

CALIFORNIA STATE ROUTE-39 (SAN GABRIEL CANYON ROAD) REHABILITATION / REOPENING PROJECT

LOS ANGELES COUNTY, CALIFORNIA
DISTRICT 7-LA-39 [PM 40.0/44.4]
EA 07-1992U0 (199210)
SCH No. 2003-02-1030 / 2006-06-1089

ENVIRONMENTAL IMPACT REPORT / ENVIRONMENTAL ASSESSMENT [EIR/EA]

JANUARY 2009

Prepared by the California Department of Transportation

This 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 U.S.C. 327.



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SUMMARY

The project as proposed and presented in this Environmental Impact Report/Environmental Assessment (EIR/EA) is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency under CEQA. FHWA's responsibility for 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 U.S.C. 327.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for NEPA. One of the most commonly seen joint document types is an EIR/EA. Following receipt of public comments on the Draft EIR/EA and circulation of the Final EIR/EA, Caltrans will be required to take actions regarding the environmental document. Caltrans will determine whether to certify that the EIR and issue Findings and a Statement of Overriding Considerations under CEQA and to issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) under NEPA.

Proposed Project. Caltrans proposes to rehabilitate and reopen a 4.4-mile segment of State Route-39 (SR-39) from post miles 40.0 to 44.4, in the Angeles National Forest, in Los Angeles County. The restored connection would be accessible to public highway traffic throughout the year, with seasonal closures during times of inclement weather. These closures would likely occur during Winter and early spring. The aforementioned segment of SR-39 has been closed to public highway traffic since 1978 as the roadway had sustained extensive damage as a result of erosion dating from 1978 to 2005. Since 1990, the Caltrans Division of Maintenance has rebuilt the roadway at Snow Spring, making it traversable throughout the length of the project area. Maintenance activities have also included the cleaning of drainage culverts and the erection of a dirt berm. With these past improvements, the roadway is passable, but only open to emergency service vehicles, and it is constricted as it approaches its northerly terminus at post mile 40.00.

Purpose. The purpose of this project is to restore access and the through-traffic connection between Interstate-210 (Foothill Freeway, or I-210) and State Route-2 (Angeles Crest Highway, or SR-2), in order to enhance access for fire suppression forces, search and rescue, and emergency personnel, including the United States Forest Service (USFS) and the Los Angeles Sheriff's Department. The proposed improvements also aim to improve the safety and operation of the roadway and to preserve the integrity of the existing facility, while preventing further deterioration of the highway and its surrounding environs per Section 100 of the California Streets and Highway Code. Additionally, the implementation of the proposed project would provide safer access for Caltrans maintenance crews, the USFS, and Los Angeles County Public Works.

Need. Rehabilitating and reopening the closed segment of SR-39 will bring this roadway into compliance with the California Streets and Highway Code, Section 91 and 100 which mandate that Caltrans shall improve and maintain state highways as provided in code, and that Caltrans shall monitor the cumulative impacts of fragmented gaps in the State Highway System (SHS) to identify safety and long-term maintenance issues. Implementation of the proposed project would also assist in satisfying goals and policies as outlined in the Angeles National Forest Land Management Plan through an enhancement of community protection and a reduction in the risk of loss of human life, structures, improvements, and natural resources from wildland fire and subsequent floods.

The local geology and slope instability continue to impede necessary water flow, and cause extreme flooding of the roadway at times. The existing roadway on this segment of SR-39 is most degraded at the original drainages, which have reached their holding capacities and continue to cause excessive flooding and erosion. Current conditions continue to degrade to such a level that they may pose a safety hazard to maintenance crews and other users of the facility. Cumulatively, these conditions create a safety

hazard for highway maintenance workers who often perform duties within the most vulnerable rockfall areas. With the implementation of the proposed project, the aforementioned safety concerns would be resolved via rehabilitation of the roadway and its appurtenant facilities, and a regional traffic circulation connection would be restored in the reopening of this segment of SR-39.

Proposed Action and Alternatives Under Consideration. The proposed project would consist of the following actions; the reconstruction of culverts and construction of new retaining walls, installation of new metal-beam guard rails and widening of the shoulder at the SR-39/SR-2 intersection, maintenance of drainage inlets at each end of the closed segment and at Snow Spring, and repaving of the roadway within project limits. The following design alternatives have been developed by a multi-disciplinary team to achieve the project purpose and need, while avoiding or minimizing environmental impacts. A more detailed discussion of the design alternatives can be referenced in Chapter 1, Project Description.

Alternative 1, or the “No-Build Alternative” proposes to maintain the existing conditions of the roadway without any improvements. This alternative is not recommended since it does not reopen the closed section of SR-39 or address persisting safety issues that the proposed project intends to resolve.

Alternative 2 proposes to rehabilitate roadway/roadside facilities, and install geosynthetic reinforcement at Snow Spring. Alternative 2 also proposes to reconstruct the washed out and damaged SR-39 roadway section for approximately 2,000 linear feet. At the location of the most significant damage, the Snow Spring Slide area (post miles 42.20 to 42.37), this alternative would install geosynthetic reinforcement to a depth of 29.5 feet below the roadway level. At post miles 40.96 to 40.97, a mechanically stabilized earth wall would be constructed to replace the existing, damaged crib wall.

Alternative 3 proposes to rehabilitate roadway/roadside facilities, and construct a concrete-box-girder bridge at Snow Spring. Alternative 3 also proposes to reconstruct the washed out and damaged SR-39 roadway section for approximately 1,300 linear feet, plus provide a new bridge at Snow Spring Slide. At this location, where the most significant damage has occurred, a concrete box girder bridge would be constructed to allow slide debris and heavy runoff to pass underneath the roadway. At post miles 40.96 to 40.97, a reinforced concrete slab bridge with spread footing on bedrock would be constructed to replace the existing, damaged crib wall.

Alternative 4 also proposes to reconstruct the washed out and damaged SR-39 roadway section for approximately 2,000 linear feet, including a realignment of the road at the Snow Spring Slide. At this location, where the most significant damage has occurred, the existing roadway would be realigned 16 feet toward the down slope by building a 890-foot mechanically stabilized earth wall along the roadway on the down slope side to support the realignment. A 20-foot rock catchment area would be constructed, along with a rock-fall fence. A 6.6-foot-deep subdrain would be installed at the bottom of the upslope.

Summary of Potential Project Impacts

ENVIRONMENTAL RESOURCE	ALTERNATIVE 1 (NO-BUILD)	BUILD ALTERNATIVE 2	BUILD ALTERNATIVE 3	BUILD ALTERNATIVE 4
HUMAN ENVIRONMENT				
Land Use	The No-Build Alternative would not involve the construction or improvement of any highway facilities, and therefore, would have no impact upon existing land use patterns.	The proposed project is an improvement to an existing transportation facility and would not involve the conversion of existing land uses, nor introduce new land uses.		
Growth	The No-Build Alternative would pose no impacts to the existing condition in relation to growth because no project-related activity would occur.	No growth-related impacts are anticipated under all Build Alternatives and because the proposed project involves the rehabilitation and reopening of an existing transportation facility. Furthermore, the surrounding area is wilderness, which is administered by the U.S. Forest Service; new private development is generally not allowed. However, the reopening of SR-39 to through traffic may increase local and regional tourist use of this scenic route and encourage additional public use of the recreational facilities and resort areas		
Community Character and Cohesion	The No-Build Alternative poses no impacts to the existing condition in relation to demographics or community character and cohesion because no project-related activity would occur.	Under the Build Alternatives, the proposed highway improvements would not result in any significant changes in demographics that would have a bearing on community character and cohesion. Development in areas surrounding the proposed project is limited, and there are no existing cohesive communities within the immediate vicinity.		
Environmental Justice	The No-Build Alternative would pose no impacts to the existing condition in relation to environmental justice because no project-related activity would occur.	Impacts related to environmental justice are not anticipated with any of the Build Alternatives as the population in the study area is characterized by a higher proportion of nonminority persons and a lower proportion of an economically disadvantaged population when compared to Los Angeles County.		
Utilities, Community Facilities, and Emergency Services	The No-Build Alternative would pose no impacts to the existing condition in relation to utilities, community facilities, or emergency services because no project-related activity would occur.	The proposed project does not conflict with existing utilities, and will not require any relocation of utilities as a result of implementation. No impacts are anticipated to existing community facilities or services.		
Traffic and Transportation / Pedestrian and Bicycle Facilities	The No-Build Alternative would continue to restrict access to this area along SR-39, limiting mobility. Traffic and transportation, and pedestrian and bicycle facilities would remain constrained.	Traffic volume data for the segment of SR-39 that this project proposes to rehabilitate and reopen is limited as it has been closed since 1978. In 1977, the Average Annual Daily Traffic (AADT) was 200 vehicles. Modeling shows that AADT will increase to 800 vehicles post-construction if the proposed project is implemented. Under the build alternatives, temporary construction activities would not result in any disruption to access or circulation as the segment is currently closed to the public. No permanent barriers to local communities are expected, and existing access points and circulation routes to and from the surrounding area would remain open. Access to the recreation area and single residence at Crystal Lake would not be affected by the construction activities associated with the proposed project. The proposed project does not pose any adverse effects or disruption to pedestrian or bicycle facilities in the project study area.		
Visual / Aesthetics	The No-Build Alternative would pose no adverse impacts to the existing condition in relation to the visual/aesthetic character of this segment of SR-39 as no project-related activity would occur.	Four viewpoints along the closed segment of SR-39 were studied in terms of vividness, intactness, and unity, and while changes in visual resources is minor, Observer Viewpoint 1 (reference Section 2.1.6 for discussion) emerged as having the greatest visual change as it exists at the junction of SR-2 and SR-39. These impacts are expected to diminish as the project site weathers and mitigation components become established.		
Cultural Resources	Under the No-Build Alternative, existing conditions would remain and no impacts to cultural resources would occur.	The three build alternatives propose work to the National Register eligible French Wall located at post mile 43.4, but work is limited to the repair of the existing cable railing system and the 84-inch diameter culvert, which were both damaged by recent storm events. Caltrans has determined that a Finding of No Adverse Effect is appropriate for this undertaking, and consultation is in process to obtain concurrence from the State Historical Preservation Office.		
PHYSICAL ENVIRONMENT				
Hydrology and Floodplain	The No-Build Alternative poses no impacts to the existing condition in relation to hydrology or floodplain as no project-related activity would occur.	The proposed project does not pose any impacts to hydrology or floodplain as it is outside the limits of the flood hazard area as described by the Federal Emergency Management Agency (FEMA).		

Water Quality and Storm Water Runoff	The No-Build Alternative poses impacts to the existing condition in relation to water quality or storm water runoff as a failure to rehabilitate the facility would prompt continued erosion and deterioration of the roadway and watersheds in the project area.	Implementation of the proposed project would not pose any adverse effects in terms of water quality or storm water runoff, but a significant component of this project includes the rehabilitation of the roadway and its appurtenant facilities to ensure proper protection of resources, namely the important regional watersheds in the project vicinity.
Geology/Soils/Seismic/Topography	The No-Build alternative poses impacts to the existing condition as deterioration of the roadway and erosion would continue without rehabilitation.	While the proposed project would not pose any significant impacts related to seismic activities or erosion, a rockfall hazard risk exists along the slopes of the segment this project proposes to rehabilitate and reopen. While this rockfall hazard risk has been known since the completion of the highway, measures, techniques, and recommendations have been set forth to mitigate any risk.
Hazardous Waste/Materials	The No-Build Alternative poses no impacts to the existing conditions in relation to hazardous waste or materials as no project-related activity would occur.	It is anticipated that no contaminated ground or surface water would be impacted during the construction of the proposed project. With the absence of any hazardous waste, an individual or cumulative impact is not anticipated. Soils adjacent to the road are anticipated to be free of Aerially Deposited Lead (ADL). This is primarily due to the road being closed to open traffic since 1978. Groundwater was not encountered during the subsurface investigation of the project area. Therefore, groundwater contamination/perched water are not anticipated.
Air Quality	The No-Build Alternative would continue to restrict access and reduce regional mobility, forcing traffic to take circuitous alternative routes that would contribute to increased degradation of air quality.	The proposed project is in conformance with federal, state, and regional air quality standards, but some minimal effects may be encountered during construction. Most of the impacts to air quality will be short-term in duration and therefore, will not result in adverse or long-term conditions. Implementation of Best Management Practices (BMPs) will reduce any air quality impacts resulting from construction activities.
Noise and Vibration	The No-Build Alternative poses no impacts to the existing condition in relation to noise and vibration as no project-related activity would occur.	Based on the analyses, it was determined that the ambient noise levels in the Angeles National Forest would increase due to traffic noise from the reopening of this segment of SR-39 and would experience significant but temporary noise increase during the construction phase of the project. A number of measures are proposed to reduce construction equipment noise and to attenuate any related impacts to the surrounding environs.
BIOLOGICAL ENVIRONMENT		
Natural Communities	The No-Build Alternative poses no impacts to the existing condition in relation to natural communities as no project-related activity would occur.	It is anticipated that the proposed project would permanently impact approximately 6.9 of 650,000 acres of natural community habitat in the Angeles National Forest. Temporary impacts are estimated to be 9.8 acres.
Wetlands and Other Waters	The No-Build Alternative poses no impacts to the existing condition in relation to wetlands and other waters as no project-related activity would occur.	It is anticipated that the proposed project would temporarily impact approximately 0.008 acres of USACE jurisdictional area and 0.016 acres of CDFG jurisdictional areas. Permanent impacts to each would be: USACE - 0.008 acres and CDFG - 0.016 acres.
Plant Species	The No-Build Alternative poses no impacts to the existing condition in relation to plant species as no project-related activity would occur.	The proposed project would permanently convert a total of 6.9 acres of natural habitat to an improved roadway. An additional 9.8 acres would be temporarily impacted during the construction phase. Please refer to Table 2-25 for a summary of impacts to each of the natural plant communities.
Animal Species	The No-Build Alternative poses no impacts to the existing condition in relation to animal species as no project-related activity would occur.	Initial construction activities associated with the proposed build alternatives could temporarily disturb common wildlife species on and immediately adjacent to the project site. However, much of the construction impacts would be temporary and the majority of the permanent improvements would be within the shoulder to an existing highway. Because of the relatively low amount of habitat that would be impacted to the surrounding Forest with the relatively common nature of these species, no significant impacts are expected to occur to common wildlife species.
Threatened and Endangered Species	The No-Build Alternative poses no impacts to the existing condition in relation to threatened and endangered species as no project-related activity would occur.	There is the potential to significantly impact Nelson's Bighorn Sheep indirectly through modification of habitat, but measures are being discussed and proposed through continuing consultation with the United States Fish & Wildlife Service to mitigate any potential impacts to a level below significance.

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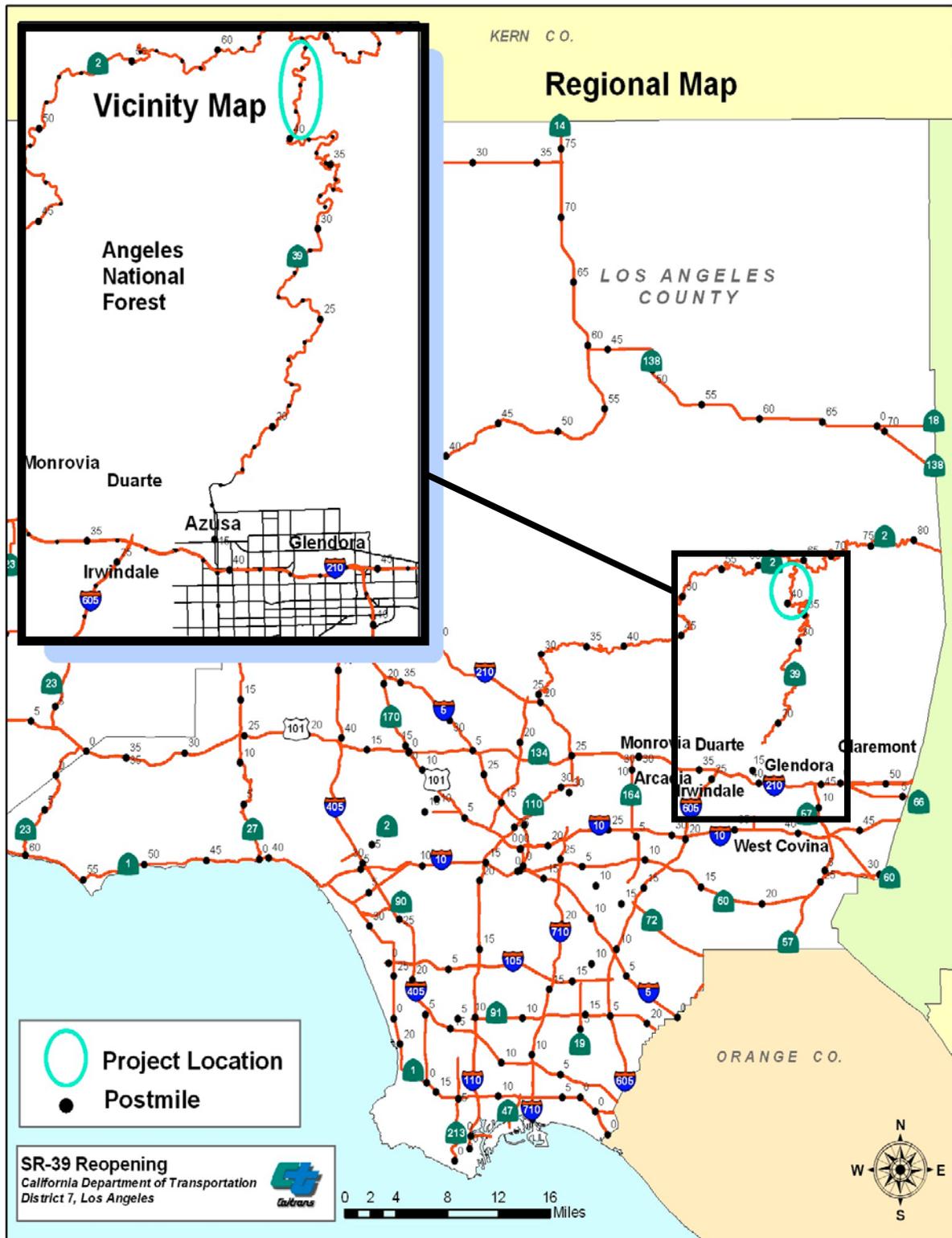
CHAPTER 1 | PROPOSED PROJECT

1.1 INTRODUCTION

The California Department of Transportation (Caltrans) proposes to rehabilitate and reopen a 4.4 mile segment of State Route-39 (SR-39) from post mile 40.00 to post mile 44.40, in the Angeles National Forest, in Los Angeles County. The said segment has been closed to public highway traffic since 1978 as the roadway had sustained extensive damage as a result of erosion dating from 1978 to 2005. Since 1990, the Caltrans Division of Maintenance has rebuilt the roadway at Snow Spring, making it traversable throughout the length of the project area. Maintenance activities also included the rebuilding of the roadway at Snow Spring to make it traversable throughout the length of the project area, the cleaning of drainage culverts, and the erection of a dirt berm. These past improvements have made the roadway passable, but it is constricted at it approaches its northerly terminus, and open only to emergency service vehicles. The rehabilitation and reopening of this segment is important in the enhancement of access and services, and a reduction in response times for the United States Forest Service (USFS), the Los Angeles County Sheriff's Department, and other emergency service agencies in fire suppression, the protection of several watersheds, and search and rescue activities. The proposed project would also restore a vital traffic circulation connection between points north on State Route-2 (Angeles Crest Highway, or SR-2) and points south in the San Gabriel Valley along Interstate-210 (Foothill Freeway, or I-210). The proposed project would improve access for patrons of the numerous recreation areas within the Angeles National Forest, and provide as an economic benefit to the associated parks and businesses. The restored connection would be accessible to public highway traffic throughout the year, with seasonal closures during times of inclement weather. These closures would likely occur during the winter and early spring seasons. Figure 1-1 shows the project location and vicinity.

