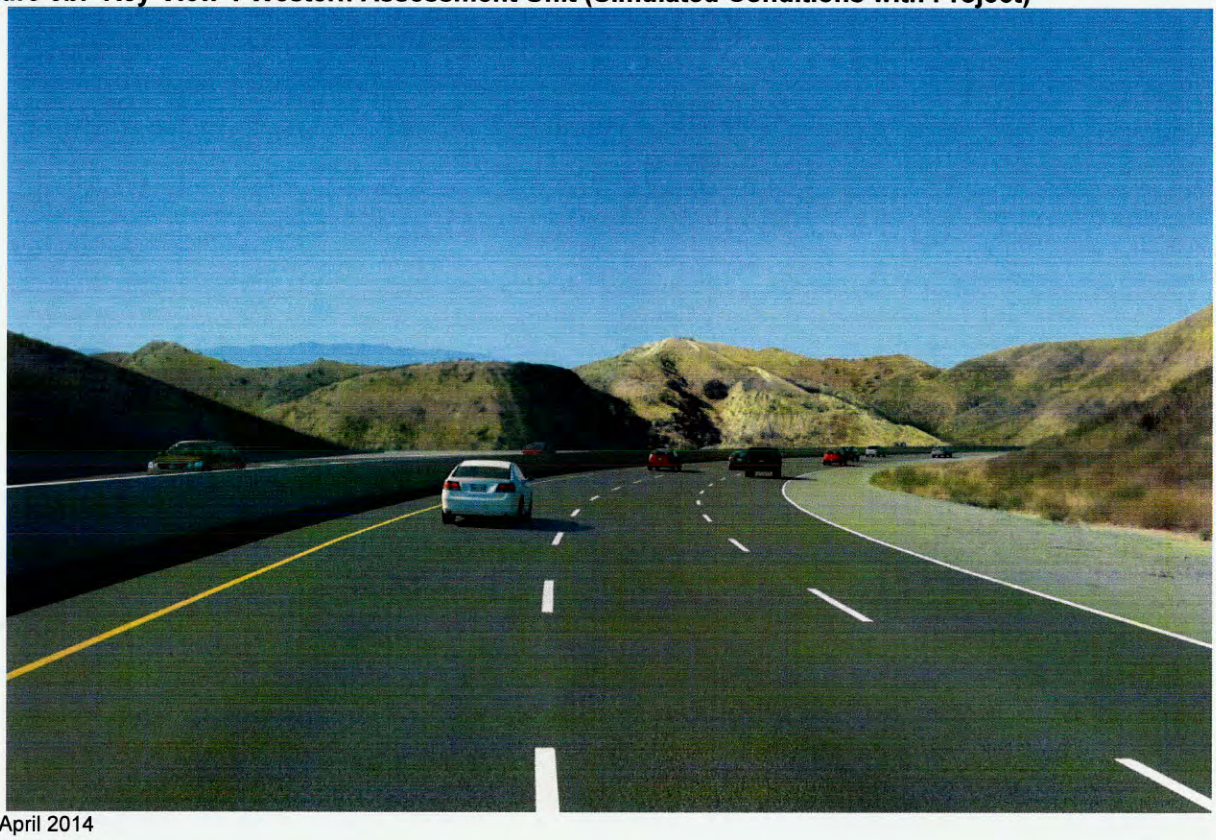
The Western Assessment Unit is relatively narrow with limited to no shoulders and a single, concrete median barrier. Views are restricted to the corridor itself and surrounding hillsides. The visual character of the Western Assessment Unit is rural with rolling hills, scrub vegetation and occasional tree clusters. Key View (KV) 1w, which represents views within this visual assessment unit is looking west towards Gilman Springs Road (Figures 5 and 6a). The simplicity of the views as shown in KV 1w lend to a cohesive and harmonious character. The size and proximity of the adjacent hills and open skyline are vivid and well balanced. Encroaching elements or other features out of context with this view are few or nonexistent.

The overall visual quality and character of this KV is considered Moderate-High.

Viewer Response:

The Highway Users are considered to have a moderate-high response to the proposed changes as their views are in close proximity, extended in duration, and there are a large number of these viewers.

Figure 6b: Key View 1 Western Assessment Unit (Simulated Conditions with Project)



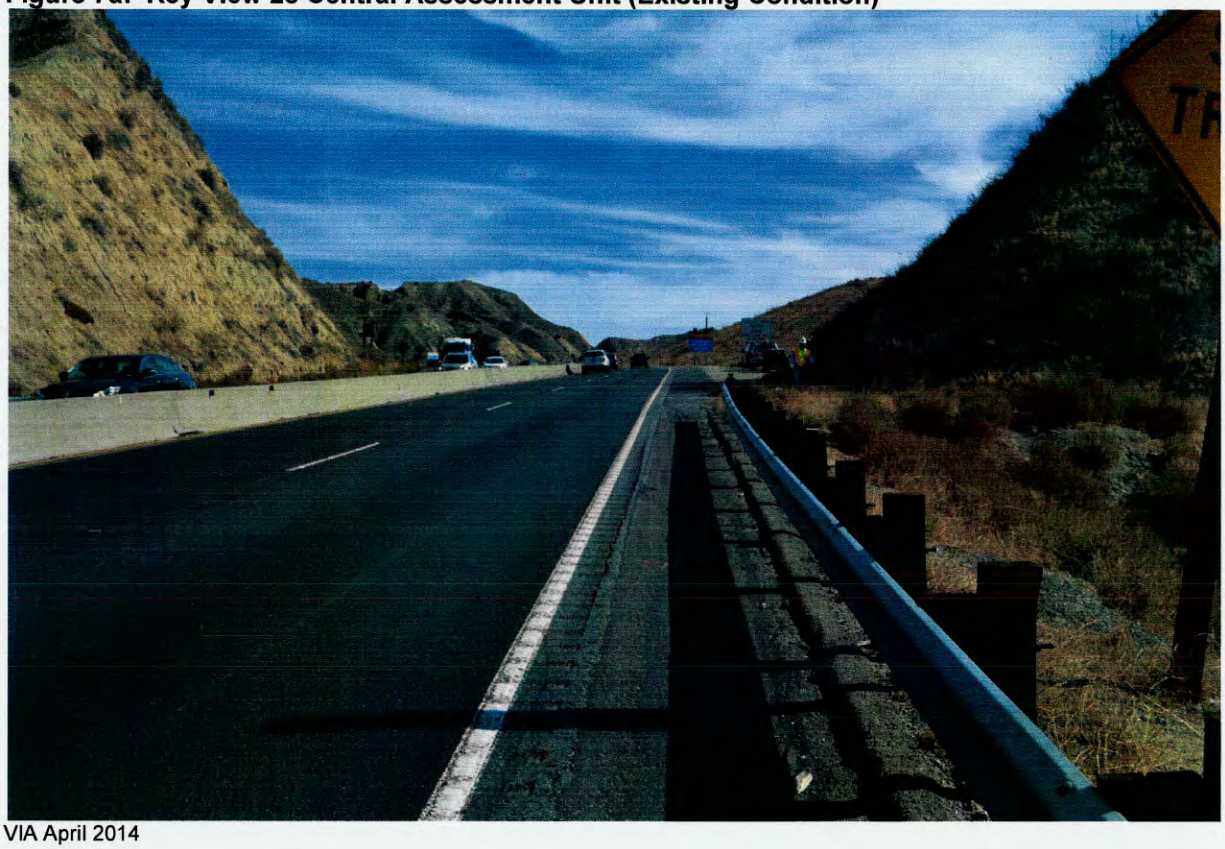
VIA April 2014

Resource Change:

Figure 6b is a simulated view of KV 1w with the proposed project changes. The widened roadway becomes a more dominant feature within this KV and sight distances open up, allowing motorists to see further in advance of their travel. The adjacent hillsides appear to be further set back from the roadway due to the wider profile of the road. Skyline views are expanded and distant horizons become visible (positive effect). The overall composition of the view is harmonious and unified with few encroachments and an even balance between the skyline, roadway, and surrounding hills. The quality of the view remains high as the distinct images of the hillsides and skyline remain intact. However, the character of the view changes from rural to urban due to the addition of truck climbing and descending lanes, a wider inside shoulder, paved outside shoulders, and an ultimate graded highway width.

Therefore, the level of resource change overall is considered Moderate.

Figure 7a: Key View 2c Central Assessment Unit (Existing Condition)



VIA April 2014

Central Assessment Unit:

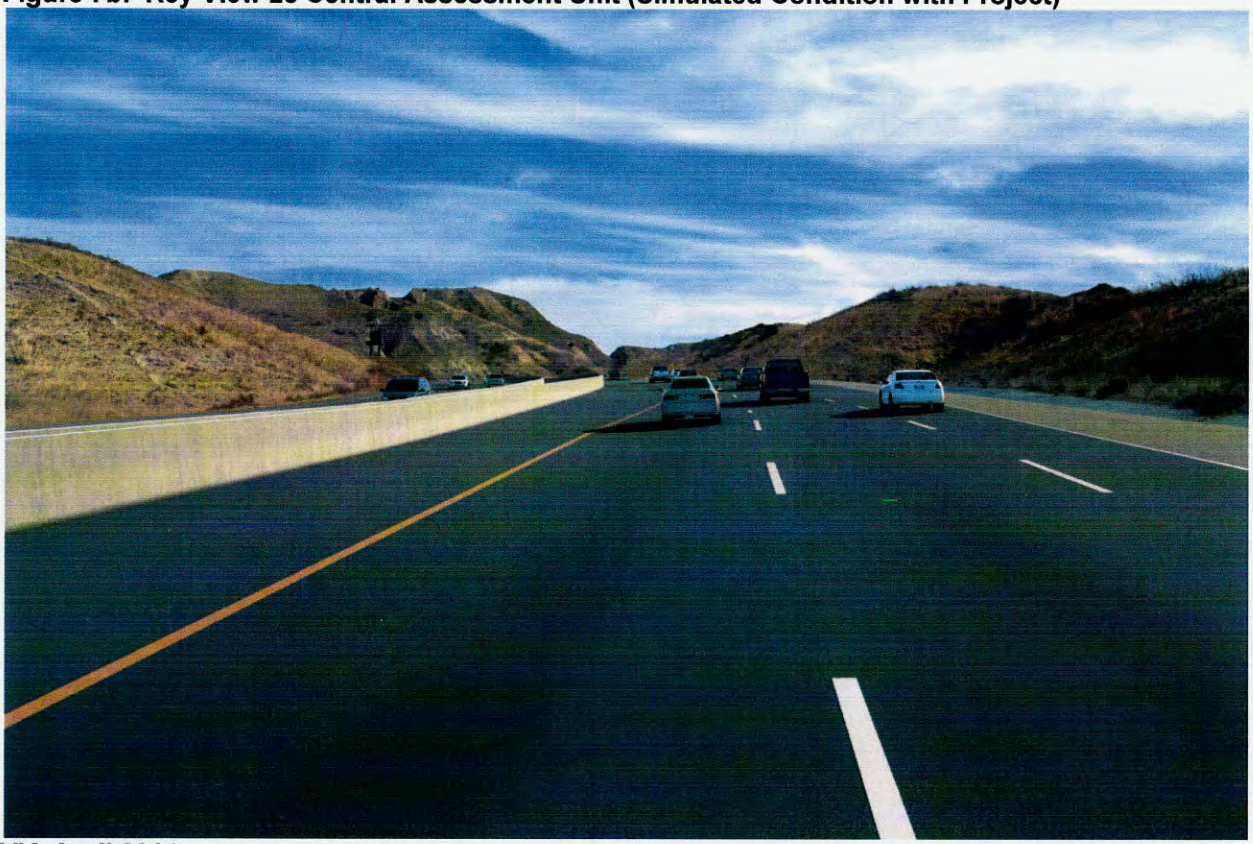
The Central Assessment Unit includes both narrow, winding portions of the roadway and wider, smoother portions where the roadway is vertically divided between the eastbound and westbound lanes. Views are focused on the corridor itself, as well as some horizon views. The large slopes are well balanced against the open skyline. The views are simple and harmonious with limited encroaching. Key View (KV) 2c, which represents views within this visual assessment unit is looking east from Timothy Lane (Figures 5 and 7a). KV 2c is within a narrower portion of SR-60 with large, steep hills adjacent to the roadway. This KV includes warning and directional signs and signals, and a k-rail median and metal rail side guard to protect motorists from sharp curves and steep ravines. The open skyline framed by large side slopes makes a vivid view and the dominant landforms create a distinct visual pattern.

The overall visual quality and character of this KV is considered Moderate.

Viewer Response:

The Highway Users are considered to have a moderate-high response to the proposed changes as their views are in close proximity, extended in duration, and there are a large number of these viewers.

Figure 7b: Key View 2c Central Assessment Unit (Simulated Condition with Project)



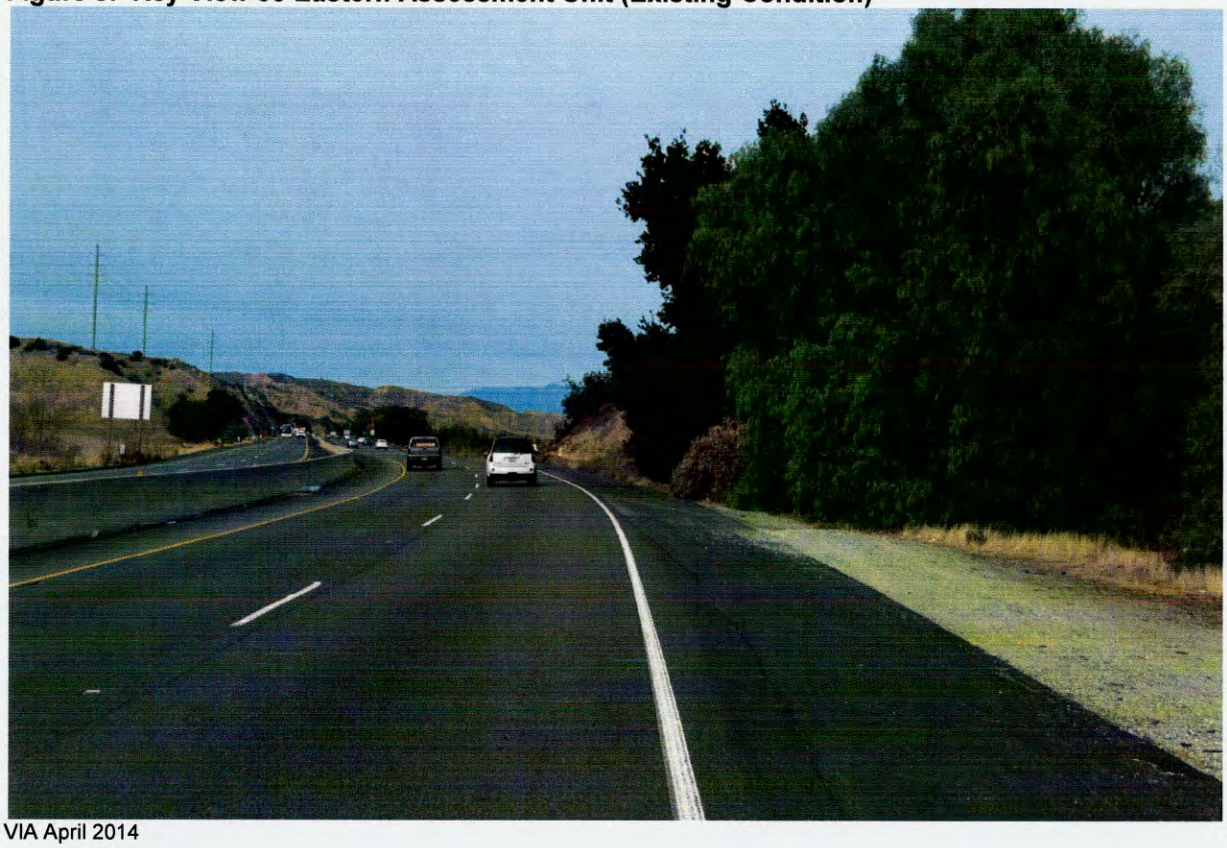
VIA April 2014

Resource Change:

Figure 7b is a simulated view of KV 2c with the proposed project changes. The wider roadway and more open skyline become the more dominant features within this KV, as the hillsides are pushed further away from the motorist's view. The view is harmonious and well balanced with the skyline, roadway, and large landforms forming a cohesive, yet let distinctive form. The vividness of the steep slopes framing the road and skyline is lost as the wider road and cut slopes blend together with the skyline to create a less diverse view. Intactness increases as some of the roadway signs and signals and metal rail are eliminated (positive effect). The scale and dominance of features within the view remain consistent, since the wider roadway takes over in scale from the large hillsides. The character of the roadway remains consistent with the existing view as this segment of SR-60 is in close proximity to the wider portions of the roadway and is generally leading up to those wider segments.

The level of resource change overall is considered Moderate.

Figure 8: Key View 3e Eastern Assessment Unit (Existing Condition)



VIA April 2014

Eastern Assessment Unit:

The Eastern Assessment Unit exhibits wider, gentler curves as the topography is less steep. The roadway provides shoulders and a wider center median. Views are open and vegetation is lusher due to the adjacent San Timoteo Creek. The hillsides, skyline, distant vistas, and vegetation create diverse visual elements that make views vivid in quality. Signage, utility lines, and distant development reduce the intactness somewhat; however, the visual elements overall, are harmonious and create a coherent and unified view. KV 3e, which represents this visual assessment unit is looking west from the eastern project extent (Figures 5 and 8). The scale of the hillsides is reduced in comparison to the roadway and skyline from this KV. The introduction of additional visual features such as the vegetation, creek, development, and distant mountain views add to the diversity of patterns, texture, and color adding to the visual character of this view.

The overall visual quality and character of this KV is considered Moderate-Low.

Viewer Response:

The Highway Users are considered to have a moderate-high response to the proposed changes as their views are in close proximity, extended in duration, and there are a large number of these viewers.

Resource Change:

Changes would include some cut and fill, grading, clearing, and a slight widening of the roadway. Since this segment of the roadway appears more generous in roadway width, incorporating shoulders and a wider median, the proposed changes are expected to appear less out of character with the existing view than it would in segments of SR-60 that are narrower with reduced median shoulders and limited to no outside shoulders. The features that give this view good quality would remain intact. The roadway is not expected to look more dominant than existing and would remain well balanced with the variety of visual elements, large landforms, and open skyline. The level of resource change within this assessment unit is low; therefore, a simulation for this view was not prepared.

Summary of Visual Impacts by Visual Assessment Unit:

The proposed project would be compatible with the County and City goals of maintaining the corridor's scenic character as it would not affect existing views or change the general nature of the corridor's use. A summary of visual impacts has been prepared for the following visual assessment units:

Western Visual Assessment Unit:

Visual impacts for KV L2, which represents the Western Assessment Unit, include a wider roadway profile creating a more dominant appearance, cut slopes that reduce their dominance, more open skyline (positive effect), and a change from rural character to more urban. These impacts would result in moderate visual changes. The Highway Users are anticipated to have a moderate-high response to the changes.

Therefore, the overall visual impact would be considered Moderate-High.

Central Visual Assessment Unit:

Visual impacts for KV 2a, which represents the Central Assessment Unit, include loss of vividness due to reduced dominance of the hillsides, increased intactness due to removal of signs and signals (positive effect), and consistency in character. These impacts would result in moderate visual changes. The Highway Users are anticipated to have a moderate-high response to the changes.

Therefore, the overall visual impact would be the same as for the Western Assessment Unit, Moderate-High.

Eastern Visual Assessment Unit:

Visual impacts for KV L11, which represents the Eastern Assessment Unit, include slightly wider roadway profile and some clearing and grading. These impacts would result in low visual changes. The Highway Users are anticipated to have a moderate-high response to the changes.

Therefore, the overall visual impact would be considered Moderate.

Table 9 summarizes and compares the narrative ratings for visual resource change, viewer response and visual impacts for Alternative 2 for each visual assessment unit.

Table 9: Summary of Key View Narrative Ratings

VISUAL ASSESSMENT UNIT	KEY VIEW	ALTERNATIVE 2		
		Resource Change	Viewer Response	Visual Impact
Western	1w	M	MH	MH
Central	2c	M	MH	MH
Eastern	3e	L	MH	M

VIA April 2014

Summary of Visual Impacts by Alternative:

A summary of visual impacts has been prepared for the following alternatives:

Alternative 1: No Build:

Under Alternative 1 the current conditions of the project area would not change; therefore, there would be no changes to the existing visual resources within the corridor (hillsides, roadway, skyline, and vistas), the assessment units, or views. Existing views and the rural character of the corridor would remain the same. The roadway is expected to continue to be maintained at the same level of upkeep as currently conducted. Therefore, there are no visual impacts associated with Alternative 1.

Alternative 2: Build:

Alternative 2 would result in moderate to moderate-high resource changes resulting in moderate-high impacts to all three visual assessment units. The proposed improvements would modify some of the slopes located along the roadway by cutting or filling them. The cut/fill

slopes would have an engineered appearance. The wider roadway and modified vertical and horizontal curves would look less rural in character and would slightly reduce the vividness of the rougher terrain. The overall appearance of the corridor would remain consistent with its existing character and distant vistas would remain intact.

PROJECT VISUAL IMPACT SUMMARY:

The proposed project would result in a more urbanized character than what currently exists. The wider roadway profile would look more like a highway than a small rural route. The widening would result in large cut and fill slopes throughout the entire corridor. In some locations this would result in opening views and vistas that currently aren't visible. In other areas it would reduce the vividness of the views framed by the steep slopes. The cut/fill slopes would look barren and engineered compared to the non-cut/fill slopes. However, there are other cut/fill slopes along the corridor. Over time, and with re-vegetation and new tree plantings, the cut/fill slopes will begin to naturalize due to mild erosion, weathering, and the re-growth of plants and trees. Because the roadway is located within the larger context of a mountain foothill, the physical changes to the adjacent hillsides would not reduce the overall character of large rolling hills set against an open skyline.

Project changes would not block scenic vistas and in some cases, may make these views more available to motorists. The project would not affect views of the surrounding mountains or valley floor or other scenic resources along a scenic highway. The proposed changes do not include new light sources. In areas where retaining walls are needed, the walls would be designed so as to minimize glare. The project would result in moderate-high visual impacts in two visual assessment units and moderate impacts in one assessment unit; therefore, the overall visual impact of the project would be moderate-high.

Temporary Construction Visual Impacts:

Alternative 1 (No Build) would have no construction impacts as it does not propose changes to the existing conditions.

Alternative 2 would require re-routing of traffic, in some cases to other facilities. The primary construction effects of the detours would include brightly colored informational or cautionary signs, warning lights, safety lighting, and barriers. Note, the visibility associated with brightly colored or visually apparent construction-related elements, such as informational signs, barriers, construction clothing, structures or equipment, have an intended safety benefit.

Construction elements that would be visible include material lay-down areas, soil stockpiles, contractor yards, large equipment, and lighting (safety, security, construction). Visual changes that would be seen from within the corridor include clearing and grubbing of vegetation, contour grading, cutting and filling of slopes and ravines, dust, and debris.

CUMULATIVE VISUAL IMPACT:

Cumulative impacts are those resulting from past, present and reasonably foreseeable future actions, combined with the potential visual impacts of this project. For this project, it has been determined that the following cumulative visual impacts may occur.

The SR-60 improvements are not expected to result in cumulative impacts to aesthetics or visual quality. In addition to the SR-60 improvements there is a new interchange planned approximately two miles east of the project limits at SR-60 and Potrero Boulevard in the City of Beaumont. In addition, land development plans exist within the limits of Beaumont and Moreno Valley; however, with the exception of the new interchange, those proposed plans would not affect SR-60 or add to a cumulative visual impact to the resources that would be affected by the proposed project. Both the SR-60 improvements and the new interchange would result in a more urbanized appearance for the two facilities. However, within the overall context of the larger topography and rural setting these changes would be minor and would not result in a cumulative impact.

The cumulative analysis considers the incremental impact of the Build Alternative when added to other past, present and reasonably foreseeable actions that affect the resource being evaluated. It identifies the aggregate or total impact that results when the impacts of other actions are combined with the direct and indirect impacts of the Build Alternative.

The recommended project measures outlined in the visual resources and resource change section would reduce the effects of project changes as seen by Highway Users on SR-60. The intent of the above measures is to reduce the effects of large cut/fill slopes, loss of vegetation, and retaining walls.

Implementation of the project measures listed above would not reduce the urbanizing effect of the project caused primarily by the addition of highway lanes. The change in visual character from rural to urban would remain. This change would not affect the overall aesthetic quality of the corridor or visual resources. The change also has the potential to be perceived as beneficial by Highway Users as it allows for expanded views, opportunities for motorists to share their focus between navigating the roadway and corridor views, and/or improved commute time resulting in a positive travel experience.

Avoidance, Minimization, and/or Mitigation Measures

The Department and the FHWA mandate that a qualitative/aesthetic approach should be taken to address visual quality loss in the project area. This approach fulfills the letter and the spirit of FHWA requirements because it addresses the actual cumulative loss of visual quality due to a project. This approach also results in avoidance, minimization, and/or project measures that can lessen or compensate for a loss in visual quality. The inclusion of aesthetic features in the project design can help generate public acceptance of a project. This section describes additional avoidance, minimization, and/or project measures to address specific visual issues. These will be designed and implemented with concurrence of the District Landscape Architect.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

The following project measures are provided to avoid or minimize visual impacts and will be incorporated into the project:

AV-1: Where retaining walls are used to stabilize cut/fill slopes the walls shall be designed to reduce glare, add visual interest, and fit the context of the setting. This will include color or patterns or materials other than concrete.

AV-2: The use of gabion baskets may be considered in lieu of traditional retaining walls in order to enhance the aesthetics of retained slopes.

AV-3: Cut/fill slopes will be re-vegetated using native plant materials to reduce erosion and facilitate vegetation growth.

AV-4: Trees removed as part of the project will be replaced at a ratio of 3:1 and an irrigation system will be installed to facilitate their survival.

AV-5: Paved drainage "V" ditches, over side drains, and headwalls will be stained to blend with the native vegetation and slopes.

With incorporation of the above project measures to offset visual impacts, no mitigation measures would be required.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

CULTURAL RESOURCES

Regulatory Setting

The term "cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966 , as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation [36 Code of Federal Regulations (CFR) 800]. On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, the Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as CAPublic Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet the National Register of Historic Places listing criteria. It further specifically requires the Department to inventory state-owned structures in its rights-of-way.

Affected Environment

The information from this section was synthesized from the Historic Property Survey Report (HPSR) (April 2014), which included a Historic Resource Evaluation Report (HRER) (April 2014), and Archaeological Survey Report (ASR) (April 2014). The ASR contains confidential information regarding site locations and is not available for public review. The HPSR has incorporated the results and conclusions from these reports.

The Area of Potential Effects (APE) for this project was established on April 25, 2014. The APE for this project was established to encompass the maximum extent of ground disturbances, direct, indirect and cumulative effects, including visual and atmospheric effects to the setting. The horizontal APE includes 25,608 linear ft of SR-60, with the areas alongside varying based on proposed areas of cut and fill. The vertical APE will extend to a maximum depth of 20' for retaining walls and at fill slopes it will be approximately 4' for cut slopes. The Project APE is approximately 194.16 acres.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

As detailed in the HPSR, efforts to identify cultural resources within the APE included a cultural resources literature and records search, consultation with Native American Groups and local Historical societies, and field surveys of the APE. In addition extensive research was conducted into the background history of the Project area and vicinity, including the construction history and development of SR-60 through the San Timoteo Badlands. These efforts were conducted to Caltrans standards, as outlined in the Caltrans Standard Environmental Reference, Volume II, Cultural Resources and meet or exceed standard industry practice.

The record search was conducted of a one-mile radius surrounding the Project APE by staff of the Eastern Information Center (EIC), University of California, Riverside. As a result of the record search and additional efforts to identify cultural resources, 26 cultural resources were identified within the vicinity of the APE. Previously documented prehistoric archaeological sites consist primarily of small resource procurement/processing sites and related artifacts including a bedrock milling station, lithic scatters, a possible roasting pit, and isolated artifacts. Previously documented historic-period cultural resources include a historical ranch, roads, refuse dumps and isolated artifacts, building/structure remains, and a materials quarry. None of these previously recorded cultural resources were ultimately determined to be within the APE.

Consultation with interested parties, including Native American groups and historical organizations, was conducted beginning in May 2013. A request was made to the Native American Heritage Commission (NAHC) for a search of the Sacred Lands File May 28, 2013. The NAHC responded on June 3, 2013, stating that a search of the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate project area. A list of Native American individuals/organizations was provided by the NAHC for additional consultation. Contact was initiated with these groups via letter on August 13, 2013, followed by two rounds of telephone calls that occurred between October 8 and 15, 2013. Native American correspondence related to the proposed project can be found in Appendix B: Agency Letters. In addition, the closest historical society to the Project area, the Moreno Valley Historical Society (MVHS), was contacted by e-mail on October 7, 2013 to illicit comments or concerns regarding the proposed project. No response has been received to date.

The archaeological survey of the Project APE was conducted between July 8 and July 12, 2013, by a two-person crew. The Project area is within the San Timoteo Badlands and is characterized by long, roughly north-south trending ridges with steep slopes, although milder slopes are present within the eastern and western ends of the Project area, and narrow drainages. The pedestrian survey was conducted wherever flat surfaces, ridge tops, drainages, and other surfaces were likely to contain cultural resources and could be safely reached and examined. Excluding the existing paved roadway, archaeologists surveyed approximately 95 percent of the Project APE. Approximately 75 percent of the Project APE was opportunistically surveyed, as steep slopes and narrow ridge tops made systematic transects impossible. Intensive pedestrian survey was performed on approximately 10 percent of the Project APE. No new archaeological resources were identified that required evaluation during the course of this survey. Mixed scatters of historical and modern refuse and debris, as well as dirt roads and trails, were observed along SR 60 throughout the entire length of the Project APE. As No intact refuse disposal sites, discrete dumps, or concentrations of artifacts were found, and lacking direct historical association, these resources were exempted from recordation and evaluation according to Attachment 4 of the Caltrans Programmatic Agreement (PA).

A reconnaissance built-environment survey of the Project APE was also performed between July 8 and 13, 2013. During that survey, a previously unrecorded segment of former U.S. Highway 60 across the San Timoteo Badlands, Æ-2339-1H (update to 33-021095) and associated road features was identified within the Project APE. This section of SR 60/US 60 was initially constructed as part of Interstate Highway 60 and was signed US 60 until sometime between 1964 and 1967, when it was relegated to a State Route. Construction of this segment was completed in 1935, and several culvert headwalls identified in the field along the northern side of the current westbound lanes were stamped with this date. Between 1955 and 1956, the highway was widened from two lanes to four lanes, which required extensive new cut and fill areas and the replacement and/or extension of multiple culverts.

The segment of SR-60/US 60 was evaluated and determined not eligible for the National Register of Historic Places as a result of the current study. While US 60/present-day SR-60 (Æ-2339-1H) has served as an important transportation link since 1935, it does not appear eligible for the NRHP or the CRHR due to a severe loss of historical integrity. The SHPO concurred with this determination on May 19, 2014 found in Appendix B: Agency Letters. This resource is also not considered an historical resource under CEQA because it does not meet the California Register of Historical Resources criteria. The remaining built environment resources within the APE were exempted from recordation and evaluation according to Attachment 4 of the Caltrans Programmatic Agreement (PA).

If buried cultural resources are encountered during construction, it is Caltrans policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find.

In the event that human remains are found, the county coroner shall be notified and ALL construction activities within 50 feet of the discovery shall stop. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). The person who discovered the remains will contact the District 8 Division of Environmental Planning; Gabrielle Duff, DEBC: (909)383-6933 and Gary Jones, DNAC: (909)383-7505. Further provisions of PRC 5097.98 are to be followed as applicable.

Environmental Consequences

Build Alternative 2: As noted above, only one property within the APE, a segment of SR-60/US 60, required evaluation. This property was determined to not meet NRHP evaluation Criteria, and therefore was determined not to be a Historic Property. The State Office of Historic Preservation concurred with this finding on May 19, 2014. Because there are no Historic Properties within the APE, Caltrans has determined that a Finding of No Historic Properties Affected according to Section 106 Programmatic Agreement Stipulation IX.A, is appropriate for this undertaking. This conclusion is based on the results of the literature and records search, consultation with Native American Groups and local Historical societies, and field surveys of the APE.

Because there are no Historic Properties listed on or eligible for listing on the NRHP within the project APE, there are no Historic Sites triggering the requirements of Section 4(f).

No-Build Alternative 1: There would be no temporary or permanent impacts to cultural resources.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation measures are required; however, the following standard measures will be followed to further avoid and/or minimize any potential impacts:

CR-1: If buried cultural resources are encountered during construction, it is Caltrans policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find.
CR-2: If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact District 8 Division of Environmental Planning; Gabrielle Duff, DEBC: (909)383-6933 and Gary Jones, DNAC: (909)383-7505 so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Physical Environment

HYDROLOGY AND FLOODPLAIN

Regulatory Setting

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations (CFR) 650 Subpart A.

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as "the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

Affected Environment

Regional Hydrology:

The Santa Ana Region 8 Basin Plan covers an extensive portion of the Southern California region area, touching on three county regions. The basin area reaches from the coastal edges of northern Orange County, to the east-west aligned crest of the San Gabriel and San Bernardino Mountains. There are four major watershed areas in Riverside County: Santa Ana River; San Jacinto Valley; Santa Margarita; and Whitewater. The Santa Ana Region "is a group of connected inland basins and open coastal basins drained by surface streams flowing generally southwestward to the Pacific Ocean" (Region 8, 2011), and is one of nine major California watershed systems between Santa Barbara and the U.S.-Mexico border at Tijuana.

Located in the northwestern corner of Riverside County, the Santa Ana Region watershed is comprised of 1,603 square miles, including the San Jacinto River watershed. Surface waters start in the upper erosion zone of the watershed mainly from the San Bernardino, Santa Ana, and San Jacinto Mountains. This upper erosion zone contains the highest gradient and soils/geology that do not allow large quantities of surface water percolation into the ground (Riverside County FCWCD, 2013b). Its primary slope direction is northeast to southwest, with secondary slopes limited by the local topography. Less than one-fifth of the entire acreage within Riverside County drains into waterbodies within the Santa Ana Region, including the San Timoteo Creek Basin (Riverside County FCWCD, 2013b). The project area is located in both

the Santa Ana River (Hydrologic Unit Code 18070203) and San Jacinto Valley (Hydrologic Unit Code 18070202) watersheds. Most of the project area is located within the San Jacinto Valley watershed.

There is no sustained aquatic habitat in several parts of the Santa Ana River Basin due to limited and largely absent flows (Region 8, 2011). In areas that have perennial flows, the habitat is normally harsh with warm, shallow water; shifting sand substrate; little or no instream cover; and no riparian vegetation or tree canopy for shade (Basin Plan, 2008). Water supply is the most serious problem in the Santa Ana River Basin because the quantity of imported water now equals or exceeds the amount of ground and surface water utilized (Basin Plan, 2008). Imported water comes from the Colorado River Aqueduct (though limited reuse due to high mineral content) and from the Sacramento-San Joaquin Delta via the State Water Project (Region 8, 2011).

Runoff from the western portion generally flows south for 5.5 miles before converging with the San Jacinto River, which flows for approximately 14 miles southwest before reaching Railroad Canyon Reservoir (also called Canyon Lake). The San Jacinto River, located 5 miles north of the project area, then flows for 3 miles south before draining into Lake Elsinore. Temescal Creek flows out of Lake Elsinore for 10 miles west before draining into Lee Lake, then flows for another 20 miles west before converging with the Santa Ana River at Prado Basin. The Santa Ana River flows southwest for 31 miles before reaching the Pacific Ocean. Runoff from the eastern portion of the site drains into San Timoteo Creek, which flows northwest for 16 miles before converging with the Santa Ana River. The Santa Ana River then flows west for 58 miles before reaching the Pacific Ocean.

Floodplains:

The Riverside County Flood Control and Water Conservation District manages the project area. The Federal Emergency Management Agency Flood Zone Designations in the project area are Flood Zone D (area of possible but undetermined flood hazards) and Flood Zone X (Moderate flood hazard area between the limits of the 100-year and 500-year floods). The western and eastern ends of the project corridor are within Flood Zone X and the middle area is within Flood Zone D. The upper areas of San Timoteo Creek (in the Redlands vicinity) have been channelized (concrete lined) by the USACE.

According to the Basin Plan (Region 8, 2011), annual rainfall in the Santa Ana Region occurs mostly in the winter and in one-to-two durations creating major floods. The USACE have or plan to channelize most surface streams in the area in order to quickly move large volumes of water to another area without significant property damage.

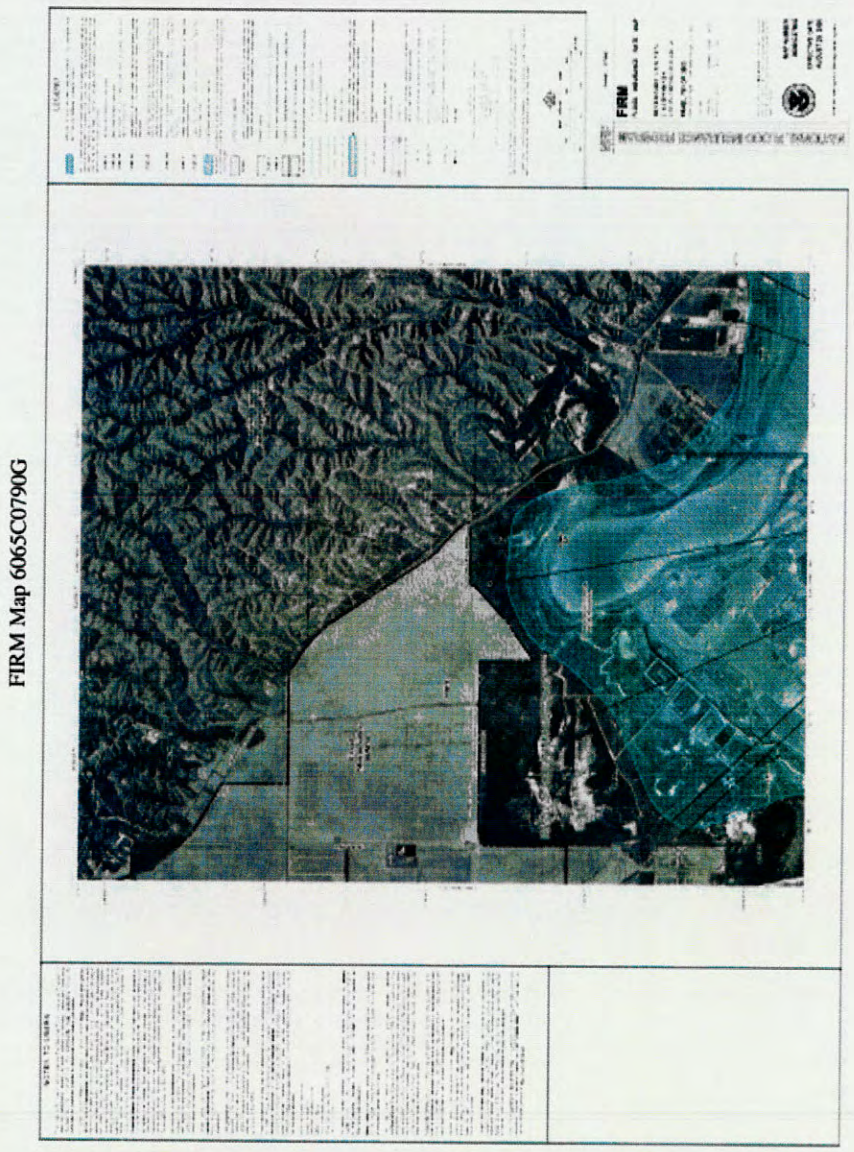
On March 27, 2014, the Department approved the Location Hydraulic Study and Summary Floodplain Encroachment Report. As SR-60 traverses that portion of Riverside County between Postmiles 22.1 to 26.5, also known as "The Badlands," it crosses thirty-four watercourses. For each of these, existing culverts carry the runoff from the upstream to the downstream side of the road.

Although there are no floodplains bearing a Federal Emergency Management Agency (FEMA) designation (please refer to Flood Insurance Rate Map (FIRM) Panels 06065C0760G, 06065C0770G, 06065C0785G, 06065C0790G, and 06065C0795G on the following pages), each of these watercourses is nevertheless subject to Federal Emergency Management Administration guidelines for flood protection. These guidelines state in essence that if any construction within any watercourse should result in a change to the existing flow that could affect houses or other occupied structures, a Flood Plain Analysis will need to be prepared to determine the effect of the new construction on the existing water surface. Specifically, if the increase in water surface elevation exceeds one foot in areas containing houses or other occupied structures, a Letter of Map Revision (LOMR) must be prepared and submitted to FEMA for evaluation. This would be accomplished during design if requested. Please refer to the Flood Insurance Rate Maps and Drainage Catchment Areas on the following pages.

April 2014 Location Hydraulic Studies – Summary Floodplain Evaluation Reports

April 2014 Location Hydraulic Studies – Summary Floodplain Evaluation Reports

April 2014 Location Hydraulic Studies – Summary Floodplain Evaluation Reports



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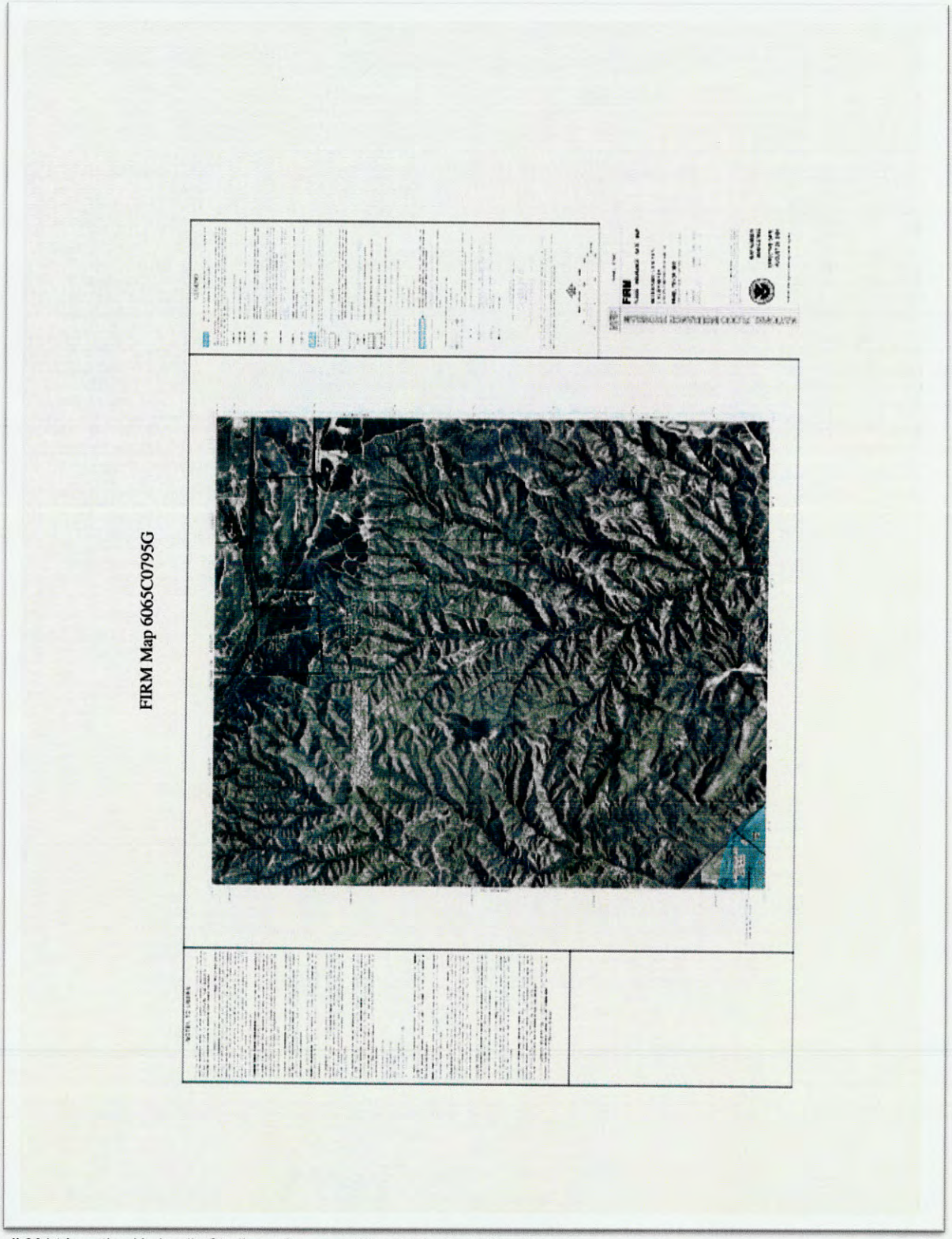

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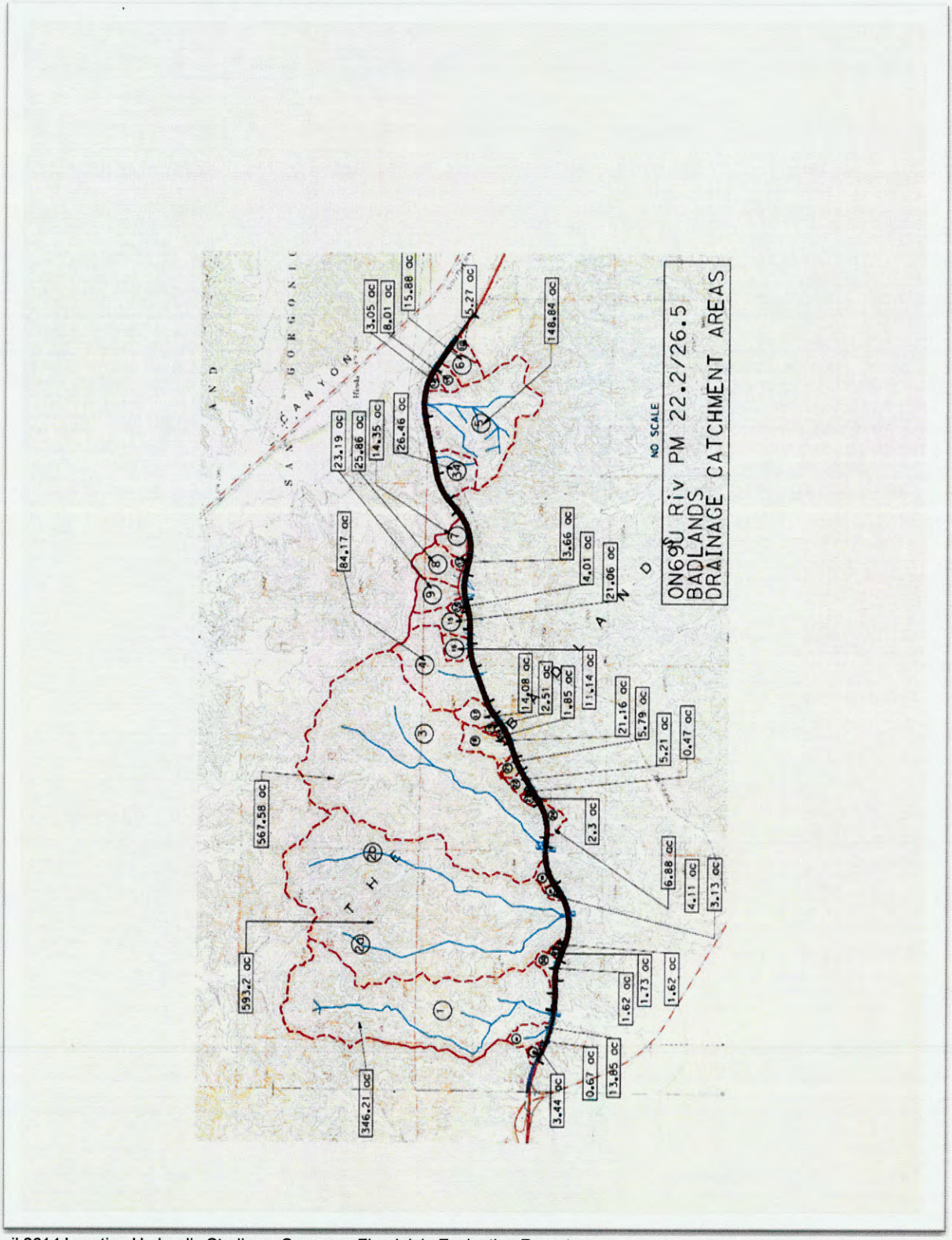


April 2014 Location Hydraulic Studies – Summary Floodplain Evaluation Reports

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

The area through "The Badlands" is marked by numerous deep canyons and sandstone soil formations, with very little land surface being level for any significant distance (greater than 100 feet along the flow lines of the various watercourses, or more than 10 feet measured perpendicular to the flow). The land is not at all conducive to development, as vegetation is almost entirely sagebrush and Mediterranean flora, with few if any trees.

Of the thirty-four existing culverts, ponding at the upstream end is at most 2.5 feet, and most of the watercourses will not even carry enough water to cause the culverts to flow full and pond. Even if construction were to extend the culverts by one hundred feet (several times the actual distance), the change in water surface would be only around two to three feet. Since all but a few of the easternmost watercourses are anywhere from thirty to as much as two hundred feet below the roadway, these changes will be insignificant.

The following is a summary of all 34 watercourses (Table 10), including their drainage areas, contributory flow rates, existing culvert types, and ponding depths for the 100-year frequency storm (that storm that has a one-in-one-hundred chance of occurring in any given year). Where the ponding depth is shown as "N/A," (not applicable), there is insufficient flow to cause the culvert to seal and flow full.

Runoff totals for the various watersheds were obtained by using the Regional Regression Equations, developed by the United States Geological Survey. The equation for the Southern California Coastal Region states that, for a 100-year frequency storm,

$$Q = 1.95\ A^{0.83}\ P^{1.87}$$

where Q=runoff in cubic feet per second,
A= area in square miles, and
P = mean annual precipitation

Annual precipitation records were obtained both via internet searches of United States Geological Survey (USGS) and National Oceanic and Atmospheric Administration (NOAA) rainfall records, as well as the specific gauges operated by the Riverside County Flood Control (RCFC) and Water Conservation District:

Riverside Average Rainfall = 10.3 inches/year
Beaumont Average Rainfall = 20.2 inches/year
Moreno Valley Ave Rainfall = 10.0 inches/year
RCFC Gauge 437 Ave Rainfall = 2.36/1.99 x 10.0 = 11.8 inches/year
Calimesa Ave Rainfall = 19.3 inches/year
Moreno East – RCFC Gauge 124 = 12.8 inches/year

From these data, the following table was prepared, using the Regional Regression Equation
$Q = 1.95\ A^{0.83}\ P^{1.87}$

Table 10: Summary of 34 Watercourses

Drainage Area	Area (Ac)	Area (SqM)	Mean Annual Precipitation (Inches)	$A^{0.83}$	$P^{1.87}$	Runoff (CFS)	Existing Culvert	Ponding Depth
1	346.2	0.54	16	0.60	178.5	208.9	6.5'x5' RCA	2.51'
2	593.2	0.93	17	0.94	200.0	366.6	7.6'x6.4' RCA	2.17'
3	567.6	0.89	18	0.91	222.5	394.8	7.5'X6.5' RCA	1.65'
4	84.2	0.13	16	0.18	178.5	62.7	48" CSP	0.66'
5	148.8	0.23	16	0.30	178.5	104.4	54" CSP	1.13'
6	15.9	0.02	15	0.04	158.2	12.3	36" CSP	N/A
7	14.4	0.02	15	0.04	158.2	12.3	48" CSP	N/A
8	25.9	0.04	15	0.07	158.2	21.6	36" CSP	N/A
9	23.2	0.04	16	0.07	178.5	24.4	36" CSP	N/A
10	5.3	0.01	14	0.02	139.1	5.4	30" CSP	N/A
11	8.0	0.001	14	0.00	139.1	0.8	30" CSP	N/A
12	3.1	.005	13	0.01	121.1	2.8	30" CSP	N/A
13	3.7	.006	14	0.01	139.1	3.8	36" CSP	N/A
14	4.0	.006	15	0.01	158.2	4.3	36" CSP	N/A
15	21.1	.03	15	0.06	158.2	17.0	36" CSP	N/A
16	11.1	.017	15	0.03	158.2	10.5	36" CSP	N/A
17	14.1	.022	14	0.04	139.1	11.4	36" CSP	N/A
18	21.2	.03	14	0.06	139.1	14.9	36" CSP	N/A
19	2.5	.02	13	0.04	121.1	9.5	36" CSP	N/A
20	1.9	.003	13	0.01	121.1	1.9	24" CSP	N/A
21	5.8	.009	13	0.02	121.1	4.7	30" CSP	N/A
22	5.2	.008	12	0.02	104.2	3.7	30" CSP	N/A
23	0.4	.0006	12	0.00	104.2	0.4	18" CSP	N/A
24	2.3	.004	11	0.01	88.6	1.7	30" CSP	N/A
25	0.5	0.008	11	0.03	88.6	5.2	24" CSP	N/A
26	4.1	.006	11	0.01	88.6	2.4	24" CSP	N/A
27	3.1	.005	10	0.01	74.1	1.7	36" CSP	N/A
28	1.8	.003	10	0.01	74.1	1.2	24" CSP	N/A
29	1.7	.003	10	0.01	74.1	1.2	24" CSP	N/A
30	1.6	.003	10	0.01	74.1	1.2	36" CSP	N/A
31	0.4	.0006	10	0.00	74.1	0.3	24" CSP	N/A
32	13.9	.02	11	0.04	88.6	6.9	24" CSP	N/A
33	3.4	.005	10	0.01	74.1	1.7	24" CSP	N/A
34	0.4	.0006	10	0.00	74.1	0.3	36" CSP	N/A

For a schematic of the various basin locations, please refer to the maps.

Environmental Consequences

The project should have little or no effect on the hydrology of any existing watercourses within the project area. There are only 15 jurisdictional watercourses within the project area. Additional analysis of these specific watercourses is discussed in the Wetlands and Other Waters Section.

Build Alternative 2: The only construction item that will affect the watercourses in any way will be a slight lengthening of the culverts in the upstream direction. (Lengthening in the downstream direction will have no effect on the water surface elevation, as the amount of flow at the outlet remains unchanged.)

No-Build Alternative 1: Would have no temporary or permanent impacts to any water ways or drainages.

Avoidance, Minimization, and/or Mitigation Measures

No floodplain risks are involved with this proposed project; therefore, no avoidance, minimization and/or mitigation measures are required.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

WATER QUALITY AND STORM WATER RUNOFF

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[3] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

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

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations [CFR] 40 Part 230), and whether the permit

[3] A point source is any discrete conveyance such as a pipe or a man-made ditch.

approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[4] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect these uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

[4] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

- **National Pollutant Discharge Elimination System (NPDES) Program**

  Municipal Separate Storm Sewer Systems (MS4)

  Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The SWRCB has identified the Department as an owner/operator of an MS4 under federal regulations. The Department's MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

  The Department's MS4 Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012 and became effective on July 1, 2013. The permit has three basic requirements:

  1. The Department must comply with the requirements of the Construction General Permit (see below);

  2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

  3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices (BMPs). The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

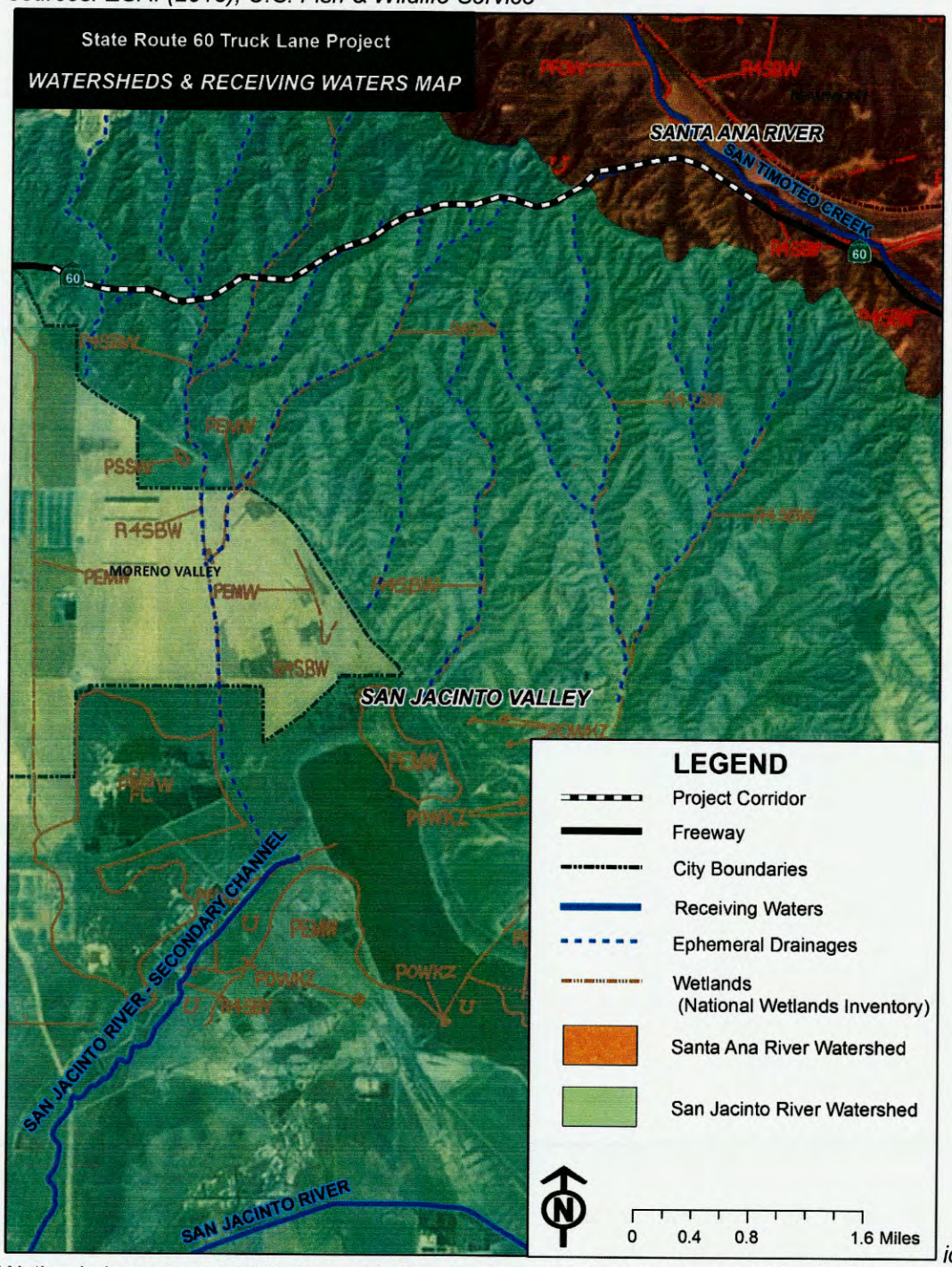
Affected Environment

On March 26, 2014, the Water Quality Assessment Report was approved. Water quality for an area depends on numerous characteristics such as the area's land use, geography, topography, soil, major aquifers, surface and ground water, and receiving water bodies' conditions. Following is a description of the characteristics of the project area. The project is located within the Santa Ana River Basin Regional Water Quality Control Board (Region 8). Figure 9 shows the location of the project relative to receiving waters and watershed.

The east-west alignment of the crest of the San Gabriel and San Bernardino Mountains separates the Santa Ana River Basin from the Mojave Desert, which is part of the Lahontan Basin (Region 6). The project area is within two watersheds in the San Ana Region 8 basin: Santa Ana River and San Jacinto River watersheds. The San Jacinto watershed is bound by two strike-slip fault zones: the San Jacinto fault zone to the northeast and the Elsinore fault zone to the southwest (Riverside County FCWCD DAMP, 2013b). Groundwater flows connected with both the Santa Ana and San Jacinto Rivers are affected by the San Jacinto Fault (split from the San Andreas Fault near San Bernardino) (Region 8 2011). The predominant geologic units within the SAR watershed are comprised of the following: intrusive rocks of the southern California batholith (granitic and andesitic rocks) eroded to form the mountain ranges; alluvial/fluvial sediments; and semi-consolidated sedimentary units.

The project is located in the West margin of the Eden Hot Spring along low-lying hills known as "The Badlands," which overlies granitic bedrock. As such, the soil is primarily a product of weathered granitic materials (Basin Plan, 2008). The Jurisdictional Delineation (JD) Report that was prepared for the project (AMEC 2013), indicates that the U.S. Department of Agriculture (USDA) Soils Maps for Western Riverside County show that the project footprint consists of approximately 88 percent un-eroded bedrock (Badlands), with the remainder being loamy sand or fine sandy loam (Alluvial fans), which are considered well-drained soils. In addition, the project area soils are included in the USDA Hydric Soils list. Hydric soils are those soils that are sufficiently wet in the upper part with potential to develop anaerobic conditions during the growing season. Soils with anaerobic conditions favor the growth and regeneration of hydrophytic vegetation, which is part of the definition of wetland. Although hydric soils may occupy a relatively small portion of the landscape, they maintain important functions in the environment. (USDA, 2013).

Figure 9: Location of the Watersheds and Receiving Waters
Sources: ESRI (2013), U.S. Fish & Wildlife Service



ice (National Wetlands Inventory) (2013), Riverside County Online RCIT/GIS Store, California Spatial Index Library (2013).

Soils are also classified in groups according to runoff potential based on its rate of infiltration. Table 11 presents the various hydrologic soil groups. According to the Storm Water Data Report (SWDR) prepared by the Department for the project (Department, 2011), the predominant soils within the limits of the project belong to Group D. Group D includes soils that are restrictive of water movement, have slow infiltration rate, and high runoff potential.

Table 11: Description of Hydric Soils Classification Groups

Hydric Soil Groups	Descriptions
Group A	Soils in this group have high infiltration rate (low runoff potential) when thoroughly wet. Water is transmitted freely through the soil. Group A soils typically have less than 10 percent clay and more than 90 percent sand or gravel and have gravel or sand textures. Some soils having loamy sand, sandy loam, loam or silt loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments
Group B	Soils in this group have moderate infiltration rate (low runoff potential) when thoroughly wet. Water transmission through the soil is unimpeded. Group B soils typically have between 10 percent and 20 percent clay and 50 percent to 90 percent sand and have loamy sand or sandy loam textures. Some soils having loam, silt loam, silt, or sandy clay loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments.
Group C	Soils in this group have slow infiltration rate (moderately high runoff potential) when thoroughly wet. Water transmission through the soil is somewhat restricted. Group C soils typically have between 20 percent and 40 percent clay and less than 50 percent sand and have loam, silt loam, sandy clay loam, clay loam, and silty clay loam textures. Some soils having clay, silty clay, or sandy clay textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments.
Group D	Soils in this group have slow infiltration movement (high runoff potential) when thoroughly wet. Water movement through the soil is restricted or very restricted. Group D soils typically have greater than 40 percent clay, less than 50 percent sand, and have clayey textures. In some areas, they also have high shrink-swell potential. These soils have a very slow rate of water transmission.

Source: US Department of Agriculture Hydrology National Engineering Handbook, Chapter 7- Hydrologic Soil Groups. (2007).

Local Hydrology: Surface Streams:

The project corridor is located within the Santa Ana River hydrologic unit and San Jacinto Valley hydrologic unit. Surface water flows derive mainly from snowmelt and storm runoff from the San Bernardino National Forest. The San Jacinto hydrologic unit is a 780 square mile watershed located in the southernmost portion of the Santa Ana Region watershed. This hydrologic unit is a tributary to the Santa Ana River through Lake Elsinore and Temescal Wash.

The project location includes two receiving waters. Along Riv-60-PM R24.9/26.5, at the eastern end of the project corridor, San Timoteo Creek (Hydrologic Unit 801.62) is the closest receiving water body to the project corridor at approximately 300 feet at the nearest point. The creek originates from the Santa Ana River in San Bernardino (near the intersection of Interstates 210 and 10) with a drainage area of 125 square miles. The annual total discharge for Water Year 2012 was 1,841.86 cubic feet (USGS, 2013b). The creek in the project area is part of Reach 3 where rising water would feed to several small tributaries that are critical areas for native fish to breed and nurse (Region 8, 2011). Its flow is comprised predominantly of reclaimed wastewater from Yucaipa and other upstream dischargers. From the Santa Ana River down to Loma Linda, San Timoteo Creek is channelized as a trapezoidal concrete floodway (USGS, 2013b). There are future plans by USACE to continue this concrete floodway along San Timoteo Creek.

At Riv-60-PM R22.2/24.9, San Jacinto River (Hydrologic Unit 802.21) is the second receiving water body within the project limits. It terminates at Canyon Lake with only significant overflows of Canyon Lake reaching Lake Elsinore. The lakes have a TMDL for nutrients. Canyon Lake is on the 303(d) list for nutrients and pathogens. Lake Elsinore is 303d listed for nutrients. San Jacinto River, a tributary to the Santa Ana River through Lake Elsinore and Temescal Wash, is ephemeral with a drainage area of 723 square miles (USGS, 2013a). The annual total discharge for Water Year 2011 was 1,964 cubic feet and for Water Year 2012 193 cubic feet (USGS, 2013a). Flows from the San Jacinto River rarely reach the Santa Ana River due to the substantial amount of available flood storage in Lake Elsinore (Riverside County FCWCD, 2013b). There are 7 reaches along the San Jacinto River Basin of the Santa Ana River watershed. The project location is closest to reach 4 and 5 of San Jacinto River.

As part of the JD that was prepared for the project, upstream and downstream connectivity of waterways was reviewed in the field and on aerial photographs and topographic maps to determine their jurisdictional status. Ephemeral washes with a physical connection to the Santa Ana River were determined to be potential WUS and Waters of the State, as well as part of and California Department of Fish and Wildlife (CDFW) streambeds.

Municipal supply:

There are no Drinking Water Reservoirs and/or Recharge Facilities within the project limits.

Groundwater:

The Inland Santa Ana Basin and the San Jacinto Basin are the two groundwater basins located in the Santa Ana Region 8 Basin. A range of interconnected, alluvium-filled valleys surrounded by steep sides of bedrock mountains and hills make up the San Jacinto Basin. Groundwater is forced to the surface by the San Jacinto Fault (Bunker Hill Dike) in the San Bernardino area,

north of the project area (Region 8, 2012). Perennial flows from the rising water area due to the fault derive from the Santa Ana River. Groundwater recharge is mostly from irrigation return flows and reclaimed water from percolation ponds. Groundwater discharge is due to pumping of ground-water according to Santa Ana Region Watershed Action Plan (Riverside County FCWCD, 2013c). The San Jacinto Groundwater Basin covers 293 square miles and is bound by the San Jacinto Mountains on the east, the San Timoteo Badlands on the northeast, the Box Mountains on the north, the Santa Rose Hills and Bell Mountain on the south, and unnamed hills on the west. The estimated groundwater storage capacity for the San Jacinto Groundwater Basin is 3,070,000 acre-foot (Region 8, 2006).

Three groundwater wells are located near the project area with the closest well less than a half mile from project area (within the golf course). This groundwater water well has a well depth of 1,130 feet and a hole depth of 1,167 feet (USGS, 2013a). San Jacinto Groundwater Basin produces 200 to 2,600 gallons per minute (Region 8, 2006). Natural recharge to this groundwater basin derives mainly from percolation of flow in the San Jacinto River and its tributaries and less recharge from infiltration of rainfall on the valley floor (Region 8, 2006). The groundwater depth within the project limits varies from 64 to 114 feet from the ground surface.

The groundwater recharge programs in Riverside County store both local and imported water as surplus to meet seasonal and drought-year demands (County of Riverside General Plan, 2013).

Existing Water Quality: Beneficial Uses:

Under the Porter-Cologne Water Quality Control Act, beneficial uses and water quality objectives are to be established for all waters of the state, both surface and ground water. Beneficial uses, as defined by the Santa Ana RWQCB for the Santa Ana Basin Plan, are the various ways the water can be used for the benefit of people and/or wildlife.

The Basin Plan also establishes standards for wetlands. Wetlands serve a number of important functions, including erosion control, and water quality improvement by the removal of pollutants. They also provide habitat for wetland species, and other values related to aesthetic, recreational, and science.

In addition, Groundwater Management Zones (GWMZs) where developed for the basin to ensure protection of groundwater beneficial uses and maximum benefits to people. The boundaries of GWMZs in the basin area were defined based on distinct flow systems and distinct differences in water quality.

The eastern end of the project corridor is within the San Timoteo Management Zones and the western part is within the San Jacinto Lower Pressure management zone of the Santa Ana Basin Plan. Table 12 lists the potential beneficial uses designated in the Basin Plan for the receiving water bodies in the project area including San Jacinto River reaches 4 and 5, and San Timeteo Creek reach 3, and GWMZs. In this table, an "X" indicates that the water body has an existing or potential use. Potential beneficial uses are established because there are plans to put the water to those uses, or because conditions (*e.g.,* location, demand) make such future use likely. The establishment of a potential beneficial use serves to protect the quality of that water for such eventual use. An "I" indicates that the water body has an intermittent beneficial use. This may occur because water conditions do not allow the beneficial use to exist year

round. The most common example of this is an ephemeral stream. Ephemeral streams in this region include, at one extreme, those which flow only while it is raining or for a short time afterward, and at the other extreme, established streams which flow through part of the year but also dry up for part of the year. While such ephemeral streams are flowing, beneficial uses occur from the water. Waste discharges, which could impair intermittent beneficial uses, whether they are discharged while those uses exist or not, are not permitted. A "+" in the MUN column indicates that the water body has been specifically excepted from the MUN designation in accordance with the criteria specified in the "Sources of Drinking Water Policy."

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Table 12: Designated Beneficial Uses of Receiving Waters in the Project Area				
Beneficial Use	[5]San Timoteo Creek Reach 3	[6] San Jacinto River Reach 4&5	San Timoteo GWMZ	Lower San Jacinto GWMZ
***REC 1:** Water Contact Recreation (REC 1*) waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing and use of natural hot springs.	**X**	**I**		
***REC 2** Non-contact Water Recreation (REC 2*) waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing and aesthetic enjoyment in conjunction with the above activities.	**X**	**I**		
WARM: Warm Freshwater Habitat (WARM) waters support warm water ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.	**X**	**I**		
WILD: Wildlife Habitat (WILD) waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.	**X**	**I**		
GWR: Groundwater Recharge (GWR) waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality or halting saltwater intrusion into freshwater aquifers.	**X**	**I**		

[5] Reach 3 – Confluence with Yucaipa Creek to confluence with little San Gorgonio and Noble Creeks (Headwaters of San Timoteo Creek)

[6] Reach 4 – Nuevo Road to North-South Mid-Section Line, T4S/R1W-S8
Reach 5 – North-South Mid-Section Line, T4S/R1 W-S8, to Confluence with Poppet Creek

X = Present or Potential Beneficial Use **I** = Intermittent Beneficial Use**+** = Excepted from MUN

* The **REC 1** and **REC 2** beneficial use of designations assigned to surface waterbodies in this Region should not be construed as encouraging recreational activities. In some cases, such as Lake Matthews and certain reaches of the Santa Ana River, access to the waterbodies is prohibited because of potentially hazardous conditions and/or because of the need to protect other uses, such as municipal supply or sensitive wildlife habitat. Where **REC 1** or **REC 2** is indicated as a beneficial use, the designations are intended to indicate that the uses exist or that the water quality of the waterbody could support recreational uses.

Table 12: Designated Beneficial Uses of Receiving Waters in the Project Area				
Beneficial Use	[5]San Timoteo Creek Reach 3	[6] San Jacinto River Reach 4&5	San Timoteo GWMZ	Lower San Jacinto GWMZ
MUN: Municipal and Domestic Supply (MUN) waters are used for community, military, municipal, or individual water supply systems. These uses may include, but are not limited to, drinking water supply.	+	+	X	X
AGR: Agricultural Supply (AGR) waters are used for farming, horticulture or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for grazing.			X	X
IND: Industrial Service Supply (IND) waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection and oil well repressurization.			X	X
PROC Industrial Process Supply (PROC) waters are used for industrial activities that depend primarily on water quality. These uses may include, but are not limited to, process water supply and all uses of water related to product manufacture or food preparation.			X	
Water Quality Assessment Report, April 2014				

Environmental Consequences

Regional and Local Impaired Waters:

State and Regional Water Boards assess water quality monitoring data for California's surface waters every two years to determine if they contain pollutants at levels that exceed protective water quality standards. This biennial assessment is required under Section 303(d) and 305(b) of the federal Clean Water Act. Placement of a water body on the 303(d) list initiates the development of a Total Maximum Daily Load (TMDL). TMDLs establish "daily load" limits of the pollutant, or other regulatory measures for reducing the amount of the pollutant entering the water body to ensure meeting water quality standards.

An integrated report of statewide water bodies and associated pollutants was approved on August 19, 2010 (Cal EPA, 2011). The report includes water quality assessment information about specific water bodies in California. There are 51 water bodies in the Santa Ana River Basin that are designated as impaired in the 2010 303(d) List of Water Quality Limited Segments (Region 8, 2011). Lake Elsinore and Canyon Lake are the nearest impaired water body, located over 18 miles southwest of the project area. The Department is a member of the task force, consisting of the regulatory agencies and stakeholders, working jointly to implement the TMDLs requirements that were established to attain water quality standards for both lakes.

San Jacinto River and San Timoteo Creek (Santa Ana River Reach 5) are not listed as impaired on the CWA 303(d) list of Water Quality Limited Segments. In addition, there are no TDC identified in the Department Storm Water Project Planning and Design Guide (PPDG) as TMDL for the project area (Department, 2010). The Department Stormwater Management Program District 8 Work Plan Fiscal year 2014-2015 (CTSW-RT-13-286.12.2) dated October 1, 2013 does not include these locations as high-risk areas. (Department, 2013a).

Long-Term Impacts During Operation and Maintenance:

This section will discuss the long-term impacts of the project alternatives. The discussion will examine the impact of the operation and maintenance of the project on water quality and beneficial uses as it affects the physical/chemical, biological, and human use characteristics of the receiving waters.

No Build Alternative-Alternative 1:

The current conditions of the project area would remain unchanged under Alternative 1. There is no existing treatment BMPs within the project limits, and there would be no improvements implemented with this alternative. The No Build Alternative will not result in any increase in pollutant loading or erosion potential from the transportation facility.

Build Alternative-Alternative 2: Physical/Chemical Characteristics of the Aquatic Environment:

The project will widen the roadway outside of the existing lanes to construct an eastbound truck-climbing lane, a westbound truck-descending lane, and standard inside and outside shoulders. In addition, the project will widen and grade the area adjacent to the truck lanes and shoulders to the ultimate freeway conditions.