The Caltrans 2008 State Highway Operation and Protection Program (SHOPP) was prepared in accordance with California Government Code Section 14526.5, Streets and Highways Code Section 164.6, and the strategies outlined in Caltrans' Policy for Management of the SHOPP. The 2008 SHOPP is a 4-year program of projects related to collision reduction, bridge preservation, roadway and roadside preservation, and mobility enhancement as well as the preservation of other transportation facilities related to the state highway system. In 2008, the proposed project was included as part of a lump sum category LALS02, which is a SHOPP funding category for roadway rehabilitation. Currently, the project has been programmed in the SHOPP 2009/2010 fiscal year under the HA23 program.

Figure 1-1. Regional Project Location and Vicinity Map



Map created by Robert Wang/Caltrans Division of Environmental Planning

1.2 PURPOSE AND NEED

1.2.1 PURPOSE

State Route-39 is a north-south California State Highway that begins at State Route-1 (Pacific Coast Highway, or SR-1) at its most southerly point in Huntington Beach (Orange County), and in its original alignment, terminated at SR-2 at its most northerly point in the Angeles National Forest. In 1978, the northernmost 4.5 miles of SR-39 (including the connection to SR-2) were closed to public highway traffic because the roadway sustained extensive damage as a result of a massive rock and mudslide caused by heavy rains and floods. The roadway has remained closed to public highway traffic from approximately 1.8 miles west of Crystal Lake Road to the SR-2 junction because of continued erosion, but access to the closed segment was granted to emergency services and personnel in February 2003 after studies showed that reopening it would not pose any significant environmental impact.

SR-39 is one of the two major routes providing movement for fire suppression forces in the protection of several watersheds, and an important element in the Angeles Forest Highway County Recreational Plan. For residents of the San Gabriel Valley, it is key alternate access link to recreational areas (ski areas, resorts, campgrounds, etc.) in the Angeles National Forest. Elected officials and the public have repeatedly requested that this segment of the SR-39 be reopened for the benefit of both residents and tourists, but a need for more comprehensive environmental studies in the project study area, and competition with other regionally prioritized projects for funding have prevented timely implementation of SR-39 roadway improvements.

The purpose of this project is:

- to restore access and the through-traffic connection between I-210 and SR-2;
- to enhance access for fire suppression forces, search and rescue, and emergency personnel, including the USFS and the Los Angeles County Sheriff's Department, in order to improve safety and access
- to preserve the integrity of the existing highway and prevent further deterioration of the highway and its surrounding environs, per Section 100 of the California Streets and Highway Code; and
- to provide safe access for Caltrans maintenance crews, USFS, and Los Angeles County Public Works maintenance and emergency personnel

1.2.2 NEED

Compliance with California Streets and Highways Code, Sections 91 and 100

Section 339 of the California Streets and Highways Code designates SR-39 as a component of the State Highway System (SHS), and Section 91 further states that Caltrans shall improve and maintain state highways, including all traversable highways which have been adopted or designated as state highways by the commission, as provided in the code. Additionally, Section 100, states that Caltrans shall monitor the cumulative impacts of fragmented gaps in the state highway system to identify safety and long-term maintenance issues. Rehabilitating and reopening the closed segment of SR-39 would bring this roadway into compliance with the aforementioned laws as outlined in the California Streets and Highways Code.

Consistency with the Angeles National Forest Land Management Plan

Implementation of the proposed project would assist in satisfying goals and policies as outlined in the Angeles National Forest Land Management Plan through the enhancement of community protection and reduction in the risk of loss of human life, structures, improvements, and natural resources from wildland fire and subsequent floods. The proposed project would also improve opportunities for tactical operations and safety by providing for defensible space, and the enhancement of public and firefighter safety.

Enhanced Access for Wildfire Suppression, Watershed Protection, and Emergency Services

Wildfires are a major environmental hazard that cost California millions of dollars each year and contribute to the degradation of air quality and watersheds throughout the state. Existing conditions in the Angeles National Forest make it highly vulnerable to wildfires, especially in conjunction with Santa Ana weather events that combine high winds with low humidity. Twentieth-century forest management practices of fire exclusion have only exacerbated the situation with years of neglect causing an accumulation of forest fire fuels such as dead vegetation, biomass, and small diameter timber that threaten the ecological health of the Angeles National Forest and the Los Angeles River and San Gabriel River watersheds. Rehabilitation and reopening of this segment of SR-39 is key to the management of forest fuels by the USFS in proactive efforts to prevent wildfires. The proposed project is also vital in providing enhanced access for the Los Angeles County Sheriff's Department and other emergency personnel for search and rescue activities and a reduction in response times, especially to areas north of the closed segment of SR-39.

Local Geology, Slope Instability and Effects of Roadway Failures

The existing roadway on this segment of SR-39 is most degraded at the original drainages, which have reached their holding capacities and continue to cause excessive flooding and erosion. This issue creates cumulative effects on the surrounding environs, especially as debris, sediment, and boulders accumulate at these locations. Winter snow pack and the associated runoff make this particular segment prone to rock slides and other geological activity that may be avoided if the roadway and its appurtenant facilities were rehabilitated.

The need for access to this area of the Angeles National Forest has persisted for quite some time, and an effort was made to provide service access in 1990, which involved the blasting of large fallen rock, clearing of all drains, the construction of berms to channel runoff, and the sealing of cracks on the roadway to prevent additional damage. This level of maintenance continued each succeeding year until potential sensitive biological resources were discovered at Snow Spring in September 1994. At that time, all maintenance activities were halted, and the accumulation of debris and sediment at drainage points continues to worsen with each passing year. These blockages continue to impede necessary water flow, and cause extreme flooding of the roadway at times.

Current conditions within the closed segment of SR-39 continue to degrade to such a level that they may pose a safety hazard to maintenance crews and other users of the facility. With the roadway's closure, it has become an attraction to hikers, cyclists, and otherwise, making continued roadway maintenance urgent and necessary to ensure safety for all. The segment of SR-39 that this project proposes to rehabilitate and reopen does not meet Caltrans roadway standards. The roadway is fragmented with segments badly fractured and is constricted or impassable as illustrated in Figure 2. The rehabilitation of the roadway and roadside facilities as proposed would bring the closed segment of SR-39 up to Caltrans standards, as specified in Sections 91 and 100 of the California Streets and Highways Code.

Figure 1-2. View of Constricted/Impassable Segment of SR-39



Photography by Skylar Feltman, Caltrans District 7 Division of Environmental Planning, 2008.

Highway Maintenance Worker Safety

Volatile conditions along the closed segment have prompted the need for emergency maintenance, especially at Snow Creek. Highway maintenance workers are responsible for carrying out measures to prevent further erosion and degradation of the facilities and the safety of these workers have become an area of concern. Many rockfall-related incidents have been reported by Caltrans highway maintenance workers as exposure to such geological events is high. These workers perform duties within the most vulnerable rockfall areas, especially in the removal of fallen rock from the roadway and when working behind protective berms. Oftentimes, highway maintenance workers must remove unstable rocks by scaling cliffs and hillsides, knocking down precariously situated rocks and boulders to the roadway below. General maintenance and emergency traffic movement through the area is a safety concern as well, especially when unexpected rockfall prompts evasive maneuvers of associated vehicles.

Regional Traffic Circulation and Economic Development

As previously discussed, the proposed project would restore a connection that is vital to the reduction of response times for fire suppression and emergency services. SR-39 is an important element in the Angeles National Forest Land Management Plan, and is a key access link for the residents of the San Gabriel Valley for recreational purposes. The restored connection would be accessible to public highway

traffic throughout the year, with seasonal closures during times of inclement weather. These closures would likely occur during the winter and early spring seasons.

Currently, the closure of this segment of SR-39 creates unnecessary out-of-direction travel that would be alleviated with the implementation of the proposed project. Restoring the SR-39 connection between I-210 in the south and SR-2 in the north would provide a 26-minute commute savings between Azusa and Wrightwood, and would reduce current out-of-direction travel on typical routes. In this case, the typical routes are I-210 from Azusa and I-10 from Los Angeles to I-15, with a connection to SR-2 and Wrightwood via SR-138. Any reduction in out-of-direction travel would have a positive effect in terms of energy conservation, vehicular emissions, and a reduction in greenhouse gases. Additionally, the proposed project would restore a much needed connection and link in the regional traffic system, which may reap economic benefit on facilities within the Angeles National Forest (parks/campgrounds).

Existing and Modeled Traffic Volumes

Supporting traffic data is limited because of the nature of the proposed project (opening a previously closed segment of highway) and the amount of time that has passed since the roadway has been passable and operable. In 1977, the Average Annual Daily Traffic (AADT) on the segment of SR-39 between Crystal Lake Road and SR-2 was 200 vehicles. At segments in the lower portions of the canyon (post mile 25.7), SR-39 had an AADT of (800) vehicles in 1998. Los Angeles Area Regional Transportation Study (LARTS) 2030 Regional Transportation Plan (RTP) modeling was performed that shows that AADT would be 2876 vehicles for the year 2030 assuming the proposed project was implemented and the flow of traffic continued through the previously closed segment of SR-39 to SR-2. There are no available records for the Traffic Accident Surveillance and Analysis System (TASAS) for this segment of SR-39 because the closure of this segment predates the implementation of this monitoring system.

1.3 PROJECT DESCRIPTION

Caltrans proposes to rehabilitate 4.4 miles of the closed highway located on SR-39, from post mile 40.00 (5 miles north of Crystal Lake Campground) to post mile 44.40 (intersection of SR-39 and SR-2)

Rehabilitation activities include:

- reconstruction of culverts;
- construction of new retaining walls;
- widening of the shoulder at the SR-39/SR-2 intersection;
- installation of new metal-beam guardrails;
- maintenance of drainage inlets at each end of the closed segment and at Snow Spring; and
- repaving of the roadway within project limits

Alternatives

This section describes the proposed action and the design alternatives that were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. The alternatives are Alternative 1 (the No-Build Alternative), and the three build alternatives; Alternative 2, Alternative 3, and Alternative 4.

Alternative 1 | No-Build Alternative

The No-Build alternative proposes to maintain the existing conditions of the roadway without any improvements. This alternative is not recommended since it does not reopen the closed section of SR-39 or address persisting safety issues that the proposed project intends to resolve.

Alternative 2 | Rehabilitate roadway/roadside facilities, install geosynthetic reinforcement at Snow Spring

Alternative 2 proposes to reconstruct the washed out and damaged SR-39 roadway section for approximately 2,000 linear feet. At the location of the most significant damage, the Snow Spring Slide area (post miles 42.20 to 42.37), this alternative would install geosynthetic reinforcement to a depth of 29.5 feet below the roadway level. It would construct a 20-foot rock catchment area. There would be a new 6.6-foot-deep subdrain at the bottom of the geosynthetic reinforcement. New K-rail and a rock-fall fence would be installed. The existing catch basis would be replaced with a corrugated metal pipe.

At post miles 40.96 to 40.97, a mechanically stabilized earth wall would be constructed to replace the existing, damaged crib wall.

Alternative 2 would also include the following components, which are common to all of the build alternatives:

- reconstruction of the washed out and damaged road section
- installation of rock fall protection (rock fall fencing or rock scaling and rock fall drapery) at eight locations
- construction of a 233-foot rock shed structure at one location to provide safety protection with rock bolts to stabilize rocks on the upslope;
- replacement of existing damaged steel crib walls with soldier pile retaining walls at three locations;
- replacement of existing damaged steel crib walls with soldier pile retaining walls with tiebacks at one location;

- construction of soldier pile retaining walls to stabilize the embankment at three locations;
- construction of soldier pile retaining walls with tiebacks to stabilize the embankment at one location;
- construction of a reinforced slopes with geo-grid to stabilize the embankment at two locations;
- repair of rubble masonry wall (Type 1) at ten locations;
- repair of rubble masonry wall (Type 2) at two locations; and
- repair French wall railing.

The cost for Alternative 2 is estimated to be \$53,000,000 in 2008 dollars.

Alternative 3 | Rehabilitate roadway/roadside facilities, construct concrete-box-girder bridge at Snow Spring

Alternative 3 proposes to reconstruct the washed out and damaged SR-39 roadway section for approximately 1,300 linear feet, plus provide a new bridge at Snow Spring slide area. At this location, where the most significant damage has occurred, a concrete box girder bridge would be constructed to allow slide debris and heavy runoff to pass underneath the roadway. The existing catch basin and corrugated metal pipe would be removed.

Between post miles 40.96 to 40.97, a reinforced concrete slab bridge with spread footing on bedrock would be constructed to replace the existing, damaged crib wall.

Alternative 3 would include the same common components listed under Alternative 2.

The cost for Alternative 3 is estimated to be \$65,000,000 in 2008 dollars.

Alternative 4 | Rehabilitate roadway/roadside facilities, realignment of roadway at Snow Spring and post mile 42.20

Alternative 4 proposes to reconstruct the washed out and damaged SR-39 roadway section for approximately 2,000 linear feet, including realignment of the road near the Snow Spring slide area. At this location, where the most significant damage has occurred, the existing roadway would be realigned 16 feet toward the down slope by building a 890-foot mechanically stabilized earth wall along the roadway on the down slope side to support the realignment. The existing catch basin and corrugated metal pipe would be removed and replaced. A 20-foot rock catchment area would be constructed, along with a rock-fall fence. A 6.6-foot-deep subdrain would be installed at the bottom of the upslope.

Between post miles 40.96 to 40.97, a soldier pile retaining wall with anchor tiebacks would be constructed to replace the existing, damaged crib wall.

Alternative 4 would include the same common components listed under Alternative 2.

The cost for Alternative 4 is estimated to be \$50,000,000 in 2008 dollars.

Table 1-1. Comparison of Proposed Project Alternatives, Common and Unique Build Features

Improvements	No Build Alternative	Alternative 2	Alternative 3	Alternative 4
Install geosynthetic reinforcement to a depth of 29.5 feet below the roadway level at Snow Spring Slide		X		
Construct a 20-foot rock catchment area at Snow Spring Slide		X		
Install a 6.6-foot-deep subdrain at the bottom of the geosynthetic reinforcement at Snow Spring Slide		X		
Install K-rail and rock-fall fence at Snow Spring Slide		X		
Remove catch basin and replace with corrugated metal pipe at Snow Spring Slide		X		
Construct a mechanically stabilized embankment wall to replace the existing damaged steel crib wall at post miles 40.96 to 40.97		X		
Construct a concrete box girder bridge at Snow Spring Slide to allow slide debris and heavy runoff to pass underneath the roadway			X	
Remove catch basin and corrugated metal pipe at Snow Spring Slide			X	
Construct a reinforced concrete slab bridge with spread footing on the bedrock to replace the existing damaged steel crib wall at post miles 40.96 to 40.97			X	
Realign the existing roadway 16 feet toward the down slope at Snow Spring Slide by building an 890-foot mechanically stabilized earth wall along the roadway on the down slope to support the realigned roadway				X
Replace the catch basin and corrugated metal pipe with a 20-foot rock catchment area, a 6.6-foot-deep subdrain at the bottom of the upslope, and a rock-fall fence				X
Construct soldier pile walls with anchor tiebacks to replace the existing damaged steel crib wall at post miles 40.96 to 40.97				X
Reconstruction of washed out and damaged road section with a full structural section (4-inch aggregate base Class 3 and 1.20 feet of hot mix asphalt type B, with overlay of 4 inches of hot mix asphalt type B for approximately 2,000 feet.		X		X
Reconstruction of washed out and damaged road section with a full structural section (4-inch aggregate base Class 3 and 1.20 feet of hot mix asphalt type B, with overlay of 4 inches of hot mix asphalt type B for approximately 1,300 feet.				X
Installation of rock fall protection (rock fall fencing or rock scaling and rock fall drapery) at 8 locations (post miles 40.42 to 40.55, 40.73 to 41.03, 41.48 to 41.90, 41.95 to 42.05, 42.09 to 42.37, 42.79 to 43.28, 43.49 to 43.84, and 43.92 to 44.22)		X	X	X
Construction of a 233-foot rock shed structure at post miles 41.03 to 41.08, to provide safety protection, with rock bolts to stabilize rocks on the upslope		X	X	X
Replacement of existing damaged steel crib walls with soldier pile retaining walls at 3 locations (post miles 40.11 to 40.13, 40.33 to 40.35, and 42.83 to 42.84)		X	X	X
Replacement of existing damaged steel crib walls with soldier pile retaining walls with tiebacks at post miles 44.34 to 44.37		X	X	X
Construction of soldier pile retaining walls to stabilize the embankment at 3 locations (post miles 42.27 to 43.29, 43.94 to 43.96, and 44.06 to 44.07)		X	X	X
Construction of soldier pile retaining walls with tiebacks to stabilize the embankment at post miles 42.95 to 42.98		X	X	X
Construction of a reinforced slopes with geo-grid to stabilize the embankment at 2 locations (post miles 41.85 to 41.88 and 43.24 to 43.26)		X	X	X
Repair of rubble masonry wall (Type 1) at 10 locations (post miles 40.53 to 40.56, 40.60 to 40.63, 41.00 to 41.03, 41.04 to 41.06, 43.50 to 43.51, 43.51 to 43.52, 43.56 to 43.57, 43.58 to 43.59, and 43.60 to 43.62, and 43.72 to 43.76)		X	X	X
Repair of rubble masonry wall (Type 2) at 2 locations (post miles 44.22 to 44.23 and 44.25 to 44.26)		X	X	X
Repair French wall railing at post miles 43.35 to 43.46		X	X	X

Permits, Reviews, and Approvals Needed

The necessary permits, reviews, and approvals for construction of the proposed project are consistent across all build alternatives and are presented in the following table:

Table 1-2. Permits, Reviews, and Approvals Needed for All Build Alternatives

Agency	Permit / Review / Approval
United States Army Corps of Engineers (USACE)	Section 404 Permit Clean Water Act
Regional Water Quality Control Board (RWQCB) State Water Resources Control Board (SWRCB)	Section 401 Water Quality Certification Clean Water Act
Regional Water Quality Control Board (RWQCB) State Water Resources Control Board (SWRCB)	Section 402 Permit Clean Water Act
California Department of Fish and Game (CDFG)	Streambed Alteration Agreement Fish and Game Code, Section 1602
United States Fish and Wildlife Service (USFWS)	Anticipated Informal consultation Federal Endangered Species Act
United States Fish and Wildlife Service (USFWS)	Anticipated Formal consultation Federal Endangered Species Act
United States Forest Service (USFS)	Biological Assessment/Biological Evaluation (BA/BE) Submission of BA/BE report and consultation

Related Caltrans Projects

EA 1X322 | State Route-39 Storm Damage Repair

Post Miles: 34.16 and 34.30

Description: Slope repair, construction of soldier pile walls at 2 locations

Construction date: May 2009

EA 2X160 | State Route-39 Storm Damage Repair

Post Miles: 40.00 to 44.40

Description: Removal of debris from roadway, post mile range 40.00 to 44.40

Construction date: Completed June 2008

EA 2X280 | State Route-39 Storm Damage Repair

Post Miles: 32.50 to 44.40

Description: Repair damaged drainages and roadway damage, post mile range 32.50 to 44.40

Construction date: To be determined

CHAPTER 2 | AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

This chapter provides a summary of analysis performed by an interdisciplinary team for the proposed project, within the context of the human and physical environment. The ensuing discussion provides the regulatory framework and language as it pertains to each resource or technical specialty, and a survey of the existing conditions or potentially affected environment. This chapter fully discloses any potential environmental effects, and makes recommendations, if necessary, to avoid, minimize, or compensate for any effects or losses. As part of the scoping and environmental analysis conducted for the proposed project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document:

Coastal Zone | The proposed project does not fall within a Coastal Zone.

California has developed a coastal zone management plan and has enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those for the Coastal Zone Management Act (CZMA); they include the protection and expansion of public access and recreation, the protection, enhancement and restoration of environmentally sensitive areas, protection of agricultural lands, the protection of scenic beauty, and the protection of property and life from coastal hazards. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act.

Wild and Scenic Rivers | The proposed project would not affect a Wild and Scenic River or any rivers under study for designation as a Wild and Scenic River.

Projects affecting Wild and Scenic Rivers are subject to the National Wild and Scenic Rivers Act (16 USC 1271) and the California Wild and Scenic Rivers Act (Pub. Res. Code Sec. 5093.50 et seq.). There are three possible types of Wild and Scenic Designations:

- Wild: undeveloped, with river access by trail only;
- Scenic: undeveloped, with occasional river access by road; and
- Recreational: some development is allowed, with road access.

Farmlands | The proposed project would not result in the early termination of lands under the Williamson Act contracts.

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, 7 USC 4201-4209; and its regulations, 7 CFR Part 658) require federal agencies, such as the Federal Highway Administration (FHWA), to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. The proposed project would not result in the early termination of lands under the Williamson Act contracts.

Timberlands | The proposed project does not fall within Timber Production Zones (TPZ), and would not pose significant impacts to forest resources or substantial conversion of timberlands.

The California Timberland Productivity Act (TPA) of 1982 (Government Code Sections 51100 et seq.) was enacted to help preserve forest resources. Similar to the Williamson Act, this program gives landowners tax incentives to keep their land in timber production. Contracts involving Timber Production Zones (TPZs) are on 10-year cycles.

Relocations | The proposed project would not involve any residential or commercial displacement or relocation.

The California Department of Transportation (Caltrans) Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

Paleontology | The proposed project would not pose any significant effects to paleontological resources.

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects. (e.g., Antiquities Act of 1906 [16 USC 431-433], Federal-Aid Highway Act of 1935 [20 USC 78]). Under California law, paleontological resources are protected by the California Environmental Quality Act, the California Code of Regulations, Title 14, Division 3, Chapter 1, Sections 4307 and 4309, and Public Resources Code Section 5097.5.

Availability of Technical Studies/Reports for Public Review

The ensuing discussion as reported in this Environmental Impact Report/Environmental Assessment is based on technical studies prepared by an interdisciplinary team for the proposed project. All technical studies and reports are available for public review (reference List of Technical Studies) by request, or at the following locations:

- **Caltrans District 7 Headquarters**
100 South Main Street; Los Angeles, California 90012
- **Azusa City Hall**
213 East Foothill Boulevard; Azusa, California 91702
- **City of Azusa Public Library**
729 North Dalton Avenue, Azusa, California 91702

2.1 HUMAN ENVIRONMENT

The forthcoming discussion of the proposed project within the context of the human environment has been excerpted and adapted from the Community Impact Assessment Report (ICF Jones & Stokes, September 2008) and the Visual Impact Assessment Report (Caltrans, October 2008) completed for the proposed project, as well as research performed by the Caltrans Division of Environmental Planning. This discussion presents existing and future land use in the project study area, the proposed project's consistency with state, regional, and local plans and programs, and the impact the proposed project may have on parks and recreation. Additionally, it presents data analyzed related to community impacts such as community character and cohesion, utilities and emergency services, traffic and transportation (including pedestrian and bicycle facilities), and potential effects to visual and cultural resources.

2.1.1 LAND USE

Affected Environment

Existing Land Use . Los Angeles County has 4,061 square miles of land area. The Los Angeles County General Plan characterizes land use patterns within the county and establishes designated land uses, which include Rural, Residential, Commercial, Industrial, and Open Space. The proposed project falls within an area designated as Open Space within the Angeles National Forest.

Updated in 1986 as part of the Los Angeles County General Plan, the Antelope Valley Area Plan characterizes land use patterns and establishes designations for a large portion of northwestern Los Angeles County. Within the Antelope Valley Area, the predominant urban land uses include agricultural uses, residential uses, and military reservations. Other predominant uses include wilderness and open space areas. This includes the Angeles National Forest, which encompasses much of the southern portion of the Antelope Valley Area and the area surrounding the proposed project.

Angeles National Forest. The Angeles National Forest encompasses approximately 1,036 square miles of land (662,983 acres) administered by the United States Forest Service (USFS), with local headquarters in the City of Arcadia. According to the Land Management Plan for Angeles National Forest, eight general land use zones have been identified within. These zones, in order of decreasing land use intensity, are shown in the following table.

Table 2-1. Angeles National Forest Land Use Zones and Distribution

Forest Area	Acreage	Percent of Total Forest Area (approx.)
Developed Area Interface (DAI) -Areas adjacent to communities or concentrated use areas and developed sites with more scattered or isolated community infrastructure.	85, 828	12.9
Back Country (BC) -Areas of the national forest that are generally undeveloped and with few roads.	161,392	24.3
Back Country Non-Motorized (BCNM) - Areas of the national forest that are generally undeveloped with no roads.	248,219	37.5
Back Country Motorized Use Restricted (BCMUR) -Areas of the national forest that are generally undeveloped and with few roads (facilities in some remote areas).	52,971	7.9
Critical Biological (CB) -Areas of the national forest managed for the protection of species at risk.	3,920	0.59
Recommended Wilderness (RW) -This zone includes land that the USFS is recommending to Congress for wilderness designation and will be managed in the same manner as existing wilderness.	13,231	1.99
Existing Wilderness (EW) -This zone includes Congressionally designated wildernesses. Only uses consistent with all applicable wilderness legislation and the primitive character are allowed in existing and recommended wilderness.	81,924	12.3
(San Dimas) Experimental Forest (EF) -Research and demonstration area; generally closed to the public except by permit	15,498	2.3
Total	662,983	100

Source: United States Forest Service, 2005.

The proposed project falls entirely within the Angeles National Forest, and the specific land use designations as presented in [Table 2-1](#) are applicable. The following [Table 2-2](#) illustrates land use in the immediate vicinity of the proposed project area in more detail.

Table 2-2. Land Use in the Immediate Vicinity of the Proposed Project

Area	Land Use
Crystal Lake	Developed Area Interface and Back Country Non-Motorized The southern terminus of the proposed project is adjacent to Crystal Lake. This area includes public recreation and camping facilities operated by the USFS
North-South Segment of SR-39	San Gabriel Wilderness (west of SR-39) The San Gabriel Wilderness borders SR-39 to the west, with restricted public access. Developed Area Interface and Back Country Non-Motorized (east of SR-39) A continuation of the Crystal Lake development area interface zone; a variety of hiking access trails are available to the east of the proposed project.
SR-2	Developed Area Interface Intersection of SR-2 and AR-39; public parking and recreational day-use hiking trails.

Source: United States Forest Service, 2005; ICF Jones & Stokes, 2008.

Future Land Use and Development. According to the USFS, the majority of the approximately 3 million visitors to the Angeles National Forest annually are residents from adjacent communities.¹ The forest is not a major vacation destination for tourists outside of the surrounding region; therefore, the proposed

¹ Dumpis, Marty. Deputy forest supervisor. Angeles National Forest. August 6, 2008— telephone conversation.

project is not expected to draw substantial numbers of new visitors to the area. The majority of the use of SR-2 and the currently open portions of SR-39 comes from recreational motorists, including motorcyclists, who travel along these routes. The following Table 2-3 presents development trends in the project vicinity.

Table 2-3. Development Trends in Project Vicinity

State Clearinghouse Number	Lead Agency	Project Title	Description	Environmental Document Type	Date Received
2008111010	Caltrans #7	North Fork San Gabriel River Bridge Scour Mitigation/Seismic Retrofit	The California Department of Transportation (Caltrans) is formally initiating studies for an Initial Study/Environmental Assessment for the proposed improvements to the North Fork San Gabriel River Bridge (Bridge No. 53-2245). Two alternatives are proposed to mitigate the potential scour problem at the North Fork San Gabriel Bridge. Alternative 1 consists of scour mitigation, seismic retrofit, and bridge rail replacement. Additionally, this alternative proposes to construct steel column casings, footing retrofit with steel piles, retaining walls along the stream, check dams, and rock slope protection. Alternative 2 proposes a bridge replacement on the same alignment.	CON	10/31/2008
2008088343	Resources Agency, The	Canyon Inn Acquisition (to become part of the Azusa River Wilderness Park)	The project is the acquisition of 26 acres which is partially developed. The Watershed Conservation Authority (WCA) proposed to acquire the property mainly for open space and habitat enhancements.	NOE	8/29/2008
2008011046	Azusa Redevelopment Agency	Target Store Redevelopment Project	The proposed project would develop an approximately 168,000-square-foot Target retail store, including 420 parking spaces. The proposed project would reach two stories in height. The Target sign tower, located above the main store entrance, would reach approximately 69 feet in height. Parking spaces and a receiving and loading dock would be located at-grade beneath the main sales and storage floor located on the second level. Additional angled parking spaces would be provided by the City and located adjacent to the project site, along San Gabriel Avenue. Vehicles would access the at-grade parking area from 9th Street, Azusa Avenue, and San Gabriel Avenue. Trucks would access the receiving and loading dock by entering on San Gabriel Avenue and exiting on Azusa Avenue. Several mature Coast Live Oak trees located on the east side of San Gabriel Avenue would be protected in place or removed and replaced per City ordinance. The proposed project would require an overlay zone, which would allow for additional building height, reduced parking stall size, and building articulation. Approximately 47,646 square feet of existing commercial and industrial buildings on the project site would be demolished with the construction of the proposed project.	NOD	8/8/2008
2008021111	Azusa, City of	2008 Plan Amendment to the Merged Central Business District and West End Redevelopment Project Area	The 2008 Plan Amendment proposes to: (1) add 15.1 acres of developed land to the existing Merged Project Area, which together is known as the Project Area; (2) increase the tax increment limit of the existing Merged Central Business District and West End Redevelopment Project Area; and (3) reinstate the Agency's eminent domain authority on two commercial properties. The purpose of the 2008 Plan Amendment is to eliminate the conditions of physical and economic blight that exist in the Project Area through rehabilitation, revitalization and reuse of existing properties. This involves the creation of programs to eliminate physical and economic blight, fund infrastructure improvements, and provide incentives that will stimulate economic revitalization of the Project Area. The actions are all being taken in accordance with the provisions of the California Community Redevelopment Law, Health and Safety Code Section 33000, et seq.	NOD	7/1/2008
2006031066	Azusa Light and Water Department	Azusa Light and Water Canyon Filtration Plant Membrane Treatment Upgrade and Expansion Project	The proposed project consists of the expansion of the existing 7.5 million gallons per day Canyon Filtration Plant. The project will include the construction of new treatment facilities and the installation of membrane filtration equipment and ancillary systems, which would allow the expansion of Plan capacity from 7.5 MGD to an initial capacity of 12 MGD and a final capacity of 16 MGD.	NOD	10/1/2007

State Route-39 Rehabilitation / Reopening Project

2007011054	Los Angeles County	Morris Dam Water Supply Enhancement Project	This project consists of rehabilitation/modification of Morris Dam's inlet/ outlet works, control systems and intake structure to allow for improved operations and conjunctive management of stormwater runoff and water conservation. The work includes replacing the outlet valves, replacing existing electrical and control systems with new ones, and modifying the intake structure to draw water from a higher elevation less susceptible to sediment impacts.	NOD	6/1/2007
2007058080	Fish & Game #5	Streambed Alteration Agreement (1600-2007-0089-R5) Regarding the Morris Dam Access Road Repair Project	The Operator proposes to alter the streambed and banks through the repair and upgrade of an existing maintenance access road which has severely eroded in the January 2005 storm events and washed out a 450-foot long segment of the 30-foot wide access road to the base of Morris Dam. The damaged road and its embankment need to be restored to provide vehicle access to the base of the dam for emergency repair and routine maintenance and dam safety monitoring activities. The scoured access road and earth bends will be restored with a combination of a 20-foot wide road and 18-foot wide steel bridge. The Operator shall not impact more than 0.31 acre of stream channel and associated non-vegetated riparian habitat. All disturbed portions of the stream channel or banks shall be restored to their original condition or better.	NOE	5/8/2007
2003061157	Pasadena Metro Blue Line Construction Authority	Gold Line Phase II Extension (Pasadena to Montclair)	Approved only a portion of overall project for implementation at this time - construction of approximately 11.4 miles of light rail transit (LRT) from Pasadena to the eastern boundary of Azusa (Segment 1 of overall project discussed in Final EIR). The majority of construction would take place within existing railroad right-of-way. The project would include new rail stations and parking in the cities of Arcadia, Monrovia, Duarte, Irwindale, and Azusa, and eight traction power substations along the route.	NOD	3/2/2007
2006078146	Metropolitan Water District of Southern California	San Gabriel Tower Communication Line Project	The Metropolitan Water District of Southern California's (Metropolitan) proposed project will consist of replacing the functions of an existing 1,500-foot communication cable with a radio communication system to remotely monitor and control flows to the San Gabriel Control Tower on the Upper Feeder and to Service Connection USG-3. Metropolitan regularly relies on this line to make changes in flow deliveries to the Upper San Gabriel Valley Water District. This project represents no significant modification to the system currently used to monitor and control flows and involves no expansion of existing use. Project activities involve the installation of a telephone pole supporting the hardware for a microwave radio link at a water tank.	NOE	7/17/2006
2003041187	Los Angeles County	San Gabriel River Corridor Master Plan	The San Gabriel River Master Plan was a stakeholder driven process that integrated over 130 projects that meet one or more of the Master Plan goals of enhancing habitat, recreation, open space, while maintaining and enhancing flood protection, water supply, and water quality. The Master Plan provides guidelines to help coordinate these projects and to facilitate the achievement of the shared vision and goals for the San Gabriel River corridor.	NOD	6/26/2006