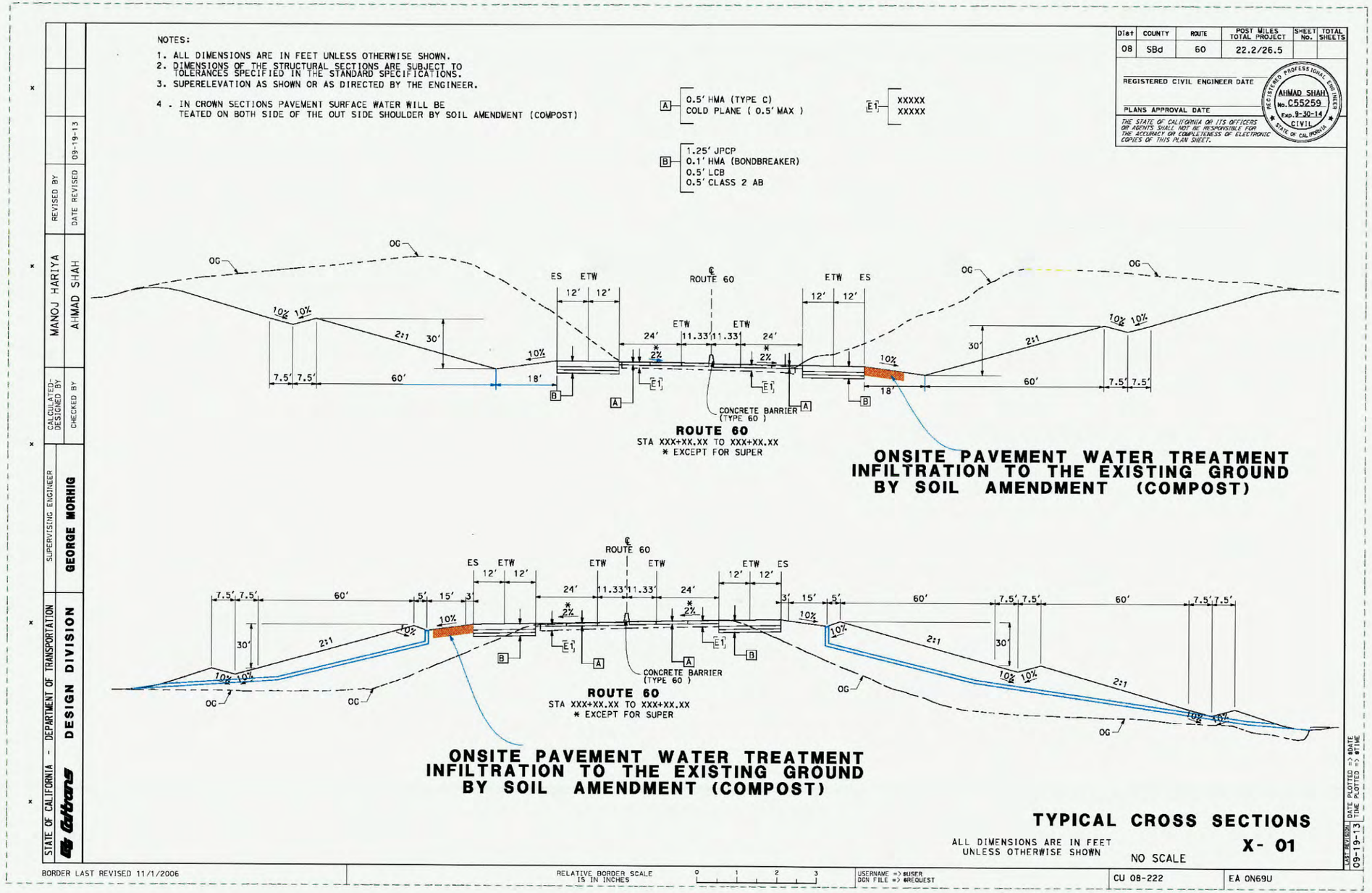
Existing Slopes are 1:2 in cut section and 1:4 in fill section. The project will create new slopes or modify existing slopes. New slopes will be created throughout the project with side slope gradient of e 1:2 or flatter. Several cut and fill slope options are being considered for the project. Final options for various locations will be determined during the final design process. Selection of an appropriate slope design would ensure control of surface drainage and minimize surface erosion. Options include mid-slope benches, terrace drains, and gunite-paved "V" ditches. Subject to geotechnical slope stability analysis, geotextile materials, and similar types of soil, reinforcement material may be utilized in the case of steeper gradient fill-slopes. Other options include retaining walls, debris catchment areas, and fencing.

The project will result in an increase of impervious surfaces from the existing 39 acres to a total of 64 acres. This would result in approximately 18.8 cfs of additional storm runoff, and a total post-construction onsite runoff of 43.4 cfs. This increase in runoff volume and velocity during a storm has the potential to increase the transport of pollutants (oil, grease, other hydrocarbons, heavy metals) and sediment loading of downstream flow.

The receiving waters in the project area are not listed on the CWA 303(d) list of Water Quality Limited Segments, and no targeted design constituents are present in the project area. However, in order to prevent degradation of local water quality, and to meet the NPDES permit requirements, the project will be designed to include pollution treatment BMPs for highway

runoffs associated with the operation of this facility. Treatment of runoffs will be accomplished by creating new slopes or modify existing slopes to allow an increase in filtration rate of storm water flow over the side slopes. In addition, soil amendment will be utilized for Infiltration of water to existing slope grounds (Figure 10: Stormwater Runoff Treatment Plan). Additional measures including bio-filtration swales/strips, and infiltration basins will be considered as needed during final design. SWDR prepared for this project indicates that Gross Solids Removal Devices will not be required for this project, because the receiving waters are not on the 303(d) list for litter/trash or has a TMDL issued for litter/trash. SWDR identifies the project's risk level as level (2), and will not require water quality monitoring. The Initial Site Assessment prepared for the project (Department, 2013c) shows that a non–hazardous concentration of Aerially Deposited Lead is present on the surface of the soil. No additional requirements would be needed for the reuse of soil in the project area.

Figure 10: Stormwater Runoff Treatment Plan



Department Design C, March 2014

The drainage system that will be implemented for the onsite flow is not anticipated to result in concentration of runoff discharge. In addition, dikes, berms, swales, and/or cross drains will be modified as necessary to control flow. Erosion control and energy dissipation measures will be implemented as needed wherever flow concentration would occur to prevent erosion and impact on downstream soils. Erosion will be minimized by reducing slope length and making slopes flat to allow re-vegetation where possible. Vegetated surfaces will feature native plants based on recommendation by the Department District Landscape Architect in consultation with the Project Biologist.

There are 28 offsite drainage systems within the project limits. Drainage culverts would be extended and headwalls replaced as needed to accommodate the roadway widening. The project will not require an increase in capacity of culverts, or the construction of new culverts to accommodate drainage needs. There is no flood control system located with the project proximity that might be impacted by this project.

The depth of groundwater within the project limits varies from 64 to 114 feet. Groundwater in the basin is derived mostly from sources other than infiltration of rainfall on the valley floor. The added runoff from the project is negligible and is not anticipated to adversely affect the quality of groundwater.

This project requires Section 401 Certification from RWQCB. Coordination with Santa Ana RWQCB will be needed for the selection of the final treatment BMPSs and other water quality control measures.

Biological Characteristics of the Aquatic Environment:

The Badlands is a mountainous and rugged terrain that is also a wildlife corridor. The Norton Younglove Preserve, situated within the Badlands, contains grasslands, riparian, and woodland habitat. Existing culverts within the project area are utilized by wildlife to cross from one side of the roadway to the other. Habitats of several species of interest are also present in the project area. San Timoteo Creek includes wetland and riparian habitats. The project will permanently impact a total of 0.713 acres of non-wetlands waters of the U.S., which is subject to USACE jurisdictions. Permanently impact of 0.897 acres will occur to streambed/bank subject to the CDFW jurisdictions. These impacts will be addressed through coordination with USACE, RWQCB, and CDFW. Lost riparian habitats as a result of the project will be replaced in the form of habitat enhancement and habitat creation (Department, 2014). Other measures to mitigate impacts on riparian habitats are discussed in the Natural Environment Study (Department, 2014).

The project will have the potential to impact wetland and riparian habitats, if water quality control measures are not implemented. The project treatment BMPs and temporary BMPs incorporated into the project design will ensure the protection of the receiving waters habitats characteristics, and beneficial uses.

The increase in stormwater flow is not anticipated to cause any hydrological changes that would cause soil erosion in a way that would affect channel stability, or the degradation of downstream

habitats. The project will include measures to avoid and minimize the potential for downstream effects. In addition to Section 401 Certification, the project will require a Section 404 permit from USACE, and Section 1602 Streambed Alternation Agreement from CDFW. (Department 2014).

Human Use Characteristics of the Aquatic Environment:

There are no Drinking Water Reservoirs and/or Recharge Facilities within the project area. Therefore, runoff from the proposed project would not be directed into a domestic or municipal drinking water resource, water recharge facility, or other "high risk" area. There are no recreational or commercial fisheries located in the immediate vicinity of the project area.

Short Term Impacts During Construction:

The construction of Build Alternative 2 will result in a total DSA of approximately 163 acres. The project also involves 70 acres of clearing and grubbing. The areas of clearing and grubbing will be identified by the cut and fill lines. During construction, the proposed project has the potential to cause temporary water quality impacts due to grading activities, traffic detours, removal of existing vegetation, and various construction activities. Stormwater runoff during construction may cause pollutant transport into the current stormwater drainage system. Pollutants of concern during project construction include sediments, trash, petroleum products, concrete waste, and chemicals.

In addition, excavated soil would increase the potential for soil erosion and sedimentation as compared to existing conditions. During storm events, erosion, and sedimentation could occur at an accelerated rate. The project would be scheduled or phased to minimize soil-disturbing work during storm events. Temporary BMPs will be implemented during construction to prevent erosion and sedimentation impacts on water channels. The contractor will be required to develop an effective SWPPP according to Department's State Water Resources Control Board permit. BMPs identified in the construction SWPPP would control potential pollutants and sediment erosion. If fueling or maintenance of construction vehicles will also occur within the proposed project site during construction, there will be a risk of accidental spills or releases of fuels, oils, or other potentially toxic materials. Measures to address risk of spills should be included in the SWPPP. Construction BMPs would include measures such as fiber rolls, gravel bag berm, street sweeping, storm drain inlet protection, soil binder, geotextiles, concrete waste management, vehicle and equipment cleaning, stockpile management, spill prevention, and others.

Cumulative Impact:

The project area is located within the Badlands between the City of Moreno Valley and the City of Beaumont. Due to the mountainous terrain, there are no existing or proposed land developments in the immediate project vicinity. A new interchange is planned approximately two miles east of the project limits at SR-60 and Potrero Boulevard in the City of Beaumont. In addition, land development plans exist within the limits of the City of Beaumont. However, the listed projects are subject to water quality rules and regulations, and would be required to be developed in compliance with these regulations in a manner that avoids any impacts to water resources. The SR-60 Truck Lanes Project is not anticipated to adversely impact receiving waters in the project area, and will not have cumulative impacts on water resource characteristics or beneficial uses.

No Build Alternative – There would be no impacts to water quality and storm water runoff.

Avoidance, Minimization, and/or Mitigation Measures

The following measures are required to protect receiving waters, and prevent degradation of water quality that may result from the construction and operation of the project:

WQ-1: Incorporate Design Pollution Prevention and Treatment BMPs in accordance with the Department Stormwater Quality Handbooks-Project Planning and Design Guide. Measures will be designed and implemented to avoid causing or contributing to pollutants and sediment loading of downstream flow. The following permanent BMP measures will be included as part of the project as required:

- Construct new slopes or modify existing slopes to allow storm water flow to the sides of the roadway.
- Dikes, curbs, and gutters will be constructed along the new shoulder in order to intercept surface runoff where necessary.
- Minimize slope length to the extent possible to allow re-vegetation.
- Implement slope rounding and collecting flows in stabilized drains.

- Protect and minimize removal of existing vegetation to the extent possible.
- Disturbed slopes will be re-vegetated to the maximum extent practicable. Re-vegetation will utilize recommendations by the District Landscape Architect, and the Project Biologist.
- As necessary, bio-filtration, soil modification, swales/strips, detention basins, media filters and infiltration basins will be considered during the final design as part of the permanent treatment strategy. Media Filters will be considered for incorporation into this project if it is determined that infiltration basins are needed, but not feasible.
- Implement attenuation devises as needed such as energy dissipation devises, soil modification, vegetation, slope terracing, and slope stepping.
- Implement energy dissipation devices at culvert outlets; including vegetation, geotextile mats, rock, and riprap.

WQ-2: Stormwater treatment strategies will be coordinated with RWQCB, and will comply with 401 permit requirements.

WQ-3: The project contractor will develop and implement SWPPP that will detail construction storm water pollution protection measures for the project. The project will be scheduled or phased to minimize soil-disturbing work during rain events.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act (CEQA).

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Department's Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects. Structures are designed using the Department's Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Department's Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

Affected Environment

The Geotechnical Design Services-South 2 has completed the Preliminary Geotechnical Design Report (PGDR) for the District proposed cut and fill slopes, located on Highway 60, between the Moreno Valley to the west and the city Beaumont to the east in Riverside County on October 10, 2013. The purpose of the report is to evaluate the geologic and geotechnical conditions within the project limits to assist in developing the engineering design studies and cost estimates for the project.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Site Description:

The proposed project is located on the SR-60 corridor between the city Moreno Valley to the west and the city Beaumont to the east in Riverside County. This heavily traveled route connects the Los Angeles basin to the "Inland Empire." This section of roadway between Gilman Springs Road and Jack Rabbit Trail (around PM 20 to PM 28), passes through the San Timoteo Badlands. The steep slopes of the San Timoteo Badlands extend from post-mile (PM) 21.4, just west of the Gilman Springs Road overpass to Jack Rabbit Trail at PM 28. The badlands rise from an elevation of approximately 1700 feet in the Moreno Valley to over 2,625 feet in elevation. Hill slopes are typically about 200 feet high and steeper than 1:1 (V:H). Several cut slopes are 50 to 100 feet high above the highway. Extensive fill have been constructed across canyons. The hills have steep ridges which are separated by seasonal stream drainages which are typical of badland topography.

Geology:

This area is called the Badlands of the Peninsular Range Province because of the sparsely vegetated rolling hill topography that shows visible signs of erosion. The erosion has cut the land into an intricate maze of narrow ravines and sharp crests and pinnacles. Travel across such a region is almost impossible, hence the name. The topography also shows signs of past landslides such as unvegetated scarps and some slump features.

The rock-like material exposed is the San Timoteo Formation. It is Pliocene (1.5-5 m.y.a.) non-marine sandstone, siltstone and minor conglomerate. It is lightly to heavily cemented. It can be divided into two areas. The eastern section is predominately siltstone and the western section is predominately sandstone.

The two areas are also bisected by the Claremont Fault. This fault is the eastern part of the San Jacinto Fault System. It is quite active and capable of generating extensive gravity force and surface rupture. The fault is not one feature. It is a wide zone that extends over the whole field area.

Environmental Consequences

Faulting:

The site is not considered prone to surface rupture since there are no known historic or active faults projecting towards or passing through the project site. The active San Jacinto Fault is located about 1700 feet west of the Gilman Springs Road Overcrossing (OC) at the start of the project PM 22.42. Locally, the San Jacinto fault is designated within an Alquist-Priolo Earthquake Fault Hazard Zone. Another unzoned splay of the San Jacinto fault zone is projected to cross the project alignment at about PM 23.23. Locally this splay fault is mapped as fold axis in the San Timoteo formation bedrock of the area. Other unzoned faults are also observed in several of the cut slopes along the alignment.

Seismic Data and Liquefaction Potential:

Based on the 2013 Caltrans fault database, the western end of the project alignment is located approximately 0.45 km (1500 feet) from the San Jacinto Valley segment of the San Jacinto fault zone (Fault ID 356, Mmax = 7.7, right lateral strike-slip, dip angle = 90 degrees), which is the controlling fault for the deterministic seismic procedure. The probabilistic response spectrum, obtained from the 2008 USGS Seismic Hazard Map for the 5% in 50 years probability of exceedance indicates a 0.9g peak horizontal ground acceleration (PGA). Since groundwater was not observed, liquefaction at this site would be considered low.

Build Alternative 2:

Additional surface and subsurface geotechnical investigation and geo-physical study may be needed during final design. Results from the geo-physical study shall provide insight to determine the rippability of the proposed slopes. The surface and subsurface investigations will be used to determine the stability of the existing and proposed slopes and to investigate any proposed retaining wall foundation material. Accurate existing and proposed cross sections will be needed to determine the final geometry and stability of the proposed cuts and fills and their potential construction methods.

No-Build Alternative: No impacts would occur to the geology, soils, seismic and topography project area.

Avoidance, Minimization, and/or Mitigation Measures

GEO–1: Drainage facilities should be designed to handle the maximum run-off.

GEO–2: Additional surface and subsurface geotechnical investigation and geo-physical study may be needed depending on the selected proposed design.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

PALEONTOLOGY

Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils.

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

16 United States Code (USC) 470aaa (the Paleontological Resources Preservation Act) prohibits the excavation, removal, or damage of any paleontological resources located on federal land under the jurisdiction of the Secretaries of the Interior or Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.

23 United States Code (USC) 1.9(a) requires that the use of federal-aid funds must be in conformity with federal and state law.

23 United States Code (USC) 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

Affected Environment

The information in this section was synthesized from the January 2014 *Combined Paleontological Identification Report and Paleontological Evaluation Report* (PIR/PER) prepared for the above proposed project.

The proposed project area is located within the San Timoteo Badlands of Riverside County. The badlands topography is a result of extensive gully erosion within a thick accumulation (9,000 ft) of Miocene (23 Ma to 5.3 Ma) to Pleistocene (2.6 Ma to 0.0117 Ma) non-marine sediments. The sediment within the San Timoteo Badlands consists of the Mount Eden Formation (Late Miocene), the San Timoteo Formation (Pliocene [5.3 Ma to 2.6 Ma] to Middle Pleistocene), and surficial Quaternary deposits derived from erosion of badlands and sedimentation along San Timoteo Creek. The San Timoteo Badlands is bounded on the west by the San Jacinto fault and on the east by San Timoteo Canyon, which contains San Timoteo Creek, a tributary of the Santa Ana River. The San Timoteo Badlands represents an important geological and paleontological resource because they record the only continuous non-marine deposit from the Miocene to the Middle Pleistocene, as well as the recordation of significant tectonic events associated with the San Jacinto and San Andreas faults.

Stratigraphy

The San Timoteo Badlands are located in a region that has been tectonically active since at least the Late Miocene, during which the right-lateral strike-slip San Gabriel-Banning fault was active and erosion of the Peninsular Range basement provided a clast source for the non-marine San Timoteo deposits. The proposed project area is mapped at a scale of 1:24,000 by Dibblee and Minch (2003) and 1:100,000 by Morton and Miller (2006). According to these published maps, the Project area is underlain by Pliocene to Pleistocene non-marine sedimentary rocks of the San Timoteo Formation and Quaternary alluvium. The San Timoeto formation is nearly 6,000 ft thick locally, and is exposed for approximately 20 mi along the San Jacinto fault and consists of a basal deposit of dark gray-green, fissile mud rock and pale brown sandstone. This formation has yielded an abundant and diverse fauna that includes at least 30 mammalian and reptilian species. The Quaternary alluvial deposits of Pleistocene age within the project area are composed of coarse-grained material which is not conducive to the preservation of fossils.

Records search and field reconnaissance

A search for paleontological records was completed with online databases and published materials. These included a paleontological record search requested from the San Bernardino County Museum (SBCM) and Natural History Museum of Los Angeles County (NHMLAC). The result of this search indicated that numerous previously known resources are recorded within the boundaries of the study area.

Records from the SBCM and NHMLAC indicate that the remains of an extinct horse (Equus sp.), Camel and Camelidae have been found within the boundary of proposed project.

A qualified professional conducted paleontological reconnaissance of the study area, the survey consisted of a windshield survey with intensive pedestrian inspection of open ground surface areas of high sensitivity formations and lithologies. The project location and some detailed features were photographed to document the condition of the study area. No fossils were observed during the survey in any of the formations examined. This is typical as most fossils are subsurface.

Environmental Consequences

Paleontological resources are considered to have scientific value if they provide new data on fossil animals, distribution, evolution, or other scientifically important information. Caltrans uses the following three level scales to characterize paleontological sensitivity:

1) **High Potential:** Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units.

Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive.

2) **Low Potential:** Are potentially Fossiliferous, but have not yielded significant fossils in the past but possess a potential for containing fossil remains; or Contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation. However, as excavation for construction gets underway it is possible that new and unanticipated paleontological resources might be encountered. If this occurs, a Construction Change Order (CCO) must be prepared in order to have a qualified Principal Paleontologist evaluate the resource. If the resource is determined to be significant, monitoring and mitigation is required.

3) **No Potential**: Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. For projects encountering only these types of rock units, paleontological resources can generally be eliminated as a concern when the PEAR is prepared and no further action taken.

Permanent Impacts

Alternative 1: No-Build Alternative

No project improvements would occur under the No-Build alternative. Therefore, no permanent impacts to paleontological resources would occur.

Alterative 2: Build Alternative

The build alternative would involve construction and operation of an expanded SR-60 facility, which would require earth-moving activities on vacant, undeveloped land, the records search and literature demonstrate that excavation in conjunction with development has high potential to result in adverse effects on nonrenewable paleontological resources present within the boundaries of the proposed project. Although no evidence of fossils was uncovered during field reconnaissance but the Stratigraphy of the study area suggests that there is high potential that the study area contains fossil resources. Based on the records search and Stratigraphy of the study area, there is potential for adverse effects to occur to paleontological resources.

Temporary Impacts

Any impacts to paleontological resources are permanent and irreparable; therefore, there would be no temporary impacts for build alternative.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Avoidance, Minimization, and/or Mitigation Measures

Due to the extensive nature of geologic units with high paleontological sensitivity in the study area, avoidance and minimization of the potential adverse effects are not feasible. With the implementation of the following mitigation measures, however, potential effects to paleontological resources would be reduced.

PA-1: Grading, excavation and other surface and subsurface excavation in defined areas of the proposed project have the potential to impact significant nonrenewable fossil resources. A Paleontological Mitigation Plan (PMP) shall be prepared during final project design by a qualified paleontologist. The PMP will detail monitoring and measures to be implemented in the event of paleontological discoveries. The PMP shall include, at a minimum, the following elements.

PA-2: Required 1-hour preconstruction paleontological awareness training for earthmoving personnel, including documentation of training, such as sign-in sheets, and hardhat stickers, to establish communications protocols between construction personnel and the Principal Paleontologist.

PA-3: there will be a signed repository agreement with an appropriate repository that meets The Department requirements and approved by the Department.

PA-4: Monitoring, by a Principal Paleontologist during excavation.

PA-5: Field and laboratory methods that meet the curation requirements of the appropriate repository will be implemented for monitoring, reporting, collection, and curation of collected specimens. Curation requirements are available for public review at the appropriate repository.

PA-6: All elements of the PMP will follow the PMP Format published in the Caltrans Standard Environmental Reference (Department 2003).

PA-7: A Paleontological Mitigation Report discussing finding and analysis will be prepared by a principal paleontologist upon completion of project earthmoving. The report will be included in the environmental project file and also submitted to the curation facility.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

HAZARDOUS WASTE/MATERIALS

Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act of 1976 (RCRA). The purpose of CERCLA, often referred to as "Superfund," is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

Community Environmental Response Facilitation Act (CERFA) of 1992

Clean Water Act

Clean Air Act

Safe Drinking Water Act

Occupational Safety and Health Act (OSHA)

Atomic Energy Act

Toxic Substances Control Act (TSCA)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires clean up of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

Affected Environment/Environmental Consequences

Build Alternative 2: On March 25, 2014, the Department approved an updated Initial Site Assessment (ISA) Checklist. The ISA determination concluded the project has low/minimal risk for potential hazardous waste involvement. There are no recognized environmental concerns within the project limits. Based on Geo-tracker field review, Environmental Data Resources (EDR) dated March 13, 2013, Task Order #08-396400-LP, the conclusion is non-hazardous concentration of lead is present in on-site soil, therefore, appropriate health and safety measures should be taken to minimize the exposure to lead.

No-Build Alternative 1: There would be no impacts to hazardous waste and materials.

Avoidance, Minimization, and/or Mitigation Measures

The following measures are required for this proposed project:
HW-1: A Lead Compliance Plan (LCP) will be required.
HW-2: Handling the removal of yellow traffic stripe and pavement markings with hazardous waste residue.
HW-3: Handling of treated wood waste.
HW-4: Handling of residue containing lead from paint and thermoplastic.
HW-5: Handling the removal of traffic stripes and pavement marking containing lead.

Climate Change

Climate change is analyzed at the end of this chapter. Neither the United States Environmental Protection Agency (U.S. EPA) nor Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will aid decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders on climate change, the issue is addressed in a separate California Environmental Quality Act (CEQA) discussion at the end of this chapter and may be used to inform the National Environmental Policy Act (NEPA) decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

NOISE

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The CEQA noise analysis is included at the end of this section.

NATIONAL ENVIRONMENTAL POLICY ACT AND 23 CFR 772

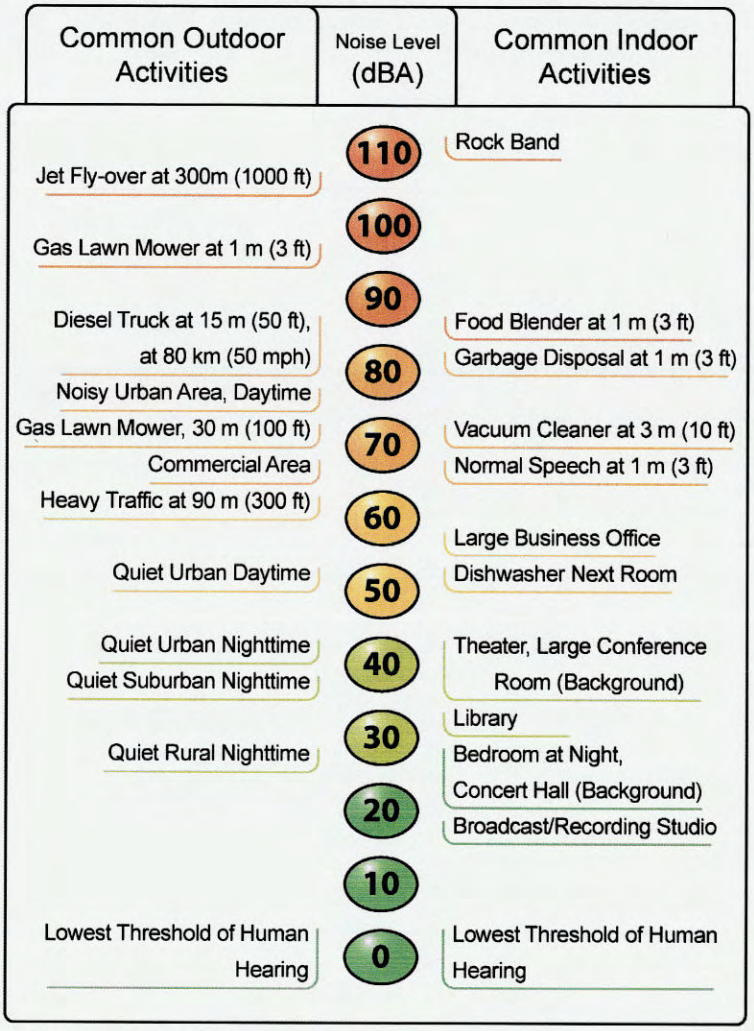
For highway transportation projects with FHWA (and the Department, as assigned) involvement, the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA 23 CFR 772 analysis.

Table 13: Noise Abatement Criteria		
Activity Category	**NAC, Hourly A-Weighted Noise Level, Leq(h)**	**Description of activity category**
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC— reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC— reporting only	Undeveloped lands that are not permitted.
[1] Includes undeveloped lands permitted for this activity category.		

Noise study Report, March 2014

Table 13 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

Figure 11: Noise Levels of Common Activities



Standard Environmental Reference

According to the Department's *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects,* the project is using the 2011 Noise Protocol *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

The Department's *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 7 dBA for projects using the 2011 Noise Protocol in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence.

Affected Environment

On March 12, 2014, the Department approved the project Noise Study Report (NSR). The purpose of the NSR is to evaluate noise impacts and abatement under the requirements of Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) "Procedures for Abatement of Highway Traffic Noise", which provides procedures for preparing operational and construction noise studies and evaluating noise abatement measures considered for federal and federal-aid highway projects. According to 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with FHWA noise standards. The Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects (Traffic Noise Analysis Protocol; Department 2011) provides Department policy for implementing 23 CFR 772 in California. The Traffic Noise Analysis Protocol outlines the requirements for preparing noise study reports.

Existing land uses in the project study area were identified through land use maps, aerial photography, and site inspection. Existing land uses in the project study area include undeveloped lands. Additional land use details are discussed under the Land Use section. There are no sensitive receptors located in the project area. The Noise Study was conducted using monitoring locations that were placed at turnouts where vehicles could stop for emergency or maintenance purposes.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Environmental Consequences

The proposed project is a federally funded Type I project. The noise analysis was conducted in accordance with FHWA and Department guidelines to determine whether the proposed project noise levels would approach or exceed the Noise Abatement Criteria (NAC) or would substantially exceed existing noise levels (23 CFR 772). If noise levels would exceed the NAC or result in a substantial increase, noise abatement measures that were used to reduce noise levels would be evaluated. Noise abatement was considered only for areas where noise impacts were identified.

The existing noise environment in the project study area is described below based on the noise monitoring results.

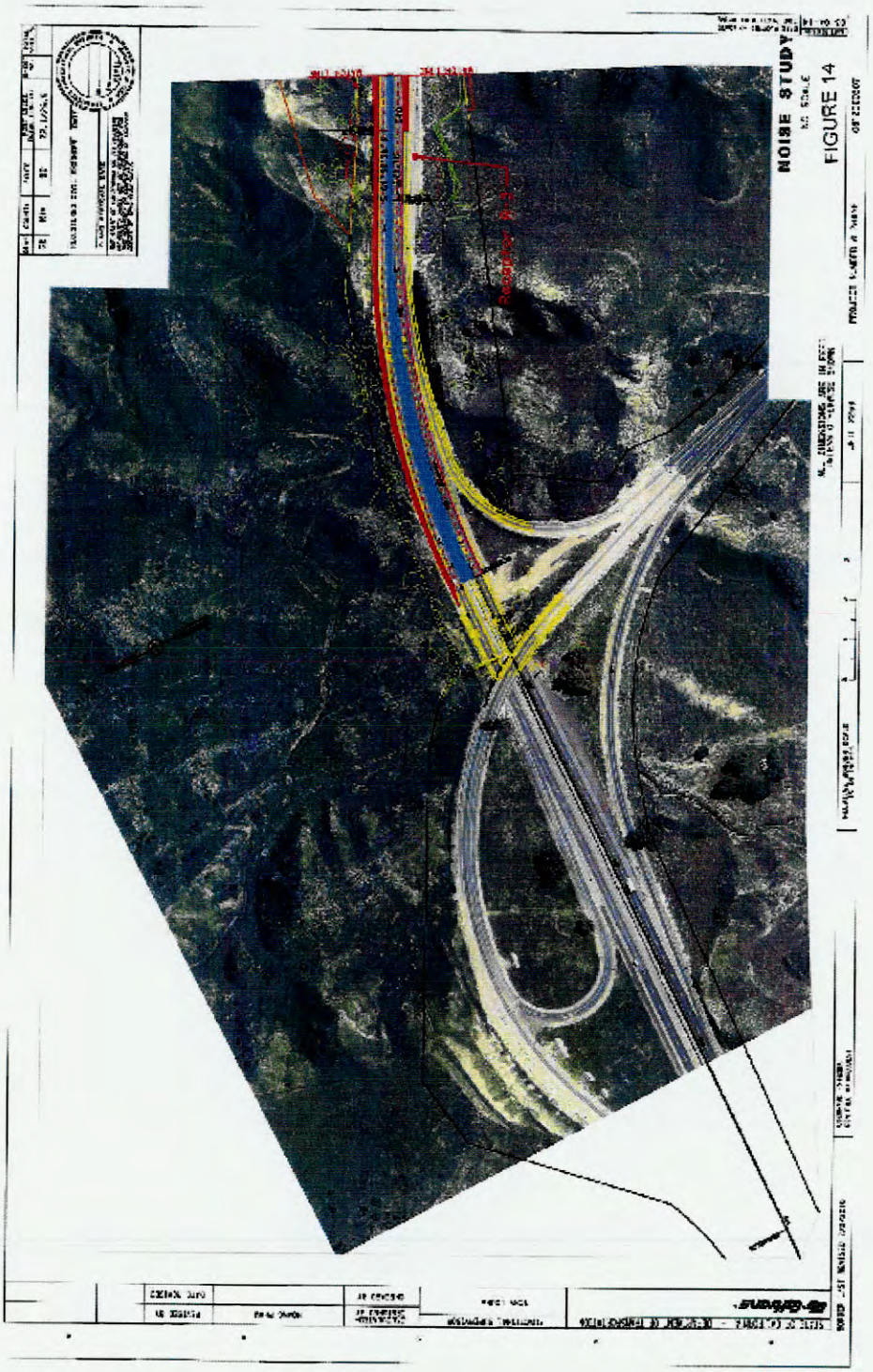
Short-term (15-minute) noise measurements were conducted to document existing noise levels at four representative locations along the project corridor. Table 14 provides a summary of the results of the short-term noise level measurements along with a description of the physical locations of the noise monitoring sites. These monitoring locations were at turnouts where vehicles could stop for emergency or maintenance purpose.

Table 14: Noise Short-Term Measurements

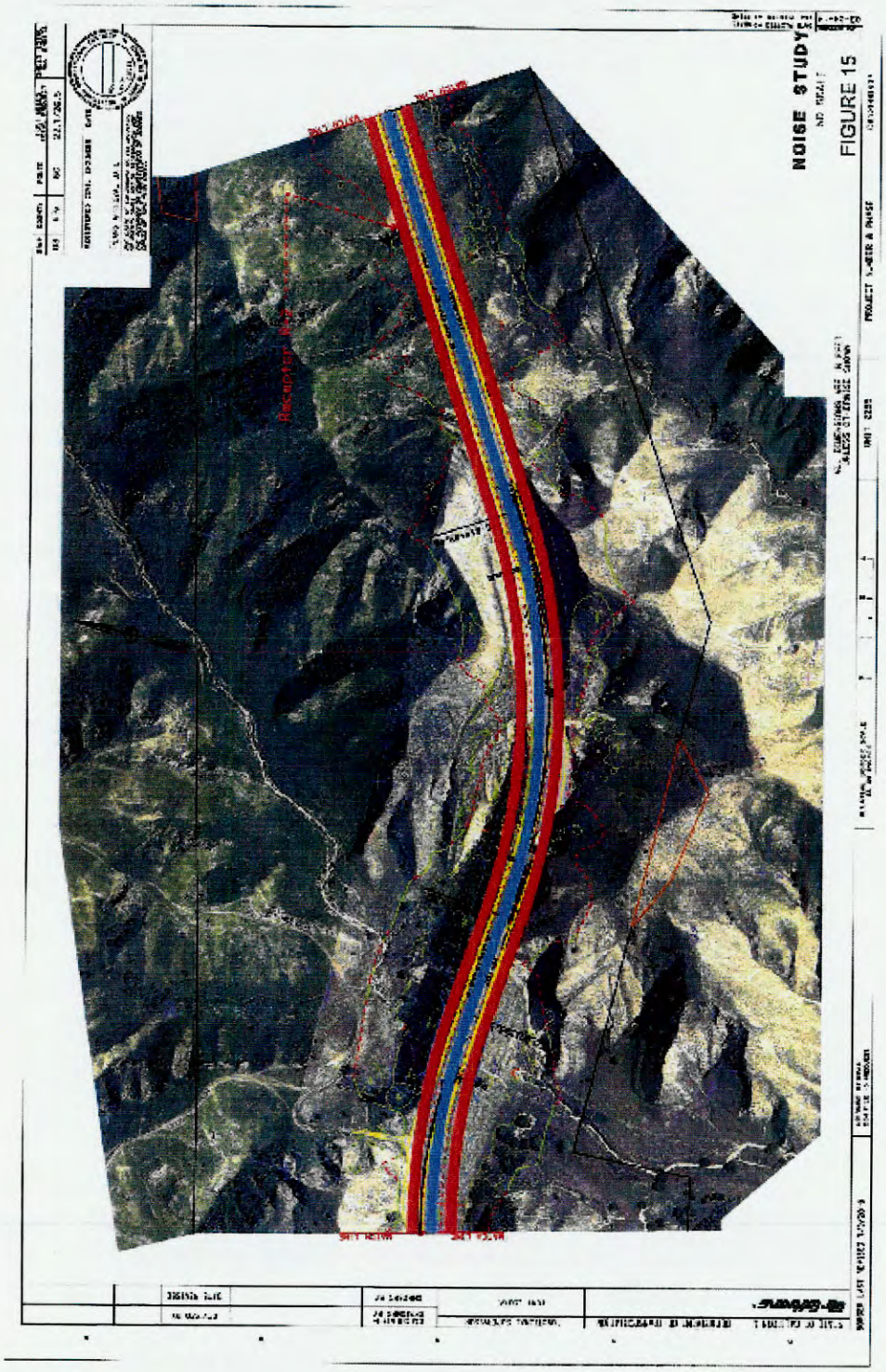
Monitor No.	Land Use/ Location	Location Description	Noise Sources	Comments	Date	Start Time	Duration	Noise dBA Leq
R-1	Undeveloped Land	Turn out	SR- 60 WB, EB	Wide median	03/19/13	9:57 am	15 mins.	72.1
R-2	Undeveloped Land	Turn out	SR- 60 WB, EB	Wide median	03/19/13	10:25 am	15 mins.	74.8
R-3	Undeveloped Land	Turn out	SR-60 WB, EB	Beginning of the project	03/19/13	8:45 am	15 mins.	70.9
R-4	Undeveloped Land	Turn out	SR-60 WB, EB		03/19/13	9:20 am	15 mins.	71.6

Noise study Report, March 2014

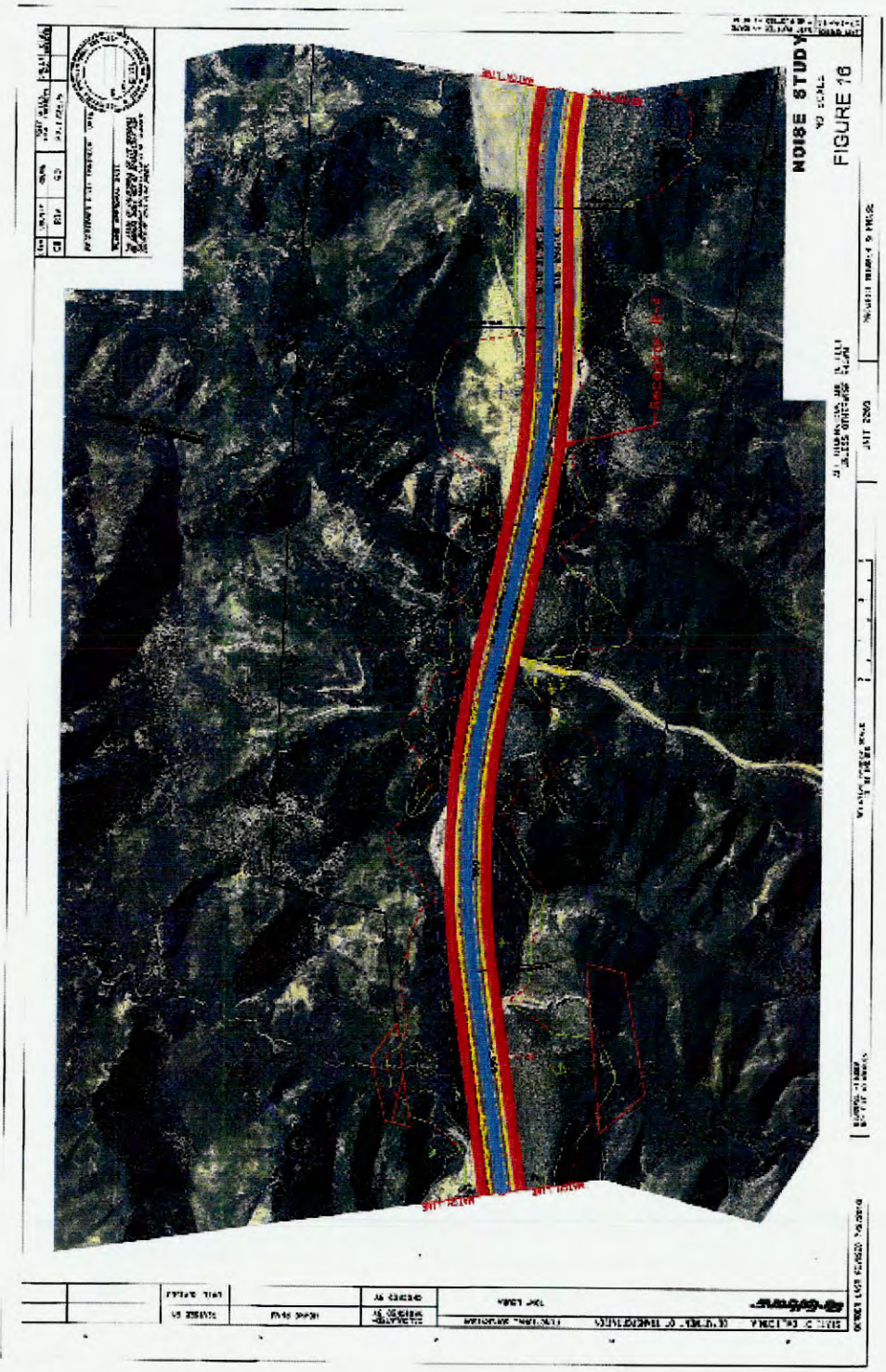
The short-term monitoring locations are shown on Figures 12, 13, 14 and 15.



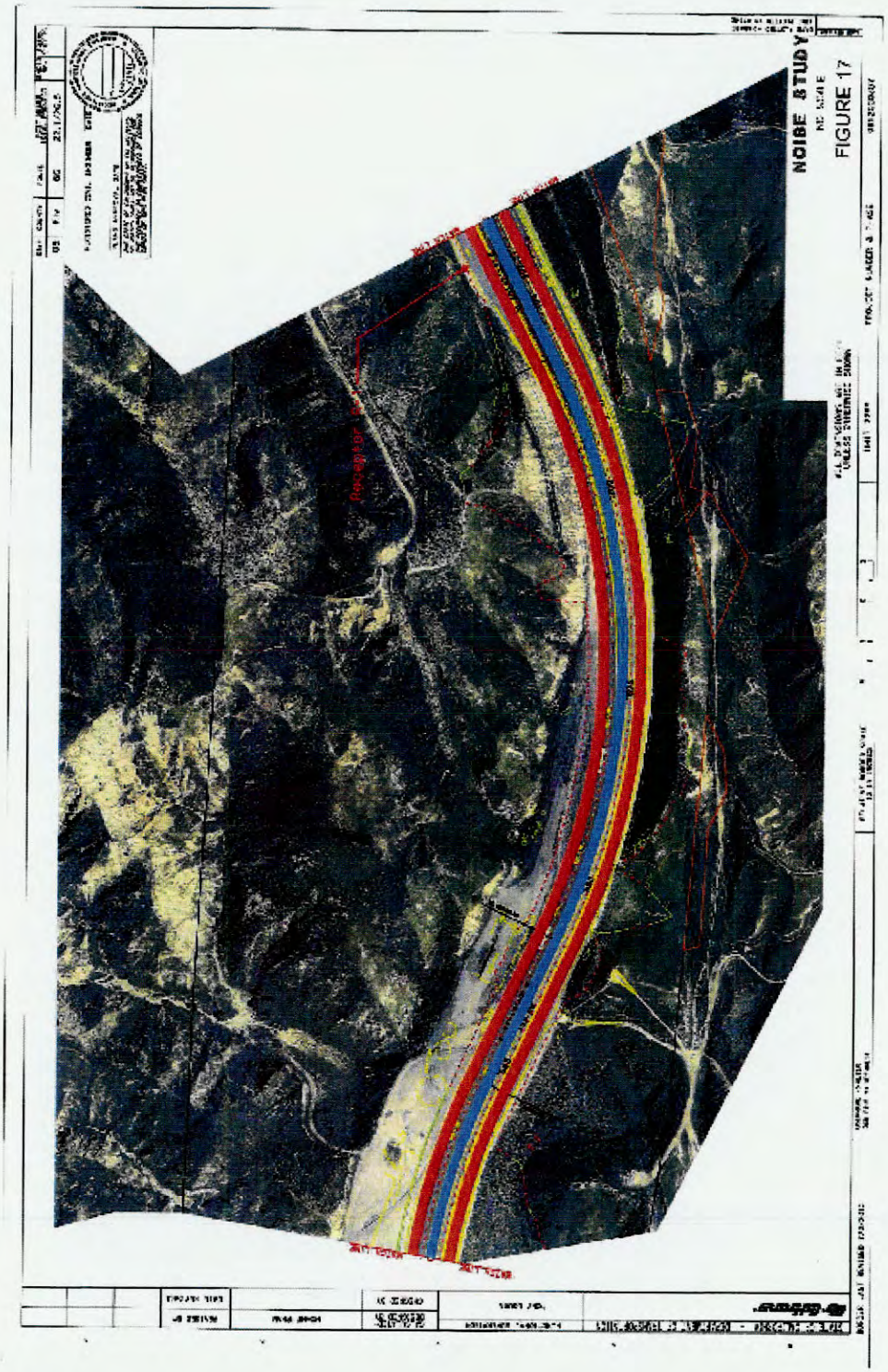
Noise study Report, March 2014



Noise study Report, March 2014



Noise study Report, March 2014



Noise study Report, March 2014

Table 15 shows the meteorological conditions during the short-term noise level measurements.

Table 15: Meteorological Conditions During Noise Monitoring

Date	Temperature (°F)	Average Wind Speed (mph)
3/19/2013	52.0 – 61.0	1.4 – 4.1

°F = degrees Fahrenheit mph = miles per hour
Noise study Report, March 2014

Four separate calibration runs were performed using the traffic counts and measured vehicle speeds collected during the noise monitoring. Receptor R-1and R-2 were on the north side of SR-60. Receptor R-3 and R-4 were on the south side of SR-60. The results of these model runs were compared to the measured noise levels to ensure the accuracy of TNM 2.5. Correction factors, known as K-factors, were applied to each of the modeled receptor locations so that the monitored and modeled noise levels were the same.

Table 16 shows the measured ambient noise level, the modeled noise levels using traffic counts and measured vehicle speeds during noise monitoring, and the K-factor at each monitored locations. TNM 2.5 modeled input data for existing features and verified for accuracy.

Each TNM 2.5 modeled input datum was rechecked for possible modeling input errors. Field measurement results were inspected for potential contamination. K factors were approximate 3 dBA or smaller. Other factors like complicated terrain, or traffic fleet may affect the results of these receptors. The K-factors listed in Table 6-3 were used for model calibration.

Table 16: Model Calibration

Monitor No.	Monitored Noise Level (dBA Leq)	Modeled Noise Level (dBA Leq)	K-Factor (dB)
R-1	72.1	74.5	-2.4
R-2	74.8	76.4	-1.6
R-3	70.9	74.0	-3.1
R-4	71.6	74.3	-2.7

Noise study Report, March 2014

Average peak period for trucks is the mid-day period between the hours of 11:00 AM to 2:00 PM. The noisiest hours happened in this period for this segment of the freeway. The volume of heavy trucks was approximately double in the westbound direction during midday as compared to PM peak period. Heavy-duty trucks make up approximately 3% to 4% of all vehicles within the corridor.

Modeled 2040 traffic noise levels with the project are compared to existing conditions and to 2040 no project conditions. The comparison to existing conditions is included in the analysis. The comparison to no project conditions indicates the direct effect of the project. As stated in the Caltrans Technical Noise Supplement (2013), modeling results are rounded to the nearest decibel before comparisons are made. In some cases, this can result in relative changes that may not appear intuitive. An example would be a comparison between sound levels of 64.4 and 64.5 dBA. The difference between these two values is 0.1 dB. However, after rounding, the difference is reported as 1 dB.

Build Alternative 2: There is no noise impact for Activity Categories G. Two types of short-term noise impacts would occur during project construction: (1) construction crew commutes and transport of construction equipment and materials to the project site; and (2) noise generated during roadway construction. Since there is no residential location within the construction zone, the rule of 86 dBA Lmax at 50 ft will not be applicable in this project.

No-Build Alternative 1: There would be no short term construction noise impacts within the project area.

Avoidance, Minimization, and/or Abatement Measures

NOI-1: The contractor shall comply with all local sound control and noise level rules, regulations and ordinances that apply to any work performed pursuant to the contract.

NOI-2: Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without the muffler.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Biological Environment

NATURAL COMMUNITIES

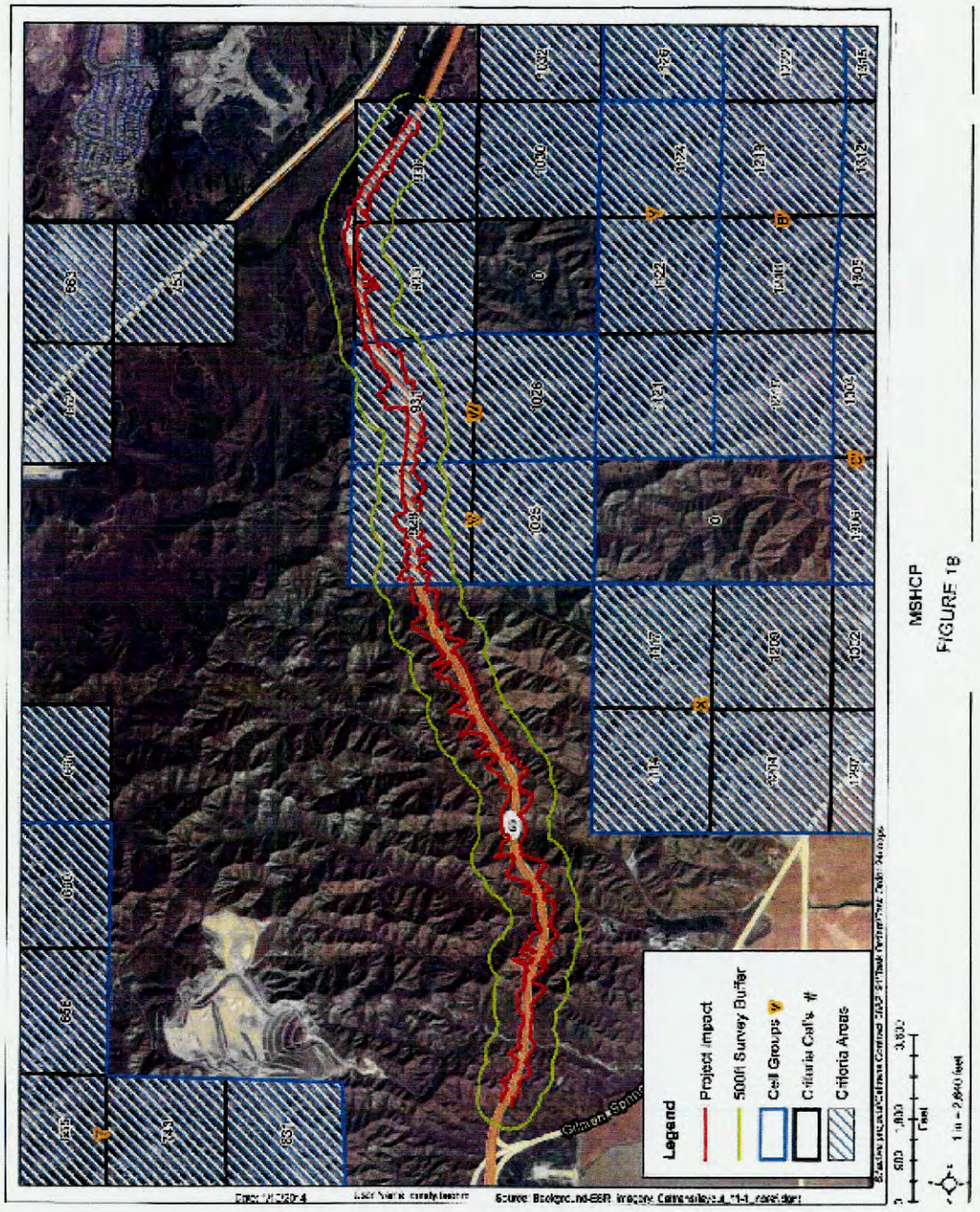
This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value. Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act (FESA) are discussed below in the Threatened and Endangered Species section. Wetlands and other waters are also discussed below.

The Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP, or MSHCP) serves as a comprehensive, multi-jurisdictional Habitat Conservation Plan pursuant to Section 10(a)(B) of the FESA of 1973 and the Natural Communities Conservation Plan (NCCP), focusing on the conservation of species and their associated habitats in western Riverside County. The MSHCP allows participating jurisdictions to authorize the take of both the plant and wildlife species identified within the MSHCP area. Regulation of the "take" of threatened, endangered, and rare species is authorized by the Wildlife Agencies (USFWS and CDFW), which allow "take authorization" for otherwise lawful actions (*e.g.*, public and private development) in exchange for the assembly and management of a coordinated MSHCP Conservation Area.

The MSHCP provides for the assembly of conservation lands consisting of Criteria Areas for the conservation of sensitive, threatened, and endangered species covered by the MSHCP. The MSHCP conservation area comprises a variety of existing and proposed Cores, Linkages, Constrained Linkages, and Noncontiguous Habitat Blocks.

Criteria Areas are organized by Area Plans, Subunits, and Cells. Area Plans are community regions defined in the County of Riverside General Plan; a Subunit is a portion of the Area Plan in which biological issues and target conservation acreages have been specified in Section 3.3 of the MSHCP Volume 1; a Cell Is a quarter-section unit consisting of 160 acres used to identify more specific land conservation criteria. Species conservation within the MSHCP is to be implemented through the use of methods and procedures as set forth in the MSHCP to bring listed species to the point where they no longer need threatened or endangered protective status under FESA or the California Fish and Game Code.

Figure 16: Multi-Species Habitat Conservation Plan (MSHCP)



Natural Environment Study, April 2014

The project is within the Burrowing Owl Survey Area. Small areas of the project are within the Los Angeles Pocket Mouse Survey Area. The east end of the project is also in a San Bernardino Kangaroo Rat Survey Area, but no habitat for that species is present there. The project contains habitat suitable for Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (MSHCP Section 6.1.2), specifically least Bell's vireo and southwestern willow flycatcher. The project is not located within any Narrow Endemic Plant Species Survey Area, Criteria Area Species Survey Area, or any other species-specific survey areas.

The Department is obligated to specific conditions as described in Section 13.8 of the MSHCP Implementation Agreement. This NES analyzes riparian/riverine and special-status species in the proposed project area in context with the MSHCP.

Affected Environment

On April 17, 2014, the Department approved the Natural Environmental Study. A Natural Environment Study (NES) describes the existing biological environment and how the project alternatives affect that environment. The NES summarizes technical documents (*e.g.*, focused species studies, wetland assessments, biological assessments, etc.) related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

The BSA is dominated by non-native grasslands. Natural communities present within the BSA include disturbed Riversidean sage scrub and chaparral, southern cottonwood-willow riparian forest, and coast live oak woodland. Southern cottonwood-willow riparian forest is considered to be a natural community of special concern. Other vegetation/ land used noted include ornamental trees, as well as disturbed/developed areas.

The project BSA is not within a sensitive plant species survey area, and thus the MSHCP was used to obtain the types of habitat within the BSA. Table 17 shows the acres of vegetation and land uses within the BSA as well as impacts as a result of the proposed project.

Table 17.
Acreage of Impacts to Vegetation Communities
Within the Project Footprint

Vegetation Communities	Acreage
Chaparral	49.92
Coast Live Oak Woodland	1.12
Non-native Grassland	16.87
Riversidean Sage Scrub	87.35
Southern Cottonwood-Willow Riparian Forest	0.00
Total	155.26

Natural Environment Study, April 2014

MSHCP and Linkages

The MSHCP provides for the assembly of conservation lands consisting of Criteria Areas for the conservation of sensitive, threatened, and endangered species covered by the MSHCP. The MSHCP conservation area comprises a variety of existing and proposed cores, linkages, constrained linkages, and noncontiguous habitat blocks. Criteria areas are organized by area plans, subunits, and cells.

The Biological Study Area (BSA) and project pass through portions of four MSHCP criteria cells 928, 931, 933, and 936 (see Figure 18). The BSA is located in the "Reche Canyon/Badlands" Area Plan (cells 928, 931, and 933) and "The Pass" Area Plan (Cell 936) of the MSHCP. All of these Cells will contribute to proposed Core 3, there is no linkage planned across the project area. The proposed project is a Covered Activity as described in Section 7.0 of the MSHCP. An MSHCP Consistency Report has been prepared to ensure consistency with MSHCP policies (NES 2014). Participation in the MSHCP is being coordinated through Section 7 consultations with the USFWS in order to maintain the existing cores, linkages, constrained linkages, and noncontiguous habitat blocks. Participation includes constructing wildlife crossings, and is discussed under the MSHCP discussion on P. 128 in the Animal Species section.

Environmental Consequences

Build Alternative 2:

The proposed project will not have substantial effects to non-native grasslands, disturbed Riversidean sage scrub, ornamental trees, disturbed/developed/ruderal vegetation, coast live oak woodland, and land use. The following sections discuss potential impacts natural communities present within the BSA.

Southern Cottonwood-Willow Riparian Forest:

The southern cottonwood-willow riparian forest is a special-status plant community as designated by CDFW. The project activities will be outside of this plant community, located on the eastern part of the project area. The project will not encroach on Southern Cottonwood-Willow Riparian Forest habitat and therefore will not impact southern cottonwood-willow riparian forest.

Riversidean Sage Scrub and Chaparral:

The Riversidean sage scrub and chaparral plant communities within the BSA have been disturbed by existing and historic land uses. The proposed project will affect 87.35 acres of Riversidean sage scrub and 49.92 acres of chaparral present within the BSA through disturbance and/or removal of existing vegetation. In addition to permanent impacts, the proposed project will result in indirect impacts through further degradation of these communities within the proposed project area. Because these plant communities are severely degraded within the BSA, effects within the BSA are not considered adverse. In addition, approximately 53 percent of these plant communities will be conserved within the MSHCP planning area. Thus, no compensatory mitigation is required.

Coast Live Oak Woodland:

The northwesterly portion of the BSA contains Coast live oak woodland dominated by several individual coast live oaks with an understory of non-native grasslands. Coast live oak woodland within the BSA is a relict stand that has been heavily affected by current historic land uses. The proposed project is anticipated to affect 1.12 acres of Coast oak woodland present within the BSA through disturbance and/or removal of existing vegetation. In addition to permanent impacts, the proposed project will result in indirect impacts through further degradation of this community within the proposed project area. Because of effects to this plant community are relatively small (1.12 acres) and this community is severely degraded and isolated as a result of surrounding development, effects are not considered adverse.

Cumulative Effects:

In the future, there may be an increase of traffic noise and additional nighttime light spill on these communities, as well as further degradation by current and future off-site development. The cumulative effects of the proposed project in combination with reasonably foreseeable development in the vicinity of these communities may further limit the use of this habitat by wildlife.

Avoidance, Minimization, and/or Mitigation Measures

The following measures will be incorporated to avoid and minimize impacts to Coast live oak woodland:

BIO-1: To designate Environmentally Sensitive Areas (ESA) to be preserved, prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around oak tree communities adjacent to the project footprint, as well as around any trees that can be avoided within the project footprint. No grading or fill activity of any type will be permitted within the project footprint. No grading or fill activity of any type will be permitted within these ESAs. In addition, heavy equipment, including motor vehicles, will not be allowed to operate within the ESAs. All construction equipment should be operated in a manner so as to prevent accidental damage to nearby preserved areas. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones.

BIO-2: To avoid impacts to nesting birds in Coast live oaks, any native vegetation removal or tree (native or exotic) trimming activities will occur outside of the nesting bird season (February 15-August 31). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist must conduct a pre-construction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active. See Section 4.3.4 for further details on avoidance and minimization efforts for nesting birds.

BIO-3: A biologist will monitor construction for the duration of the project to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly constructed and followed. Preconstruction surveys will be conducted to lessen temporary indirect impacts to Least Bell's Vireo (LBV).

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

WETLANDS AND OTHER WATERS

Regulatory Setting

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

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the United States Environmental Protection Agency (U.S. EPA).

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

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

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

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCB) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for additional details.

Affected Environment

On April 17, 2014, the Department approved the Natural Environmental Study containing the Delineation of Jurisdictional Waters. A Natural Environment Study (NES) describes the existing biological environment and how the project alternatives affect that environment. The NES summarizes technical documents (*e.g.*, focused species studies, wetland assessments, biological assessments, etc.) related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

The BSA contains 15 jurisdictional drainages. The Jurisdictional Delineation Report (JD) identifies all on-site jurisdictional drainages and identifies their widths. Within the BSA, there are 2.25 acres of waters of the US and 0.95 acre of wetlands under the jurisdiction of ACOE, 26.99 acres of streambed and associated riparian habitat under the jurisdiction of CDFW, and 1.715 acres of waters of the State under the jurisdiction of the RWQCB.

Drainages 1 through 14 are ephemeral drainages, and were dry at the time the JD field work was conducted. Drainage 13 exhibited a trickle of flowing water emanating from the 4-foot corrugated metal pipe on the downstream (south) side of SR-60. Based on the JD field work,

Drainage 13 was delineated as wetlands, due to the presence of hydrology, vegetation, and hydric soils. The San Timoteo Creek was delineated as drainage 15, and was unvegetated at the time of the JD field work because of the presence of flowing water. The streambeds of the ephemeral drainages were largely unvegetated and the banks were typically dominated by mule fat (FAC), brittlebush (NL), California Sagebrush (NL), tarragon (*Artemisia dracunculus*, NL), California broomsage (*Lepidospartum squamatum,* FACU), tree tobacco *(Nicotiana glauca*), blue elderberry (*Sambucus nigra subsp. caerulea*, FAC), Goodding's black willow (*Salix gooddingii,* FACW), coast live oak (*Quercus agrifolia*, NL), skunk bush (*Rhus aromatica*, FACU), and horseweed (*Erigeron canadensis*, FACU), with an understory of shortpod mustard (*Hirschfeld incana*, NL), tocalote (*Centaurea melitensis*).The proposed design plan was overlaid on the jurisdictional delineation boundary to determine the extent of impacts to jurisdictional areas. The extension of asphalt, fill slopes, and culverts were considered as possible permanent impacts to Waters of the State and Waters of the US. Although wetlands were delineated at Drainage 13, the project will avoid all impacts to wetlands. Temporary impacts will be caused by access for construction equipment and grading limits.

Environmental Consequences

Build Alternative 2: The proposed project will temporarily impact 0.774 acre of waters of the US and waters of the State, and 1.041 acres of CDFW jurisdiction. The proposed project will permanently impact 0.713 acre of waters of the US and waters of the State, and 0.897 acre of CDFW jurisdiction. Based on the current design, there are no permanent or temporary impacts to wetlands. The proposed project requires temporary and permanent impacts to jurisdictional drainages and therefore, authorizations from the ACOE, RWQCB, and CDFW would likely be required as described below.

The two most common types of permits issued by ACOE under Section 404 of the CWA to authorize the discharge of dredged or fill material into waters of the US are: a nation-wide permit (NWP) or an individual permit (IP). NWPs are general permits for specific categories of activities that result in minimal impacts to aquatic resources. NWP 14 can be used for linear transportation projects. The discharge cannot cause the loss of greater than ½ acre of waters of the US. The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the US exceeds 0.1 acre; or (2) there is a discharge in a special aquatic site including wetlands.

In order to qualify under NWP 14, impacts to waters of the US must be less than ½ acre; however, permanent impacts to waters of the US for this project exceed ½ acre. Therefore, in discussions on December 17, 2013 with ACOE (Veronica Chan), the ACOE would allow the use of separate authorizations under NWP 14 based on the presence of distinctive subwatersheds. The project area is within the jurisdiction of the Santa Ana RWQCB (Region 8). Under Section 401 of the CWA, the RWQCB must certify that the discharge of dredged or fill material into waters of the US does not violate state water quality standards by issuing a Water Quality Certification.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

The RWQCB regulates impacts to waters of the State under the Porter Cologne Water Quality Control Act through issuance of a Construction General Permit, State General Waste Discharge Order, or Waste Discharge Requirements, depending upon the level of impact and the properties of the waterway.

A 1602 Streambed Alteration Agreement is required for all activities that alter streams and lakes and their associated riparian habitat. In addition to the formal application materials and fee (based on cost of the project), a copy of the appropriate CEQA documentation must be included with the application.

Preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) report is required under the MSHCP for projects that involve impacts to riparian/riverine resources and/or vernal pools. The purpose of the DBESP report is to ensure replacement of any lost functions and values of habitat as it relates to covered species.

The DBESP (Table 18) document has been prepared to comply with the Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas and Vernal Pools required by Section 6.1.2 (Vol. 1) of the MSHCP. A summary of the required information is identified for the proposed project below.

Table 18: Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas for the State Route 60 Truck Lanes Project

Item	MSHCP Section 6.1.2 (Vol. 1) Requested Information	Location of Information or Summary Response in Report
1	Definition of the Project Area	The proposed project occurs along SR-60 between the cities of Moreno Valley and Beaumont in Riverside County, California (Figure 19). The proposed project is located in the Badlands region of Riverside County on SR60 from PM 22.1 (Gilman Springs Road) to PM 26.5 (Jack Rabbit Trail). The Biological Study Area (BSA) for the project consists of the impact footprint and a 500-foot buffer (Figure 20). The BSA is on lands mapped on the United States Geological Survey (USGS) *El Casco, Calif.* 7.5-minute topographic quadrangle (Figure 20). Specifically, the route and survey area are on portions of Sections 1-6, Township 3 South, Range 2 West and Sections 34-35, Township 2 South, Range 2 West. The BSA is located in the Reche Canyon/Badlands Area Plan and The Pass Area Plan of the MSHCP, and includes portions of four MSHCP Criteria Cells: 928, 931, 933, and 936 (Figure 18).
2	A written project description, demonstrating why an avoidance	**Alternative 1: No-Build (Avoidance) Alternative** The No-Build (Avoidance) Alternative would maintain

Table 18: Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas for the State Route 60 Truck Lanes Project

Item	MSHCP Section 6.1.2 (Vol. 1) Requested Information	Location of Information or Summary Response in Report
	alternative is not possible	the facility in its current condition. No improvements would be implemented at this time; therefore, no capital cost is associated with this alternative. As urban development continues and traffic demand increases, traffic operational characteristics will further deteriorate, resulting in an increase in congestion, vehicle delay, safety issues, and vehicle-operating costs. Therefore, the No-Build (Avoidance) Alternative is not possible because it would not address or alleviate the forecasted operational and safety issues along this segment of SR 60. **Alternative 2: Build Alternative** The project would construct a truck-climbing lane in the eastbound direction, a truck-descending lane in the westbound direction, and widen the inside and outside shoulders in both directions to the current standard in Riverside County. Most of the widening for this preferred alternative would be to the outside of the existing roadbed. However, for the portion of the freeway between PM 24.3 and PM 25.7, consideration would be given to widen the median, if feasible. The project would grade a 23-ft section adjacent to the outside shoulder in each direction to permit infiltration of storm water and to prevent falling rocks from entering the traveled way. The project would generate excavated soils that will need disposal. The disposal of soils will be in accordance with the Department standard specifications and regulations. Construction staging would be developed during the design phase. It is anticipated that construction would be staged within Department Right of Way and within project limits. Access to all the work is anticipated from and within the project limits and Department right of way. The project would rehabilitate the existing lanes, as well as the inside shoulder, in each direction. The rehabilitation effort would be designed under a separate contract and funded under a separate State Highway Operation Performance Program (SHOPP) project under Expenditure Authorization (EA) 1C090. Both contracts are to be combined prior to commencing the construction phase. The proposed project would reconstruct the existing concrete median barrier for the entire project.

Table 18: Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas for the State Route 60 Truck Lanes Project

Item	MSHCP Section 6.1.2 (Vol. 1) Requested Information	Location of Information or Summary Response in Report
		The proposed project design will include shifting the horizontal alignment within the widened portion to improve design sight distances, where feasible. The proposed project design will include modifying vertical profiles at feasible locations to improve sight distances.
3	A written project description of biological information available for the project site including the results of resource mapping	A Natural Environmental Study (NES) (Department 2014) was prepared for the project, which summarized the project conditions and results of the following studies: • General Biological Resources Assessment & Habitat Suitability Assessment for Sensitive Species • Final Delineation of Jurisdictional Waters (AMEC 2013a) • Habitat Assessment and Focused Surveys for the Least Bell's Vireo And Southwestern Willow Flycatcher (AMEC 2013b) • Burrowing Owl Habitat Assessment and Focused Survey (AMEC 2013c) • Habitat Assessment and Focused Survey for the Los Angeles Pocket Mouse (AMEC 2013d) For detailed methods and results for the above-mentioned assessments and surveys, please reference the NES and/or specific reports. The Biological Study Area (BSA) was created to encompass the proposed project footprint and typical habitats in the immediate project vicinity that may be affected by the proposed project. It generally included the project's permanent footprint and a 500-foot buffer. The BSA is currently undeveloped, with the exception of SR60, a cell phone tower and associated buildings, and a small number of rural residences in the vicinity. The project route is within the Badlands, which is characterized by erosion resulting in countless gullies, steep ridges, and sparse vegetation in semiarid climates. Wildfires have removed much of the native vegetation, leaving much of the area dominated by non-native annuals or bare. Drainages within the project area are ephemeral or sparsely vegetated, with the exception of San Timoteo Creek. Vegetation communities present on the project are described in detail in the

Table 18: Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas for the State Route 60 Truck Lanes Project

Item	MSHCP Section 6.1.2 (Vol. 1) Requested Information	Location of Information or Summary Response in Report
		NES. **Jurisdictional Waters** AMEC conducted a wetlands delineation and assessment of jurisdictional waters (AMEC 2013a). The effects to riparian/riverine areas within the BSA were calculated according to the regulatory authority of the U.S. Army Corps of Engineers (Corps) and California Department of Fish and Wildlife (CDFW). The BSA contains 15 jurisdictional drainages. The proposed project will permanently affect 0.713 acres and temporarily impact 0.774 acres of potential jurisdictional non-wetland waters and 0.0 acre of wetland waters of the United States subject to Corps and Regional Water Quality Control Board (RWQCB) jurisdiction. The proposed project will permanently impact 0.897 acres and temporarily impact 1.041 acres of streambed/bank subject to CDFW jurisdiction. Of the CDFW total acres to be permanently impacted, 0.184 acres are considered to be riparian habitat. **Least Bell's Vireo (LBV) and Southwestern Willow Flycatcher (SWWF)** Based on repeated detections of singing male LBVs in the same general areas, eight LBV territories are assumed to occur in or immediately adjacent to the project area. One of these territories was confirmed to have a pair of LBVs, with at least one begging fledgling, on June 28, 2013. The project area is not within LBV designated critical habitat. No SWWF were detected within the survey area. On May 23 and June 5, single willow flycatchers were detected, one on each date. These dates are within the normal period of spring migration of the species in southern California, and none of the birds were found on subsequent surveys. Therefore, these birds were migrants, likely of more northerly subspecies (*E.t. adastus* or *E.t. brewsteri*), and not southwestern willow flycatchers (subspecies *E.t. extimus*). **Burrowing Owl** No burrowing owls or burrowing owl sign were

Table 18: Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas for the State Route 60 Truck Lanes Project

Item	MSHCP Section 6.1.2 (Vol. 1) Requested Information	Location of Information or Summary Response in Report
		detected during surveys, but because suitable habitat is present within the BSA, a pre-construction survey for burrowing owls will be conducted within 30 days of project ground disturbance. **Los Angeles Pocket Mouse (LAPM)** No LAPM were captured during the surveys. LAPM do not currently occupy the MSHCP designated LAPM survey areas within the project footprint and vicinity.
4	Quantification of unavoidable impacts to riparian/riverine areas and vernal pools associated with the project, including direct and indirect effects	The effects to riparian/riverine areas within the BSA were calculated according to the regulatory authority of the U.S. Army Corps of Engineers (Corps) and California Department of Fish and Wildlife (CDFW). The BSA contains 15 jurisdictional drainages. The proposed project will permanently impact 0.713 acres and temporarily impact 0.774 acres of potential jurisdictional non-wetland waters and 0.0 acre of wetland waters of the United States subject to Corps and Regional Water Quality Control Board (RWQCB) jurisdiction. The proposed project will permanently impact 0.897 acres and temporarily impact 1.041 acres of streambed/bank subject to CDFW jurisdiction. Of the CDFW total acres to be permanently impacted, 0.184 acres are considered to be riparian habitat. No vernal pools occur on the project site, and there is no suitable habitat for fairy shrimp to occur.
5	A written description of project design features and mitigation measures that reduce indirect effects, such as edge treatments, landscaping, elevation difference, minimization and/or compensation through restoration or enhancement	A variety of measures have been incorporated into the project to avoid, minimize, and mitigate for direct and indirect impacts to sensitive species and habitats. The construction guidelines provided in MSHCP *Section 7.5.3,* as well as Best Management Practices (BMPs), will minimize and avoid impacts to sensitive species and habitats occurring adjacent to the existing roadway. The project will comply with MSHCP Section 6.1.4 *Guidelines Pertaining to Urban/Wildlands Interface*, which addresses indirect effects associated with locating development in proximity to the MSHCP Conservation Area. Permanent impacts to riparian/riverine habitat and

Table 18: Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas for the State Route 60 Truck Lanes Project