2002071046	Azusa, City of	Rosedale (Monrovia Nursery Specific Plan) Revised Grading	On February 3, 2003, the Monrovia Nursery project received its entitlements, which comprised a General Plan Amendment, Zone Change, Specific Plan approval, Annexation, Development Agreement, and Vesting Tentative Map approval. These entitlements allowed the landowner, Monrovia Nursery, to construct a planned community comprised of up to 1,250 homes up to 50,000 sq ft of commercial, K-8 school, fire station, and an extensive system of parks and open space. An Environmental Impact Report (EIR) pursuant to CEQA, was prepared in connection with said entitlements, and was certified on February 3, 2003. Since the Approval date, the implementation of the project now known as Rosedale has diligently proceeded, and refinements to the various plans and studies have been completed. In managing the grading activities on the property, it was recently discovered that the shrinkage factor was overestimated, which resulted in the surplus of 450,000 cubic yards (CY) of soil material. The original project description upon which the EIR analysis was based assumed a balance condition between cut and fill; therefore no import or export of soil materials was anticipated and consequently the EIR concluded no significant environmental impacts would result from any off-site material transport. In order to manage the surplus soil material, the proposed amended grading plan would feature the following: 1. The grades of the project site would be increased by 5 to 10 feet over the entire site, beginning at approximately the center of the site and ending at the southerly boundary of the of the property. 2. The pad elevations in the Promenade area would increase by approximately 10 feet. 3. After re-grading the site and increasing the elevations, approximately 80,000 to 130,000 CY of soil material would remain to be exported.	NOP	6/13/2006
2006031066	Azusa Light and Water Department	Azusa Light and Water Canyon Filtration Plant Membrane Treatment Upgrade and Expansion Project	The proposed project consists of the expansion of the existing 7.5 million gallons per day Canyon Filtration Plant. The project will include the construction of new treatment facilities and the installation of membrane filtration equipment and ancillary systems, which would allow the expansion of Plan capacity from 7.5 MGD to an initial capacity of 12 MGD and a final capacity of 16 MGD.	Neg	3/15/2006
2002121092	Azusa, City of	Azusa Pacific University Specific Plan	The Azusa Pacific University has developed a Specific Plan for its main campus, located on two nearby sites known as the East Campus and the West Campus. Both campuses are located in the City of Azusa in Los Angeles County. The proposed Specific Plan consists of a series of projects for the campuses that involve demolition of some existing buildings, development of new buildings, renovation of several existing buildings, modifications to circulation, access and parking, and modification and expansion of other campus infrastructure. The development proposed under the Specific Plan is intended to accommodate the projected enrollment of approximately 8,484 students at the main campus over the next 15 to 20 years.	NOD	9/22/2005
2005098259	Fish & Game #5	Streambed Alteration Agreement (1600-2005-0489-R5) Regarding the San Gabriel Reach 40 Levee Repair Project	The Operator proposes to alter the streambed and banks through the repair and upgrade of an existing maintenance access road which has severely eroded in past storm events. The access road is used by County maintenance crew. Two locations along the levees of the San Gabriel River were severely scoured, approximately 750 feet by 50 feet of the left bank upstream of Rubber Dam No. 3, and 1,100 feet by 35 feet of the right bank downstream of Rubber Dam No. 3 were damaged and are in need of repair. The proposed project involves restoring the scoured levees back to pre-storm conditions. The restoration area of the two sites totals approximately 1.75 acres. Heavy equipment such as loaders and bulldozers will be used to repair the eroded levees using onsite material. Approximately 12,700 cubic yards of material will be redistributed and the entire project impact area will be 4.42 acres. If necessary, Public Works will import material from recent debris basin cleanouts to complete the levee repair project. Public Works will avoid impacts to the protected vegetated polygons within the channel during the levee restoration. The vegetated polygons within the impacted area will be protected by grading and forming sand islands around them.	NOE	9/19/2005

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2005078192	Fish & Game #5	Streambed Alteration Agreement (1600-2005-0310-R5) Regarding the Coldwater Canyon Road Repair Project	The Operator proposes to alter the streambed and banks to repair and maintain a pre-existing private dirt road that was damaged earlier this year due to the heavy winter storms so that residence, fire vehicles and other emergency vehicles can access residents in this area.	NOE	7/12/2005
2005028015	Water Resources, Department of	Morris Dam, No. 32-40	The retirement of three outlets and their valves. The rehabilitation of the spillway drum gates, and the rehabilitation of the three remaining outlets which includes the replacement of their valves.	NOE	2/2/2005
2002042138	Azusa, City of	Azusa City Library Project	Adoption of a relocation plan, prepared pursuant to state relocation guidelines, for the acquisition of four real properties to be used in the development of a 65,000 SF library.	NOD	9/23/2004
2004061014	Duarte, City of	2000-2005 Duarte Housing Element Update	The City of Duarte has adopted the 2000-2005 Housing Element Update and approved the Negative Declaration prepared for the project. The Housing Element Update was carried out pursuant to the update cycle for jurisdictions within the Southern California Association of Governments (SCAG) region.	Neg	6/2/2004
2003041009	Caltrans #7	State Route 39 Culvert Rehabilitation Project at Brown's Gulch	The project will reconstruct the culvert invert at the bottom of Brown's Gulch.	NOD	5/19/2004
2004038286	Toxic Substances Control, Department of	Tank Storage (TS) Piping Reconfiguration at Onyx Environmental Services L.L.C, Azusa Facility, Class 1* Permit Modification , Modificaion #32	The Onyx Environmental Services L.L.C., Azusa Facility has received permission to make the following changes in their facility and its operations plan: 1) an administrative change to one of the existing piping a) from the TS tanks to the transfer pumps, b) from the pump discharge to a jumper line and c) of the line to main feed tank for the distillation system.	NOE	5/11/2004
2003121054	Glendora, City of	Redevelopment Project No. 5	The proposed project will adopt and implement a Redevelopment Plan. The project will merge the Agency's four existing redevelopment areas in the City (Existing Project Area Nos. 1, 2, 3, and 4), including the tax increment caps for each area. The project will also add new territory, and establish the authority to purchase non-residential real property through eminent domain in all five areas.	EIR	4/5/2004
2003081144	Azusa, City of	City of Azusa General Plan and Development Code	Update and replace the City of Azusa's existing General Plan. The proposed General Plan includes provisions for the addition of approximately 3,400 dwelling units, 3,100,000 square feet of industrial space, 200,000 square feet of commercial/mixed use, and 524 acres of recreation space.	EIR	11/26/2003
2003064001	Army National Guard, California	Construction and Operation of the Los Angeles Armory in Azusa, California	Under the proposed project, the California Army National Guard would construct and operate the Los Angeles Armory in the City of Azusa, Los Angeles County, California. The 89,553-square foot Armory would be constructed over 18 to 24 months. The total surface area to be disturbed is an estimated 15 acres. The Armory would have a full-time staff of 20 employees. Approximately 650 soldiers would train at the installation within each month (on weekends only), and not all at the same time.	FIN	7/31/2003
2003078166	Toxic Substances Control, Department of	Onyx Environmental Services L.L.C., Azusa Facility, Class 2 Permit Modification, Modification #31	The Onyx Environmental Services L.L.C. Azusa Facility has requested a Class 2 Permit Modification to their Hazardous Waste Facility Permit (Permit). The modification consists of the following changes being made to their facility: 1) An administrative change of the first responder's address and telephone number in the Contingency Plan. 2) Modification of the existing Suction Line by adding an in-line strainer and isolation valve to the carbon-steel distillation column. 3) Replacement of the existing cooling tower. (This item is listed for information purposes only). 4) Change in form format of the Daily Facility Inspection Forms. 5) Addition of a glass distillation system.	NOE	7/10/2003

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2003038265	San Gabriel and Los Angeles Rivers & Mountains Conservancy	Prop 13 Grant to City of Azusa for proposed San Gabriel River Wilderness Park	Grant to City of Azusa from Proposition 13 (The Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act).	NOE	3/18/2003
2003019031	Fish & Game #5	Valleydale Storm Drain Project	Alter the streambed, currently concrete lined by increasing the flood protection by constructing reinforced storm drain line approximately 7,000 feet long, ranging from (in diameter) 36" to 66". In order to alleviate flooding at the intersection of Woodcroft Street and Lark Ellen Avenue. Valleydale Elementary School is affected by the floods occurring during the rainy season and is located at the Northeast of the intersection.	NOD	1/23/2003
2003018135	Toxic Substances Control, Department of	Onyx Environmental Services L.L.C., Azusa Facility, Class 1 Permit Modification, Modification #29 & #30	The Onyx Environmental Services L.L.C. Azusa Facility has requested a Class 1 Permit Modification to their Hazardous Waste Facility Permit (Permit). The modification consists of the following changes: 1) An administrative change of personnel and phone number to the Contingency Plan; 2) Addition of state waste code 792 to the permit; 3) A change of state waste code 371 to state waste code 271 to the Waste Analysis Plan (WAP), due to a typographical error; 4) Replacement of a can crusher unit with an equivalent model; 5) A waiver to the WAP which will remove the requirement for a Heat Value (BTU/lb) analysis for waste if a percent water analysis or the waste profile composition indicates the water content to be at or above 50percent.	NOE	1/13/2003

Source: CEQAnet Database, State of California Office of Planning and Research, SCH submissions, City of Azusa and Environs. Accessed 19 November 2009 at: <http://www.ceqanet.ca.gov/>

- CON = Early Consultation
- NOE = Notice of Exemption
- NOD = Notice of Determination
- NOP = Notice of Preparation
- EIR = Environmental Impact Report
- Neg = Negative Declaration
- FIN = Final Document
- MND = Mitigated Negative Declaration
- EA = Environmental Assessment
- Oth = Other Document

United States Forest Service Lands. According to the USFS, there are no plans for residential, commercial, or any other development in the immediate vicinity of the proposed project. There are no private in-holding properties (private property holdings within the boundary of USFS jurisdiction) in the nearby area; all of the surrounding land is owned by the federal government, and private development is generally not allowed. There are approximately five residential structures south of the proposed project along SR-39 that are seasonal residences under permit from the USFS.

Mount Waterman and Mount Kratka Ski Areas. Mount Waterman and Mount Kratka are privately owned ski areas located along SR-2, approximately four miles west of SR-39. These areas have plans for increased day use within their existing property boundaries. Additional expansion or physical development is prohibited due to the restrictions of the existing adjacent wilderness areas. Other private in-holdings along SR-2 include commercial facilities at Newcomb's Ranch, approximately 14 miles west of SR-39, and the community of Wrightwood, approximately 20 miles east of SR-39. Both of these areas are bounded by the Angeles National Forest and currently receive all of their visitors from SR-2. No known construction or expansion is planned for either location.

Consistency with State, Regional, and Local Plans and Programs

Caltrans 2008 State Highway Operation and Protection Program (SHOPP). This transportation program was prepared in accordance with California Government Code Section 14526.5, Streets and Highways Code Section 164.6, and the strategies outlined in Caltrans' Policy for Management of the SHOPP. The 2008 SHOPP is a 4-year program of projects related to collision reduction, bridge preservation, roadway and roadside preservation, and mobility enhancement as well as the preservation of other transportation facilities related to the state highway system. The proposed project is included as part of a lump sum category LALS02, which is a State Highway Operation and Protection Program (SHOPP) funding category for roadway rehabilitation.

Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP). SCAG is the metropolitan planning organization for six counties in Southern California: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The RTP is a long-term (minimum of 20 years) vision document that outlines transportation goals, objectives, and policies for the SCAG region.

SCAG's 2008 RTIP lists transportation projects proposed over a 6-year period, from fiscal year 2008/2009 to 2013/2014. The RTIP must include all transportation projects that require federal funding as well as all regionally significant transportation projects for which federal approval (by FHWA or the Federal Transit Administration, or FTA) is required regardless of the funding source.

While the proposed project is not listed individually in the RTP or the RTIP, according to the Air Quality Technical Study, the proposed project is included in the RTP and RTIP as a lump sum category of LALS02, a SHOPP funding category for roadway rehabilitation. Therefore, the proposed project is in conformance with both the RTP and RTIP.

Los Angeles County General Plan. According to California Government Code Section 65300, a general plan is the blueprint that guides the physical development of the county or city and any land outside its boundaries that bears relation to planning. It presents an overall vision for the jurisdiction and defines and establishes goals and policies to achieve that vision. The Los Angeles County General Plan was last updated and approved in 1980, but is currently under review in 2008 draft form. The proposed project is consistent with the Los Angeles County General Plan in regard to the management of National Forests (LUA17-A18) and Scenic Highways (LUA19-A20), where corridors are reviewed for visual consistency in regard to structures, landscaping, and grading, in particular. It is also consistent with the Los Angeles County General Plan in terms of circulation goals that seek to achieve a transportation system that is consistent with the objectives of the general plan, the needs of the residents, and responsive to the economic, environmental, energy conservation, and social needs of the local community and surrounding

areas. Finally, the proposed project is also consistent with safety goals that seek to strengthen the capability of county agencies to effectively respond to earthquake and non-earthquake-induced emergencies.

Angeles National Forest Land Management Plan. Implementation of the proposed project would satisfy the following goals and policies as outlined in the Angeles National Forest Land Management Plan:

- Enhance community protection and reduce the risk of loss of human life, structures, improvements, and natural resources from wildland fire and subsequent floods.
- Improve opportunities for tactical operations and safety near structures, improvements, and high resource values. By providing for defensible space, public and firefighter safety is enhanced.
- Local jurisdictional authorities, citizen groups, and the USFS act together to mitigate hazardous fuel conditions in areas surrounding urban interface, urban intermix, and/or outlying improvements.
- Transportation system of roads and trails is safe, affordable, and environmentally sound; responds to public needs; and is efficient to manage.

Parks and Recreational Facilities

Angeles National Forest. The proposed project is completely located within the Angeles National Forest, with an estimated 650,000 acres of recreational opportunity. The Angeles National Forest was established on July 1, 1908 and is located in the San Gabriel Mountains of Los Angeles County, just north of Metropolitan Los Angeles. The Angeles National Forest is headquartered in Arcadia, California, and is not just responsible for forest and resource management within, but also for management of watersheds within its boundaries to provide valuable water to Southern California, and to protect surrounding communities from catastrophic floods.

The land within the Forest is diverse, both in appearance and terrain. Elevations range from roughly 1,200 to 10,064 feet above sea level, with much of the Forest covered with dense chaparral that changes to pine and fir-covered slopes in higher elevations. The Pacific Crest Trail crosses the forest, which originates at the U.S. Border with Mexico to the northern border with Canada. Within the Forest there are roughly 36 picnic areas, 66 campgrounds, and two (2) ski areas.