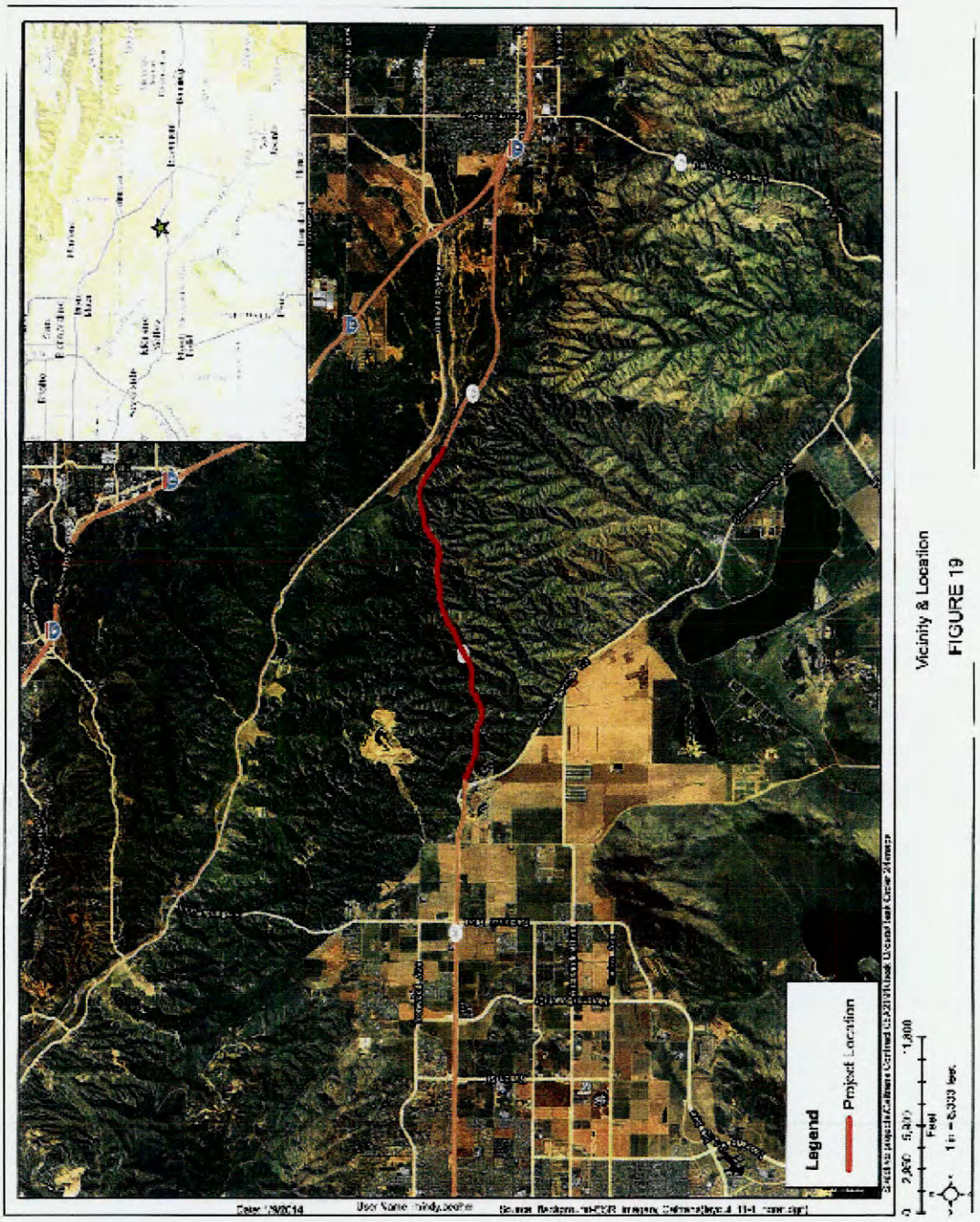
Item	MSHCP Section 6.1.2 (Vol. 1) Requested Information	Location of Information or Summary Response in Report
		LBV are proposed to be mitigated through purchase credits, in the form of habitat creation, from the Santa Ana Watershed Authority of the Riverside-Corona Resource Conservation at a 3:1 ratio for impacts to 0.184 acre of riparian habitat and 0 acre of wetlands (*i.e.*, acquire 0.552 acres) to compensate for the permanent loss of habitat. For impacts to streambed and non-wetland waters, credits will be purchased in the form of habitat enhancement, habitat creation, or a combination of habitat enhancement and habitat creation at a 2:1 ratio for impacts to 0.897 acre of streambed (*i.e.*, 1.794 acres). Please note that the 0.897 acre of streambed is inclusive of 0.713 acre of ACOE non-wetland waters of the US. Thus, the total mitigation to purchase for impacts to 0.184 acre of riparian habitat, 0.0 acre of wetlands, and 0.897 acre of streambed is 2.346 acres.
6	A finding demonstrating that although the proposed project would not avoid impacts, with proposed design and compensation measures, the project would be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures.	The proposed project will impact riparian/riverine habitat and may result in temporary indirect impacts to LBV. Although the proposed project will not avoid impacts, with the proposed design and compensation measures discussed below, the project will be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures. Temporary impact areas will be restored and the LBV would be expected to continue to occupy the BSA (Biological Study Area). The project will mitigate for temporary impacts through restoration and creation of onsite riparian habitat, and will also create wildlife crossings, as per the requirements of the MSHCP Volume 1, Section 7, to ensure the connectivity of the landscape for various wildlife species. This will provide riparian habitat that is of equivalent or better quality to the impacted habitat and is contiguous with existing and anticipated conservation areas.
7	a. Effects on Conserved Habitats;	The purpose of the riparian/riverine procedures described in Section 6.1.2 of the MSHCP is to ensure that the biological functions and values of riparian/riverine areas throughout the MSHCP Plan Area are maintained. Areas are maintained to ensure that habitat values for species inside the MSHCP Conservation Area are maintained. MSCHP

Table 18: Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas for the State Route 60 Truck Lanes Project

Item	MSHCP Section 6.1.2 (Vol. 1) Requested Information	Location of Information or Summary Response in Report
		Section 6.1.2 states that "those impacts that are unavoidable shall be mitigated such that the lost functions and values as they relate to Covered Species are replaced as set forth under the Determination of Biologically Equivalent or Superior Preservation." Implementation of the project mitigation will improve and retain existing biological resource values and is judged to be equivalent or superior to the unavoidable impact to riparian/riverine habitats at the project site.
	b. Effects on Section 6.1.2 Riparian/Riverine Species	As mentioned in Item 4, there will be effects to riparian/riverine habitat, including occupied LBV habitat. Best Management Practices will be implemented to minimize potential impacts during construction and ensure that impacts to water quality beyond the project site are minimized to the greatest extent feasible. These measures will be coordinated with the Regional Water Quality Control Board, U.S. Army Corps of Engineers, and California Department of Fish and Wildlife during the Section 401 Clean Water Act, Section 404 Clean Water Act, and Section 1602 Streambed Alteration permitting processes, respectively.
	c. Effects on riparian linkages and function of the MSHCP Conservation Area	Effects will occur at the project site to Reche Canyon/Badlands Area Plan, Subunit 3, Cell # 928 and 931, and to The Pass Area Plan which contains a portion of Proposed Core 3, is within Subunit 1, and includes Cell # 933 and 936. The effects to these areas will be attributed to the extension of the culverts which will directly affect riparian linkages and functions. However, with the extension, there will be adherence to BMPs and construction guidelines (MSHCP *Section 7.5.3*) and improvements to wildlife crossings, which will mitigate impacts through avoidance and minimization measures, as outlined in the NES and MSHCP Consistency Determination documents.

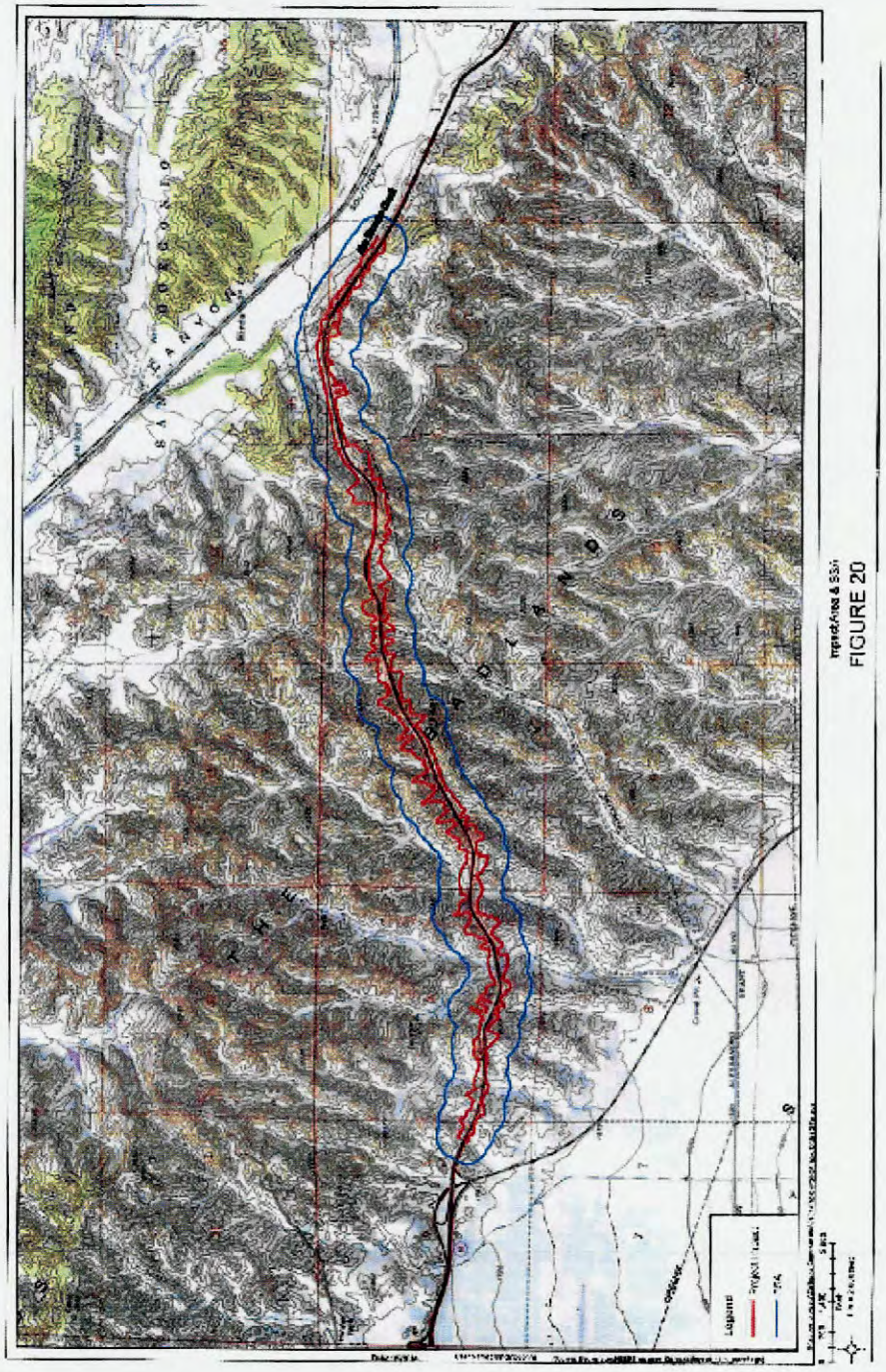
Determination of Biologically Equivalent or Superior Preservation (DBESP), March 2014

Figure 17: Biological Vicinity and Location Map



Natural Environment Study, April 2014

Figure 18: Impact Area & Biological Study Area



Natural Environment Study, April 2014

Implementation of the project mitigation will improve and retain existing biological resource values and is judged to be equivalent or superior to the unavoidable impact to riparian/riverine habitats at the project site.

As mentioned in Item 4, there will be temporary effects to riparian/riverine habitat, including occupied LBV habitat.

No-Build Alternative: There would be no impacts on wetlands and other waters.

Avoidance, Minimization, and/or Mitigation Measures

WET-1: The construction guidelines provided in MSHCP *Section 7.5.3,* as well as Best Management Practices (BMPs), will minimize and avoid impacts to sensitive species and habitats occurring adjacent to the existing roadway.

WET-2: The project will comply with MSHCP Section 6.1.4 *Guidelines Pertaining to Urban/Wildlands Interface*, which addresses indirect effects associated with locating development in proximity to the MSHCP Conservation Area.

WET-3: Permanent impacts to riparian/riverine habitat and LBV are proposed to be mitigated through purchase credits, in the form of habitat creation, from the Santa Ana Watershed Authority or the Riverside-Corona Resource Conservation at a 3:1 ratio for impacts to 0.184 acre of riparian habitat and 0 acre of wetlands (*i.e.*, acquire 0.552 acres) to compensate for the permanent loss of habitat. For impacts to streambed and non-wetland waters, credits will be purchased in the form of habitat enhancement, habitat creation, or a combination of habitat enhancement and habitat creation at a 2:1 ratio for impacts to 0.897 acre of streambed (*i.e.*, 1.794 acres). Please note that the 0.897 acre of streambed is inclusive of 0.713 acre of ACOE non-wetland waters of the US. Thus, the total mitigation to purchase for impacts to 0.184 acre of riparian habitat, 0.0 acre of wetlands, and 0.897 acre of streambed is 2.346 acres.

The proposed project will impact riparian/riverine habitat and may result in temporary indirect impacts to LBV. Although the proposed project will not avoid impacts, with the proposed design and compensation measures discussed below, the project will be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures.

WET-4: Temporary impact areas will be restored and the LBV would be expected to continue to occupy the BSA. The project will mitigate for temporary impacts through restoration and creation of riparian habitat onsite and will also create wildlife crossings, as per the requirements of the MSHCP Volume 1, Section 7 to ensure the connectivity of the landscape for various wildlife species. This will provide riparian habitat that is of equivalent or better quality to the impacted habitat and is contiguous with existing and anticipated conservation areas.

WET-5: Best Management Practices will be implemented to minimize potential impacts during construction and to ensure that impacts to water quality beyond the project site are minimized to the greatest extent feasible. These measures will be coordinated with the Regional Water Quality Control Board, U.S. Army Corps of Engineers, and California Department of Fish and Wildlife during the Section 401 Clean Water Act, Section 404 Clean Water Act, and Section 1602 Streambed Alteration permitting processes,

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

PLANT SPECIES

Regulatory Setting

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

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

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

Affected Environment

On April 17, 2014, the Department approved the Natural Environmental Study. A Natural Environment Study (NES) describes the existing biological environment and how the project alternatives affect that environment. The NES summarizes technical documents (*e.g.*, focused species studies, wetland assessments, biological assessments, etc.) related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

Six of the twelve unlisted special status plant species identified in Table 19, (Jaegar's milk-vetch, Plummer's mariposa-lily, Parry's spineflower, Robinson's pepper-grass, mud nama, and San Bernardino aster) have suitable habitat present within the BSA.

Table 19.
Special-Status Plant Species Occurring or Potentially Occurring in the BSA and Vicinity

Scientific Name	Common Name	Status[1]	Habitat and Distribution	Habitat Present / Absent[2]	Rationale
Astragalus pachypus var. jaegeri	Jaeger's milk-vetch	F/None S/SP CNPS/1B.1 MSHCP/C	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland. Dry ridges and valleys and open sandy slopes; often in grassland and oak-chaparral. 365-915 m.	P	Suitable habitat is present within BSA
Atriplex serenana var. *davidsonii*	Davidson's saltscale	F/None S/SP CNPS/1B.2 MSHCP/S	Coastal bluff scrub, coastal scrub in alkaline soil. 3-250m.	A	Suitable habitat not present within BSA; BSA not in an MSHCP survey area
California (Erodium) macrophylla	Round-leaved filaree	F/None State/SP CNPS/1B.1 MSHCP/S	Cismontane woodland, valley and foothill grassland. clay soils. 15-1200m.	A	No suitable habitat in BSA; BSA; not in an MSHCP survey area
Calochortus plummerae	Plummer's mariposa-lily	F/None S/SP CNPS/4.2 MSHCP/P	Chaparral, Cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. 100-1700 m.	P	Suitable habitat present within BSA.
Centromadia pungens ssp. *Laevis*	Smooth tarplant	F/None State/SP CNPS/1B.1 MSHCP/S	Alkaline areas in chenopod scrub, meadows, playas, riparian woodland, valley and foothill grassland below 480 meters (1,600 feet) elevation.	A	Suitable habitat not present within BSA; BSA not in an MSHCP survey area
Chorizanthe parryi var. *parryi*	Parry's spineflower	F/None S/SP CNPS/1B.1 MSHCP/P	Dry, sandy soils in chaparral or coastal sage scrub at 40 to 1, 750 meters (100 to 5, 700 feet) elevation.	P	Suitable habitat present within BSA.
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	F/None S/SP CNPS/1B.1 MSHCP/S	Annual herb usually found on alkaline soils in marshes, playas, vernal pools, and valley and foothill grassland below 1,400 meters (4, 600 feet) elevation.	A	Suitable habitat not present within BSA; BSA not in an MSHCP survey area
Lepidium virginicum var.	Robinson's pepper-grass	F/None S/SP	Chaparral, coastal scrub. 1-885 m.	P	Suitable habitat present.

Table 19.
Special-Status Plant Species Occurring or Potentially Occurring in the BSA and Vicinity

Scientific Name	Common Name	Status[1]	Habitat and Distribution	Habitat Present / Absent[2]	Rationale
robinsonii		CNPS/4.3 MSHCP/ not included			
Nama stenocarpum	Mud nama	F/None S/SP CNPS/2B.2 MSHCP/S	Annual or perennial herb of lake shores, riverbanks, and similar intermittently wet areas at 5 to 500 meters (20 to 1,600 feet) elevation.	P	Suitable habitat present within BSA; BSA not in an MSHCP survey area
Progne subis	Purple Martin	F/MBTA S/CSC MSHCP/C	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, Ponderosa pine, & Monterey pine. Nests in old woodpecker cavities mostly, also in human-made structures. nest often located in tall, isolated tree/snag.	P	Suitable habitat is present in BSA, but this species is likely extirpated from the area.
Symphyotrichum defoliatum	San Bernardino aster	F/None S/SP CNPS/1 B MSHCP/not included	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 2-2040m.	P	Suitable habitat present within BSA.
Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	F/None S/SP CNPS/2 MSHCP/S	Marshes and swamps, riparian forest, meadows and seeps, vernal pools. Mud flats of vernal lakes, drying river beds, alkali meadows; 5 to 460 meters (20 to 1, 500 feet) elevation.	A	Suitable habitat not present within BSA; BSA not in an MSHCP survey area
Navarretia fossalis	Spreading navarretia	F/FT S/SP CNPS/1B.1 MSHCP/S	Vernal pools, chenopod scrub, marshes and swamps, playas. San Diego hardpan & claypan vernal pools; in swales & vernal pools, often surrounded by other habitat types. 30-665 m.	A	Suitable habitat present within BSA; BSA not in an MSHCP survey area

Table 19.
Special-Status Plant Species Occurring or Potentially Occurring in the BSA and Vicinity

Scientific Name	Common Name	Status[1]	Habitat and Distribution	Habitat Present / Absent[2]	Rationale
Atriplex coronata var. *notatior*	San Jacinto Valley crownscale	F/FE S/SP CNPS/1B. 1 MSHCP/S	Playas, valley and foothill grassland, vernal pools. Alkaline areas in the San Jacinto River Valley. 140-500 m.	A	Suitable habitat not present within BSA; BSA not in an MSHCP survey area
Dodecahema leptoceras	Slender-horned spineflower	F/FE S/SE CNPS/1B. 1 MSHCP/S	Gravel soils of Temecula arkose deposits in openings in chamise chaparral in the Vail Lake Area, or on sandy soils in openings in alluvial scrub in floodplain terraces and benches that receive overbank deposits every 50 to 100 years from generally large washes or rivers.	A	Suitable habitat not present within BSA; BSA not in an MSHCP survey area

Notes:

[1] Status:

F: Federal Classification
- FE - Federal Endangered
- FT - Federal Threatened
- MBTA - Migratory Bird Treaty Act
- BCC - Bird of Conservation Concern

S: California Classification
- SE - State Endangered
- ST - State Threatened
- FP - Fully Protected
- CSC - California Species of Special Concern. Refers to species with vulnerable or seriously declining populations.
- WL - California Watch List Species. Refers to species with potentially vulnerable or declining populations.
- SP - Special Plant. Refers to any other plant/plant community monitored by the CNDDB, regardless of its legal or protection status.

CNPS: California Native Plant Society Classifications
- 1A - Plants Presumed Extirpated in CA and Either Rare or Extinct Elsewhere.
- 1B - Plants Rare, Threatened, or Endangered in CA and Elsewhere.
- 2A - Plants Presumed Extirpated in CA, But More Common Elsewhere.
- 2B - Plants Rare, Threatened, or Endangered in CA, But More Common Elsewhere.
- 3 - Plants about which more information is needed – a CNPS review list.
- 4 - Plants of Limited Distribution - A Watch List
- .1 Seriously threatened in CA (over 80% of occurrences threatened/high degree and immediacy of threat).
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- .3 Not very threatened in CA (<20% of occurrences threatened/low degree and immediacy of threat or no current threats).

MSHCP: Western Riverside County MSHCP Status
- S - Species is adequately conserved under the MSHCP, but surveys are required within indicated habitats and/ or survey areas.
- C - Species is adequately conserved under the MSHCP.
- P - Species is covered but considered inadequately conserved pending completion of MSHCP specified requirements.

[2] Habitat Present/Absent
- P - Present – general habitat is present and species is/may be present.
- A - Absent – no further work needed.

Natural Environment Study, April 2014

Environmental Consequences

Build Alternative 2: Potential temporary impacts to plant species would occur as a result of staging, temporary storage, dust-producing construction activities, and other potential temporary construction impacts within the project area. Specific potential direct and indirect impacts will be identified during final design. The permitting agencies will determine if additional measures need to be implemented at that time, and the measures will be included in the permits issued for the project. The MSHCP includes specific measures and programs that have been approved by its member agencies for the avoidance, minimization, and mitigation of potential impacts to species within the MSHCP jurisdiction.

The three special-status plant species identified in Table 19 are Federal/State-listed as endangered/threatened, however, there is no suitable habitat for those three species within the

BSA. San Jacinto Valley crownscale, slender-horned spineflower, and spreading navarretia are not present within the project area.

There are potential impacts to Plummer's mariposa-lily and Parry's spineflower. However, the MSHCP does not adequately cover Plummer's mariposa-lily and Parry's spineflower, and there are no specific survey areas have been identified for these species. Mud nama is adequately covered by the MSHCP, however, the project is not within a specified survey area. Robinson's pepper-grass and San Bernardino aster are not included in the MSHCP.

Potential indirect impacts to Jaegar's milk-vetch and mud nama will be mitigated through participation in the MSHCP. Potential impacts to Plummer's mariposa-lily, Parry's spineflower, Robinson's pepper-grass, and San Bernardino aster may also be considered adequately mitigated through participation in the MSHCP, or at the discretion of the CDFW or other agencies may require additional compensatory mitigation, unless a plant survey is conducted to show that they are absent.

No-Build Alternative: There would be no impacts to any plant species.

Avoidance, Minimization, and/or Mitigation Measures

Because the Federal/State-listed species were determined to be absent from the BSA, no avoidance and minimization efforts are required. Of the remaining six unlisted special-status plant species, impacts can be avoided or minimized by keeping project footprint and activities to a minimum.

The MSHCP is designed to mitigate for impacts to covered species and habitat on a regional scale. Through participation in the MSHCP and implementation of the avoidance, minimization, and mitigation measures identified above, no substantial cumulative effects are anticipated to occur to the plants or their habitats. Methods of participation in the MSHCP are discussed under Animal Species.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

ANIMAL SPECIES

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

National Environmental Policy Act

Migratory Bird Treaty Act

Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

California Environmental Quality Act

Sections 1600 – 1603 of the California Fish and Game Code

Sections 4150 and 4152 of the California Fish and Game Code

Affected Environment

On April 17, 2014, the Department approved the Natural Environmental Study. A Natural Environment Study (NES) describes the existing biological environment and how the project alternatives affect that environment. The NES summarizes technical documents (*e.g.*, focused species studies, wetland assessments, biological assessments, etc.) related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

The following 18 special status animal species are not Federal/State-listed threatened/endangered. They were also identified in Table 21 as being present or potentially present in the BSA: Cooper's hawk, Southern California Rufous-Crowned sparrow, Golden Eagle, Belding's Orange-Throated whiptail, Coastal whiptail, Ferruginous hawk, Northwestern San Diego Pocket mouse, Northern Red Diamond rattlesnake, White-tailed kite, California Horned Lark, Yellow-breasted chat, Loggerhead shrike, San Diego Black-Tailed jackrabbit, San Diego Desert woodrat, Coast (San Diego) Horned Lizard, Purple Martin, Yellow Warbler, and Western Spadefoot. All of these species are fully covered by participation in the MSHCP, and will not be discussed further. However, the bird species cannot be impacted while nesting.

Burrowing owl and Los Angeles Pocket Mouse (LAPM) are not Federal/State-listed threatened/endangered and are not adequately covered by the MSHCP. Special survey areas and procedures are in place for these two species. However, potential project-related effects to these two species are detailed further in their respective following sections.

California (Western) Mastiff bat, Western Yellow bat, Southern Grasshopper mouse, Lawrence's Goldfinch, and American badger are not Federal/State-listed threatened/endangered. These species were identified in Table 20 as being present or potentially present in the BSA, but are not included in the MSHCP. Potential impacts to Lawrence's goldfinch will be mitigated by the measures detailed below for nesting birds. Potential impacts to the other four uncovered species will be discussed below.

Table 20.
Special-Status Animal Species Occurring or Potentially Occurring in the BSA and Vicinity

Scientific Name	Common Name	Status[1]	Habitat and Distribution	Habitat Present / Absent[2]	Rationale
Accipiter cooperii	Cooper's hawk	F/MBTA S/WL MSHCP/C	Woodland, chiefly of open, interrupted or marginal type. Prefers nest sites in riparian, deciduous trees, as in canyon bottoms on river flood-plains; but also uses live oaks, etc.	P	Species occurs in BSA
Agelaius tricolor	Tricolored blackbird	F/BCC S/CSC MSHCP/C	Freshwater marsh, marsh and swamp, swamp, wetland	A	Suitable habitat not present within BSA.
Aimophila ruficeps canescens	Southern California Rufous-crowned sparrow	F/MBTA S/WL MSHCP/C	Resident in coastal sage scrub & sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass & forb patches.	P	Species occurs in BSA
Aquila chrysaetos	Golden eagle	F/BCC S/FP MSHCP/C	Rolling foothills, mountain areas, sage-juniper flats, and desert. cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	P	Suitable habitat is present, however this species was not observed in the BSA.
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail	F/None S/SSC MSHCP/C	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes & other sandy areas with patches of brush & rocks.	P	Suitable habitat is present within BSA.
Aspidoscelis tigris stejnegeri	Coastal whiptail	F/None S/ None MSHCP/C	Found in deserts & semiarid areas with sparse vegetation and open areas. Also found in woodland & riparian areas. Ground may be firm soil, sandy, or rocky.	P	Suitable habitat is present within BSA
Athene cunicularia	Burrowing owl	F/MBTA S/CSC MSHCP	Great basin grassland, great basin grassland scrub, Mojavean desert scrub,	P	Suitable habitat present. No burrowing owls were detected during focused

Table 20.
Special-Status Animal Species Occurring or Potentially Occurring in the BSA and Vicinity

Scientific Name	Common Name	Status[1]	Habitat and Distribution	Habitat Present / Absent[2]	Rationale
			Sonoran desert scrub, valley and foothill grassland		surveys.
Buteo regalis	Ferruginous hawk	F/BCC S/WL MSHCP/C	Open grasslands, sagebrush flats, desert scrub. Low foothills & fringes of pinyon-juniper habitats.	P	Wintering habitat only, does not breed in our area.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	F/None S/CSC MSHCP/C	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel grasslands, and sagebrush.	P	Suitable habitat present within BSA. Not captured by Los Angeles Pocket Mouse surveys, but those were limited to specific designated survey areas.
Crotalus ruber ruber	Northern red-diamond rattlesnake	F/None S/CSC MSHCP/C	Chaparral, woodland, grassland & desert areas. Occurs in rocky areas & dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	P	Species occurs in BSA.
Elanus leucurus	White-tailed kite	F/MBTA S/FP MSHCP/C	Low foothills or valley areas within oaks, riparian areas, or marshes near open grasslands for foraging.	P	Species occurs in BSA.
Eremophilia alpestris actia	California horned lark	F/MBTA S/CSC MSHCP/C	Open grasslands and fields, agricultural area, open montane grasslands.	P	Suitable habitat present in the BSA.
Eumops perotis californicus	California (Western) mastiff bat	F/None S/CSC MSHCP/not included	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral etc. Roosts in crevices in cliff faces, high buildings, trees & tunnels.	P	Suitable habitat present in the BSA.
Icteria virens	Yellow-breasted Chat	F/MBTA S/CSC MSHCP/C	Summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses.	P	Species occurs in the BSA.
Lanius ludovicianus	Loggerhead shrike	F/BCC S/CSC MSHCP/C	Broken woodlands, savannah, pinyon-juniper, Joshua tree & riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning & fairly dense shrubs & brush for nesting.	P	Suitable habitat is present within the BSA.
	Western yellow bat	F/None S/CSC MSHCP/ not included	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palm trees. Forages over water and among trees.	P	Suitable habitat is present within the BSA.

Table 20.
Special-Status Animal Species Occurring or Potentially Occurring in the BSA and Vicinity

Scientific Name	Common Name	Status[1]	Habitat and Distribution	Habitat Present / Absent[2]	Rationale
Lepus californicus bennettii	San Diego black-tailed jackrabbit	F/None S/CSC MSHCP/C	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats.	P	Suitable habitat is present within the BSA. BSA not in an MSHCP survey area.
Neotoma lepida intermedia	San Diego desert woodrat	F/None S/CSC MSHCP/C	Coastal scrub, moderate to dense canopies preferred. Particularly abundant in rock outcrops & rocky cliffs & slopes.	P	Species occurs in the BSA.
Onychomys torridus ramona	Southern grasshopper mouse	F/None S/CSC MSHCP/ not included	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on anthropods.	P	Suitable habitat present.
Perognathus longimembris brevinasus	Los Angeles pocket mouse	F/None S/CSC MSHCP/S	Lower elevation grasslands & coastal sage communities. Open ground with fine sandy soils.	P	Suitable habitat present, but none were detected by focused surveys in the designated survey areas.
Phrynosoma (coronatum) blainvillii	Coast (San Diego) horned lizard	F/None S/CSC MSHCP/C	Frequents a wide variety of habitats. Most common in lowlands along sandy washes with scattered low bushes for cover, open areas for sunning & patches of loose soil for burial.	P	Suitable habitat present.
Plegadis chihi	White-faced ibis	F/MBTA S/WL MSHCP/C	Winters in locally wet meadows, shallow freshwater marshes, ponds, lakes, rivers, flooded fields, and estuaries.	A	Suitable habitat not present within the BSA.
Progne subis	Purple Martin	F/MBTA S/CSC MSHCP/C	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, Ponderosa pine & Monterey pine. Nests in old woodpecker cavities mostly, also in human-made structures. Nests often located in tall, isolated tree/snag.	P	Suitable habitat is present within the BSA, but this species is likely extirpated from the area.
Setophaga petechia	Yellow warbler	F/BCC S/CSC MSHCP/C	Riparian woodlands	P	Species occurs in BSA.
Spea hammondii	Western spadefoot	F/None S/CSC MSHCP/C	Grasslands and occasionally hardwood woodlands, requires pools for breeding; burrows during dry season.	P	Suitable habitat may be present within BSA, pools in compacted soils of roads often used.
Spinus lawrenci	Lawrence's goldfinch	F/BCC S/None MSHCP/not included	Breeds in open oak or other arid woodland and chaparral, near water. Rarely breeds along immediate coast.	P	Species occurs within the BSA.

Table 20.
Special-Status Animal Species Occurring or Potentially Occurring in the BSA and Vicinity

Scientific Name	Common Name	Status[1]	Habitat and Distribution	Habitat Present / Absent[2]	Rationale
			Typically habitats include valley foothill hardwood, valley foothill hardwood-conifer. Occurs in desert riparian, palm oasis, pinyon-juniper, and lower montane habitats in southern California. Nearby herbaceous habitats are often used for feeding.		
Taxidea taxus	American badger	F/None S/CSC MSHCP/not included	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils & open, uncultivated ground.	P	Suitable habitat present within the BSA.

Notes:

[1] Status:

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MSHCP: Western Riverside County MSHCP Status
- S - Species is adequately conserved under the MSHCP, but surveys are required within indicated habitats and/ or survey areas.
- C - Species is adequately conserved under the MSHCP.
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[2] Habitat Present/Absent
- P - Present – general habitat is present and species is/may be present.
- A - Absent – no further work needed.

Natural Environment Study, April 2014

Environmental Consequences

Burrowing Owl:

The project site was found to contain potentially suitable habitat for the burrowing owl in the form on non-native grasslands present within the BSA. A focused burrowing owl survey was completed during the nesting/breeding period for this species. The burrowing owl was not detected within the BSA during the spring 2013 focused surveys; however, the burrowing owl is a highly mobile species with the potential to move onto proposed project site prior to construction; therefore, a preconstruction focused survey would be required to verify species absence from the proposed project site no more than 30 days prior to grading.

Los Angeles Pocket Mouse (LAPM):

The MSHCP has designated specific areas where surveys for the Los Angeles Pocket Mouse are required, and two of those areas occur in the vicinity of the Project footprint.

A focused LAPM survey was conducted on May 14th and 16th, 2013. The focused LAPM survey determined that the LAPM is absent from MSHCP designated survey areas in the BSA. AMEC performed LAPM trapping from June 24-30 2013. No LAPM were captured during the surveys. AMEC concludes that LAPM do not currently occupy the MSHCP designated LAPM survey areas within the project footprint and vicinity.

Nesting Birds:

Potential effects to nesting raptors and other migratory bird species may occur during bird breeding season. Impacts can be avoided by conducting a focused survey for nesting birds prior to removal of trees and by removing vegetation outside of bird breeding season.

MSHCP Participation

The Departments participation within the MSHCP requires the project be consistent with wildlife connectivity measures stipulated in Section 7.5.2 of the MSHCP. These measures are being developed through ongoing coordination with the United States Fish & Wildlife Service (USFWS), California Department of Fish & Wildlife (CDFW), and the Riverside Conservation Authority (RCA). Specific dates and topics of coordination efforts are discussed in Chapter 3: Comments and Coordination.

Exact locations, sizes, and details of requirements for wildlife connectivity will be determined during final design in coordination with USFWS, CDFW, and RCA. Specific design requirements will include the following:

- Twelve wildlife crossings must be constructed within the project area in order to maintain wildlife corridor connectivity. Two large wildlife crossings must be constructed with a height of approximately 10 to 13. feet and an openness ratio (width multiplied by height, divided by length) of at least 0.6. A mixture of ten small and medium wildlife crossings must be placed at least every 300 meters. The small wildlife crossings must vary in size from approximately 1.6 to 3.3 feet diameter culverts, and the medium wildlife crossings must vary in size from 3.3 to 5 feet diameter culverts. The Department may be able to utilize several existing culverts as small and medium wildlife crossings. The two large wildlife crossings will likely be constructed on the east end of the project.

- New welded wire fencing of an appropriate height, with three strand wire at the top, will be constructed adjacent to the roadways and highway. The fencing will guide large wildlife to appropriate crossing locations, and will reduce road kill.

The Department is scheduled to present its' plan for participation in the MSHCP to the Western Riverside Conservation Authority (RCA) on June 19, 2014. The following wildlife crossings

have been identified and proposed as a result of inter-agency coordination, and technical analysis developed by the Department during ongoing coordination with John Taylor of the USFWS. Details of the coordintion process are discussed in Chapter 3.

- Three Top Arch concrete boxes are located within the limit of the project at post mile 22.59, 23.22 and 23.58 ranging from 5.5' to 6.3' in width and 6.6' to 7.7' height these structures are suitable for small and medium animals. The arch culverts will be protected by incorporating retaining structures in lieu of extending them.
- The rest of the existing drainage structures (approximately 25 structures) are corrugated steel pipe ranging from 24" to 48" in diameters the will be rehabilitated and extended
- Additional wildlife crossings consisting of three 36" diameters reinforced concrete pipe (RCP) culverts, and three 60" diameters (RCP) will be constructed to accommodate small and medium size animals total cost around $0.75 million
- Two large 17' x 17' and 19' x 18' reinforced concrete box culverts (RCB), and will have a total cost of approximately $2.3 million is proposed to accommodate large animals. The box culvert at PM 25.09 will have an openness ratio of 0.63. The box culvert at PM 26.08 will have an openness ratio of 0.62.

Avoidance, Minimization, and/or Mitigation Measures

AS-1: An MSHCP pre-construction survey for nesting birds and burrowing owls will be conducted within 30 days prior to ground disturbance in suitable habitat areas.

AS-2: If burrowing owls are found to be present in the BSA during subsequent pre-construction surveys, then the project-specific mitigation would be developed and authorized through consultation with the Western Riverside County Regional Conservation Authority, CDFW, and USFWS, as outlined in MSHCP Table 9.2 and Appendix D, Summary of MSHCP Species Survey Requirements.

AS-3: Nesting Birds: To avoid potential effects to fully protected raptors and other nesting birds protected by the MBTA and state fish and game code, and for compliance with the MSHCP Incidental Take Permit Condition 5; vegetation clearing and preliminary ground disturbance work will be completed outside of the bird breeding season (typically February 15 through August 31). In the event that initial groundwork cannot be conducted outside the bird breeding season, focused surveys will be conducted prior to ground-disturbing activities. Should nesting birds be found, an exclusionary buffer will be established by the biologist. The buffer may be up to 500 feet in diameter depending on the species of nesting bird found. This buffer will be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

THREATENED AND ENDANGERED SPECIES

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the CDFW. For species listed under both the FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Affected Environment

On April 17, 2014, the Department approved the Natural Environmental Study. A Natural Environment Study (NES) describes the existing biological environment and how the project alternatives affect that environment. The NES summarizes technical documents (*e.g.*, focused species studies, wetland assessments, biological assessments, etc.) related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

The Department coordinated with John M. Taylor of the USFWS on January 8, 2013. On January 9, 2013, a species list request was sent to the USFWS. The USFWS List of Federally Endangered, Threatened, Proposed, and Candidate Species and their Critical Habitat that May Occur in the Vicinity of the SR-60 Truck Lanes Project letter dated February 6, 2013 can be found in Appendix B: Agency Letters. On April 4, 2014, the Department received an e-mail confirming the USFWS Species list remains valid (see Appendix B: Agency Letters).

The USFWS has been consulted with to help determine the best locations for wildlife crossings to help comply with the requirements of the MSHCP. Further coordination with USFWS has been initiated as a part of the MSHCP compliance stage of the project, and in compliance with the requirement of the Formal Section 7 Consultation process. The USFWS will also be coordinated with to help determine the locations of wildlife fencing. See Appendix B: Agency Letters for the draft locations, descriptions and costs. Proposed wildlife crossing locations are discussed in the MSHCP discussion in the Animal Species section on P. 128.

This project will not require consultation with the National Marine Fisheries Service as this project will not impact fisheries or essential fish habitat.

Table 21.
Threatened & Endangered Species Occurring or Potentially Occurring in the BSA and Vicinity

Scientific Name	Common Name	Status[1]	Habitat and Distribution	Habitat Present / Absent[2]	Rationale
Dipodomys merriami parvus	San Bernardino kangaroo rat	F/FE S/CSC MSHCP/S	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and floodplains.	A	Although there is an MSHCP survey area at the east edge of the BSA, there is no suitable habitat within the BSA.
Dipodomys stephensi	Stephens' kangaroo rat	F/FE S/ST MSHCP/C	Found in plant communities transitional between grassland and coastal sage scrub, with perennial vegetation cover of less than 50%.	P	Suitable habitat present within the BSA.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Table 21.
Threatened & Endangered Species Occurring or Potentially Occurring in the BSA and Vicinity

Scientific Name	Common Name	Status[1]	Habitat and Distribution	Habitat Present / Absent[2]	Rationale
Empidonax traillii extimus	Southwestern willow flycatcher	F/FE S/SE MSHCP/S	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water.	P	Suitable habitat present. Not detected by focused surveys. Single willow flycatchers were detected on two dates within the normal spring migration period of the full species. They did not stay & were therefore presumed to be migrants of more northerly subspecies.
Popliptila californica californica	Coastal California gnatcatcher	F/FT S/CSC MSHCP/C	Obligate, permanent resident of sage scrub and sometimes chaparral.	P	Suitable habitat present within the BSA.
Vireo bellii pusillus	Least Bell's vireo	F/FE S/SE MSHCP/S	Riparian forests and willow thickets.	P	Based on repeated detections of singing male LBVs in the same general area during focused surveys, biologists believe that there were eight LBV territories in or immediately adjacent to the BSA. Breeding confirmed in one territory.

Notes:

[1] Status:

F: Federal Classification
- FE - Federal Endangered
- FT - Federal Threatened

S: California Classification
- SE - State Endangered
- ST - State Threatened
- FP - Fully Protected
- CSC - California Species of Special Concern. Refers to species with vulnerable or seriously declining populations.
- WL - California Watch List Species. Refers to species with potentially vulnerable or declining populations.
- SP - Special Plant. Refers to any other plant/plant community monitored by the CNDDB, regardless of its legal or protection status.

CNPS: California Native Plant Society Classifications
- 1A - Plants Presumed Extirpated in CA and Either Rare or Extinct Elsewhere.
- 1B - Plants Rare, Threatened, or Endangered in CA and Elsewhere.
- 2A - Plants Presumed Extirpated in CA, But More Common Elsewhere.
- 2B - Plants Rare, Threatened, or Endangered in CA, But More Common Elsewhere.
- 3 - Plants about which more information is needed – a CNPS review list.
- 4 - Plants of Limited Distribution - A Watch List
- .1 Seriously threatened in CA (over 80% of occurrences threatened/high degree and immediacy of threat).
- .2 Moderately threatened in CA (20-80% occurrences threatened/moderate degree and immediacy of threat).
- .3 Not very threatened in CA (<20% of occurrences threatened/low degree and immediacy of threat or no current threats).

MSHCP: Western Riverside County MSHCP Status
- S - Species is adequately conserved under the MSHCP, but surveys are required within indicated habitats and/ or survey areas.
- C - Species is adequately conserved under the MSHCP.
- P - Species is covered but considered inadequately conserved pending completion of MSHCP specified requirements.

[2] Habitat Present/Absent
- P - Present – general habitat is present and species is/may be present.
- A - Absent – no further work needed.

Natural Environment Study, April 2014

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Environmental Consequences

San Bernardino Kangaroo Rat (SBKR):

This small, burrowing mammal is state listed and federally listed as endangered. Its favored habitat is alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and floodplains. It is covered under the MSHCP, however, no suitable habitat is present within the BSA.

Stephens' Kangaroo Rat (SKR):

This small, burrowing mammal is state listed as threatened and federally listed as endangered. Its favored habitat is grasslands with sparse sage scrub. It is a covered species under the MSHCP (NES 2014).

Permanent impacts to the 16.87 acres of non-native grassland habitat could include direct injury or death to SKR due to vegetation removal and project activities, or indirect impacts such as causing burrow damage or abandonment. Therefore, based on the potential for SKR take, the Department has determined that the proposed project is likely to adversely affect SKR.

Coastal California Gnatcatcher:

This small, resident bird is federally listed as threatened. Its favored habitat is sage scrub. It is a covered species under the MSHCP.

Permanent impacts to the 87.35 acres of Riversidean sage scrub habitat could include direct injury or death to coastal California gnatcatchers due to vegetation removal and project activities, or indirect impacts such as causing nest damage or abandonment. Therefore, based on the potential for Coastal California gnatcatcher take, The Department has determined that the Project is likely to adversely affect coastal California gnatcatcher (NES 2014).

Southwestern Willow Flycatcher (SWWF):

The SWWF is a subspecies of willow flycatcher. It has been Federally listed as endangered by the USFWS since 1995, and was State-listed as an endangered species by the CDFG in 1992. The SWWF is a migratory songbird occurring in this region only during the breeding season (late May to early August). It is the only subspecies of willow flycatcher in southern California. This species breeds in riparian habitat along rivers, streams, and other wetlands.

AMEC conducted focused surveys for SWWF in 2013 to determine the presence of SWWF within the BSA. No SWWF were detected within the BSA. On May 23rd and June 5th, 2013, single willow flycatchers were detected, one on each date. These dates are within the normal period of spring migration of the species in southern California, and none of the birds were found on subsequent surveys. Therefore, AMEC concluded that these birds were migrants, likely of more northerly subspecies (*E.t. adastus* or *E.t. brewsteri*) and not Southwestern Willow Flycatchers (subspecies *E.t. extimus*).

Because SWWF was determined to be absent during the focused survey, no impacts to the species are anticipated. The Department has determined, in accordance with Section 7 of the Endangered Species Act, there will be "No Effect" to the SWWF.

Least Bell's Vireo (LBV):

The LBV was listed as an endangered species by the State and Federal agencies in 1980 and 1986, respectively, and critical habitat was designated in 1994 (USFWS 1986, 1994). The LBV is a small migratory songbird that nests in southern California. This species is a summer resident of southern California. It breeds in willow thickets and other dense, low riparian growths in lowlands and lower portions of canyons. Approximately 38,000 acres of critical habitat was designated for the LBV in 1994. The critical habitat occurs in 10 areas throughout Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego Counties. No designated critical habitat occurs in the project BSA.

AMEC conducted focused surveys for LBV in 2013 to determine the presence of LBV within the BSA. Based on repeated detections of singing male LBVs in the same general areas, AMEC believes there were eight LBV territories in or immediately adjacent to the project area. One of these territories was confirmed to have a pair of LBVs and at least one fledgling on 28 June 2013.

The proposed project may result in potential impacts to LBV habitat through temporary indirect degradation of existing riparian/riverine vegetation. Temporary indirect impacts include construction-related impacts such as noise, dust, potential fuel pills from construction equipment, possible night lighting during construction, and activities of equipment or personnel outside designated construction areas as well as operation impacts such as on adjacent habitats caused by storm water runoff, traffic, and litter. Construction may indirectly impact riparian/riverine habitats permanently through enhancing the germination and proliferation of non-native invasive plant species. Invasive plant species are those that out-compete native plants; they are of particular concern.

Indirect impacts are difficult to quantify since they result from normal activities and can change from day to day. These indirect impacts affect LBV through the contribution to the degradation of potential LBV habitat.

LBV is an MSHCP species, and project-related take of this species and its habitat would be authorized through Formal Section 7 consultation with the USFWS and through compliance with the MSHCP. Based on the potential for temporary indirect impacts, the Department has determined that the proposed project is likely to adversely affect LBV (NES 2014)..

MSHCP Participation and Formal Section 7 Consultation

The proposed project involves a federal nexus with the Federal Highway Administration (FHWA), so a FESA Formal Section 7 consultation with the USFWS will be required. Per Section 14.9 of the MSHCP Implementation Agreement, the USFWS shall ensure, in a biological opinion, that the proposed project is consistent with the terms and conditions of the MSHCP. Any reasonable and prudent measure issued by the USFWS in the biological opinion

shall be consistent with the MSHCP and Implementation Agreement to the maximum appropriate extent. The USFWS may also determine through formal consultation that the proposed project scope, analysis, surveys, avoidance and minimization measures, and conclusions are consistent with the MSHCP.

Wildlife crossings will be constructed as a part of the Department's participation in the MSHCP. Details of the proposed MSHCP participation efforts are discussed on P. 128 in the MSHCP discussion in the Animal Species section.

Cumulative Effects:

The cumulative effects of the proposed project in combination with a foreseeable increase in traffic may incrementally cause further impediment to wildlife movement within drainages and culverts. The MSHCP is designed to mitigate for impacts to covered species and habitat on a regional scale. Through participation in the MSHCP and implementation of the avoidance, minimization, and mitigation measures identified above, no substantial cumulative effects are anticipated to occur to present species. SKR, California Coastal Gnatcatcher, and LBV experience no cumulative substantial effects.

No-Build Alternative 1: There would be no impacts to any Threatened and Endangered Species.

Avoidance, Minimization, and/or Mitigation Measures

T&E-1: SKR: Impacts to this species can be avoided or minimized by keeping project footprint and activities to a minimum in grassland areas.

T&E-2: Coastal California Gnatcatcher: Impacts to this species can be avoided or minimized by keeping project footprint and activities to a minimum in sage scrub areas.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

INVASIVE SPECIES

Regulatory Setting

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

Affected Environment

On April 17, 2014, the Department approved the Natural Environmental Study. A Natural Environment Study (NES) describes the existing biological environment and how the project alternatives affect that environment. The NES summarizes technical documents (*e.g.*, focused species studies, wetland assessments, biological assessments, etc.) related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

The California Department of Food and Agriculture (CDFA), Division of Plant Health and Pest Prevention Services, has listed the noxious weed seed of California. Ratings (A, B, C, or Q) have been designated for noxious species. These ratings reflect CDFA's view of the statewide importance of invasive species, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest within the State. The ratings are policy guidelines that indicate the most appropriate action to take against a pest under general circumstances. Pests designated by Level A are those subject to State- or County Agricultural Commissioner (CAC)-enforced action involving eradication, containment, rejection, or other holding action. Pests designated by Level B are those which the CAC has the discretion to eradicate, contain, control, or perform other holding actions, or are those pests subject to State-endorsed holding action and eradication only when found in a nursery. Pests designated a Level C are those not subject to State-enforced action outside of nurseries, except to retard the spread (at the discretion of the CAC) or to provide for pest cleanliness in nurseries. Pests designated Q are those at the State/County level pending determination of a permanent rating.

The California Exotic Pest Plant Council (CalEPPC) list is based on information submitted by members, land managers, botanists, and researchers throughout the State, as well as published sources. The list highlights non-native plants that are serious problems in wildlands (natural areas that support native ecosystems, including national, State, and local parks, ecological reserves, wildlife areas, national forests, BLM lands, etc.). It includes List A, the most invasive wild land pest plants, which are documented as aggressive invaders that displace natives and disrupt natural habitats. This list includes two sub-lists: List A-1 is composed of widespread pests that are invasive in three Jepson regions, and List A-2 is composed of regional pests invasive in three or fewer Jepson regions. List B is composed of wild land pest plants of lesser invasiveness; invasive pest plants that spread less rapidly and cause a lesser degree of habitat

disruption. The List B species may be widespread or regional. Red Alert are those pest plants with potential to spread explosively and whose infestations currently are small or localized. Annual grasses are those annual grasses that are abundant and widespread in California and pose serious threats to wildlands.

Environmental Consequences

None of the species on the California list of invasive species is used by the Department for erosion control or landscaping in Riverside County, CA. All equipment and materials will be inspected for the presence of invasive species.

Build Alternative 2: The proposed project has the potential to spread invasive species by entering and exiting construction with contaminated equipment, the inclusion of invasive species in seed mixtures and mulch, and by the improper removal and disposal of invasive species so that seed is spread along the highway.

No-Build Alternative 1: There will be no impacts or spread of invasive species.

Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented to mitigate the potential of invasive species from spreading into the project area:

INV–1: Bare soil will be landscaped with Department-recommended seed mix from locally adopted species, where feasible, to preclude the invasion of noxious weeds. The use of site-specific materials, which are adapted to local conditions, increases the likelihood that revegetation will be successful and maintains the genetic integrity of the local ecosystem. Arrangements shall be made well in advance of planting for the scheduled planting time. Sufficient time should be allocated for a professional seed company to visit the project site during the appropriate season and collect the native plant seed. If local propagules are not available or cannot be collected in sufficient quantities, materials collected or grown from other sources within southern California shall be substituted. For widespread native herbaceous species that are more likely to be genetically homogenous, site specificity is a less important consideration and seed from commercial sources may be used.

INV–2: Seed purity shall be certified by planting seed labeled under the California Food and Agricultural Code or that has been tested within a year by a seed laboratory certified by the Association of Official Seed Analysts or by a seed technologist certified by the Society of Commercial Seed Technologists.

INV–3: Construction equipment will be cleaned of mud or other debris that may contain invasive plants and/ or seeds and inspected to reduce the potential of spreading noxious weeds before arriving at the construction site and before leaving the construction site.

INV–4: Trucks with loads carrying vegetation shall be covered and vegetation shall be covered and vegetative materials removed from the site shall be disposed of in accordance with all applicable laws and regulations.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following construction staging options are being proposed and will be studied more in detail during the PS&E phase of the project.

Build Alternative 1 Stage Construction for Option 1:

Stage 1

Slope cutting and reconfiguration operations accompanied by grading and paving work for the new lane and shoulder in the WB direction of SR-60 will proceed while traffic is detoured onto the WB I-10.

It is proposed to implement 55-hr typical weekend closures of the north roadbed of SR-60 and to detour the westbound traffic onto Interstate (I)-10, while leaving the eastbound (EB) direction open. This action will permit slope cut back and reconfiguring operations, grading and paving of new lane and shoulder to proceed in the WB direction. The WB lanes will be open to traffic during normal working days with shoulder restrictions on both sides.

Stage 2

Upon completion of construction of the new WB truck descending lane and its corresponding shoulder, the entire WB roadbed will be restriped and conditioned to accommodate traffic in both directions. EB traffic crossovers will route traffic onto the WB roadbed. This action will permit complete closure of the south roadbed and the construction of the truck climbing lane and corresponding shoulder as well as slope configuration, grading and paving.

Stage 3

Route the EB traffic on the new roadbed, remove crossovers and complete construction contract.

Staging construction activities in this manner will permit the contractor sufficient room to work on the steep slopes using whatever cost effective methods are available with minimal interference from traffic. More space will also be available to construct the needed JPCP pavement and its corresponding graded area for the shoulder. The availability of full roadbed for the contractor in each direction will result in cost savings and better quality of work.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

CLIMATE CHANGE:

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)[7].

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively. [8]

Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

[7] http://climatechange.transportation.org/ghg_mitigation/
[8] http://www.fhwa.dot.gov/environment/climate_change/mitigation/

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order (EO) S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board (CARB) to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level GHG analysis. [9] FHWA supports the approach that climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions. U.S. EPA in conjunction with NHTSA issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.[10]

[9] To date, no national standards have been established regarding mobile source GHGs, nor has U.S. EPA established any ambient standards, criteria or thresholds for GHGs resulting from mobile sources.
[10] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

The U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, U.S. EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is projected to save approximately four billion barrels of oil and two billion metric tons of GHG emissions.

The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

Project Analysis

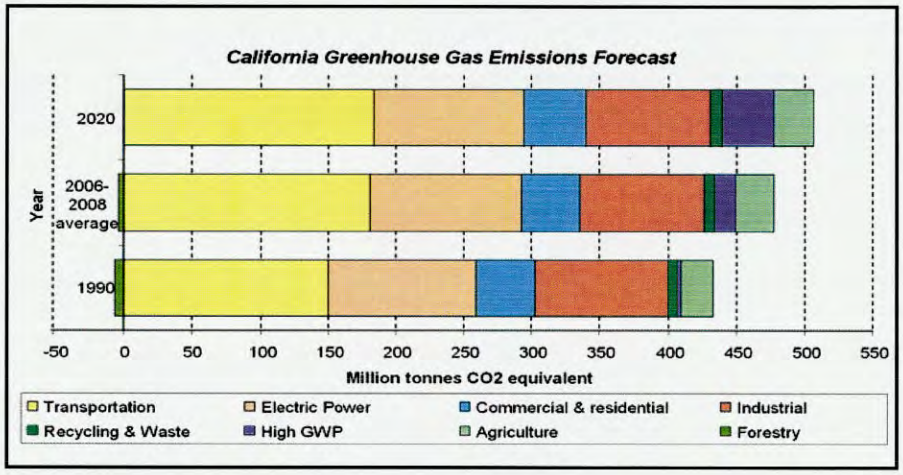
An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[11] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

[11] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

FIGURE 19: California Greenhouse Gas Forecast



Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

The Department and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[12]

One of the main strategies in the Department's Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide (CO_2) from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0-25 miles per hour (see Figure 20 below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO_2, may be reduced.

[12] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

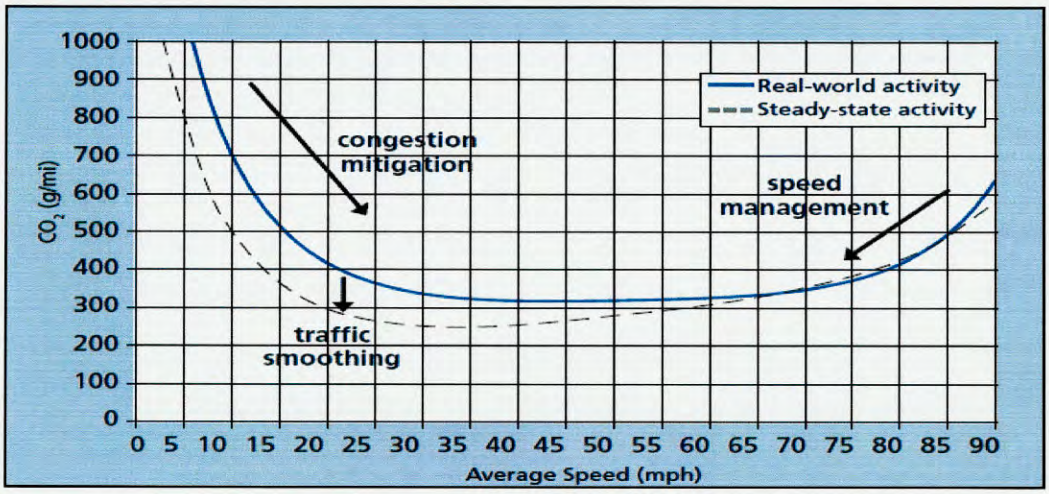


Figure 20 Possible Effect of Traffic Operation Strategies in Reducing On-Road CO_2 Emission[13]

In its current two-lane configuration, this segment of SR-60 is in need of improvements due to impacts on congestion from slower moving trucks and safety. Because large volumes of commercial trucks traverse the segment and without passing lanes on the long stretches, slower moving trucks can create conflict between autos and trucks, generating both congestion and safety hazards. A truck climbing lane, descending lane, and standard shoulders would improve safety and operational characteristics by creating an additional lane in that can separate vehicle flow in one direction. While an additional lane will increase roadway capacity, alternative plans to reduce congestion, such as improved transit service, were not addressed due to rural nature of project area and not building the truck lanes would not meet the goals of this project to improve safety.

Under project conditions as shown in Table 21, vehicle volumes during operation are expected to be unchanged from no-build conditions within the same forecast years. Vehicle volumes for both no-build and build conditions are expected to increase by over 100% from 2013 to 2040. However, despite having no anticipated change in volumes between no-build and build conditions, vehicles speeds are expected to increase and thus result in an increase in emissions from no-build to build conditions. Please refer to Chapter 1 for further discussion of improvements to traffic due to this project.

[13] Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010)<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>

Table 22: Traffic Data Information						
Years	**2013**		**2018**		**2040**	
Alternatives	**1 (No Build)**	**2**	**1 (No Build)**	**2**	**1 (No Build)**	**2**
Annual Average Daily Traffic (AADT)	47,600	47,600	56,200	56,200	105,800	105,800
Level of Service (LOS)	C	B	D	C	F	E
Average Speed (based on LOS) (mph) [a]	60	60	57	60	28	55
EMFAC speed bin used	60	60	55	60	30	55
Annual VMT (vehicle-miles) [b]	76,445,600	76,445,600	90,257,200	90,257,200	169,914,800	169,914,800
CO2 Emissions without Pavley + LCFS (Metric Tons/year)	36,785	36,785	40,429	45,026	78,575	91,050
CO2 Emissions with Pavley + LCFS (Metric Tons/year)	34,929	34,929	33,515	37,703	56,900	68,489

May 2013 TASAS, EMFAC2011

[a] LOS speeds based on Caltrans defined average speeds for multiple highways. LOS F speeds are defined as speeds less than 55mph. Average speed was calculated assuming even distribution of vehicles travelling between 0 and 55mph. (http://www.dot.ca.gov/ser/downloads/LOS/LOS%20for%20multi-lane%20highway.gif)

[b] Annual VMT was calculated using the AADT multiplied by the project length (4.4 miles) between post miles and 365 days per year.

The proposed project is listed in the 2013 Federal Transportation Improvement Program financially constrained Regional Transportation Plan Amendment 1 - 12 which was found to conform by Southern California Associate of Governments on September 19, 2012, and FHWA and FTA made a regional conformity determination finding on December 14, 2012. The design concept and scope of the proposed project is consistent with the project description in the 2013 Federal Transportation Improvement Program, and the "open to traffic assumptions of the SCAG regional emissions analysis.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Implementation of measures listed in Table 22 help to reduce GHGs from construction of Caltrans projects.

Limitations and Uncertainties with Modeling

EMFAC

Although EMFAC can calculate CO_2 emissions from mobile sources, the model does have limitations when it comes to accurately reflecting changes in CO_2 emissions due to impacts on traffic. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008) and a 2009 University of California study[14], brief but rapid accelerations, such as those occurring during congestion, can contribute significantly to a vehicle's CO_2 emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idling) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work by EPA and the CARB is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling.

CARB is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the CARB has made this decision. Their website only states:

> REVISION: Both the EMFAC and OFFROAD Models develop CO_2 and CH_4 [methane] emission estimates; however, they are not currently used as the basis for [CARB's] official [greenhouse gas] inventory which is based on fuel usage information. . . However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models.[15]

Other Variables

With the current science, project-level analysis of greenhouse gas emissions has limitations. Although a greenhouse gas analysis is included for this project, there are numerous key greenhouse gas variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected CO_2 emissions.

First, vehicle fuel economy is increasing. The EPA's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2012 ,"[16] which provides data on the fuel

[14] Matthew Bartha, Kanok Boriboonsomsin. 2009. *Energy and emissions impacts of a freeway-based dynamic eco-driving system.* Transportation Research Part D: Transport and Environment
Volume 14, Issue 6, August 2009, Pages 400–410
[15] http://www.arb.ca.gov/msei/offroad.htm
[16] http://www.epa.gov/oms/fetrends.htm

economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy has improved each year beginning in 2005, and is now at a record high. Corporate Average Fuel Economy (CAFE) standards remained the same between model years 1995 and 2003 and subsequently began setting increasingly higher fuel economy standards for future vehicle model years. The EPA estimates that light duty fuel economy rose by 16% from 2007 to 2012. Table 22 shows the increases in required fuel economy standards for cars and trucks between Model Years 2012 and 2025 as available from the National Highway Traffic Safety Administration for the 2012-2016 and 2017-2025 CAFE Standards.

Table 23: Average Required Fuel Economy (mpg)

	2012	2013	2014	2015	2016	2018	2020	2025
Passenger Cars	33.3	34.2	34.9	36.2	37.8	41.1-41.6	44.2-44.8	55.3-56.2
Light Trucks	25.4	26	26.6	27.5	28.8	29.6-30.0	30.6-31.2	39.3-40.3
Combined	29.7	30.5	31.3	32.6	34.1	36.1-36.5	38.3-38.9	48.7-49.7

Source: EPA 2013, http://www.epa.gov/fueleconomy/fetrends/1975-2012/420r13001.pdf

Second, near zero carbon vehicles will come into the market during the design life of this project. According to the 2013 Annual Energy Outlook (AEO2013):

> "LDVs that use diesel, other alternative fuels, hybrid-electric, or all-electric systems play a significant role in meeting more stringent GHG emissions and CAFE standards over the projection period. Sales of such vehicles increase from 20 percent of all new LDV sales in 2011 to 49 percent in 2040 in the AEO2013 Reference case."[17]

The greater percentage of alternative fuel vehicles on the road in the future will reduce overall GHG emissions as compared to scenarios in which vehicle technologies and fuel efficiencies do not change.

Third, California has recently adopted a low-carbon transportation fuel standard in 2009 to reduce the carbon intensity of transportation fuels by 10 percent by 2020. The regulation became effective on January 12, 2010 (codified in title 17, California Code of Regulations, Sections 95480-95490). Beginning January 1, 2011, transportation fuel producers and importers must meet specified average carbon intensity requirements for fuel in each calendar year.

[17] http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf

Lastly, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, "Effects of Gasoline Prices on Driving Behavior and Vehicle Market,"[18] the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists adjust to higher gas prices by making fewer trips and driving more slowly; 2) the market share of sports utility vehicles is declining; and 3) the average prices for larger, less-fuel-efficient models declined from 2003 to 2008 as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel efficient vehicles. More recent reports from the Energy Information Agency[19] and Bureau of Economic Analysis[20] also show slowing re-growth of vehicle sales in the years since its dramatic drop in 2009 due to the Great Recession as gasoline prices continue to climb to $4 per gallon and beyond.

Limitations and Uncertainties with Impact Assessment

Taken from p. 5-22 of the National Highway Traffic Safety Administration Final EIS for MY2017-2025 CAFE Standards (July 2012), Figure 9 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:

"Moss and Schneider (2000) characterize the 'cascade of uncertainty' in climate change simulations Figure 22). As indicated in Figure 21, the emission estimates used in this EIS have narrower bands of uncertainty than the global climate effects, which are less uncertain than regional climate change effects. The effects on climate are, in turn, less uncertain than the impacts of climate change on affected resources (such as terrestrial and coastal ecosystems, human health, and other resources [...] Although the uncertainty bands broaden with each successive step in the analytic chain, all values within the bands are not equally likely; the mid-range values have the highest likelihood."[21]

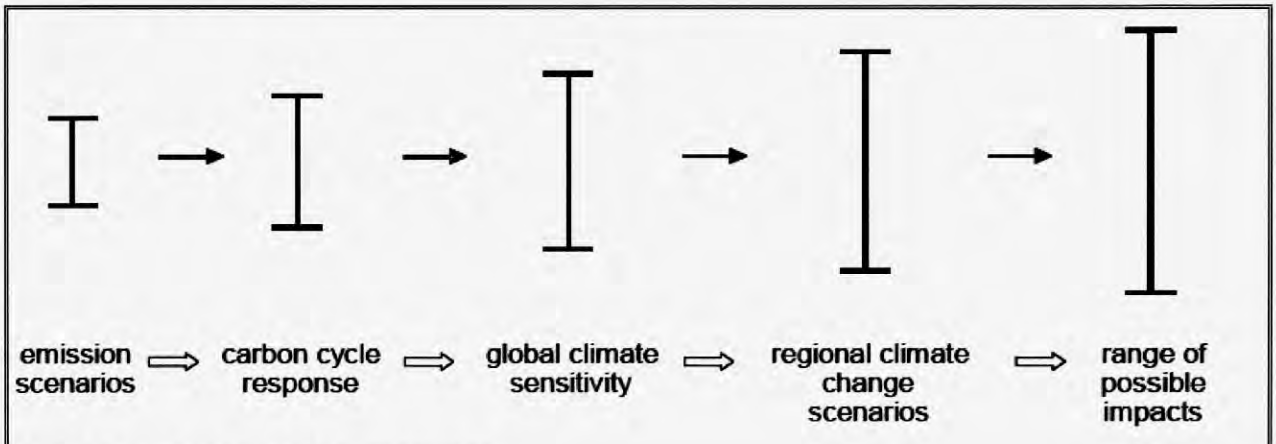


Figure 21: Cascade of Uncertainties

Department Annotated Outline, August 2013

[18] http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf
[19] http://www.eia.gov/oiaf/aeo/tablebrowser/aeo_query_server/?event=ehExcel.getFile&study=AEO2013&region=0-0&cases=ref2013-d102312a&table=114-AEO2013&yearFilter=0
[20] Historical Vehicle Sales: www.bea.gov/national/xls/gap_hist.xls
[21] http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FINAL_EIS.pdf. page 5-22

Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in CO_2 emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of CO_2 equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons CO2 from 2000 to 2030, which represents an increase of between 25 and 90%.[22]

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing "new" greenhouse gas emissions. It is difficult to assess the extent to which any project level increase in CO_2 emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

[22] Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. http://www.ipcc.ch/SPM2feb07.pdf.

CEQA Conclusion

As discussed above, both the future with project and future no build show increases in CO2 emissions over the existing levels; the future build CO2 emissions are higher than the future no build emissions. In addition, as discussed above, there are also limitations with EMFAC and with assessing what a given CO2 emissions increase means for climate change. Therefore, it is The Department's determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, the Department is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Figure 22: Mobility Pyramid

Department Annotated Outline, August 2013

The Department continues to be involved on the Governor's Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies the Department is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in GHG emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 22: The Mobility Pyramid.

The Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. The Department works closely with local jurisdictions on planning activities, but does not have local land use planning authority. The Department assists efforts to improve the energy efficiency of the transportation sector by

increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the Department is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. EPA and ARB.

The Department is also working towards enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), SB 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs.

Table 24 summarizes the Departmental and statewide efforts that the Department is implementing to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 24: Climate Change/CO_2 Reduction Strategies						
Strategy	**Program**	**Partnership**		**Method/Process**	Estimated CO_2 Savings Million Metric Tons (MMT)	
		Lead	**Agency**		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.045 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Climate Action Program at Caltrans (December 2006).

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013)[23] provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

- According to the Department's Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) rules, ordinances, and regulations for air quality restrictions.

Adaptation Strategies

"Adaptation strategies" refer to how the Department and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011[24], outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks .

[23] http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml
[24] http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop The California Climate Adaptation Strategy (Dec 2009)[25], which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report[26] to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise.

[25] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF
[26] *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at http://www.nap.edu/catalog.php?record_id=13389.

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as the Department as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academies Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

All projects that have filed a Notice of Preparation as of the date of EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project is outside the coastal zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

Chapter 3 – Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization and/or mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including Project Development Team (PDT) meetings and interagency coordination meetings. This chapter summarizes the results of the Department's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

The PDT agreed upon the proposed project description, alternatives and purpose and need in July 2013 and September 2013. In February 2014 the alternatives were amended to incorporate alternative from the Value Analysis Study. The PDT developed and agreed upon the PA&ED Risk Management Plan in March 2014.

Air Quality: On December 3, 2013, Southern California Association of Governments (SCAG) Transportation Conformity Working Group (TCWG) has determined that this project is exempt from all air emissions analyses pending on the concurrence from Federal Highway Administration (FHWA). On December 9 2013, TCWG received via email the concurrence from FHWA. Subsequently, TCWG/FHWA reaffirmed the project as an Exempt Project on February 25, 2014 based on the latest details of the project description, purpose/need and project alternatives.

Native American and Section 106 Coordination (Cultural Resources:

Consultation with interested parties, including Native American groups and historical organizations, was conducted beginning in May 2013. Native American coordination was conducted through the following correspondence:

The Native American Heritage Commission (NAHC) was contacted by letter on May 28, 2013, requesting information regarding sacred lands and a list of Native American organizations/individuals to contact.

The NAHC responded on June 3, 2013, stating that a search of the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate project area. A list of Native American individuals/organizations was provided by the NAHC for additional consultation.

Through consultation with the Caltrans District 8 Native American Heritage Coordinator, consultant Applied Earthworks (Æ) initiated contact with 10 of the individuals on the NAHC's list on behalf of the Department through a letter dated August 13, 2013 (see Attachment D of this HPSR). This was followed by two rounds of telephone calls that occurred between October 8 and 15, 2013. The following organization/individuals were contacted:

- Carla Rodriguez, Chairwoman, San Manuel Band of Mission Indians
- Ann Brierty, Cultural Resources Department, San Manuel Band of Mission Indians
- Daniel McCarthy, Director Cultural Resources Department, San Manuel Band of Mission Indians

- Steven Estrada, Environmental Director, Santa Rosa Band of Mission Indians
- William Madrigal Jr., Cultural Heritage Coordinator, Morongo Band of Mission Indians
- San Dunlap, Cultural Resources Director, Gabrielino Tongva Nation
- Goldie Walker, Chairwoman, Serrano Nation of Mission Indians
- Joseph Hamilton, Chairman, Ramona Band of Mission Indians
- John Gomez Jr., Cultural Resources Department, Ramona Band of Mission Indians
- Luther Salgado, Chairperson, Cahuilla Band of Indians
- Ernest H. Siva, Tribal Elder, Morongo Band of Mission Indians

Several of the individuals contacted could not be reached, were left messages, or were represented by other members of their tribe who responded on their behalf.

- Daniel McCarthy responded on behalf of the San Manuel Band of Mission Indians' Cultural Resources Department by e-mail on October 7, 2013, to state that given the nature and location of the project, the Cultural Resources Department has no issues or concerns at this time.
- Steven Estrada, Cultural Resources Advisor for the Santa Rosa Band of Mission Indians, responded by telephone to state that the Tribe recommends monitoring, but will defer to the Soboba Band of Luiseño Indians for further consultation.
- Sam Dunlap of the Gabrielino Tongva Nation stated in a telephone conversation that it does not seem likely that any Native American archaeological materials would be found during construction given the rugged terrain and previous disturbances to the area from construction of the existing SR-60. Therefore, he did not recommend monitoring.
- William Madrigal asked for site records of the prehistoric sites in the Project vicinity as well as a map showing their relationship to the study area and Project APE. His request was fulfilled on August 28, 2013. Mr. Madrigal also requested a copy of the survey report, which was sent to him on December 20, 2013. Mr. Madrigal responded by email on January 14, 2014, stating that the tribe had no comment on the Project but requested immediate notification in the event archaeological materials are discovered during Project construction.
- Goldie Walker of the Serrano Nation of Mission Indians responded during a telephone conversation that if anything is found during construction, she wishes to be called. She also requested that a copy of the final cultural resources report be sent to her for her file. Once the report is finished Ms. Walker will be mailed a copy.

The closest historical society to the Project area, the Moreno Valley Historical Society (MVHS) was contacted by e-mail on October 7, 2013, regarding the proposed Project (see HPSR Attachment D, Part B [Correspondence with Historical Society/Other Consultation]). As of October 15, 2013, no response has been received from any of the members of the MVHS. No contact was made with any other historical societies or community groups to solicit cultural resources concerns over the proposed Project. There is no historical society group for the San Timoteo Badlands where the project is located, and the Project is not located within the area of interest of the San Gorgonio Pass Historical Society in Beaumont. There are no known historical groups interested in former U.S. Highway 60/SR 60 in Riverside County.

The following additional coordination also occurred during the NHPA Section 106 Process:

- A Determination of Eligibility and notification of No Historic Properties Affected was submitted to Carol Rowland-Nawi, State Historic Preservation Officer at the Office of Historic Preservation on April 29, 2014. Dr. Rowland-Nawi provided SHPO Concurrence on May 19, 2014.

Biological Resources:

On June 6, 2014, the Department initiated Formal Section 7 Consultation for Threatened and Endangered Species with USFWS and Determination of MSHCP Compliance with CDFW.

Emailed Marc Brown from the Regional Water Quality Control Board (RWQCB) on January 3, 2013 confirming he will be the source of contact with regards to water quality issues.

Emailed Veronica Chan of the ACOE confirming that she will be the ACOE contact regarding impacts covered under the jurisdiction of the ACOE. On April 10, 2014, the Department met with Veronica Chan at the project site to field verify the Jurisdictional Delineation.

Coordinated with John M. Taylor of the USFWS on January 8, 2013. On January 9, 2013, the Department sent a species list request. Species list was received on February 6, 2012. On April 4, 2014, the Department received an e-mail from USFWS validating the 2013 Species list.

Beginning on February 5, 2013, and then in several additional meetings in 2013-2014, the Department met with John M. Taylor, USFWS to discuss the needed wildlife crossings and possible locations. These meetings culminated in a meeting on March 20, 2014, where the proposed wildlife crossings were presented at the Riverside Conservation Authority (RCA) monthly meeting.

Chapter 4 – List of Preparers

The following Caltrans staff and consultants contributed to the preparation of this IS/EA.

Ray Desselle, Department of Transportation, Caltrans, District 08, District Landscape Architect, Louisiana State University. 35 years experience, 31 years Caltrans Landscape Architecture. Contribution: Visual Impacts Assessment.

Gabrielle Duff, Senior Environmental Planner, M.A. Anthropology, University of California, Riverside. 20 years experience in cultural resources management.

Maggi Elgeziry, Associate Environmental Planner (Natural Studies), B.A. in Environmental Studies from Carleton University, Ottawa, Canada, and an M.S. in Environmental Policy and Resource Management from American Public University System in West Virginia. 8 years of experience with the Department. Contribution: Natural Environment Study (NES), Multiple Species Habitat Conservation Plan (MSHCP) Consistency Determination, and Determination of Biologically Equivalent or Superior Preservation (DBESP).