Figure 1-3. Entrance to Crystal Lake Recreation Area



Photography by Erika Gallo, Caltrans District 7 Division of Environmental Planning 2008

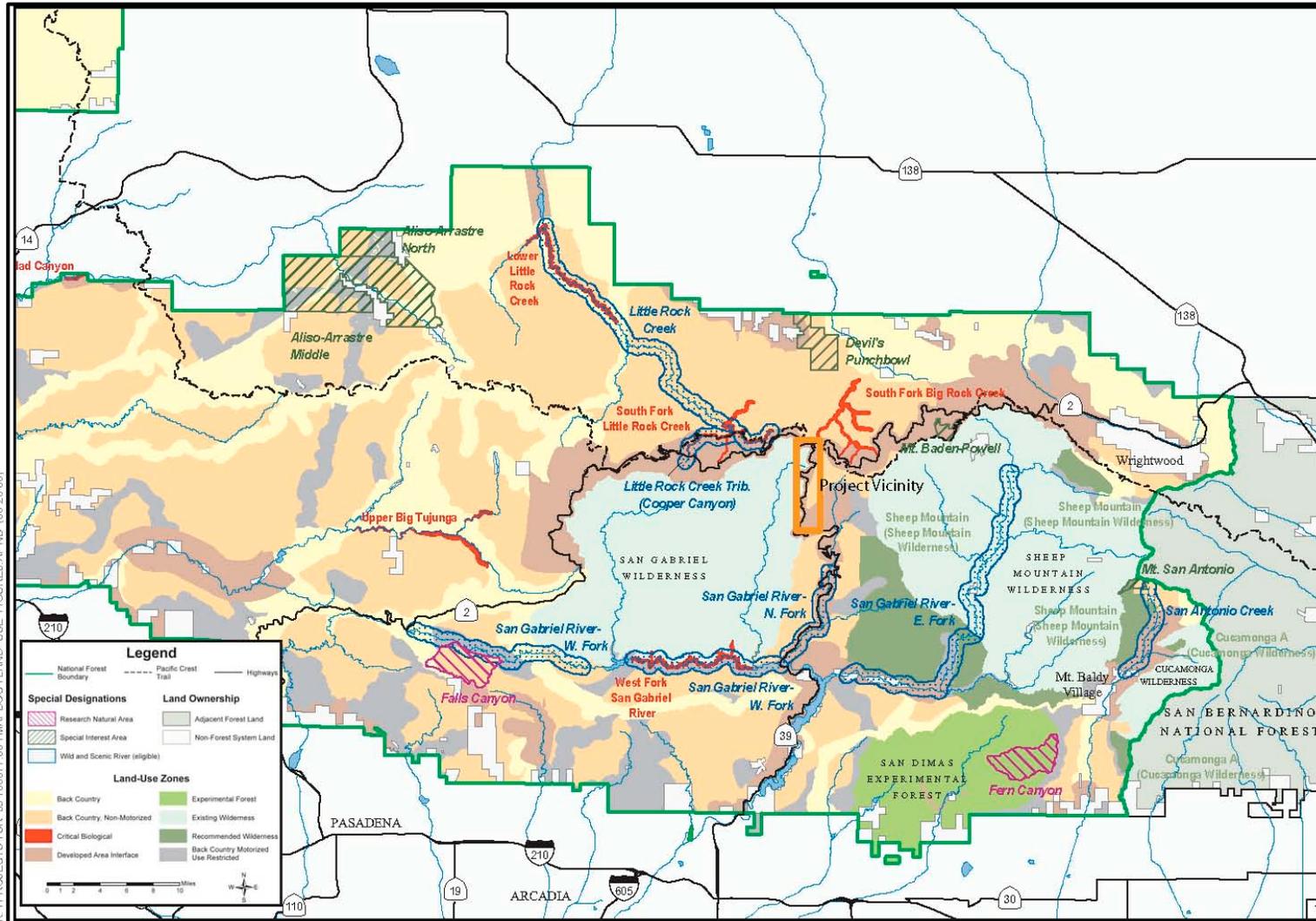
Crystal Lake Recreation Area. The Crystal Lake recreation area is located within the closed section of SR-39, and offers hiking camping, and other recreational opportunities. The following hiking and nature trails can be found in this area:

- Lake Trail
- Big Cieneca Trail
- Half Knob Trail
- Golden Cup Trail
- Pacific Crest Trail
- Windy Gap Trail
- Little Jimmy Trail Camp
- Pinion Ridge
- Mount Hawkins Trail
- Sunset Ridge Nature Trail
- Tototgna Nature Trail
- Cedar Canyon Trail
- Lost Ridge Trail
- Soldier Creek Trail

Crystal Lake is settled neatly in a bowl below the granite crags surrounding Mount Hawkins. Years of drought have reduced the lake's water levels which caused continued microbiological contamination of the water and rendered the lake unusable to swimmers. One of the most interesting features of the Crystal Lake Recreation Area is the amphitheatre which was built by the Civilian Conservation Corps and other agencies. The amphitheatre can seat about 200 individuals, and is often used by USFS personnel for lectures.

Section 4(f) Evaluation of Resources. Codified in federal law at 49 U.S.C. §303, Section 4(f) of the United States Department of Transportation Act of 1966 declares that "it is the policy of the United States government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Section 4(f) specifies that the Federal Highway Administration (FHWA) and other Departments of Transportation agencies (DOTs) cannot approve the use of land from a significant publicly owned public park, recreation area, wildlife or waterfowl refuge, or any significant historic site unless there is no feasible and prudent alternative to the use of land; and the action includes all possible planning to minimize harm to the property resulting from use. The proposed project simply aims to rehabilitate and reopen an existing roadway, and according to an engineering report prepared by Caltrans District 7, Division of Project Development (Draft Project Report, July 2008), no acquisition of right-of-way (a strip of land granted for a rail line, highway, or other transportation facility) is required in the implementation of the proposed project; therefore, there are no potential impacts to Section 4(f) protected property (Direct Use, Temporary Occupancy, or Constructive Use).

Figure 1-4. Land Use—Project Study Area/Angeles National Forest



Map created by ICF Jones & Stokes utilizing USFS data (2005)

Environmental Consequences

Compatibility with Existing Land Use. The No-Build Alternative would not involve the construction or improvement of any new highway facilities and, therefore, would have no impact upon existing land use patterns. Each of the build alternatives for the proposed project would involve the rehabilitation of a highway in a wilderness region. The project proposes improvements to an existing transportation facility to improve emergency access and allow safe and reliable public access; these improvements would have a beneficial impact on local and regional recreational opportunities. The proposed project is an improvement to an existing transportation facility and would not introduce new land uses or encourage growth.

Due to the restricted nature of the federally-owned national forest, there are no major construction projects planned on or near the proposed project. Furthermore, the rehabilitation and reopening of SR-39 would not substantially increase public attraction to or development pressure on the area because the route would continue to serve as a remote scenic highway and would not provide direct or convenient access to any existing or proposed population or commercial activity centers. The reopening of SR-39 to through traffic may increase local and regional tourist use of this scenic route and encourage additional public use of the recreational facilities at the Mount Waterman and Mount Kratka ski resort areas to the west of SR-39 or SR-2 during the winter season. However, no residences or new substantial commercial facilities are planned in these areas.²

All construction and highway improvements would occur within the existing right-of-way. They would not require property takes of surrounding property and would not cause any displacement or disruption of business, residences, or existing neighborhoods. Since the proposed project is in an area of wilderness in the Angeles National Forest, there are no private residences or businesses in the immediate vicinity. According to the Land Management Plan for the Angeles National Forest, the proposed project area is situated in an area designated as Developed Area Interface, just to the east of Existing Wilderness. Construction activity would occur primarily within the existing right-of-way and would not significantly affect surrounding land areas.

Avoidance, Minimization, and/or Mitigation Measures

Because the proposed project is consistent with existing land use and plans, and poses no potential significant effects to land use, there are no avoidance, minimization, and/or mitigation measures proposed. To preserve the integrity and quality of the wilderness environment surrounding the proposed project, all applicable construction best management practices (BMPs) would be implemented during construction.

² Dumpis, Marty. Deputy forest supervisor. Angeles National Forest. August 6, 2008— telephone conversation.

2.1.2 GROWTH

Regulatory Setting. The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act (NEPA) of 1969, require evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations, 40 CFR 1508.8, refer to these consequences as secondary impacts. Secondary impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project’s potential to induce growth. CEQA guidelines, Section 15126.2(d), require that environmental documents “...discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment...”

Affected Environment

The following discussion of growth impacts has been adapted and excerpted from the Community Impact Analysis (ICF Jones & Stokes, 2008) prepared for the proposed project.

Regional and Local Growth Projections. Demographic project data were collected from the Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP). According to the 2008 SCAG RTP, the total population for Los Angeles County was 10,034,571 in 2003. This number is projected to be 12,338,620 persons in 2035, an increase of about 22.96 percent. The number of households in 2003 for the county was 3,177,439. By 2035, this number is projected to be 4,003,501, or an increase of 25.99 percent.

Local area demographics in the study area were determined using census tract 9300 (324 square miles, or approximately 207,226 acres), which encompasses the project area and most of the Angeles National Forest. According to the 2008 SCAG data, the total population of census tract 9300 was 471 persons in 2003. The total population of the same census tract is projected to be 991 persons by 2035, an increase of 110 percent. The number of households in this area in 2003 was 146. This number is projected to grow to 395 by 2035, an increase of 170 percent.

Table 2-4. Existing/Projected Population, Housing and Employment, Census Tract 9300

Geographic Area		2005	2015	2035
Census Tract 9300	Population	480	706	991
	Households	149	266	395
	Employment	73	286	412

Source: Southern California Association of Governments, Regional Transportation Plan 2008

Businesses and Employment. The Community Impact Assessment prepared for the proposed project indicates that there are few businesses or places of employment in the study area, which is wholly contained within the Angeles National Forest. The ski resorts at Mount Waterman and Mount Kratka may provide limited seasonal employment during winter months, and other commercial centers, such as Newcomb’s Ranch (west of SR-39 along SR-2) and Wrightwood (east of SR-39 along SR-2) provide limited employment opportunities. However, economic census data were not available that were specific to the study area. The closest adjacent community is the City of Azusa, just south of the project study area at the foot of the San Gabriel Mountains. The proposed project will not pose any negative impacts

on local business and employment, but may have positive effects rather, on seasonal recreational activities and access. While the restored connection would be accessible to public highway traffic throughout the year, seasonal closures may occur during times of inclement weather. These closures would likely occur during winter and early spring.

Environmental Consequences

Project Related Growth Inducement. All aforementioned regional projections are based on ambient growth alone, without the implementation of the proposed project. It is not expected that the implementation of the proposed project would have any significant effect on regional and local growth patterns beyond existing projections. In California, Caltrans projects are rarely designed to encourage or facilitate growth, rather most improvement projects are proposed in response to local and regional needs that may be a result of growth that has already occurred, or projected to occur. There is some long-term potential that economic pressures for growth in business and tourist services could occur.

The No-Build Alternative would have no meaningful impacts related to growth because no project-related activity would occur. No growth-related impacts are anticipated under each of the Build Alternatives and because the proposed project simply involves the rehabilitation and reopening of an existing transportation facility.

Furthermore, the surrounding area is wilderness, which is administered by the USFS; new private development is generally not allowed. However, the reopening of SR-39 to through traffic may increase local and regional tourist use of this scenic route and encourage additional public use of the recreational facilities at the Mt. Waterman and Mt. Kratka ski resort areas. Given its limited scope and the protected wilderness status of the surrounding area, the Community Impact Assessment prepared for the proposed project indicates that implementation would not be growth inducing.

While the USFS maintains comprehensive resource management programs for the majority of this area, there are nearly 40,000 acres of privately owned "in-holdings" within the forest boundaries. For these areas, the county retains primary responsibility in terms of land use regulation. All development proposals are subject to CEQA/NEPA regulations and applicable Rural Community and Special Management Area performance standards and criteria. All proposed private and public development projects within the Angeles National Forest are subject to review by both the Regional Planning Commission and the USFS for compliance with applicable land use and resource management plans.

Avoidance, Minimization, and/or Mitigation Measures

Because this project simply proposes to rehabilitate and reopen an existing segment of SR-39, and the surrounding wilderness land is protected, no significant growth inducing effects are anticipated in the implementation of this project. Subsequently, there are no avoidance, minimization, and/or mitigation measures proposed.

2.1.3 COMMUNITY IMPACTS

The discussion of potential impacts to the community in the project study area includes the environmental regulations the proposed project is subject to and the survey of the potentially affected environment. Where necessary, measures are proposed to avoid, minimize, and/or mitigate any potential effects to a level below significance.

COMMUNITY CHARACTER AND COHESION

Regulatory Setting. The National Environmental Policy Act of 1969 as amended (NEPA), established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 U.S.C. 4331[b][2]). The Federal Highway Administration in its implementation of NEPA (23 U.S.C. 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as, destruction or disruption of human-made resources, community cohesion and the availability of public facilities and services.

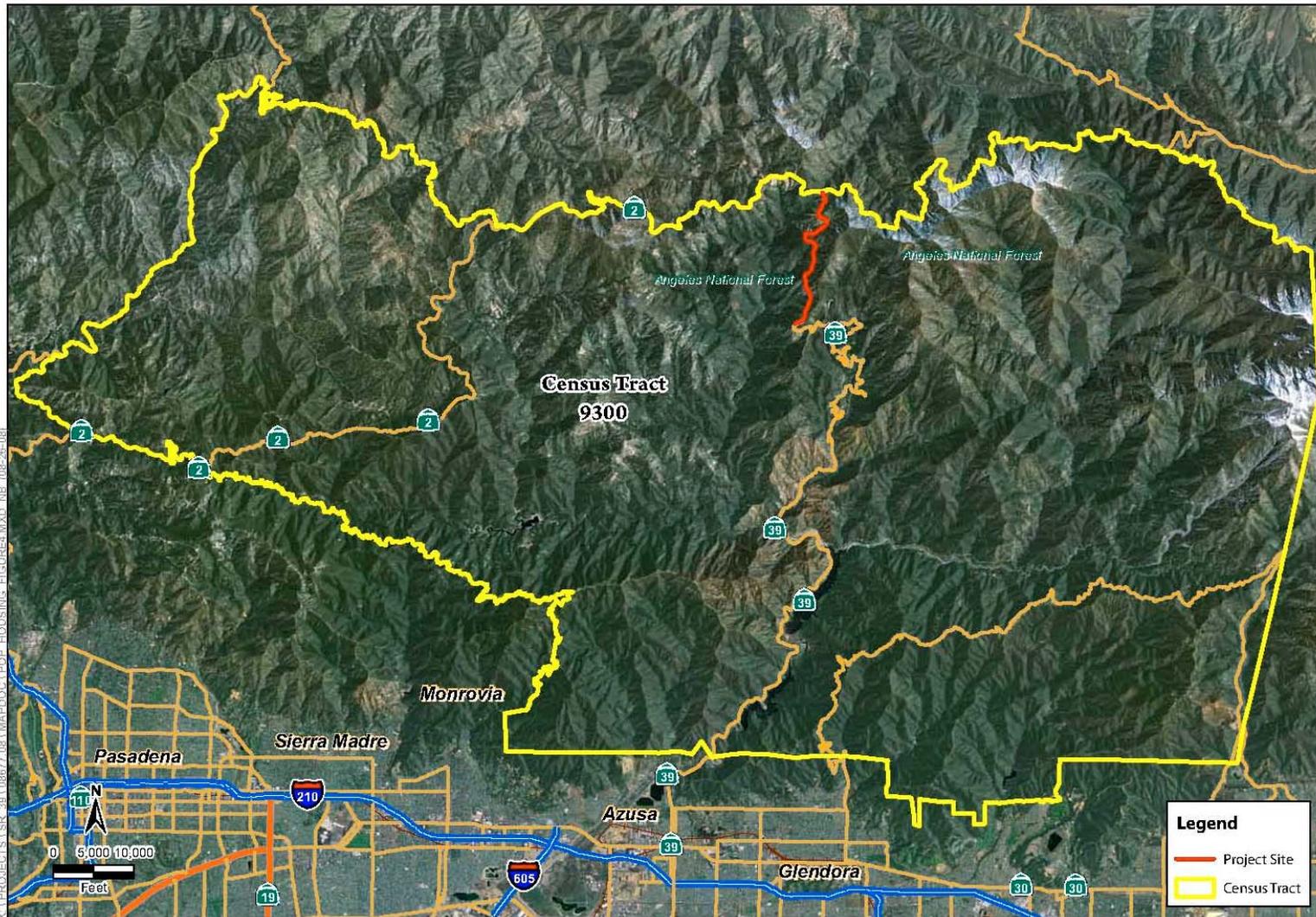
Under the California Environmental Quality Act, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

Affected Environment

A population and housing study area has been defined by the 2000 U.S. Census of Population and Housing (2000 Census) to include those census areas that are located within 0.5 mile of the proposed project. Because the proposed project is in a rural, undeveloped area, the census tract is large, and consists of only one block group, rather than a division of small block group areas. Therefore, the study area is defined by the boundaries of census tract 9300, as presented in Figure 2-1.

The study area is intended to encompass an area where the potential impacts, if any, of construction and operation of the proposed project would be reasonably foreseeable. In addition to the census-tract-level demographic data for the proposed project area, demographic data for Los Angeles County is also provided for comparison purposes.

Figure 2-1. Population and Housing Study Area



Map created by ICF Jones & Stokes utilizing data from ESRI Streetmap USA (2007)

Population Characteristics. According to U.S. Census 2000 data, the project study area had a total population of 685 persons, the largest group of which was persons of white origin (non-Hispanic), at 63.65 percent, more than twice that of Los Angeles County (31.09 percent). Hispanic or Latino persons composed the next largest group, 112 persons, or 16.35 percent, which, overall, is significantly lower than Los Angeles County (44.56 percent). Percentages for other groups, including Native American, Asian, Native Hawaiian/Pacific Islander, other, and multiracial groups, were comparable to Los Angeles County. Of those residing within the study area, 19.85 percent were under 18 years of age in 2000, which is a lower percentage than Los Angeles County as a whole (28.03 percent). The study area also has 5.25 percent of persons who were 65 years of age and over, which is less than Los Angeles County as well (9.73 percent). A local and regional demographic profile is provided below.

Table 2-5. Existing Local and Regional Population Characteristics, Race and Ethnicity

Geographic Area	Total Population	White (%)	Hispanic/Latino (%)	Black/African American (%)	American Indian and Alaska Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Other (%)	Two or more races (%)
Census Tract 9300	685	436 (63.65)	112 (16.35)	73 (10.66)	1 (0.15)	44 (6.42)	0 (0.00)	4 (0.58)	15 (2.19)
Los Angeles County	9,519,338	2,959,614 (31.09)	4,242,213 (44.56)	901,472 (9.47)	25,609 (0.27)	1,124,569 (11.81)	23,265 (0.24)	19,935 (0.21)	222,661 (2.34)

Source: U.S. Census Bureau, Census of Population and Housing, 2000a; Summary File 1.

Income and Poverty Status. The same census data indicates that per capita income in the project study area was \$30,964 in 1999, which is higher than that of Los Angeles County as a whole (\$20,683 in 1999). This data indicates an economically advantaged population in comparison to regional income characteristics. Data regarding the number of persons below the poverty threshold indicate a relatively small percentage of people living below the poverty line within the project study area. The population/persons below the poverty threshold in 1999 was lower in the study area (7.98 percent) than in the county (17.9 percent). The 1999 poverty threshold used for the 2000 Census data, as defined by the U.S. Census bureau, was \$8,501 for an individual and \$17,029 for a family of four. Local and regional Income and poverty characteristics are provided below.

Table 2-6. Existing Local and Regional Population Characteristics, Income and Poverty

Geographic Area	Total Population	Median Household Income in Dollars	Median Family Income in Dollars	Per Capita Income in Dollars	Population Below Poverty Threshold	Percentage of Population Below Poverty Line
Census Tract 9300	685	51,071	89,354	30,964	42*	7.98*
Los Angeles County	9,519,338	42,189	46,452	20,683	1,674,599	17.9

* The poverty rate for this data set is from Summary File 3, which uses a population sample. The percentage is calculated using population for whom the poverty status is determined (n=526) and not the total population. Source: U.S. Census Bureau, Census of Population and Housing 2000b; Summary File 3.

Housing Characteristics. The study area had a total of 270 housing units in 2000. Of that total, 206 units, or 76.30 percent were occupied, and 23.70 percent were vacant. Owner-occupied housing units composed 79.13 percent of the total occupied units, with 20.87 percent renter occupied. The percentage of renter-occupied residences was much lower than that of Los Angeles County (52.14 percent). In addition, 81.43 percent of residences within the study area were in single-family structures, which is higher than the number in the county (56.10 percent). There were no multi-family residences in the project study area, as opposed to 42.17 percent for Los Angeles County. Finally, 18.56 percent of residences in the study area were categorized as “Other” (mobile homes, recreational vehicles, vans, campers, and tents), compared to only 1.73 percent for the county. Tables 2-7 and 2-8 identify occupancy and tenure within the local study area and the region.

Table 2-7. Existing Local and Regional Housing Characteristics, Occupancy

Geographic Area	Total Housing Units	Occupied Units (%)	Vacant Units (%)	Owner Occupied (%)	Renter Occupied (%)	Average Household Size
Census Tract 9300	270	206 76.30	64 23.70	163 79.13	43 20.87	2.52
Los Angeles County	3,270,909	3,133,774 95.81	137,135 4.19	1,499,744 47.86	1,634,030 52.14	2.98

Source: U.S. Census Bureau, Census of Population and Housing, 2000a; Summary File 1.

Table 2-8. Existing Local and Regional Housing Characteristics, Type

Geographic Area	Total Units*	Single-Family (%)	Multi-Family (%)	Other** (%)
Census Tract 9300	264	215 81.43	0 0	49 18.56
Los Angeles County	3,270,909	1,835,087 56.10	1,379,201 42.17	56,621 1.73

Notes:

* Total housing units for this data set are from Summary File 3, which uses a population sample. Thus, total units shown here do not correspond to the total units reported in the Summary File 1 data sets.

** Other units include mobile homes, recreational vehicles, vans, campers, tents, etc.

Source: U.S. Census Bureau, Census of Population and Housing, 2000b; Summary File 3

Neighborhood and Community Characteristics. The study area is typical of Southern California’s mountain regions and largely characterized by a sparsely settled alpine environment. Very few residences are located in the study area. Those that can be found in the area include both houses and trailers or mobile homes, which are scattered over the landscape rather than clustered in distinct communities or neighborhoods. Most residences within the Angeles National Forest are recreational and occupied only seasonally. Much of the population is located on the fringes of the Angeles National Forest and at the edge of adjacent cities and towns, rather than within the forest itself.

Business and Employment. As previously discussed, there are few businesses or places of employment in the study area, which is wholly contained within the Angeles National Forest. The ski resorts at Mount Waterman and Mount Kratka may provide limited seasonal employment during winter months, and, other commercial centers, such as Newcomb’s Ranch (west of SR-39 along SR-2) and Wrightwood (east of SR-39 along SR-2) provide limited employment opportunities. However, economic census data were not available that were specific to the study area. The closest adjacent business community is the City of Azusa, just south of the project study area at the foot of the San Gabriel Mountains. Commercial business activities in the City of Azusa are presented in the following table.

Table 2-9. Summary of Commercial Business Activities, City of Azusa

Business Type	Number of Businesses	Sales or Receipts (in thousands)	Annual Payroll (in thousands)	Number of Employees
Manufacturing	121	1,015,612	228,306	5,326
Wholesale trade	70	196,247	24,411	757
Retail Trade	87	337,056	29,228	1,125
Information	3	N	D	(20-99)
Real estate and rental and leasing	24	18,752	1,856	81
Professional, scientific, and technical services	29	25,966	16,547	340
Administrative and support and waste management and remediation service	33	67,622	18,951	549
Educational services	3	392	200	28
Health care and social assistance	46	24,799	9,441	556
Arts, entertainment, and recreation	3	D	D	(20-99)
Accommodation and food services	67	40,198	11,133	914
Other services (except public administration)	74	27,437	13,248	443

D = Withheld to avoid disclosing data of individual companies; data are included in higher level totals

N = Not available

Source: U.S. Census Bureau, 2002 Economic Census (2002)

Environmental Consequences

Changes in Demographic Characteristics. The No-Build Alternative would pose no impacts related to demographic characteristics because no project-related activity would occur. Under any of the Build Alternatives, the proposed highway improvements would not result in any significant demographic change. While the proposed project involves the reopening of an existing transportation facility, it would not include relocation of existing communities or disruption of current housing plans.

Community Cohesion. The No-Build Alternative would have no impacts related to community cohesion because no project-related activity would occur. No adverse effects related to community cohesion are anticipated under any of the Build Alternatives. Development in areas surrounding the project is limited, and there are no existing cohesive communities within the immediate vicinity. Along SR-2, there is a small rural commercial and residential establishment at Newcomb's Ranch, approximately 14 miles west of SR-39, and a larger community at Wrightwood, approximately 20 miles east. However, these communities will not be physically affected, divided, or altered by the proposed project.

Avoidance, Minimization, and/or Mitigation Measures

Because the proposed project would not pose any adverse effects related to community character or cohesion, no avoidance, minimization, and/or mitigation measures have been proposed to offset or compensate any changes.

ENVIRONMENTAL JUSTICE

Regulatory Setting. 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 Clinton on February 11, 1994. This Executive Order 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 2000, this was \$17,029 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. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

Affected Environment

Demographic Profile. As previously discussed, the project study area had a total population of 685 persons, the largest group of which was persons of white origin (non-Hispanic), at 63.65 percent, more than twice that of Los Angeles County (31.09 percent). Hispanic or Latino persons composed the next largest group, 112 persons, or 16.35 percent, which, overall, is significantly lower than Los Angeles County (44.56 percent). Percentages for other groups, including Native American, Asian, Native Hawaiian/Pacific Islander, other, and multiracial groups, were comparable to Los Angeles County. The distribution of minorities in the project study area is consistent with Los Angeles County, and in some cases, lower than county averages.

Socioeconomic Profile. U.S. Census 2000 data that was analyzed earlier in this section indicates that per capita income in the project study area was \$30,964 in 1999, which was higher than that of Los Angeles County as a whole (\$20,683 in 1999). This data indicates an economically advantaged population in comparison to regional income characteristics. Data regarding the number of persons below the poverty threshold indicate a relatively small percentage of people living below the poverty line within the project study area. The population/persons below the poverty threshold in 1999 was lower in the study area (7.98 percent) than in the county (17.9 percent). The 1999 poverty threshold used for the 2000 Census data, as defined by the U.S. Census bureau, was \$8,501 for an individual and \$17,029 for a family of four.

Environmental Consequences

The No-Build Alternative would have no impacts related to environmental justice because no project-related activity would occur. Impacts related to environmental justice are not anticipated with any of the Build Alternatives as the population in the study area is characterized by a higher proportion of nonminority (white) persons when compared with Los Angeles County. The percentage of the population within the study area below the poverty line is 7.98 percent, which is less than Los Angeles County at 17.9 percent. Per capital income in the project study area is \$30, 964, which is higher than Los Angeles County (\$20,683), indicating an economically advantaged population. The study area has a lower percentage of persons under the age of 18 (19.85 percent) when compared with Los Angeles County (28 percent) and a lower percentage of persons over the age of 65 (5.25 percent) when compared with the County (28 percent). Because the population within the study area does not exhibit minority, low-income, or vulnerable-age population groups, no further analysis of environmental justice is required. No relocations or displacements of residents or commercial operations are expected as a result of the proposed project, therefore, no impacts are expected regarding this issue.

Avoidance, Minimization, and/or Mitigation Measures

No minority or low-income populations have been identified that would be adversely affected by the proposed project as determined above. Therefore, this project is not subject to the provisions of E.O. 12898, and no avoidance, minimization, and/or mitigation measures have been proposed to offset or compensate for any changes. Caltrans has instituted public involvement and community outreach efforts to ensure that issues of concern or controversy to minority and low-income populations are identified and addressed where practicable as part of the project planning and development process and the environmental process. The project is expected to have a beneficial impact on the regional population by providing improved regional public access, emergency services, and motorist safety.

2.1.4 UTILITIES, COMMUNITY FACILITIES, AND EMERGENCY SERVICES

Utilities

The Caltrans Division of Design, Utilities Engineering, has determined that the proposed project would not conflict with existing utilities, and would not require any relocation of utilities as a result of implementation.

Community Facilities

There are few community facilities or services within the study area. The closest such services and facilities are located to the south in the adjacent cities of Azusa, Glendora, Duarte, and Covina. While the study area falls within the Azusa, La Canada, and Snowline school districts, due to the remote and rural nature of the study area, no residences or school bus routes are located near the proposed project. Similarly, there are no churches or other houses of worship in the vicinity of the proposed project. The nearest such facilities are located approximately 15 miles to the south in the City of Azusa and the surrounding communities.

Emergency Services

Emergency service providers in the study area include the Los Angeles County Sheriff's Department, the Los Angeles County Fire Department, and the USFS. Cooperative agreements exist among the sheriff's department, fire department, and the USFS for mutual aid and assistance. Emergency and forest service access has been unimpeded along SR-39 despite the closure of the route to the public, with regular minor maintenance of the closed portions of the route since the initial collapse in 1978. Since the study area is entirely within Angeles National Forest and a primarily rural, undeveloped area, many emergency and medical services are substantial distances from the proposed project. All relevant emergency service providers and nearby medical centers (primarily in the urban areas to the south of the study area) are listed in the following table.

Table 2-10. Emergency Service Facilities near the Proposed Project Area

Facility	Address	Direction from Proposed Project	Distance (miles)
Emergency Services			
California Highway Patrol	411 N. Central Avenue, Suite 410 Glendale, CA 91203	Southwest, adjacent to SR-134, west of SR-39	26
Angeles National Forest Supervisor's Office (Ranger Station)	701 N. Santa Anita Avenue Arcadia, CA 91006	Southwest, adjacent to I-210, west of SR-39	15.75
Los Angeles County Sheriff's Department, Crescenta Valley Substation	4554 Briggs Avenue La Crescenta, CA 91214	Southwest, adjacent to I-210, west of SR-2	23
Los Angeles County Sheriff's Department, San Dimas Substation	270 S. Walnut Avenue San Dimas, CA 91773	South, adjacent to SR-57, east of SR-39	15
San Gabriel River Ranger District	110 N. Wabash Avenue Glendora, CA 91741	South, adjacent to Foothill Drive, east of SR-39	12.7
Los Angeles County Fire Department, Battalion 16, Station #97	18453 E. Sierra Madre Avenue Azusa, CA 91702	South, adjacent to SR-39	14
Los Angeles County Fire Department, Battalion 16, Station #32	605 N. Angeleno Avenue Azusa, CA 91702	South, adjacent to SR-30	14
Los Angeles County Fire Department, Battalion 4, Station #19	1729 W. Foothill Boulevard La Canada Flintridge, CA 91011	Southwest, near SR-2	22
Los Angeles County Fire Department, Fire Camp 19	22550 East Fork Road Azusa, CA 91702	South, adjacent to SR-39	5.5
Los Angeles County Fire Department, Fire Camp 2	4810 N. Oak Grove Drive La Canada Flintridge, CA 91011	Southwest, adjacent to I-210, east of SR-2	20
California State Fire Marshall	602 E. Huntington Drive, Space A Monrovia, CA 91016	Southwest, between SR-2 and SR-39	15
Hospitals			
Santa Teresita Medical Center and Hayden Child Care Center	819 Buena Vista Street Duarte, CA 91010	Southwest, adjacent to Huntington Drive, west of SR-39	13.5
Foothill Presbyterian Hospital	250 S. Grand Avenue Glendora, CA 91741	South, adjacent to SR-66, east of SR-39	13
Huntington East Valley Hospital	150 W. Route 66 Glendora, CA 91740	South, adjacent to SR-66, east of SR-39	14
Doctors Hospital	725 S. Orange Avenue West Covina, CA 91790	South, adjacent to I-10, west of SR-39	18
Foothill Surgery Center	255 E. Santa Clara Street, #240 Arcadia, CA 91006	Southwest, adjacent to I-210, west of SR-39	15.5
Methodist Hospital	300 W. Huntington Drive Arcadia, CA 91007	Southwest, adjacent to I-210, west of SR-39	17

2.1.5 TRAFFIC AND TRANSPORTATION / PEDESTRIAN AND BICYCLE FACILITIES

TRAFFIC AND TRANSPORTATION

This section discusses potential impacts on traffic and circulation both during construction and as a result of the implementation of the proposed project. Typical analysis performed by the Caltrans Offices of Traffic Operations and Traffic Investigations reflects data regarding existing condition and design year traffic, but because this segment of SR-39 has been closed since 1978, data, comparison, and analysis is relatively limited. In any instance, the ensuing discussion is based on a series of studies performed by the Caltrans Offices of Traffic Operations and Investigations, and research performed by the Caltrans Division of Transportation Planning.

Affected Environment

Regional Traffic Circulation. Most existing traffic within the project study area is concentrated in the southern portion of SR-39 (San Gabriel Canyon Road), which is still operable and passable to the public. As previously discussed, SR-39 originates in Huntington Beach (Orange County) at its most southern point, and passes through the City of Azusa before its current terminus at post mile 40.0.

Rehabilitating and reopening the closed segment of SR-39 from post mile 40.0 to 44.4 would restore the through connection to SR-2 in the north. SR-2 provides regional access between the cities of La Canada Flintridge, Glendale, and Los Angeles to the west, and SR-138 and I-15 to the northeast.

Both SR-2 and SR-39 serve as secondary highways, providing regional access to the San Gabriel Mountains. There are a number of USFS service roads that provide local access along SR-39 and surrounding the immediate vicinity of the proposed project, particularly in the area surrounding Crystal Lake (near the southern terminus of the proposed project limits).

Accident Data. There are no available records for the Traffic Accident Surveillance and Analysis System (TASAS) for this segment of SR-39 as the closure of this segment predates the implementation of this monitoring system.

Environmental Consequences

Existing and Modeled Traffic Volumes. As previously discussed, traffic data for the segment of SR-39 that this project proposes to rehabilitate and restore is limited because of the amount of time that has passed since the roadway has been passable and operable. In 1977, the Average Annual Daily Traffic (AADT) on the segment of SR-39 between Crystal Lake Road and SR-2 was 200 vehicles. At segments in the lower portions of the canyon (post mile 25.7), SR-39 had an AADT of 800 vehicles in 1998. Los Angeles Area Regional Transportation Study (LARTS) 2030 RTP modeling was performed that shows that the AADT would be 2876 vehicles for the year 2030, assuming the proposed project was implemented and the flow of traffic continued through the previously closed segment of SR-39 to SR-2. The same modeling produced the following 2030 volume and time savings forecasts as presented in the following table:

Table 2-11. Forecasted Traffic Volume and Time Savings

Time Period	Volume (vehicles)	Time Savings (in minutes)
Morning	1126	29276
Mid-Day	161	4186
Afternoon	1487	38662
Evening	102	2652
AADT	2876	74776

Reduction in Out-of-Direction Travel. Restoring the SR-39 connection between I-210 in the south and SR-2 in the north would provide a 26-minute commute savings between Azusa and Wrightwood and would reduce current out-of-direction travel on typical routes. In this case, the typical routes are I-210 from Azusa and I-10 from Los Angeles to I-15, with a connection to SR-2 and Wrightwood via SR-138.

Regional Mobility. LARTS modeling does not indicate any significant gains in regional mobility. Improvements or degradation in regional mobility are typically measured by comparing current Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) per year in the existing, or No-Build condition to forecasted VMT and VHT post-construction. Any reduction in VMT or VHT would show an improvement in regional mobility. Any gain in VMT or VHT would signal a degradation in regional mobility. The following table presents the VMT and VHT for the proposed project in the existing condition and post-construction.