Kurt Heidelberg, Senior Environmental Planner. M.A. Anthropology, University of California at Riverside, M.S. Computer Science, Virginia Commonwealth University. 24 years experience in Environmental Planning. Contribution: Paleontological Studies.

Kerrie Hudson, Senior Environmental Planner. B.A Business Administration, California Baptist University. 16 years experience with Caltrans.

Bahram Karimi, Associate Environmental Planner/Paleontologist. 8 years of experience with Caltrans. M.S. Geology, Grahwal University India and B.S. Geology, Karnataka University India.

Roy King, RCE # 28000: Masters of Science, Water Resources Engineering, California State University, Fullerton, 1980. Bachelor of Science, Civil Engineering, University of Wyoming, 1966. 15 years of experience in Department Hydraulics Division; 10 years experience in Department's Construction Division; 25 years of experience in various private engineering firms, government agencies, and overseas. Contribution: Location Hydraulic Report.

Tony Louka, Senior Transportation Engineer. B.S. Civil Engineering, University of Baghdad. 36 years experience, 31 years experience in Environmental Engineering. Contribution: Air Quality, Noise, Hazardous Waste.

Laleh Modrek, Transportation Engineer (Hazardous Waste Coordinator) B.S. Civil Engineering, California State University Los Angeles. 26 years working in Caltrans, 20 years of experience working in Environmental Engineering.

Hoang Pham, Transportation Engineer/Civil. 6 years of experience working in Air Quality and Noise for Caltrans. Contribution: Air Quality, Noise Study,

Scott Quinnell, Caltrans Senior Environmental Planner, Biological Studies & Permits Branch. B.S. Geography, M.S. Environmental Studies from Cal State University, Fullerton. 14 years experience. Contribution: Technical Expertise, Review and Approval of Biological Technical documents.

Chapter 4 – List of Preparers

Tisa Rodriguez, Associate Environmental Planner. M.A. in Public Administration from San Diego State University. 8 years of experience in Environmental Planning.

Ahmad Shah Transportation Engineer Civil (P.E) Project Engineer. Kabul University Faculty Of Engineering 8 years experience working in water resources 4 years computer data processing 3 years environmental engineering removal and installation of underground storage tanks. 21 years with Caltrans roadway design.

Mary K. Smith, Cultural Studies (Architectural History). M.A. in Historic Preservation Planning Cornell University. 16 years of cultural resource management experience; 9 years with Caltrans as an Architectural Historian. Contribution: Environmental document review.

Victoria Stosel, Cultural Studies (Archaeology). M.A. in Anthropology, California State University, Los Angeles. 11 years of cultural resource experience; 1 year with Caltrans as an Archaeologist. Contribution: Environmental document review.

Consultants:

Cultural Resource Documents:

Applied Earthworks:

Carley Smith, Field technician. M.A. in Anthropology University of Oregon, B.A. in Anthropology University of Oregon. 4 years experience in cultural resource management. Contribution: Archaeology Survey Report, archaeological assessment.

Susan K. Goldberg, Co-Principal Investigator. M.A. Anthropology, University of Missouri, Columbia. Member of the Register of Professional Archaeologists (R.P.A) since 1980. Over 30 years experience in cultural resource management. Contribution: Archaeological Survey Report, Historical Resources Evaluation Report, Historic Property Survey Report.

John J. Eddy, Co-Principal Investigator. M.A. Anthropology, California State University, Northridge. Member of the Register of Professional Archaeologists (R.P.A) since 2013. Over 10 years experience in cultural resource management. Contribution: Archaeological Survey Report, Historical Resources Evaluation Report, Historic Property Survey Report.

Josh Smallwood, Architectural Historian. M.A. Historic Preservation, Savannah College of Art and Design. Over 9 years experience in historic property survey and evaluation. Contribution: Historical Resources Evaluation Report.

Matthew Armstrong, Lead Archaeological Surveyor. M.A. Anthropology, University of California, Santa Barbara. Over 10 years experience in conducting archaeological surveys. Contribution: Archaeological Survey Report.

Chapter 4 – List of Preparers

Biological Resource Documents:

AMEC Environment and Infrastructure, Inc. (AMEC):

John F. Green, Stephen J. Myers, Scot Chandler, and Vesta Myers. Contribution: Selected habitat assessments; jurisdictional delineations; and focused surveys in compliance with the requirements of the MSHCP.

Scot Chandler, Senior Biologist. B.S. Applied Ecology, University of California at Irvine. 10+ years experience in conducting wetland delineations. Contribution: Biological Documents.

Visual Impact Assessment:

Parsons Brinckerhoff:

Theresa Dickerson, Lead Environmental Planner, Parsons Brinckerhoff. California State Polytechnic University, Pomona; B.S., Landscape Architecture; 26 years of environmental planning and visual impact assessment. Contribution: Primary Author, Visual Impact Assessment.

Jessica C. Wilkinson, AICP, Senior Planner, Parsons Brinckerhoff. Master of Urban and Regional Planning, California State Polytechnic University, Pomona; B.A., Political Science/Public Administration, California State Polytechnic University, Pomona; A.S, Architectural Technology, Mount San Antonio College, Walnut; 12 years of municipal and environmental planning. Contribution: Environmental Support/GIS, Visual Impact Assessment.

Jeff Howard, Senior Supervising Planner, Parsons Brinckerhoff. Bachelors of Landscape Architecture, University of Arizona; 35 years of land use and environmental planning; Contribution: Technical Oversight.

Stephanie S. Oslick, AICP, Environmental Manager, Parsons Brinckerhoff. M.S., Environmental Studies, California State University Fullerton; B.S., Biological Sciences, University of Southern California; 18 years of environmental planning experience. Contribution: VIA & WQAR Quality Assurance/Quality Control Review.

Water Quality Assessment Report:

Parsons Brinkerhoff:

Maisoon Afaneh, AICP, Lead Environmental Planner, Parsons Brinckerhoff. Kansas State University, M.A Regional and Community Planning, 18 years of transportation and environmental planning experience. Contribution: Primary Author, Water Quality Assessment. Jessica C. Wilkinson, AICP, Senior Planner, Parsons Brinckerhoff. Master of Urban and Regional Planning, California State Polytechnic University, Pomona; B.A., Political Science/Public Administration, California State Polytechnic University, Pomona; A.S, Architectural Technology, Mount San Antonio College, Walnut; 12 years of municipal and environmental planning. Contribution: Co-author, Water Quality Assessment.

Chapter 4 – List of Preparers

Stephanie S. Oslick, AICP, Environmental Manager, Parsons Brinckerhoff. M.S., Environmental Studies, California State University Fullerton; B.S., Biological Sciences, University of Southern California; 18 years of environmental planning experience. Contribution: VIA & WQAR Quality Assurance/Quality Control Review.

Paleontological Report:

Applied EarthWorks, Inc.

Jessica L. Debusk, Senior Project Manager, Paleontology Program Manager, Applied EarthWorks, Inc. B.S. Geology, Emphasis Paleobiology, University of Nevada, Reno, 2002. Contribution: PIR/PER.

Heather Clifford, Staff Paleontologist/Geologist Applied EarthWorks, Inc., Pasadena, CA. M.S. Geology, California State University, Los Angeles. B.A. Art – Photography, San Francisco State University, 2005. Contribution: PIR/PER.

Chapter 5 – Distribution List

Federal Agencies:
Teri Raml, District Manager
California Desert District
Bureau of Land Management
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553

Veronica Chan, Environmental Protection Specialist
Project Manager
U.S. Army Corps of Engineers
Los Angeles District
915 Wilshire Blvd, Suite 1101
Los Angeles, CA 90017

U.S. Department of Transportation
Federal Highway Administration
California Division
650 Capitol Mall, Suite 4–100
Sacramento, CA 95814

Karin Cleary- Rose, Chief
San Bernardino and Riverside County
U.S. Fish and Wildlife Service
Carlsbad Fish & Wildlife Office
Palm Springs Fish & Wildlife Office
777 E. Tahquitz Canyon Way, Suite 208
Palm Springs, CA 92262

State Agencies:
Heather Pert, Environmental Scientist
California Department of Fish and Wildlife
Inland Desert Region, Suite C-220
3602 Inland Empire Boulevard
Ontario, CA 91764

Kimberly Gazzaniga
Chief of Environmental Site Assessment
Department of Water Resources
3500 Industrial Blvd
West Sacramento, CA 95691

Marc Brown
California Regional Water Quality Control Board
Santa Ana Region 8
3737 Main Street, Suite 500
Riverside, CA 92501-3348

The Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street

Sacramento, CA 95814

MPO/RTPA Agencies:
Rongsheng Lou, Program Manager
Department of Compliance and Performance Monitoring
Division of Planning & Programs
Land Use and Environmental Planning
Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

Anne Mayer, Executive Director
Riverside County Transportation Commission
4080 Lemon Street, 3rd Floor
Riverside, CA 92501

Lori Stone
Executive Director
MARCH JPA
23555 Meyer Drive
Riverside CA 92518

County/Cities:
Kecia Harper-Ihem
Riverside County Clerk of the Board
4080 Lemon Street, 1st Floor
Riverside, CA 92501

The County of Riverside Regional Park
Real Property Division
3133 Mission Inn Avenue
Riverside, CA 92507

Riverside County
Real Estate Division
3403 10th Street, Suite 500
Riverside, CA 92501

City of Banning
Community Development Department
Division of Planning
99 E. Ramsey Street
Banning, CA 92220-0998

Chapter 5 – Distribution List

Rebecca Deming, Director of Planning
City of Beaumont
Planning Department
550 East 6th Street
Beaumont, CA 92223

City of San Jacinto
Building "A" Planning
595 S. San Jacinto Avenue
San Jacinto, CA 92583

City of Moreno Valley
Planning Division
14177 Frederick Street
Moreno Valley, CA 92553

Transit Agency:
Rohan Kuruppu, Director of Planning
Riverside Transit Agency
1825 Third Street
Riverside, CA 92517-1968

Martha Cosentino
Pass Transit/Dial-A-Ride
Banning Community Center
789 N. San Gorgonio Ave
Banning CA 92220

Burlington Northern Santa Fe Railway
740 E. Carnegie
San Bernardino, CA 92408

Conservation Agencies:
Charlie Landry, Director
Western Riverside County
Regional Conservation Authority
Riverside Centre Building
3403 10th Street, Suite 320
Riverside, CA 92501

Shelli Lamb, Executive Director
Riverside-Corona Resource Conservation District
4500 Glenwood Drive, Building A
Riverside, CA 92501

Property Owners:
Mr. Eugene Gabrych
2006 Old Highway 395
Fallbrook, CA 90028

Mr. Robert Schiffer/Frank Soschai
320 Superior Avenue, Suite 300
Newport Beach, CA 92660

Bob & Edna Namias St. Clair
P.O. Box 803
Redlands, CA 92373

Professors High Landerson
14225 Corporate Way
Moreno Valley, CA 92558

Highland Fairview Properties
14225 Corporate Way
Moreno Valley, CA 92558

Raceway Properties
14225 Corporate Way
Moreno Valley, CA 92558

Mr. Arnold Applebaum
12975 McGehee Drive
Moreno Valley, CA 92555

Hawkins Family Estate
2702 Hillcrest Drive
Las Vegas, NV 91750

Raul Zacala
303 Hargrove Street
Ingelwood, CA 90302

Mission Viejo Company
1250 Corona Point Court
Corona, CA 92879

Utility Company:

Karen Cadavona, Senior Corporate Representative
Third Party Environmental Review
Southern California Edison
2244 Walnut Grove Avenue, Quad 4C, 472A
Rosemead, CA 91770

Ryan Roth
Principle Planner
Riverside County Waste Management Department
14310 Frederick Street
Moreno Valley, CA 92553

Chapter 5 – Distribution List

Dan Jaggers
District Engineer
Beaumont-Cherry Valley Water District
560 Magnolia Ave
Beaumont, CA 92223-2258

Eastern Municipal Water District
P.O. Box 8300
Perris, CA 92572-8300

Western Municipal Water District
14205 Meridian Parkway
Riverside, CA 92518

Gertman Thomas
The Gas Company
PO Box 3003
Redlands, CA 92373

Don Quinn
Head Engineer
Pipeline Inquiries
Kinder Morgan
1100 Town & Country Road
Orange, CA 92868

SUNESYS
Western Regional Office
226 North Lincoln Ave
Corona, CA 92882

Charter Communications
Corporate Headquarters
400 Atlantic Street,
Stamford, CT 06901

AT&T Corporate Office
300 North Continental Blvd
El Segundo, CA 90245

Verizon California Inc.
112 Lakeview Canyon Rd
Westlake Village, CA 91362

Chapter 5 – Distribution List

Emergency Services

Chief John Hawkins
Riverside Unite
Cal Fire
210 W San Jacinto
Perris, CA 92570

Sergeant Willie Bowen
Inland Division
California Highway Patrol
8118 Lincoln Ave,
Riverside, CA 92504-4347

Officer Darren Meyer
Border Division
California Highway Patrol
195 Highland Springs Ave
Beaumont, CA 92223-2511

Captain Geoff Raya
Cabazon Station
Riverside County Sherriff's Department
PO Box #457
Cabazon, CA. 92230

Bruce Barton
Director of EMS
Riverside County EMS Agency
4065 County Circle Dr, Ste 102
Riverside, CA 92503

APPENDICES

Appendix A. CEQA Checklist

Appendix A. CEQA Environmental Checklist

CEQA Environmental Checklist

PROJECT DESCRIPTION AND BACKGROUND

Project Title:	**State Route 60 Truck Lanes**
Lead agency name and address:	**Caltrans District 8 464 West 4th Street, 6th Floor MS 823 San Bernardino, CA 92401**
Contact person and phone number:	**Kerrie Hudson (909) 383-5918**
Project Location:	**Riverside County**
Project sponsor's name and address:	**Same**
General plan description:	**Rural**
Zoning:	**Open Space/Conservation Habitat**
Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation.)	**Build west & eastbound truck lanes, widen shoulders inside/out and repave roadway. Drainage & wildlife crossings.**
Surrounding land uses and setting; briefly describe the project's surroundings:	**Rural and mountainous area**
Other public agencies whose approval is required (e.g. permits, financial approval, or participation agreements):	**USACOE, USF&WS, CDFW, RWQCB, RCTC, Caltrans**

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project. Please see the checklist for additional information.

☒	Aesthetics	☐	Agriculture and Forestry	☐	Air Quality
☒	Biological Resources	☒	Cultural Resources/Paleo	☒	Geology/Soils
☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials	☒	Hydrology/Water Quality
☐	Land Use/Planning	☐	Mineral Resources	☐	Noise
☐	Population/Housing	☐	Public Services	☐	Recreation
☐	Transportation/Traffic	☐	Utilities/Service Systems	☐	Mandatory Findings of Significance

Appendix A. CEQA Environmental Checklist

DETERMINATION:

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required

Signature:	**Date:** 6/12/2014
Printed Name: Kerrie Hudson, Senior Environmental Planner	**For: Caltrans D08**

Appendix A. CEQA Environmental Checklist

CEQA Environmental Checklist

08-Riv-60	22.1 to 26.5	0N69U/0812000307
Dist.-Co.-Rte.	P.M/P.M.	E.A./P.N.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	☐	☐	☐	☒
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Appendix A. CEQA Environmental Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Appendix B. Agencies Letters/Correspondence

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS–49
SACRAMENTO, CA 94273–0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711
www.dot.ca.gov

Serious drought.
Help save water!

April 29, 2014

Carol Roland-Nawi
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

08-RIV-60 PM 22.10/26.50
Truck Climbing /Descending Lanes
Project No. 08-1200-0307

Dear Dr. Roland-Nawi:

RE: Determination of Eligibility and notification of No Historic Properties Affected for the SR-60 Truck Climbing and Descending Lanes Project in Riverside County, California.

The California Department of Transportation (Caltrans) on behalf of FHWA, in cooperation with the Riverside County Transportation Commission (RCTC) propose construction of an eastbound truck ascending lane and a westbound truck descending lane and inside and outside standard shoulders on Route 60 between PM 22.10 and PM 26.50. The project will take place in the Badlands area of unincorporated Riverside County.

This consultation is undertaken in accordance with the First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation, executed on January 1, 2014. (Section 106 PA.) Caltrans as assigned by the Federal Highway Administration (FHWA) is initiating consultation as a federal agency.

Section 106 activities to date for this undertaking include preparation of a Historic Property Survey Report (HPSR, April 2014), which documents the identification and evaluation of cultural resources within the project's area of potential effects (APE). Consultation and identification efforts (summarized on page 2-5 of the HPSR) resulted in the identification of one (1) historic period cultural resource in the APE that required evaluation:

MRN	Name/Address	Location	OHP Status
01	AE-2339-1H (Update to 33-021095), a segment of former U.S. Highway 60/present-day SR 60	The Badlands area of Riverside County between Moreno Valley and Beaumont	6Y

Pursuant to Stipulation VIII.C.6 of the Section 106 PA, we request your concurrence that the above property is not eligible for listing in the National Register of Historic Places. Pursuant to Stipulation IX.A of the Section 106 PA, Caltrans is proposing that a finding of **No Historic Properties Affected** is appropriate for this undertaking.

We look forward to receiving your response within thirty (30) days of the receipt of this submittal, in accordance with Stipulation VIII.C.6.a of the Section 106 PA. If you have any questions or comments regarding the proposed project, please contact Mary K. Smith, Associate Environmental Planner/Architectural History at (909) 383-5950 or by email at mary_k_smith@dot.ca.gov. Thank you for your assistance with this undertaking.

Sincerely,

GABRIELLE DUFF
Branch Chief
Environmental Support/Cultural Studies

c: Kelly Hobbs, 106 Coordinator, CSO, DEA

Enclosure: *Historic Property Survey Report for State Route 60 Truck Climbing and Descending Lanes Project From Gilman Springs Road to 4.3 miles East of Gilman Springs Road in Unincorporated Riverside County, California (April 2014).*

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

May 19, 2014 Reply To: FHWA_2014_0501_002

Gabrielle Duff, Branch Chief
Environmental Support/Cultural Studies (MS 825)
Caltrans District 8
464 W Fourth Street, 6th Floor
San Bernardino, CA 92401-1400

Re: Determination of Eligibility for the Proposed SR-60 Truck Climbing and Descending Lanes Project in Riverside County, CA

Dear Ms. Duff:

You are consulting with me about the subject undertaking in accordance with the January 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has determined that the Badlands area of Riverside County between Moreno Valley and Beaumont (update to 33-021095) is not eligible for the National Register of Historic Places due to a lack of integrity. Based on my review of the submitted documentation, I concur.

Please note for future consultations that it is not good practice to conduct Native American consultation after the field survey is complete. Native American consultation may provide information that could shape the areas or method of survey and can address any Native American concerns.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at natalie.lindquist@parks.ca.gov.

Sincerely,

Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, Ph.D.
State Historic Preservation Officer

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: RONGSHENG LOU
Program Manager
Department of Compliance and Performance Monitoring
Division of Land Use and Environmental Planning
Southern California Association of Governments
818 W. 7th Street, 12th Floor
Los Angeles, CA 90017

Date: November 19, 2013

File: 08- Riv-60- PM 22.1/26.5
Construct Truck Lanes and
Standard Shoulders
RTIP ID: 3TK04MA13
Project ID: RIV120201
EA: 0N69U

From: TONY LOUKA
Office Chief
Environmental Engineering

Subject: Request for TCWG Concurrence in Use of Conformity Exemption for Truck Climbing Lane Project

This project proposes to construct an east bound truck ascending lane, a west bound truck descending lane and an inside, and outside standard shoulders in both directions on State Route 60 (SR-60) in Riverside County between Gilman Springs Road, Post Mile (PM) 22.10 and 1.47 miles west of Jack Rabbit Trail PM 26.50.

Need

The proposed project area is in mountainous terrain with numerous tight radius horizontal curves, short tangent sections, steep grades, and swift changes in elevation. The sustained uphill grade exceeds 2.9 percent. A few locations have uphill grades that exceed 6 percent. The overall change of elevation from one end of the project to the other is a little greater than 500 feet over a distance of 2.5 miles. Due to the mountainous terrain and the presence of a concrete median barrier, the horizontal alignment of the roadway is also restricted with little or no existing shoulder width. This is true particularly on the left side of the travelled way inside shoulder where there is no inside shoulder for much of the project limits.

The vehicle mix within the project limits contains 16 percent trucks. Because of the steep grades, automobiles with trailers, trucks, and buses have difficulty maintaining a reasonable speed throughout the entire segment.

Approximately 17.9 percent of the accidents in the eastbound direction involve trucks with trailers, and 28.4 percent of accidents involve pickup/panel trucks, because of the speed differential between high-speed passenger vehicles and slow-moving trucks. Approximately 13 percent of the accidents in the eastbound direction involve trucks with trailers, and 21.3 percent of accidents involve pickup/panel trucks.

Approximately 38.8 percent of the hitting-object accidents in the eastbound direction involve vehicles striking either the median barrier on the left or the guardrail or embankment slope on the right because of the horizontal restrictions. In the westbound direction, this number was increased, with approximately 50 percent of vehicles striking either the median barrier or guardrail/embankment slope .

Purpose

The purpose of this project is to improve safety, reduce traffic congestion, and improve operational characteristics along this segment of SR-60. This project would improve freeway operations by providing for trucks and other slow vehicles that face challenges on this segment and increase delays. Safety problems may arise when the reduction in speed of heavy trucks exceeds 10 mph along the grade. Trucks characteristically exhibit the lowest level of hill-climbing performance of all vehicles on highways and freeways. Thus, at uphill grades of sufficient length and steepness, their speed loss may be great enough that they impede the flow of traffic, reducing the capacity of the highway to carry traffic. Truck-climbing and/or truck-descending lanes would separate the slow moving trucks from passenger vehicles. It is anticipated that truck involvement in accidents will decrease as a result.

Standard shoulders throughout the limits of the project would provide some recovery room for errant vehicles that may leave the travelled way, and would allow slow vehicles to pull over safely.

Project alternatives under consideration include the following:

Alternative 1: No-Build

The No-Build alternative would maintain the facility in its current condition. No improvements would be implemented at this time; therefore, no capital cost is

associated with this alternative. As development continues and traffic demand increases, traffic operational characteristics will further deteriorate resulting in an increase in congestion, vehicle delay, safety issues, and vehicle-operating costs. The No-Build alternative would not address or alleviate the forecasted operational and safety issues along this segment of SR-60.

Alternative 2:

- Construct an eastbound truck-climbing lane, a westbound truck-descending lane and construct standard inside and outside shoulders.
- Widen and grade the area adjacent to the truck lanes and shoulders to the ultimate freeway condition.
- Rehabilitate the existing #1 and #2 lanes as well as the inside shoulder, in each direction. The rehabilitation effort will be designed under a separate contract, and funded under a separate State Highway Operation Performance Program (SHOPP) project under Expenditure Authorization (EA) (1C090). Both contracts are to be combined prior to commencing the construction phase.
- Reconstruct the existing concrete median barrier for the entire project.
- Most of the widening for this alternative would be to the outside of the existing roadbed. However, for the portion of the freeway between PM 24.3 and PM 25.7, consideration would be given to widen to the median, if feasible.

The project is outside of the current (2010) Census Urbanized Area. Therefore the project, overall, fits the "Truck climbing lanes outside the urbanized area" exemption from conformity analysis requirements under 40 CFR 93.126. General rehabilitation, shoulder widening, and median barrier reconstruction likewise fall under full conformity exemptions in 40 CFR 93.126.

The truck "descending" lanes would also fall under the conformity exemption because they are for the same purpose (isolation of very slow trucks from normal traffic on the steep grade) as the climbing lanes. A similar, previous project on SBd-15 was found to meet the exemption for the same reason.

Please see Exhibit A, B, and C for project location, project layout plans, and 2010 Census Urbanized Area map.

The widening in Alternative 2 will not add capacity. Future traffic for the no-build is the same as the build condition.

We would like to request TCWG to concur with conformity exemption status for the project.

If you have any questions, please call Tony Louka at 383-6385.

c: Kerrie Hudson, Environmental Studies "A"
Radhakrishnan, Raghuram, Project Manager.

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: KERRIE HUDSON
Office Chief
Environmental Studies "A"

Date: March 12, 2014

File: 08- Riv-60- PM 22.1/26.5
Construct Truck Lanes and
Standard Shoulders
PN: 0812000307
EA: 0N69U

From: TONY LOUKA
Office Chief
Environmental Engineering

Subject: ENVIRONMENTAL STUDIES FOR AIR QUALITY AND NOISE

On December 3, 2013, Transportation Conformity Working Group (TCWG) has determined that this project is exempt from all air emissions analyses pending on the concurrence from Federal Highway Administration (FHWA). On December 9 2013, TCWG received via email the concurrence from FHWA. Subsequently, TCWG reaffirmed the project as an Exempt Project on February 25, 2014 based on the latest details of the project alternatives. Please see the attachment for documents related to air quality concerns.

This project is a Type I project per Traffic Noise Analysis Protocol. We have completed the Noise Study Report. Please see the attached report for your use.

If you have any questions, please call Tony Louka at 383-6385.

c: Tisa Rodriguez, Environmental Studies "D"
David Smith, Environmental Studies "D"

TRANSPORTATION CONFORMITY WORKING GROUP
of the
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

February 25, 2014
Minutes

1.0 CALL TO ORDER

Fernando Castro, Caltrans District 7, called the meeting to order at 10:05 am.

2.0 PUBLIC COMMENT PERIOD

There were no public comments.

3.0 CONSENT CALENDAR

3.1 TCWG January 28, 2014 Meeting Minutes
The minutes were deferred to next TCWG meeting.

4.0 INFORMATION ITEMS

4.1 Review of PM Hot Spot Interagency Review Forms

1) SCAG015
It was determined that this is not a POAQC.

2) RIV120201
It was reaffirmed that this is an exempt project.

4.2 FTIP Update
Pablo Gutierrez, SCAG, reported the following:

- County project submittals for 2013 FTIP Amendment #13-17 were due to SCAG today.
- SCAG staff continues analyzing 2015 FTIP project submittals.

4.3 RTP Update
There was no new update.

4.4 EPA updates
Wienke Tax, EPA Region 9, reported the following:

- EPA withdrew its previous approvals of South Coast VMT offset demonstrations for 1-hour and 1997 8-hour ozone standards, effective April 29, 2013. The EPA action triggered two sanction clocks in South Coast. If not resolved, stationary source sanctions would start in October 2014 and highway sanctions would start in April 2015. EPA is required to take action on updated

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

In Reply Refer To:
FWS-WRIV-13B0096-13SL0135

FEB - 6 2013

Mr. Scott Quinnell
Senior Environmental Planner
Department of Transportation, District 8
464 West Fourth Street, 6th Floor
San Bernardino, California 92401

Subject: Request for a List of Federally Endangered, Threatened, Proposed, and Candidate Species and their Critical Habitat that May Occur in the Vicinity of the State Route 60 Truck Lane/Shoulder Widening Project, Riverside County, California

Dear Mr. Quinnell:

This letter is in response to your request, received by our office via email January 12, 2013, for a list of federally endangered, threatened, proposed, and candidate species and desginated critical habitat potentially present in the vicinity of the State Route 60 Truck Lane/Shoulder Widening Project (project). The project site is located along State Route 60 between post miles 22.2 and 26.5 in Riverside County, California. We understand this information will be to assist you in evaluating the potential for occurrence of federally listed endangered, threatened, proposed, and designated candidate species and their critical habitat within the project area. This list is office-generated from species and critical habitat search of the 7.5-minute U.S. Geological Survey Quadrangle in which your project area falls and lists species with the potential to occur within the area. We also suggest that you contact the California Department of Fish and Wildlife regarding State-listed and sensitive species that may occur within the project area. Please note that State-listed species are protected under the provisions of the California Endangered Species Act.

As a reminder, if a proposed project is authorized, funded, or carried out by a Federal agency and may affect a federally listed species, then section 7 consultation pursuant to the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*), is required. Should you have any questions regarding the species listed or your responsibilities under the Act, please contact John M. Taylor of this office at 760-322-2070, extension 218.

Sincerely,

/s/ Kennon A. Corey
Assistant Field Supervisor

Enclosure

Enclosure

Federally Endangered, Threatened, Proposed, and Candidate Species and their Critical Habitat that May Occur in the Vicinity of the State Route 60 Truck Lane/Shoulder Widening Project, Riverside County, California

January 22, 2013

Type	Scientific Name	Common Name	Federal Status	Critical Habitat in Vicinity
Birds	*Polioptila californica californica*	coastal California gnatcatcher	Threatened	No
	Vireo bellii pusillus	least Bell's vireo	Endangered	No
	Empidonax traillii extimus	southwestern willow flycatcher	Endangered	Yes
Flowering Plants	*Dodecahema leptoceras*	slender-horned spineflower	Endangered	N/A
Mammals	*Dipodomys merriami parvus*	San Bernardino Merriam's kangaroo rat	Endangered	No
	Dipodomys stephensi	Stephens' kangaroo rat	Endangered	No

Hudson, Kerrie L@DOT

From: Taylor, John [john_m_taylor@fws.gov]
Sent: Friday, April 04, 2014 11:26 AM
To: Quinnell, Scott F@DOT
Cc: Hudson, Kerrie L@DOT; Elgeziry, Maggi@DOT
Subject: Re: SR 60 Truck Lanes project (EA 0N69U), USFWS Species List

Scott,
I am writing to confirm the species list as issued February 6, 2013 (FWS-WRIV-13B0096-13SL0135) remains valid. There have not been any additional sightings of federally listed species nor changes to designated critical habitat within the Project boundary, as previously described in your original species list request. Should you have any questions, please feel free to contact me at any time. This email will be printed and retained for the project record.

Sincerely,

John M. Taylor
Fish & Wildlife Biologist
U.S. Fish and Wildlife Service - Palm Springs
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, CA 92262
Ph: 760-322-2070 x218
john_m_taylor@fws.gov

On Fri, Apr 4, 2014 at 9:37 AM, Quinnell, Scott F@DOT <scott.quinnell@dot.ca.gov> wrote:

John,

For circulation of the Environmental Document for the SR 60 Truck Lanes Project, we need a USFWS Species list that is not older than 6 month or a confirmation that the existing list is still valid.

Regarding the attached USFWS Species List (FWS-WRIV-13B0096-13SL0135), please confirm that the Feb. 6, 2013 list is still valid or produce a new list that reflects any changes.

Thank you,

Scott Quinnell

Senior Environmental Planner

Branch Chief, Biological Studies & Permits Branch and

COST ESTIMATE WILD LIFE CROSSING RTE 60 PM 22.1 TO 26.5

Sta	Description	60" RCP (Jacked)	60" RCP	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
		LF	LF	CY	LB
621+50.00 (PM 23.89)	HW & WW TYPE "B" (NB)			23.68	2554
	55.0' x 60" RCP (Jacked)	55.0			
	189.0' x 60" RCP		189.0		
	HW & WW TYPE "B" (SB)			23.68	2554
Total Quantities		55	189	47.36	5108
Unit Price		$895.00	$200.00	$650.00	$1.00
Item Cost		$49,225.00	$37,800.00	$30,784.00	$5,108.00
Total Cost		$122,917			

Sta	Description	36" RCP (Jacked)	36" RCP	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
		LF	LF	CY	LB
632+50.00 (PM 24.10)	HW			1.95	105
	55.0' x 36" RCP (Jacked)	55.0			
	174.0' x 36" RCP		174.0		
	HW			1.95	105
Total Quantities		55	174	3.9	210
Unit Price		$710.00	$115.00	$650.00	$1.00
Item Cost		$39,050.00	$20,010.00	$2,535.00	$210.00
Total Cost		$61,805			

Sta	Description	60" RCP (Jacked)	60" RCP	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
		LF	LF	CY	LB
654+50.00 (PM 24.51)	HW & WW TYPE "B" (NB)			23.68	2554
	55.0' x 60" RCP (Jacked)	55.0			
	295.0' x 60" RCP		295.0		
	HW & WW TYPE "B" (SB)			23.68	2554
Total Quantities		55	295	47.36	5108
Unit Price		$895.00	$200.00	$650.00	$1.00
Item Cost		$49,225.00	$59,000.00	$30,784.00	$5,108.00
Total Cost		$144,117			

Sta	Description	36" RCP (Jacked)	36" RCP	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
		LF	LF	CY	LB
663+00.00 (PM 24.67)	HW			1.95	105
	55.0' x 36" RCP (Jacked)	55.0			
	250.0' x 36" RCP		250.0		
	HW			1.95	105
Total Quantities		55	250	3.9	210
Unit Price		$710.00	$115.00	$650.00	$1.00
Item Cost		$39,050.00	$28,750.00	$2,535.00	$210.00
Total Cost		$70,545			

Sta	Description	W x H/ L	STRUCTURAL Conc, BOX Culv	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
			CY	CY	LB
685+20.00 (PM 25.09)	HW & WW TYPE "A" (NB)			56.26	5492
	14' (W) x 12' (H) x 140.8' (L) RCB	1.19E/0.363M	317.58		88704
	HW & WW TYPE "A" (SB)			56.26	5492
Total Quantities			317.58	112.52	99688
Unit Price			$810.00	$650.00	$1.00
Item Cost			$257,239.80	$73,138.00	$99,688.00
Total Cost			$430,066		

Sta	Description	60" RCP (Jacked)	60" RCP	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
		LF	LF	CY	LB
715+00.00 (PM 25.66)	HW & WW TYPE "B" (NB)			23.68	2554
	84.0' x 60" RCP (Jacked)	84.0			
	131.0' x 60" RCP		131.0		
	HW & WW TYPE "B" (SB)			23.68	2554
Total Quantities		84	131	47.36	5108
Unit Price		$895.00	$200.00	$650.00	$1.00
Item Cost		$75,180.00	$26,200.00	$30,784.00	$5,108.00
Total Cost		$137,272			

Sta	Description	W x H/ L	STRUCTURAL Conc, BOX Culv	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
			CY	CY	LB
735+00.00 (PM 26.08)	HW & WW TYPE "A" (NB)			125.95	12027
	14' (W) x 14' (H) x 167.0' (L) RCB	1.17E/0.357M	624.70		143787
	HW & WW TYPE "A" (SB)			149.68	14242
Total Quantities			624.7	275.63	170056
Unit Price			$810.00	$650.00	$1.00
Item Cost			$506,007.00	$179,159.50	$170,056.00
Total Cost			$855,223		

Sta	Description	36" RCP (Jacked)	36" RCP	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
		LF	LF	CY	LB
756+30.00 (PM 26.44)	HW			1.95	105
	86.0' x 36" RCP (Jacked)	86.0			
	131.0' x 36" RCP		131.0		
	HW			1.95	105
Total Quantities		86	131	3.9	210
Unit Price		$710.00	$115.00	$650.00	$1.00
Item Cost		$61,060.00	$15,065.00	$2,535.00	$210.00
Total Cost		$78,870			

COST ESTIMATE WILD LIFE CROSSING RTE 60 PM 22.1 TO 26.5

Sta	Description	W x H/ L	STRUCTURAL Conc, BOX Culv	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
			CY	CY	LB
685+20.00 (PM 25.09)	HW & WW TYPE "A" (NB)			67.42	8455
	17' (W) x 17' (H) x 140.8' (L) RCB	2.05E/0.63M	594.50		157978
	HW & WW TYPE "A" (SB)			67.42	8455
Total Quantities			594.50	134.84	174888
Unit Price			$810.00	$650.00	$1.00
Item Cost			$481,545.00	$87,646.00	$174,888.00
Total Cost			$744,079		

Sta	Description	W x H/ L	STRUCTURAL Conc, BOX Culv	STRUCTURAL Conc, HEADWALL	BAR REINFORCING STEEL
			CY	CY	LB
735+00.00 (PM 26.08)	HW & WW TYPE "A" (NB)			194.68	21164
	19' (W) x 18' (H) x 167.0' (L) RCB	2.05E/0.62M	1189.10		269037
	HW & WW TYPE "A" (SB)			164.83	18183
Total Quantities			1189.10	359.51	308384
Unit Price			$810.00	$650.00	$1.00
Item Cost			$963,171.00	$233,681.50	$308,384.00
Total Cost			$1,505,237		

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
464 W. 4th Street
SAN BERNARDINO, CA 942401-1400
PHONE (909) 383-7560
FAX (909) 383-6494

www.dot.ca.gov

Serious drought.
Help save water!

June 4, 2014

Karin Cleary- Rose, Chief
San Bernardino and Riverside County
U.S. Fish and Wildlife Service
Carlsbad Fish & Wildlife Office
Palm Springs Fish & Wildlife Office
777 E. Tahquitz Canyon Way, Suite 208
Palm Springs, CA 92262

Dear Ms. Rose:

The California Department of Transportation (Caltrans) is submitting to your office an NES, including MSHCP Consistency Assessment, and DBESP findings, for the SR-60 Truck Lanes Project (0N69U) (FWS-WRIV -13B0096-13 SLO 135), a covered activity in the Western Riverside County MSHCP. Also, as a follow-up to the March 20. 2014 RCA meeting enclosed are the proposed 0N69U wildlife crossings and associated costs for further discussion.

Based on the enclosed documents, Caltrans requests an MSHCP consistency determination and a DBESP finding for this project.

If you have any questions or concerns, please contact Maggi Elgeziry, Caltrans Associate Environmental Planner, at (909) 383-7560 or I can be reached at (909) 388-1387.

Sincerely,

Scott Quinnell
Senior Environmental Planner
Branch Chief, Biological Studies & Permits Branch and
Biological Construction and Maintenance Monitoring
Caltrans District 8
(909) 383-6936

cc: Heather Pert, UDFW and Charlie Landry, RCA

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN JR., Governor

DEPARTMENT OF TRANSPORTATION
464 W. 4th Street
SAN BERNARDINO, CA 942401-1400
PHONE (909) 383-7560
FAX (909) 383-6494

www.dot.ca.gov

Serious drought.
Help save water!