Table 2-12. Comparison of VMT/VHT in the No-Build Condition and Post-Construction

	Existing Condition (No-Build)	Post-Construction	Net Gain/Loss
VMT	474,659,044	40,714	40,714
VHT	15,279,346	2,996	2,996

Within the context of regional mobility, implementation of the proposed project would not yield any significant gains, but as discussed earlier in this document, the rehabilitation and reopening of this segment of SR-39 would bring this roadway into compliance with the California Streets and Highway Code, Sections 91 and 100, which mandate that Caltrans shall improve and maintain state highways as provided in code, and that Caltrans shall monitor the cumulative impacts of fragmented gaps in the State Highway System to identify safety and long-term maintenance issues. If no action is taken to rehabilitate this segment of SR-39 and the surrounding environs, the local geology and slope instability may continue to impede necessary water flow, cause extreme flooding of the roadway, and create safety hazards during necessary maintenance activities. Additionally, the proposed project is vital in providing enhanced access for the Los Angeles County Sheriff’s Department and other emergency personnel in search and rescue activities and a reduction in response times.

Temporary Construction-Related Effects on Access and Circulation. Under the No-Build Alternative, existing conditions would remain and no construction-related effects would occur. Under any of the Build Alternatives, temporary construction activities would not result in any disruption to access or circulation as the segment is currently closed to the public. No permanent barriers to local communities are expected, and existing access points and circulation routes to and from the surrounding area would remain open. Access to the recreation area and single residence at Crystal Lake would not be affected by the construction activities associated with the proposed project.

Construction activity would be temporary, and limited to localized, site-specific activities in the immediate vicinity of the proposed project. The anticipated temporary effects would be primarily related to trucks

and equipment in the area, and partial and/or complete street and lane closures. Increased traffic from construction equipment and heavy trucks traveling to and from the project site may affect the sparse residential settlements south of the proposed project along SR-39 and along SR-2. However, since there is little or no existing traffic congestion in this area, construction-related effects would be minimal.

Avoidance, Minimization, and/or Mitigation Measures

With implementation of the proposed project, no permanent adverse effects to local or regional traffic access or circulation are anticipated, rather, the project provides an improvement through the restoration of the through connection to SR-2. For these reasons, no avoidance, minimization, and/or mitigation measures are proposed to compensate for any offset or change in traffic access or circulation.

PEDESTRIAN AND BICYCLE FACILITIES

Caltrans, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal highway projects. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility. The proposed project would not pose any adverse effects or disruption to pedestrian or bicycle facilities in the project study area.

Caltrans is also committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public would be provided to persons with disabilities.

2.1.6 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 U.S.C. 4331[b][2]). To further emphasize this point, the Federal Highway Administration in its implementation of NEPA (23 U.S.C. 109[h]) directs that final decisions regarding 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.

Likewise, 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 Section 21001[b])

Visual Impact Assessment (VIA). A Visual Impact Assessment (VIA) has been prepared by the Caltrans District 7 Division of Landscape Architecture (December 2008) according to guidelines set forth by the Federal Highway Administration (FHWA). This process for assessing visual impacts satisfies the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The ensuing discussion has been adapted from this VIA and aims to define the visual environment of the proposed project area, quantify the visual resources within, and identify viewer response to the potentially affected resources. Project-related resource changes are assessed and analyzed to determine the degree of potential visual impacts, and to propose appropriate measures to mitigate any adverse impacts.

Affected Environment

Existing Facility. SR-39 (San Gabriel Canyon Road) is a two-lane highway connecting the San Gabriel Valley to SR-2 (Angeles Crest Highway), and provides access to the recreational areas within the Angeles National Forest. The SR-39 facility is a meandering mountain road that runs along the steep canyon walls of the San Gabriel Mountains. Elevation increases heading north on the route from the City of Azusa to the SR-2 junction. There are many hillside viaducts and reservoirs along the segment, and SR-39 serves as one of two major routes providing movement for fire suppression forces in the protection of several watersheds. SR-39 also serves as an important facility for the Los Angeles County Sheriff's Department in search and rescue activities. The segment of SR-39 in which this project proposes to rehabilitate and reopen has been closed since 1978 due to continued erosion of the majority of the roadway within the project limits..

Regional Landscape. Defining the regional landscape establishes a frame of reference for comparing and analyzing the visual effects of the proposed project. A regional landscape is made up of a characteristic combination of landscape components, which distinguishes it from the next. The following description of the landscape components of the area addresses landform and landcover:

Landform. The landform along SR-39 within the project site is typical of the region and is relatively consistent throughout the region from one end to the other. The region is defined as part of the southern slopes of the San Gabriel Mountain Range. The project site is located on the west-facing slope of Mount Islip at approximately 4500- 6800 feet in elevation. Deep v-shaped valleys, steep ridges and peaks characterize the landform of the San Gabriel Mountain. The natural slopes within the project site range from 35 degrees on soil slopes to almost 90 degrees on rock slopes. The exaggerated topography of the region generally allows the opportunity for long-range vistas of the surrounding landscape. The steep topography necessitates a curvilinear roadway, which produces views for the highway traveler alternating between close-in uphill slopes and wide-open panoramas of the San Gabriel Wilderness.

Landcover – Water. Surface water is an important visual and recreational element throughout much of the region. Morris Reservoir, San Gabriel Reservoir, San Gabriel River, Crystal Lake, and waterfalls and streams are visible along SR-39 leading up to the project site. Although all these water elements play an important role in defining the regional landscape, views of surface water are not readily visible from the highway within the project limits. No lakes are within the viewshed of the project, and the abundant streams at the base of the valley are blocked from view and not noticeable from a moving vehicle.

Landcover – Vegetation. Throughout the region, vegetation is a primary component of visual character. Diverse plant communities in the region are a result of significant variations in elevation throughout the San Gabriel Mountain Range. Dense riparian vegetation covers the majority of the lower valleys, while mid-level elevations contain a mixture of chaparral and sage scrub. At higher elevations, evergreen conifers such as Pine, Cedar, and Douglas Fir dominate the landscape with occasional wildflowers and understory Manzanitas.

Vegetation on the upslope within the project area is sparse, due to the abundance of steep and rocky slopes. Downslope to the roadway, the San Gabriel Wilderness provides the viewer with the only substantive scenic landscape experience. Unfortunately, long-range views are limited to-and-from the roadway because of the combination of a meandering roadway, an adjacent dirt berm, and steep and rocky slopes.

Landcover - Built Development. Built development within the region primarily consists of the highway itself (with occasional vista points), USFS recreational improvements, campgrounds, parking lots, and scattered camping cabins. None of these elements are visible along this segment of SR-39, with the exception of the SR-2 junction. Here, there is a parking lot (Islip Saddle) with an outhouse for visitors and Mount Islip hikers to utilize. While the Islip Saddle is

visible to travelers at the SR-39/SR-2 junction, the hiking trail cannot be seen from the roadway throughout the length of the project area. Other man-made development within the project area consists of existing retaining walls and rubble masonry walls that work to stabilize the slope and roadway.

Landscape Units. Landscape units provide a framework for understanding the visual effects of a proposed highway project. The regional landscape can be divided into distinct landscape units, which may be thought of as an “outdoor room,” and perceived as a complete visual environment with certain characteristics that distinguish it from the next. The general landform and vegetative cover throughout the project site are visually consistent, and no atypical features are present. Within this context, the entire length of this segment of SR-39 will be analyzed as a single landscape unit.

Viewer Sensitivity and Response. A change in visual character cannot be described as having good or bad attributes until it is compared with the viewer response to that change. Public opinion concerning the established visual character of the regional landscape, and the proposed project that would change that character are the basis for evaluating the contrast in visual character.

Planning. SR-39 is considered a developed rural highway. The route is on the State Scenic Highway Designation Eligibility List. The geographic setting contains high scenic integrity and visual quality. This segment of SR-39 lies between the undisturbed backcountry of Mount Islip and the natural landscape of the San Gabriel Wilderness. A heightened degree of sensitivity concerning the natural and aesthetic character of the surrounding environment should be considered when planning for this highway to retain the scenic beauty and preserve it as an asset for the region.

Viewer Groups. Two general viewer groups were considered for the evaluation of viewer response; those with views **from** the road and those with views **of (or, “to”)** the road.

Viewers from the Road. This viewer group is comprised of highway users. For viewers traveling SR-39 through the project site, distant views are generally of short duration due to the meandering roadway. At steeper elevations and curvilinear areas (which are a majority of the roadway), the foreground and middle ground views along the highway are dominant. The viewers along this segment of SR-39 are primarily in motor vehicles.

The awareness of visual resources by these highway users is expected to vary with their specific activity. Tourists, which comprise a large number of viewers on SR-39, who drive for pleasure and viewing scenery will generally have a high awareness of the visual resources around them, yet are anticipated to be less sensitive to specific changes in that environment. In general, highway users in vehicles would experience the area as a cumulative sequence of views and may not focus on specific roadway features. Local residents and business owners are the most sensitive to aesthetic issues due to their familiarity as well as their personal investment in the area. However, since this segment of the roadway has been closed since 1978, their awareness to any specific changes to the visual environment are anticipated to be very low as well.

Viewers of the Road. This viewer group is made of all those who can see the project area or any of its components from off-site locations. In the case of this project, the number of people with views of the specific project site is very limited. Views of the project from an offsite location only occur at Islip Saddle and at the Jarvi Memorial Vista Point located along SR-2, approximately 0.5 mile west of the junction. Islip Saddle does not provide a clear view of SR-39 since it is located on the opposing side of SR-2. The Jarvi Memorial Vista Point provides visitors a glimpse of the roadway as they look out into the San Gabriel Wilderness. As the roadway curves away from the vista point, the view of the road is substantially reduced. When the roadway curves back into view, the

viewing distance is too far for the naked eye to differentiate the changed environment from the surrounding rough terrain.

Within the project limits and beyond the SR-2 junction, the roadway is only visible at various view points along SR-39. The view points are strategically located to provide the travelers with the greatest panoramic view of the San Gabriel Wilderness. The travelers would be more focused on the wilderness than looking back at the road.

Observer Viewpoints. Viewing locations, or Observer Viewpoints, are selected which best represent the typical visual character of the project, show any unique project components or affected resources, and represent an affected viewer group. Five Observer Viewpoints were identified which best reveal this project's components and any potential visual character change. These viewpoints are presented in the following figure.

Figure 2-2. Selected Observer Viewpoints of Study



Source: California Department of Transportation, DHHP Aerial Photo, Copyright 2003. Map created by Joel Bonilla/Division of Environmental Planning

Environmental Consequences

Potential Visual Impacts. A Visual Quality Evaluation (VQE) was conducted in order to assess the magnitude of the potential visual changes caused by the proposed project. The VQE compares the visual quality of both the existing and proposed conditions. A separate VQE was done from each of the five Observer Viewpoints. A numerical rating between 1 and 7 was assigned for the existing quality from each viewpoint, with 1 having the lowest value and 7 the highest. Visual simulations were then prepared to illustrate the likely appearance of each view after project construction. Numerical ratings were then assigned to each of these “proposed” views. The numerical difference, if any, between the existing and proposed conditions quantifies the change which may occur as a result of the proposed project. This numerical difference is compared to the expected sensitivities of potential viewer groups in order to determine a level of visual impact.

The numerical rating system described above is based on evaluative criteria using three primary components identified as vividness, intactness, and unity. These three criteria are described as follows:

- **Vividness** is the visual power or memorability of the landscape components as they combine in a striking and distinctive visual pattern.
- **Intactness** is the visual integrity of the landscape and its freedom from non-typical encroaching elements. If all of the various elements of a landscape seem to "belong" together, there will be a high level of intactness.
- **Unity** is the visual harmony of the landscape considered as a whole. Unity represents the degree to which the visual elements maintain a coherent visual pattern.

The No-Build alternative would pose no potential Visual/Aesthetic impacts because no project-related construction would occur. All Build Alternatives would have similar impacts to visual resources in the project area, with the exception of Build Alternatives 3 and 4. These differences are presented in the following Viewpoints 4a and 4b. Following are the visual quality ratings for each Observer Viewpoint:

Observer Viewpoint 1

This viewpoint represents the first view of SR-39 for travelers originating in Palmdale, the San Fernando Valley, and Los Angeles. It is outside the project limit at the SR-39/SR-2 junction and signals the beginning of the southerly route from SR-2.

Table 2-13. Visual Quality Ratings, Observer Viewpoint 1

Visual Quality Scenario	Vividness	Intactness	Unity	Average (V+I+U/3)
Existing	4.0	5.0	5.5	4.9
Proposed	4.5	4.0	4.0	4.2
Visual Quality Difference				-0.7

This Observer Viewpoint receives a moderately high rating for existing visual quality. This view earns its highest ratings for visual unity, due to the rock slope and sparse vegetation covering the hillside to form a harmonious landscape from top to bottom. This is very typical throughout the entire region. The visual quality of the viewpoint does not provide a memorable landscape experience, thus the vividness component is only moderate. The intactness of this view is also somewhat reduced due to the engineered characteristic of the existing Metal Beam Guardrail (MBGR) along SR-2 leading up to the junction.

Figure 2-3a. Observer Viewpoint 1, Existing View



View from roadway heading eastbound on SR-2 at SR-39 junction

Figure 2-3b. Observer Viewpoint 1, Post-construction Visual Simulation



Proposed view with new construction of soldier pile wall and metal beam guardrail

The photo simulation shows the proposed Soldier Pile retaining wall with wood lagging, as it would appear if constructed. At first impression, the retaining wall appears to dramatically change the dynamic of the landscape to become the dominant element within the area. It also shows the division of the landform at mid-slope more clearly. The intactness and unity of this viewpoint is somewhat reduced. At closer observation the retaining wall could be an improvement to the vividness of the viewpoint. Even though the wall does stand out, the vastness of the rocky hillside and tall evergreen conifers dwarf the retaining wall down to scale. The wall provides a more prominent feature in an already semi-developed area which includes a parking lot and outhouse. It also ties-in well with similar features at the SR-39/SR-2 junction. The new MBGR above the retaining wall connects into the existing MBGR on SR-2 to show the roadway flow continuously around the curve onto SR 39.

Observer Viewpoint 2

This viewpoint shows the typical side view of a Soldier Pile wall as seen from inside the vehicle on a meandering roadway or from a vista point.

Table 2-14. Visual Quality Ratings, Observer Viewpoint 2

Visual Quality Scenario	Vividness	Intactness	Unity	Average (V+I+U/3)
Existing	3.0	4.0	4.5	3.9
Proposed	3.0	4.0	4.5	3.9
Visual Quality Difference				0

Similar to Observer Viewpoint 1, the landform consists of rock slope and sparse vegetation covering the hillside to form a continuous landscape from top to bottom. Unfortunately, the existing Mechanically Stabilized Earth (MSE) retaining wall and the already damaged steel crib wall compromise the integrity and uniformity of this segment of the roadway. The visual quality ratings for the existing condition are moderate due to these factors.

Figure 2-4a. Observer Viewpoint 2, Existing View



Existing view from the roadway on southbound SR 39, typical of meandering road within the project limits

Figure 2-4b. Observer Viewpoint 2, with Post-Construction Simulation



Proposed view with new construction of soldier pile wall.

The photo simulation shows the new Soldier Pile retaining wall (with wood lagging) that replaces the damaged steel crib retaining wall. The overall dynamic of the landform will not be altered at all since this is just a replacement of an existing wall. There are minor contrasting differences in color and texture between the existing MSE wall and the new soldier pile wall. The traveler might not notice these differences because their attention would be reserved for driving and maneuvering the meandering roadway. At the vista point, their attention would be focused on the majestic beauty of the San Gabriel Wilderness and not back at the retaining wall. The overall visual quality of this viewpoint remains unchanged.

Observer Viewpoint 3

This viewpoint shows the concrete curb on top of a soldier pile wall from the roadway surface through the driver or passenger point of view. This viewpoint also shows the existing rock debris at the toe of slope, which is very typical along this segment of SR 39.

Table 2-15. Visual Quality Ratings, Observer Viewpoint 3

Visual Quality Scenario	Vividness	Intactness	Unity	Average (V+I+U/3)
Existing	3.0	4.0	4.0	3.7
Proposed	3.5	4.0	4.5	4.0
Visual Quality Difference				+0.3

The existing visual quality rating of this viewpoint is moderate. The curvilinear road and the dirt berm block the only significant view of the San Gabriel Wilderness. The exposed rock slope provides a certain sense of naturalness to the hillside. The rock debris at the toe of slope, dirt berms, and k-rails create a very chaotic and disorganized roadway.

Figure 2-5a. Observer Viewpoint 3, Existing View



Existing view on the roadway heading southbound SR 39, typical surface roadway view for all drivers and passengers.

Figure 2-5b. Observer Viewpoint 3, with Post-Construction Simulation



Proposed view with new construction of repaved roadway, concrete curb on top of soldier pile wall (not visible from roadway), and rock fall drapery.

The photo simulation shows the proposed repaving of the existing roadway and concrete curb atop the Soldier Pile retaining wall. The wall is not visible from this viewpoint because it is located on the downslope of the road. The simulation also shows hillside rock fall drapery that will act to contain and prevent rocks from falling onto the roadway. The visual quality of this segment of the roadway is slightly improved due to this new construction. The roadway looks more organized, the retaining wall is not visible from the road, and the rock fall drapery provides a sense of safety for the traveler when driving adjacent to the hillside. The wire mesh drapery on the hillside does reduce the natural appearance of the rock slope, but the roadway appears to have a smoother flow around the curve. With the removal of the

dirt berm, more of the vegetation beyond the roadway and a wider view of the wilderness landscape can be seen.

Observer Viewpoint 4a (Alternative 4 only)

This viewpoint shows the realignment of the roadway about 16 feet toward the downslope and the proposed MSE wall to stabilize the roadway and the fill slope. This particular design is unique to Alternative 4.