June 4, 2014

Heather Pert
Department of Fish and Wildlife
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764

Dear Ms. Pert:

The California Department of Transportation (Caltrans) is submitting to your office an NES, including MSHCP Consistency Assessment, and DBESP findings, for the SR-60 Truck Lanes Project, a covered activity in the Western Riverside County MSHCP. Also, as a follow-up to the March 20, 2014 RCA meeting enclosed are the proposed 0N69U wildlife crossings and associated costs for further discussion.

Based on the enclosed documents, Caltrans requests an MSHCP consistency determination and a DBESP finding for this project.

If you have any questions or concerns, please contact Maggi Elgeziry, Caltrans Associate Environmental Planner, at (909) 383-7560 or I can be reached at (909) 388-1387.

Sincerely,

Scott Quinnell
Senior Environmental Planner
Branch Chief, Biological Studies & Permits Branch and
Biological Construction and Maintenance Monitoring
Caltrans District 8
(909) 383-6936

cc: Karin Cleary-Rose, USFWS and Charlie Landry, RCA

"Caltrans improves mobility across California"

SR-60 Truck Lanes Project

Proposed Wildlife Crossings Locations

The California Department of Transportation (Department) proposes to construct an eastbound truck climbing lane and a westbound truck descending lane, and inside and an outside standard shoulders in both directions on State Route 60 (SR-60) in Riverside County between Gilman Springs Road. Post Mile (PM) 22.10 and Jack Rabbit Trail PM 26.50.

Beginning on February 5, 2013, and then in several additional meetings in 2013-2014, the Department met with John M. Taylor, USFWS to discuss the needed wildlife crossings and possible locations. These meetings culminated in a meeting on March 20, 2014, where the proposed wildlife crossings were presented at the Riverside Conservation Authority (RCA) monthly meeting.

The following wildlife crossings have been identified and proposed as a result of inter-agency coordination, and technical analysis developed by the Department:

- Three Top Arch concrete boxes are located within the limit of the project at post mile 22.59, 23.22 and 23.58 ranging from 5.5' to 6.3' in width and 6.6' to 7.7' height these structures are suitable for small and medium animals. The arch culverts will be protected by incorporating retaining structures in lieu of extending them.
- The rest of the existing drainage structures (approximately 25 structures) are corrugated steel pipe ranging from 24" to 48" in diameters the will be rehabilitated and extended
- Additional wildlife crossings consisting of three 36" diameters reinforced concrete pipe (RCP) culverts, and three 60" diameters (RCP) will be constructed to accommodate small and medium size animals total cost around $0.75 million
- Two large 17' x 17' and 19' x 18' reinforced concrete box culverts (RCB), and will have a total cost of approximately $2.3 million is proposed to accommodate large animals. The box culvert at PM 25.09 will have an openness ratio of 0.63. The box culvert at PM 26.08 will have an openness ratio of 0.62.

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Serious drought.
Help save water!

To: BASEM E. MUALLEM, P.E.
District Director
District 8

Date: April 30, 2014

File: 08-RIV-60-22.1/26.5
EA: 0N69U
SR-60 Truck Lanes Project
Project Number 0812000307

From: RAGHURAM RADHAKRISHNAN
Project Manager
Program/Project Management

Subject: **REQUEST FOR EXEMPTION - PUBLIC INFORMATION MEETING**

In accordance with the Project Development Procedure Manual, Chapter 11, Part 2 – The Project Development Process: Applicability: Category 4B Projects; this document will serve as an approval for exemption from conducting a public information meeting during the circulation of the draft Initial Study/Environmental Assessment, the draft project report and environmental document for the project. The draft project report and environmental document is scheduled for public circulation in May/June 2014.

On April 15, 2014, the Project Development Team/Public Information Officer made the decision of not conducting a Public Information Meeting at this stage of the project. For the following reasons: 1) The existing freeway does not have any local access points within the Project Limits and the project is located within a rural area. 2) Limited right of way acquisition is anticipated. 3) Information related to traffic handling and impacts to traffic during construction is not known at this time. A comprehensive mailing list is being prepared to circulate the draft project report and environmental document. An extensive public outreach effort will be conducted during the design and into construction stages of this project.

RECOMMENDED BY:

RAGHURAM RADHAKRISHNAN
Project Manager
Program/Project Management

CONCURRED BY:

SYED RAZA
Deputy District Director
Program/Project Management

APPROVED BY:

BASEM E. MUALLEM, P.E.
District Director

5/5/14
DATE

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

2013 Federal Transportation Improvement Program

Riverside County
State Highway
Including Amendments 1-12
(In $000`s)

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
RIV080904	Riverside	SCAB		3M0801	CAXT3	60	20	22	S	NON-EXEMPT	0
Description:							PTC	52,000	Agency	MORENO VALLEY	

AT SR-60/THEODORE ST IC: WIDEN OC FROM 2 TO 6 THRU LANES; WIDEN WB EXIT/ENTRY RAMPS FROM 1 LN TO 2 LNS AT EXIT/ENTRY, 3 LNS AT ART. W/ HOV AT ENTRY; WIDEN EB EXIT RAMP FROM 1 LN TO 2 LNS AT EXIT AND 3 LNS AT ART.; WIDEN EB ENTRY RAMP FROM 1 LN TO 2 LNS W/HOV; ADD EB LOOP ENTRY WITH 2 LNS AT ART. AND 1 LN AT ENTRY; ADD AUX LNS 1700' EACH DIR WEST OF IC & 1200' EB AND 2200' WB EAST OF IC -RTP 3M0801

Fund	ENG	R/W	CON	Total	Prior	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	Total
DEVELOPER FEES	7,000	11,000	34,000	52,000		7,000		11,000	34,000			52,000
RIV080904 Total	7,000	11,000	34,000	52,000		7,000		11,000	34,000			52,000

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
RIV080903	Riverside	SCAB		3M0714	CAXT3	60	21	23	S	NON-EXEMPT	0
Description:							PTC	70,000	Agency	MORENO VALLEY	

AT SR-60/GILMAN SPRINGS RD IC - REALIGN GILMAN SPRINGS RD/REMOVE EXISTING EB/WB RAMPS; WIDEN OC FROM 2 TO 6 THRU LANES; WB EXIT IS 1 LANE WIDENING TO 2 LANES THEN TO 3 LANES AT ARTERIAL, WB LOOP & EB ENTRY RAMPS FROM 1 LANE TO 2 LANES W/ HOV; WIDEN EB EXIT RAMPS FROM 1 LANE TO 2 LANES AT EXIT AND 3 LANES AT ARTERIAL; ADD AUX LANES TO WEST OF IC 1200' EB AND 2200' WB

Fund	ENG	R/W	CON	Total	Prior	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	Total
DEVELOPER FEES	7,000	14,000	49,000	70,000				7,000		14,000	49,000	70,000
RIV080903 Total	7,000	14,000	49,000	70,000				7,000		14,000	49,000	70,000

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
RIV120201	Riverside	SCAB		3TK04MA13	CAN74	60	22.2	26.5	S	NON-EXEMPT	9
Description:							PTC	100,032	Agency	CALTRANS	

ON SR-60 NEAR BEAUMONT: CONSTRUCT NEW EASTBOUND AND WESTBOUND TRUCK LANES FROM GILMAN SPRINGS RD TO 1.6 MILES WEST OF JACK RABBIT TRAIL AND UPGRADE EXISTING INSIDE AND OUTSIDE SHOULDER IN THE WB DIRECTION TO STANDARD WIDTHS (10-FT INSIDE SHOULDER AND 10-FT OUTSIDE SHOULDER) (EA: ON69U).

Fund	ENG	R/W	CON	Total	Prior	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	Total
FFY 2006 APPROPRIATIONS EARMARKS	2,546			2,546	2,546							2,546
SURFACE TRANS PROG - HR4818	492			492	492							492
AGENCY	9,994	550	53,800	64,344					64,344			64,344
SHOPP - ADVANCE CONSTRUCTION	3,500	450	28,700	32,650		2,000			30,650			32,650
RIV120201 Total	16,532	1,000	82,500	100,032	3,038	2,000			94,994			100,032

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
RIV050535	Riverside	SCAB		RIV050535	CAX71	60	28.03	30.42	S	NON-EXEMPT	8
Description:							PTC	79,746	Agency	BEAUMONT	

ON SR60 BTWN JACK RABBIT TR & SR60/I-10 JCT: PH1-CONST. NEW POTRERO 6 LN OC (3 LNS EACH DIR) W/TEMP CONNECT TO WESTERN KNOLLS (EA34141/34143). PH2: NEW IC ON/OFF RAMPS. CONST. WB/EB EXIT & ENTRY RAMPS (2 LNS) & WB/EB LOOP ENTRY RAMPS (2 LNS) (ENTRY RAMPS INCL HOV LANE), INCL EB/WB AUX LNS AT EXIT RAMPS, REALIGN WESTERN KNOLLS AVE, AND REMOVE WESTERN KNOLLS AVE CONNECTION TO SR60 (EA34142/34143).

Fund	ENG	R/W	CON	Total	Prior	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	Total
DEMO-SAFETEA-LU			1,440	1,440		1,440						1,440
SECTION 129 - SURFACE TRANSPORTATION PRIORITIES			1,470	1,470		1,470						1,470

Appendix C. Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711
www.dot.ca.gov

Flex your power!
Be energy efficient!

March 2013

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

Appendix D. Environmental Commitment Record.

Appendix D. Environmental Commitment Record

Date: (May 2014)
Project Phase:
☒ PA/ED (*DED/FED*)
☐ PS&E Submittal
☐ Construction

ENVIRONMENTAL COMMITMENTS RECORD
(State Route 60 Truck Lanes Project)

08-SBd-60
PM 22.10/26.50

EA 08-0N69U
PN 08-12000307

Avoidance, Minimization, and/or Mitigation Measures	Page # in Env. Doc.	Environmental Analysis Source (Technical Study, Environmental Document, and/or Technical Discipline)	Responsible for Development and/or Implementation of Measure	Timing/ Phase	If applicable, corresponding construction provision: (standard, special, non-standard)	Action(s) Taken to Implement Measure	Measure Completed (Date and Initials)		Remarks	Environmental Compliance	
										YES	NO
Noise											
NOI-1: The contractor shall comply with all local sound control and noise level rules, regulations and ordinances that apply to any work performed pursuant to the contract.			RE/Contractor	Construction	Standard Specs 2010: 14-8.02						
NOI-2: Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without the muffler.			RE/Contractor	Construction	Standard Specs 2010: 14-8.02						
Utilities and Emergency Services											
UT-1: During the early stages of PS&E the Department will determine, if utility relocation is required.	5	RWDS	District Design / PDT	Final Design							
UT-2: The Department and RCTC will conduct	1	DTMP	District Design/Public	Pre-Construction							

Date: (May 2014)
Project Phase:
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(State Route 60 Truck Lanes Project)

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										YES	NO
extensive public outreach prior and during construction by providing press releases well in advance to warn the travelling public and emergency services.			Affairs and RCTC.								
Traffic and Transportation/Bicycle and Pedestrian Facilities											
TR-1: The Department and RCTC will conduct extensive public outreach during construction and provide press releases well in advance to warn the travelling public.	1	TMP	District Design / District Traffic Management / District PIO/RCTC / Resident Engineer / Contractor	Final Design, Construction							
Visual/Aesthetics											
AV-1: Where retaining walls are used to stabilize cut/fill slopes the walls shall be designed to reduce glare, add visual interest, and fit the context of the setting. This will include color or patterns or materials other than concrete.	34	VIA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor	Final Design, Construction							

Appendix D. Environmental Commitment Record

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										YES	NO
AV-2: The use of gabion baskets may be considered in lieu of traditional retaining walls in order to enhance the aesthetics of retained slopes.	34	VIA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor	Final Design, Construction							
AV-3: Cut/fill slopes will be re-vegetated using native plant materials to reduce erosion and facilitate vegetation growth.	34	VIA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor	Final Design, Construction							
AV-4: Trees removed as part of the project will be replaced at a ratio of 3:1 and an irrigation system will be installed to facilitate their survival.	34	VIA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor	Final Design, Construction							

Appendix D. Environmental Commitment Record

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Project Phase:
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(State Route 60 Truck Lanes Project)

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										YES	NO
AV-5: Paved drainage "V" ditches, over side drains, and headwalls will be stained to blend with the native vegetation and slopes.	34	VIA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor	Final Design, Construction							
Cultural Resources											
CR-1: If buried cultural resources are encountered during construction, it is Caltrans policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find.			RE/Contractor	Construction	Standard Specs 2010: 14-2 Cultural Resources.	Contact Gabrielle Duff at (909) 383-6933 or Gary Jones at (909) 383-7505.					
CR-2: If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted.			RE/Contractor	Construction	Standard Specs 2010: 14-2.02A Archeological Resources: General.	Contact Gabrielle Duff at (909) 383-6933 or Gary Jones at (909) 383-7505.					

Date: (May 2014)
Project Phase:
☒ PA/ED (*DED/FED*)
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ENVIRONMENTAL COMMITMENTS RECORD
(State Route 60 Truck Lanes Project)

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										YES	NO
Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact District 8 Division of Environmental Planning; Gabrielle Duff, DEBC: (909)383-6933 and Gary Jones, DNAC: (909)383-7505 so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.											
Water Quality and Storm Runoff											
WQ-1: Incorporate Design Pollution Prevention and Treatment BMPs in	5-1	WQAR	District Design / District Storm Water /	Final Design, Construction							

Date: (May 2014)
Project Phase:
☒ PA/ED (*DED/FED*)
☐ PS&E Submittal
☐ Construction

ENVIRONMENTAL COMMITMENTS RECORD
(State Route 60 Truck Lanes Project)

08-SBd-60
PM 22.10/26.50

EA 08-0N69U
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Avoidance, Minimization, and/or Mitigation Measures	Page # in Env. Doc.	Environmental Analysis Source (Technical Study, Environmental Document, and/or Technical Discipline)	Responsible for Development and/or Implementation of Measure	Timing/ Phase	If applicable, corresponding construction provision: (standard, special, non-standard)	Action(s) Taken to Implement Measure	Measure Completed (Date and Initials)		Remarks	Environmental Compliance	
										YES	NO
accordance with the Department Stormwater Quality Handbooks-Project Planning and Design Guide. Measures will be designed and implemented to avoid causing or contributing to pollutants and sediment loading of downstream flow. The following permanent BMP measures will be included as part of the project as required: • Construct new slopes or modify existing slopes to allow storm water flow to the sides of the roadway. • Dikes, curbs, and gutters will be constructed along the new shoulder in order to intercept surface runoff where necessary. • Minimize slope length to the extent possible to allow re-vegetation. • Implement slope rounding			Resident Engineer / Contractor							

Date: (May 2014)
Project Phase:
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ENVIRONMENTAL COMMITMENTS RECORD
(State Route 60 Truck Lanes Project)

08-SBd-60
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Avoidance, Minimization, and/or Mitigation Measures	Page # in Env. Doc.	Environmental Analysis Source (Technical Study, Environmental Document, and/or Technical Discipline)	Responsible for Development and/or Implementation of Measure	Timing/ Phase	If applicable, corresponding construction provision: (standard, special, non-standard)	Action(s) Taken to Implement Measure	Measure Completed (Date and Initials)		Remarks	Environmental Compliance	
										YES	NO
and collecting flows in stabilized drains. • Protect and minimize removal of existing vegetation to the extent possible. • Disturbed slopes will be re-vegetated to the maximum extent practicable. Re-vegetation will utilize recommendations by the District Landscape Architect, and the Project Biologist. • As necessary, bio-filtration, soil modification, swales/strips, detention basins, media filters and infiltration basins will be considered during the final design as part of the permanent treatment strategy. Media Filters will be considered for incorporation into this project if it is determined that infiltration basins are needed, but not feasible.										

Appendix D. Environmental Commitment Record

Date: (May 2014)
Project Phase:
☒ PA/ED (*DED/FED*)
☐ PS&E Submittal
☐ Construction

ENVIRONMENTAL COMMITMENTS RECORD
(State Route 60 Truck Lanes Project)

08-SBd-60
PM 22.10/26.50

EA 08-0N69U
PN 08-12000307

Avoidance, Minimization, and/or Mitigation Measures	Page # in Env. Doc.	Environmental Analysis Source (Technical Study, Environmental Document, and/or Technical Discipline)	Responsible for Development and/or Implementation of Measure	Timing/ Phase	If applicable, corresponding construction provision: (standard, special, non-standard)	Action(s) Taken to Implement Measure	Measure Completed (Date and Initials)		Remarks	Environmental Compliance	
										YES	NO
• Implement attenuation devises as needed such as energy dissipation devises, soil modification, vegetation, slope terracing, and slope stepping. • Implement energy dissipation devices at culvert outlets; including vegetation, geotextile mats, rock, and riprap.											
WQ-2 Stormwater treatment strategies will be coordinated with RWQCB, and will comply with 401 permit requirements.	5-1	WQAR	District Design / District Storm Water / Resident Engineer / Contractor	Final Design, Construction							
WQ-3 The project contractor will develop and implement SWPPP that will detail construction storm water pollution protection measures for the project. The project will be scheduled or phased to minimize soil-disturbing work during	5-1	WQAR	District Design / District Storm Water / Resident Engineer / Contractor	Final Design, Construction							

Date: (May 2014)
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(State Route 60 Truck Lanes Project)

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										YES	NO
rain events.											
Paleontology											
PA-1: Grading, excavation and other surface and subsurface excavation in defined areas of the proposed project have the potential to impact significant nonrenewable fossil resources. A Paleontological Mitigation Plan (PMP) shall be prepared during final project design by a qualified paleontologist. The PMP will detail monitoring and measures to be implemented in the event of paleontological discoveries. The PMP shall include, at a minimum, the following elements	28	PIR/PER	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design, Construction	NSSP						
PA-2: Required 1-hour preconstruction paleontological awareness training for earthmoving personnel, including documentation of training,	28	PIR/PER	District Design / District Paleontological Studies / Resident Engineer /	Final Design, Construction	NSSP						

Appendix D. Environmental Commitment Record

Date: (May 2014)
Project Phase:
☒ PA/ED (*DED/FED*)
☐ PS&E Submittal
☐ Construction

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Avoidance, Minimization, and/or Mitigation Measures	Page # in Env. Doc.	Environmental Analysis Source (Technical Study, Environmental Document, and/or Technical Discipline)	Responsible for Development and/or Implementation of Measure	Timing/ Phase	If applicable, corresponding construction provision: (standard, special, non-standard)	Action(s) Taken to Implement Measure	Measure Completed (Date and Initials)		Remarks	Environmental Compliance	
										YES	NO
such as sign-in sheets, and hardhat stickers, to establish communications protocols between construction personnel and the Principal Paleontologist			Contractor								
PA-3: there will be a signed repository agreement with an appropriate repository that meets Department requirements and approved by the Department.	28	PIR/PER	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design, Construction	NSSP						
PA-4: Monitoring, by a Principal Paleontologist during excavation.	28	PIR/PER	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design, Construction	NSSP						
PA-5: Field and laboratory methods that meet the curation requirements of the appropriate repository will be implemented for monitoring, reporting, collection, and curation of collected specimens. Curation requirements are available for public review at	28	PIR/PER	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design, Construction	NSSP						

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										YES	NO
the appropriate repository.											
PA-6: All elements of the PMP will follow the PMP Format published in the Caltrans Standard Environmental Reference (Department 2003).		PIR/PER	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design, Construction	NSSP						
PA-7: A Paleontological Mitigation Report discussing finding and analysis will be prepared by a principal paleontologist upon completion of project earthmoving. The report will be included in the environmental project file and also submitted to the curation facility.		PIR/PER	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design, Construction	NSSP						
Hazardous Waste/Materials											
HW-1: A Lead Compliance Plan is required.	1	ISA Checklist	District Design / District Environmental Engineering / Resident Engineer /	Final Design, Construction	SSP 7-1.02K (6)(J)(III) Lead Compliance Plan.						

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										YES	NO
			Contractor								
HW-2: Handling the removal of yellow traffic stripe and pavement markings with hazardous waste reside.	1	ISA Checklist			SSP 14-11.07						
HW-3: Handling treated wood waste.	1	ISA Checklist			SSP 14-11.09						
HW-4: Handling residue containing lead from paint and thermoplastic.	1	ISA Checklist			SSP 15-1.03B						
HW-5: Handling the removal of traffic stripes and pavement markings containing lead.	1	ISA Checklist			SSP 15-2.02C(2)						
Air Quality											
AIR-1: The construction contractor must comply with the Department's Standard Specifications in Section 14-9 (2010).			Resident Engineer / Contractor	Construction	Standard Specs 2010: Section 14-9 Air Quality.						
Biological Resources											

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										YES	NO
BIO-1: The following measures will be incorporated to avoid and minimize impacts to Coast live oak woodland: To designate Environmentally Sensitive Areas (ESA) to be preserved, prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around oak tree communities adjacent to the project footprint, as well as around any trees that can be avoided within the project footprint. No grading or fill activity of any type will be permitted within the project footprint. No grading or fill activity of any type will be permitted within these ESAs. In addition, heavy equipment, including		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction						

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										YES	NO
motor vehicles, will not be allowed to operate within the ESAs. All construction equipment should be operated in a manner so as to prevent accidental damage to nearby preserved areas. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones.											
BIO-2: To avoid impacts to nesting birds in Coast live oaks, any native vegetation removal or tree (native or exotic) trimming activities will occur outside of the nesting bird season (February 15-August 31). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist must conduct a pre-construction		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							

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										YES	NO
survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active. See Section 4.3.4 for further details on avoidance and minimization efforts for nesting birds.											
BIO-3: A biologist will monitor construction for the duration of the project to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							

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										YES	NO
properly constructed and followed. Preconstruction surveys will be conducted to lessen temporary indirect impacts to Least Bell's Vireo (LBV).											
Wetlands and Waters											
WET-1: The construction guidelines provided in MSHCP *Section 7.5.3,* as well as Best Management Practices (BMPs), will minimize and avoid impacts to sensitive species and habitats occurring adjacent to the existing roadway.		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							
WET-2: The project will comply with MSHCP Section 6.1.4 *Guidelines Pertaining to Urban/Wildlands Interface*, which addresses indirect effects associated with locating development in proximity to the MSHCP Conservation Area.		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction	??						

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										YES	NO
WET-3: Permanent impacts to riparian/riverine habitat and LBV are proposed to be mitigated through purchase credits, in the form of habitat creation, from the Santa Ana Watershed Authority or the Riverside-Corona Resource Conservation at a 3:1 ratio for impacts to 0.184 acre of riparian habitat and 0 acre of wetlands (*i.e.*, acquire 0.552 acres) to compensate for the permanent loss of habitat. For impacts to streambed and non-wetland waters, credits will be purchased in the form of habitat enhancement, habitat creation, or a combination of habitat enhancement and habitat creation at a 2:1 ratio for impacts to 0.897 acre of streambed (*i.e.*, 1.794 acres). Please note that the 0.897 acre of streambed is inclusive of 0.713 acre of ACOE non-wetland waters of the US. Thus, the total		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction						

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										YES	NO
mitigation to purchase for impacts to 0.184 acre of riparian habitat, 0.0 acre of wetlands, and 0.897 acre of streambed is 2.346 acres.											
WET-4: Temporary impact areas will be restored and the LBV would be expected to continue to occupy the BSA. The project will mitigate for temporary impacts through restoration and creation of onsite riparian habitat and will also create wildlife crossings, as per the requirements of the MSHCP Volume 1, Section 7 to ensure the connectivity of the landscape for various wildlife species. This will provide riparian habitat that is of equivalent or better quality to the impacted habitat and is contiguous with existing and anticipated conservation areas.		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							

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										YES	NO
WET-5: Best Management Practices will be implemented to minimize potential impacts during construction and ensure that impacts to water quality beyond the project site are minimized to the greatest extent feasible. These measures will be coordinated with the Regional Water Quality Control Board, U.S. Army Corps of Engineers, and California Department of Fish and Wildlife during the Section 401 Clean Water Act, Section 404 Clean Water Act, and Section 1602 Streambed Alteration permitting processes, respectively.		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							
Animals											

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										YES	NO
AS-1: An MSHCP pre-construction survey for nesting birds and burrowing owls will be conducted within 30 days prior to ground disturbance in suitable habitat areas.		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							
AS-2: If burrowing owls are found to be present in the BSA during subsequent pre-construction surveys, then the project-specific mitigation would be developed and authorized through consultation with the Western Riverside County Regional Conservation Authority, CDFW, and USFWS, as outlined in MSHCP Table 9.2 and Appendix D, Summary of MSHCP Species Survey		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							

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										YES	NO
Requirements.											
AS-3: Nesting Birds: Avoidance and Minimization Efforts: To avoid potential effects to fully protected raptors and other nesting birds protected by the MBTA and state fish and game code, and for compliance with the MSHCP Incidental Take Permit Condition 5; vegetation clearing and preliminary ground disturbance work will be completed outside of the bird breeding season (typically February 15 through August 31). In the event that initial groundwork cannot be conducted outside the bird breeding season, focused surveys will be conducted prior to ground-disturbing activities. Should nesting birds be		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							

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										YES	NO
found, an exclusionary buffer will be established by the biologist. The buffer may be up to 500 feet in diameter depending on the species of nesting bird found. This buffer will be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.											
Threatened and Endangered Species											

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										YES	NO
T&E-1: SKR: Impacts to this species can be avoided or minimized by keeping project footprint and activities to a minimum in grassland areas.		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							
T&E-2: Coastal California Gnatcatcher: Impacts to this species can be avoided or minimized by keeping project footprint and activities to a minimum in sage scrub areas.		NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							
Invasive Species											
INV-1: Bare soil will be landscaped with Caltrans-recommended seed mix from locally adopted species, where feasible, to preclude the invasion of noxious weeds. The use of site-specific materials, which	42	NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							

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										YES	NO
are adapted to local conditions, increases the likelihood that revegetation will be successful and maintains the genetic integrity of the local ecosystem. Arrangements shall be made well in advance of planting for the scheduled planting time. Sufficient time should be allocated for a professional seed company to visit the project site during the appropriate season and collect the native plant seed. If local propagules are not available or cannot be collected in sufficient quantities, materials collected or grown from other sources within southern California shall be substituted. For widespread native herbaceous species that are more likely to be genetically homogenous, site specificity is a less important consideration and seed from commercial											

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										YES	NO
sources may be used.											
INV-2: Seed purity shall be certified by planting seed labeled under the California Food and Agricultural Code or that has been tested within a year by a seed laboratory certified by the Association of Official Seed Analysts or by a seed technologist certified by the Society of Commercial Seed Technologists.	43	NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							
INV-3: Construction equipment will be cleaned of mud or other debris that may contain invasive plants and/ or seeds and inspected to reduce the potential of spreading noxious weeds before arriving at the construction site and before leaving the construction site.	43	NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							
INV-4: Trucks with loads carrying vegetation shall be covered and vegetation shall be covered and vegetative materials removed from the site shall be disposed of in	43	NES	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction							

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										YES	NO
accordance with all applicable laws and regulations.											
Geotechnical/Soils/Seismic/Topography											
GEO-1: Drainage facilities should be designed to handle the maximum run-off.	2	PGDR	Project Engineer Project Manager Stormwater HQ Geotech Hydrology	PS&E							
GEO–2: Additional surface and subsurface geotechnical investigation and geo-physical study may be needed depending on the selected proposed design	4	PGDR	Project Engineer Project Manager Stormwater HQ Geotech Hydrology	PS&E							

Appendix E - List of Technical Studies

Air Quality Exemption Memo, March 12, 2014.

Air Quality Request for SCAG TCWG Concurrence in Use of Conformity Exemption for Truck Lanes Project, November 19, 2013.

Historic Property Survey Report (April 2014)

- Archaeological Survey Report (April 2014)
- Historical Resources Evaluation Report (April 2014)
- Native American Consultation (April 2014)

Updated Initial Site Assessment Checklist, March 25, 2014.

Location Hydraulic Study, March 27, 2014.

Summary Floodplain Encroachment Report, March 27, 2014.

Natural Environmental Study, April 17, 2014.

- Multiple Species Habitat Conservation Plan, April 17, 2014.
- Determination of Biologically Equivalent or Superior Preservation, April 17, 2014.
- Agency Correspondence
- Burrowing Owl Habitat Assessment and Focused Survey
- Habitat Assessment and Focused Survey for the Least Bell's Vireo and Southwestern Willow Flycatcher.
- Habitat Assessment and Focused Survey for the Los Angeles Pocket Mouse.
- Delineation of Jurisdictional Waters.

Noise Study Report, March 12, 2014.

Paleontological Identification Report/Paleontological Evaluation Report, January 15, 2014.

Preliminary Geotechnical Design Report, October 10, 2013.

Right of Way Datasheet, February 21, 2014.

Storm Water Data Report, March 23, 2011.

Traffic Data Information Memorandum, May 23, 2013.

Draft Traffic Management Plan, February 25, 2014.

Visual Impact Assessment, March 27, 2014.

Water Quality Assessment Report, March 26, 2014.

Appendix F - Acronyms

1. µ Pa - micro-Pascals
2. AADT – Average Daily Truck Traffic
3. ACOE - United States Army Corp of Engineers
4. ACM – Asbestos Containing Materials
5. ADL – Aerially Deposited Lead
6. AGR – Agricultural Supply
7. AJD – Approved Jurisdictional Determination
8. AMEC – AMEC Environmental and Infrastructure, Inc.
9. APE: Area of Potential Effects
10. AS – Aggregate Subbase
11. BLM – Bureau of Land Management
12. BMPs - Best Management Practices
13. BOR – Bureau of Reclamation
14. BSA – Biological Study Area
15. CAC – County Agricultural Commissioner
16. CAGM – Coastal California Gnatcatcher
17. CARB - California Air Resources Board
18. Cal/EPA - California Environmental Protection Agency
19. CalEPPC – California Exotic Pest Plant Council
20. CDFA – California Department of Food and Agriculture
21. CDFW - California Department of Fish and Wildlife
22. CERCLA - Comprehensive Environmental Response, Compensation and Liability Act of 1980
23. CERFA - Community Environmental Response Facilitation Act of 1992
24. CEQ - Council on Environmental Quality

Appendix F - Acronyms

25. CEQA - California Environmental Quality Act
26. CESA – California Endangered Species Act
27. CFR – Code of Federal Regulations
28. Cfs – Cubic Foot per Second
29. CGP – Construction General Permit
30. CHP – California Highway Patrol
31. CMP – Consolidated Monitoring Plan
32. CNDDB – California Natural Diversity Data Base
33. CNEL – Community Noise Equivalent Level
34. CNPS – California Native Plant Society
35. County – Riverside
36. CO-CAT - Coastal Ocean Climate Action Team
37. CTP - California Transportation Plan
38. CWA – Clean Water Act
39. DAMP – Drainage Area Management Plan
40. DBSEP - Determination of Biologically Equivalent or Superior Preservation
41. dBA – A-weighted decibels
42. DHV – Design Hour Volumes
43. Department - California Department of Transportation

Appendix F - Acronyms

44. DOC – Department of Conservation
45. DSA – Disturbed Soil Area
46. EA – Environmental Assessment
47. EA – Expenditure Authorization
48. EB - Eastbound
49. ECR - Environmental Commitments Record
50. EPA – Environmental Protection Agency
51. ESA – Environmentally Sensitive Area
52. FEMA – Federal Emergency Management Agency
53. FESA – Federal Endangered Species Act
54. FIRM – Flood Insurance Rate Map
55. FHWA – Federal Highway Administration
56. FIFRA - Federal Insecticide, Fungicide, and Rodenticide Act
57. FMMP – Farmland Mapping and Monitoring Program
58. FPPA – Farmland Protection Policy Act
59. Ft – Foot/feet
60. FTIP – Federal Transportation Improvement Program
61. GHG - Greenhouse Gas
62. GWMZs – Groundwater Management Zones
63. GWR – Groundwater Recharge
64. HMA – Hot Mix Asphalt
65. HPSR – Historic Property Survey Report
66. Hz - Hertz
67. I-10 – Interstate 10
68. IND – Industrial Service Supply

69. IP – Individual Permit

70. IS - Initial Study

71. ISA – Initial Site Assessment

72. ITSP – Interregional Transportation Strategic Plan

73. IPCC - Intergovernmental Panel on Climate Change

74. ITS - Intelligent Transportation System

75. ITSP – Interregional Transportation Strategic Plan

76. IGR - Intergovernmental Review

77. JD – Jurisdictional Delineation

78. JPCP – Jointed Plane Concrete Pavement

79. KV or KVs – Key View or Key Views

80. LACM – Natural History Museum of Los Angeles County

81. LAPM – Los Angeles Pocket Mouse

82. LBP – Lead Based Paint

83. LBV – Least Bell's vireo

84. LCB – Lean Concrete Base

85. LCP – Lead Compliance Plan

86. Ldn – day-night level

87. Leq - equivalent continuous sound level

88. Leq(h) - equivalent continuous sound level per hour

89. Lmax – maximum sound level

90. LOMR – Letter of Map Revision

91. LOS – Levels of Service

92. Lxx – xx percentile-exceeded sound level

93. MBTA – Migratory Bird Treaty Act

Appendix F - Acronyms

94. MDAQMD – Mojave Desert Air Quality Management District

95. Mi – mile/miles

96. Mph – miles per hour

97. MLD - Most Likely Descendent

98. MS4 – Municipal Separate Storm Sewer Systems

99. MSHCP – Multiple Species Habitat Conservation Plan

100. MUN – Municipal and Domestic Supply

101. NAC – Noise Abatement Criteria

102. NAHC - Native American Heritage Commission

103. NCCP – Natural Communities Conservation Plan

104. ND - Negative Declaration

105. NEPA - National Environmental Policy Act

106. NESHAP - National Emission Standard for Hazardous Air Pollutants

107. NHPA – National Historic Preservation Act

108. NHS – National Highway System

109. NHTSA - National Highway Traffic Safety Administration

110. NOAA - National Oceanic and Atmospheric Administration

111. NPDES – National Pollutant Discharge Elimination System

112. NPS – National Park Service

113. NRCS – Natural Resources Conservation Service

114. NWP – Nation-wide Permit

115. OC - Overcrossing

116. OS-CH – Open Space-Conservation Habitat

117. OSHA - Occupational Safety and Health Act

118. OS-R – Open Space-Recreation

Appendix F - Acronyms

119. OS-RUR – Open Space-Rural
120. OPR - Office of Planning and Research
121. PA – Programmatic Agreement
122. PA/ED - Project Approval & Environmental Document
123. PDT - Project Development Team
124. PE – Project Engineer
125. PER – Paleontological Evaluation Report
126. PF – Public Facilities
127. PGA – Peak Horizontal Ground Acceleration
128. PGDR – Preliminary Geotechnical Design Report
129. PHV – Peak Hour Volume
130. PIR – Paleontological Identification Report
131. PLAC – Permit, licenses, authorization certification
132. PM – Post Mile
133. PN – Project Number
134. PPDG – Project Planning and Design Guide
135. PRC - Public Resources Code
136. PROC – Industrial Process Supply
137. PRPA – Paleontological Resources Preservation Act
138. PSQ – Professionally Qualified Staff
139. RAP – Relocation Assistance Program
140. RCFC = Riverside County
141. RCRA - Resource Conservation and Recovery Act of 1976
142. RCTLMA – Riverside County Transportation and Land Management Agency
143. RHMA – Rubberized Hot Mix Asphalt

144. RM – Rural Management
145. ROW – Right of Way
146. RWDS – Right of Way Datasheet
147. RWQCB - Regional Water Quality Control Board
148. OSTP - Science and Technology Policy
149. REC 1 – Water Contact Recreation
150. REC 2 – Non-contact Water Recreation
151. RR – Rural Residential
152. RWQCB – Regional Water Quality Control Board
153. SBCM – San Bernardino County Museum
154. SCAG – Southern California Association of Governments
155. SDC - Seismic Design Criteria
156. SHOPP – State Highway Operation Performance Program
157. SHPO – State Historic Preservation Officer
158. SR-60 – State Route 60
159. SSP - Standard Special Provision
160. STAA – Federal Surface Transportation Assistance Act
161. STRAIN - Structure Replacement and Improvement Needs
162. SVP – Society of Vertebrate Paleontology
163. SWDR – Storm Water Data Report
164. SWMP – Statewide Storm Water Management Plan
165. SWPPP – Storm Water Pollution Prevention Plan
166. SWRCB – State Water Resources Control Board
167. SWWF – Southwestern willow flycatcher
168. TASAS – Traffic Accident Surveillance and Analysis System

Appendix F - Acronyms

169. TCWG – Transportation Conformity Working Group

170. TDC – Targeted Design Constituent

171. TDS – Total Dissolved Solids

172. TMDLs – Total Maximum Daily Load

173. TMP – Transportation Management Plan

174. TSCA - Toxic Substances Control Act

175. TSN – Transportation System Network

176. TSS – Total Suspended Solids

177. UCMP – University of California Museum of Paleontology's

178. USC – United States Code

179. USDA – United States Department of Agriculture

180. USFS – United States Forest Service

181. USFWS – Untied States Fish and Wildlife Service

182. USGS – United States Geological Survey

183. V/C – Volume to Capacity

184. V:H – Vertical Height

185. VIA – Visual Impact Assessment

186. WAP – Watershed Action Plan

187. WARM – Warm Freshwater Habitat

188. WB – Westbound

189. WDRs – Waste Discharge Requirements

190. WILD – Wildlife Habitat

191. WRCMSHCP – Western Riverside County Multiple Species Habitat Conservation Plan

192. WQAR – Water Quality Assessment Report

Appendix F - Acronyms

193. WSC – Waters of the State of California

194. WUS – Waters of the U.S.