Table 2-16. Visual Quality Ratings, Observer Viewpoint 4a

Visual Quality Scenario	Vividness	Intactness	Unity	Average (V+I+U/3)
Existing	4.0	5.0	5.5	4.9
Proposed	4.5	4.0	4.5	4.4
Visual Quality Difference				-0.5

The existing visual quality of this viewpoint is also similar to Observer Viewpoint 1. The intactness and unity ratings are moderately high due to the sparse evergreen conifers spread over the rock and soil slopes on both sides of the roadway. This overlapping creates a very uniform landscape even though the roadway dissects the slope. Unfortunately, the dirt berm on the edge of the roadway creates an unnatural appearance, reducing the visual quality of the site.

Figure 2-6a. Observer Viewpoint 4a, Existing View



Existing view from the roadway going northbound on SR 39 toward Snow Spring.

Figure 2-6b. Observer Viewpoint 4a, with Post-Construction Visual Simulation



Proposed view of Alternative #4 with new construction of repaved roadway, realigned roadway, and MSE wall.

The photo simulation represents the realignment of the existing roadway 16 feet toward the downslope, repaving of the asphalt surface, and construction of a new MSE retaining wall to stabilize the fill slope. Some vegetation will be removed from the retaining wall construction. The overall visual quality will be reduced slightly. The MSE wall aesthetic treatment should be designed to minimize its visual impact and blend into the surrounding environment. The MSE wall will add a new dimension to the visual quality of the landscape. It also provides a smooth transition from rock slope to roadway to retaining wall then to

dirt slope. The physical landscape and uniformity of the viewpoint will be reduced, but the new dynamic dimension of the MSE curve around the roadway will provide the traveler with a more memorable driving experience. The removed dirt berm will allow the traveler to have a clearer view of oncoming traffic around the curve and also improve the scenic view. Travelers coming from the opposite direction will also have a wider view of the San Gabriel Wilderness.

Observer Viewpoint 4b (Alternative 3 only)

This viewpoint shows the construction of a new Concrete Box Girder Bridge to address continued erosion issues at this particular post mile location. This particular design is unique to Alternative 3.

Table 2-17. Visual Quality Ratings, Observer Viewpoint 4b

Visual Quality Scenario	Vividness	Intactness	Unity	Average (V+I+U/3)
Existing	4.0	5.0	5.5	4.9
Proposed	3.5	3.5	3.5	3.5
Visual Quality Difference				-1.4

The existing visual quality of this viewpoint is similar to Observer Viewpoint 4. The intactness and unity ratings are moderately high due to the sparse evergreen conifers spread over the rock and soil slopes on both sides of the roadway. This overlapping creates a very uniform landscape even though the roadway dissects the slope. Unfortunately, the dirt berm on the edge of the roadway creates an unnatural appearance, reducing the visual quality of the site.

Figure 2-7a. Observer Viewpoint 4b, Existing View



Existing view from the roadway going northbound on SR 39 toward Snow Spring.

Figure 2-7b. Observer Viewpoint 4b, with Post-Construction Visual Simulation



Proposed view of Alternative 3 with new construction of a Concrete Box Girder Bridge and repaved roadway.

The photo simulation represents the repaving of the asphalt surface and construction of the Concrete Box Girder Bridge. Some vegetation and a portion of the roadway would be removed for the bridge construction to allow slide debris and water runoff to pass underneath. The physical landscape and landform uniformity of the viewpoint would be noticeably reduced. The bridge is a very distinct, man-made structure within this semi-natural environment. Its presence becomes a visual distraction to the

natural landscape of rock slope and vegetation. The sense of a dynamic curving roadway along the hillside leading into the mountain disappears. The blurry line separating the rock slope on top of the roadway to soil slope under the roadway is now replaced by a dominant structure. The overall visual quality of this viewpoint is much less harmonious than before the change.

Summary of Potential Project-Related Visual Impacts. The existing visual quality of SR-39 in the project area ranges from moderate to high. This view quality is due primarily to the natural vegetation, dramatic topographic variations, geographical setting, and minimal visibility of built elements. Viewers through this area generally have high expectations regarding scenic quality, and the State scenic eligibility designation bestowed by the State of California further heightens viewers' sensitivity along this route. Roadside views along SR-39 within the project area are generally confined to the fore-and-middle-ground of the roadway with intermittent views of the San Gabriel Wilderness.

As a result of this proposed project, minor changes in visual resources would occur within the project limits. These changes would be primarily due to the increased visibility of "built" characteristics and the short-term decrease of the natural scenic components. This change of character would be most evident to the typical viewer in terms of newly disturbed cut and fill slopes, landform alterations and a more open spatial character at certain locations. The removal of existing mature trees adjacent to the roadway would further contribute to the character change. The Visual Quality Evaluation ratings show the existing visual character would have a minor reduction of intactness and visual unity due to the cut and fill slopes for the retaining wall construction. A slight increase in vividness is expected due to the opening of the panoramic views from a few locations. The proposed project would have the greatest impact on the visual environment at Observer Viewpoint 1, at the junction of Route 2 and SR 39 because of the high visibility at that location. The visual quality at Observer Viewpoint 4 at Snow Spring would also decrease somewhat due to fill slope activities for the MSE retaining wall and the realignment of the roadway.

Post-construction and short-term adverse visual impacts would also occur as part of the proposed project. These impacts are expected to diminish as the project site weathers and mitigation components become established.

Through analysis of specific viewpoints, and examination of the visual experience of moving through the view corridor of the proposed project location and its surroundings, it is found that the existing high visual quality is mostly due to the following:

- Native vegetation: The space-defining quality of the trees as well as the harmonious visual pattern of the diverse vegetation on the hills and ground plane;
- the minimal visual encroachment of constructed elements;
- the unique characteristics of rock outcroppings for the initial roadway;
- the combination of alternating distant vistas and narrowing viewsheds caused by undulating landforms;
- the curvilinear road alignment

Avoidance, Minimization, and/or Mitigation Measures

In order to maintain the visual quality elements of the area, and in order to decrease the amount of negative visual impacts caused by the project, the following design, construction and maintenance actions are recommended. The recommendations would promote a more natural appearance to the landscape and the built environment. The visual impacts of this project would also be reduced and will not result in substantial changes in overall visual quality:

- 1) Retaining walls would be visually compatible with the surrounding highway corridor theme
- 2) Material, color, and texture for soldier pile retaining walls, MSE walls, rock drapery, etc. would to match or blend into the surrounding environment, i.e. existing wall or rock slope.
- 3) Rock outcroppings exposed during construction would be treated to give a weathered appearance.
- 4) Finish-grade of the slopes would have a rough appearance, where feasible, to create the look of age.
- 5) Realignment of existing road would be revegetated after recontouring landform.

- 6) Removed trees would be replaced using an appropriate planting ratio and maintenance program determined by Caltrans biologists and Landscape Architects ensuring plant establishment and long-term success.
- 7) Replacement plantings would be as appropriate as determined by Caltrans biologists and Landscape Architects in consultation with United States Forest Service (USFS) plant resource specialists.
- 8) All disturbed slopes would be revegetated with native plant materials and erosion control.
- 9) An appropriate number of felled trees and boulders would be saved, then placed at locations in disturbed areas to create a natural appearance, as determined by the Caltrans Landscape Architects.
- 10) Erosion control seed species, origin and application strategy would be determined by Caltrans Landscape Architects in consultation with Caltrans biologists and USFS plant resource specialists.
- 11) Bridge structures would be designed to minimize their visual impact and to blend into, and be visually compatible with the surrounding environment.

2.1.7 CULTURAL RESOURCES

Regulatory Setting. “Cultural resources” as used in this document refers to all historical and archaeological resources, regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act of 1966, as amended, (NHPA) sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such 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 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, FHWA, State Historic Preservation Officer (SHPO), and Caltrans went into effect for 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 Caltrans. The FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 773) (July 1, 2007).

The Archaeological Resources Protection Act (ARPA) applies when a project may involve archaeological resources located on federal or tribal land. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from historic properties. See Appendix B for specific information regarding Section 4(f).

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as California Public 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 National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

Affected Environment

The project area is situated within the Angeles National Forest in the San Gabriel Mountain Range. The San Gabriel Mountain Range has been primarily formed from granitic rock, but is overlaid with older rock material dating to 1.7 billion years of age. Slopes on the mountainsides are frequently prone to landslides due to storms and active geologic faults. Soil is generally sparse along the slopes and accumulates within the valleys along the range. The San Andreas Fault extends across the San Gabriel Mountains for over 45 miles. This fault has been the source of many large and violent earthquakes in the past, as well as in recent decades.

Flora within the mountains varies based on elevation, direction, and precipitation. The project area lies within a part of the mountain range that is oriented southward, toward the Los Angeles basin. Vegetation growing on the southern side of the San Gabriel Mountains primarily consists of chaparral sagebrush scrub, which thrives in elevations up to 5,000 feet. The natural environment remains largely undisturbed due to the rugged geographical terrain and the closure of SR-39 for the past three decades.

The project is located in the ethnographic and historic territory of the Gabrielino. The Gabrielino were a cohesive society of people living in chieftains unified by language, religious practices, customs, economic trade, and marriage. The Gabrielino language is a Shoshonean branch of the Uto-Aztecan linguistic stock. Extensive knowledge of natural resources and settlement size allowed the Gabrielino to develop a sophisticated economy of vast trade networks. Items such as nuts, seeds, soapstone, otter pelts, deerskins, dried fish, shells, and tools were exchanged with neighboring Native American societies such as the Chumash, Serrano, and Cahuilla. Modern Gabrielino refer to their people as the Tongva.

The history of Los Angeles County can be broken down into four periods; Early Explorer Period (1542-1769), Spanish Mission Period (1769-1821), Mexican Ranch Period (1821-1846), and Anglo-American Period (1846- to present). Today, the population of the City of Azusa has risen to over 44,000 people with millions more living in the surrounding portions of the Los Angeles Basin.

Identification of Cultural Resources in the Project Study Area. In order to identify cultural resources within the project area a Historic Property Survey Report (HPSR), Historic Resource Evaluation Report (HRER), and an Archaeological Survey Report (ASR) were completed in August 2008. Background research included a record search conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) located at California State University, Fullerton on July 30, 2007. Due to the steep terrain at the site of the project location, a quarter-mile radius for the record search was deemed appropriate in order locate cultural resources relevant in geographic location to the project area. The records search included a review of the following sources:

- National Register of Historic Places 1979-2002 & supplements
- California Register of Historical Resources 1992 & supplements
- California Inventory of Historic Resources 1976
- California Historical Landmarks 1995 and supplements
- California Points of Historical Interest 1992 and supplements
- Archaeological site records housed at the SCCIC

The record search identified four previously conducted cultural resource studies within the project area. Of these three were completed by Caltrans and included portions of SR-39 and the adjacent right-of-way. The USFS conducted the fourth survey of a 6000-acre area bordering SR-39.

The previous studies conducted by Caltrans identified a Mechanically Stabilized Earth (MSE) wall located at post mile 43.4 as a cultural resource. The wall, commonly referred to as the “French Wall” was, when completed in 1972, the first MSE wall built in the United States. As part of the current project the French Wall was evaluated for inclusion on the National Register of Historic Places. No archaeological sites were identified within a quarter-mile of the project area.

Regarding the potential for cultural resources that may have not been identified by the record search, District staff consulted with several organizations including the Native American Heritage Commission, local Native American groups and the USFS.

Area of Potential Effects (APE). An Area of Potential Effects (APE) for the project was established in consultation with Caltrans’ Professionally Qualified Staff (PQS) and the Project Manager on April 12, 2008 and August 13, 2008, respectively. The APE represents the maximum geographic extent of the project, including the physical limits of all construction as well as staging areas and access roads associated with the project. To ensure all potential rock fall mitigation measures were included as well as any potential realignment to the roadway the APE includes all land within 50 feet down-slope of the highway centerline and 150 feet up-slope of the highway centerline for the entire length of the project limits, where SR-39 meets SR-2. The APE was also drawn to include the entire boundary of the French Wall.

Cultural Resource Investigation, Surveys, and Findings. On July 31, 2007, District cultural resources staff conducted a Phase I cultural resources investigation of the APE. The purpose of the investigation

was to determine the presence or absence of cultural resources within the APE and to ascertain the degree of potential disturbance to any identified resources. The survey took place along the entire project area, while a foot survey took place between post miles 41.6 to 43.4 at two-meter increments to the best extent possible. Geological constraints did not allow the crew to walk the extreme slopes in the project area. The project area itself has been cut into the side of the mountain with steep slopes consisting of soils from past landslide deposits. The survey identified a single cultural resource requiring evaluation for inclusion on the National Register: the French Wall.

The French Wall was found to be significant when evaluated within its historic context. As a result, the property was found eligible for the National Register under Criterion C, for its distinctive characteristics of a type and method of construction as the first modern MSE wall in the United States. While it is not yet 50 years old the French Wall was found to be of exceptional importance meeting Criteria Consideration G. In addition to being eligible for the National Register, the French Wall appears eligible for the California Register of Historical Resources (California Register) under Criterion 3 and is considered a historical resource for the purposes of CEQA. As the French Wall is also a state-owned structure that meets National Register criteria it has been given consideration under PRC Section 5024.5. PQS determined all other properties present within the APE are exempt from evaluation under Attachment 4 of the PA, as Property Type 1: Minor, ubiquitous, or fragmentary infrastructure, specifically as recent transportation or pedestrian facilities.

Environmental Consequences

No-Build Alternative. Under the No-Build Alternative, existing conditions would remain and no impacts to cultural resources would occur. However, a connection between SR-39 and SR-2 would not be accessible to the public and safety would not be improved along the roadway with selection of the No-Build Alternative.

Build Alternatives. The three build alternatives each propose work to the French Wall eligible for the NHRP located at post mile 43.4. Work would be limited to repair of the existing cable railing system and the 84-inch diameter culvert, both damaged by recent storm events. The cable railing system is located at the top of the vertical wall. Damaged poles would be replaced in-kind, as would the three horizontal cables that constitute the railing. The severed 84-inch diameter corrugated metal pipe culvert on the south side of the wall would also be replaced in-kind.

The ASR, HRER and HPSR describing the findings under NHPA, CEQA and PRC Section 5024.5 were transmitted to the SHPO for consultation in September 2008. SHPO concurred with Caltrans' evaluation on October 16, 2008. The Finding of Effect (FOE) document (in this case, a Finding of No Adverse Effect) analyzes the effects of the proposed project on the historic property.

The Finding of Effect (FOE) was received by SHPO on December 3, 2008, but no response or comment was received within 30 days, which per PA Section X.B.1(b) may be deemed to constitute concurrence in the Finding of No Adverse Effect finding. Notification of the aforementioned was submitted to SHPO on January 5, 2009 to advise of the circumstances regarding concurrence of the No Adverse Effect finding. This completed the Section 106 process. It was determined a Finding of No Adverse Effect is appropriate for this undertaking. Professionally Qualified Staff has determined that the proposed project would not alter, directly or indirectly, any of the characteristics of the historic property that qualify it for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. For the same reason it was also determined that this project would have no adverse effect on state-owned buildings and structures within the APE that meet National Register and/or California Historical Landmarks eligibility criteria. Pursuant to CEQA Guidelines Section 15064.5(b), PQS has determined a finding of no substantial adverse change, as the impacts to the French Wall would be mitigated below the level of significant impact by using the Secretary of the Interior's Standards for the Treatment of Historic Properties.

While the French Wall was determined to be an historic property under the NHPA, Section 4(f) does not apply to this resource. Section 4(f) places restrictions on the use of land from historic sites for highway improvements but makes no mention of such sites already serving as transportation facilities. FHWA has determined that Section 4(f) applies only when historic sites already serving as transportation facilities are demolished or if the quality for which the facility was determined to be eligible for the National Register is adversely affected by the proposed improvement. As the French Wall is already serving as a transportation facility and the proposed project would not demolish or have an adverse effect on the qualities for which it was determined eligible for the National Register 4(f) is not applicable to this cultural resource.

Avoidance, Minimization and/or Mitigation Measures

The only aspect of the project that involves an historic property is the proposed repair of the French Wall. The repairs incorporate the Secretary of the Interior's Standards for the Treatment of Historic Properties – Rehabilitation (limited to in-kind repair of the existing cable railing system and the 84-inch diameter culvert) and as a result will not have an effect on the qualities for which it was determined eligible for the National Register. For the same reason it was also determined that this project will have no adverse effect on state-owned buildings and structures within the APE that meet National Register and/or California Historical Landmarks eligibility criteria. Pursuant to CEQA Guidelines Section 15064.5(b), PQS has determined a finding of no substantial adverse change, as the impacts to the French Wall will be mitigated below the level of significant impact by using the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Discovery of Cultural Materials During Construction. If previously unidentified cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. 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). At this time, the person who discovered the remains will contact the District 7 Native American Coordinator, 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.

2.2 PHYSICAL ENVIRONMENT

2.2.1 HYDROLOGY AND FLOODPLAIN

Regulatory Setting. Executive Order 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 CFR 650 Subpart A.

In order 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 impacted 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

The Caltrans Office of Engineering Services—Hydraulics, completed a Location Hydraulic Study (August 2007) for the proposed project to identify and evaluate the base floodplain within the limits of the proposed project and address the flow of water as it affects the state highway, the base floodplain, and the surrounding area. The ensuing discussion has been adapted from the aforementioned study, and from research performed by the Caltrans Division of Environmental Planning.

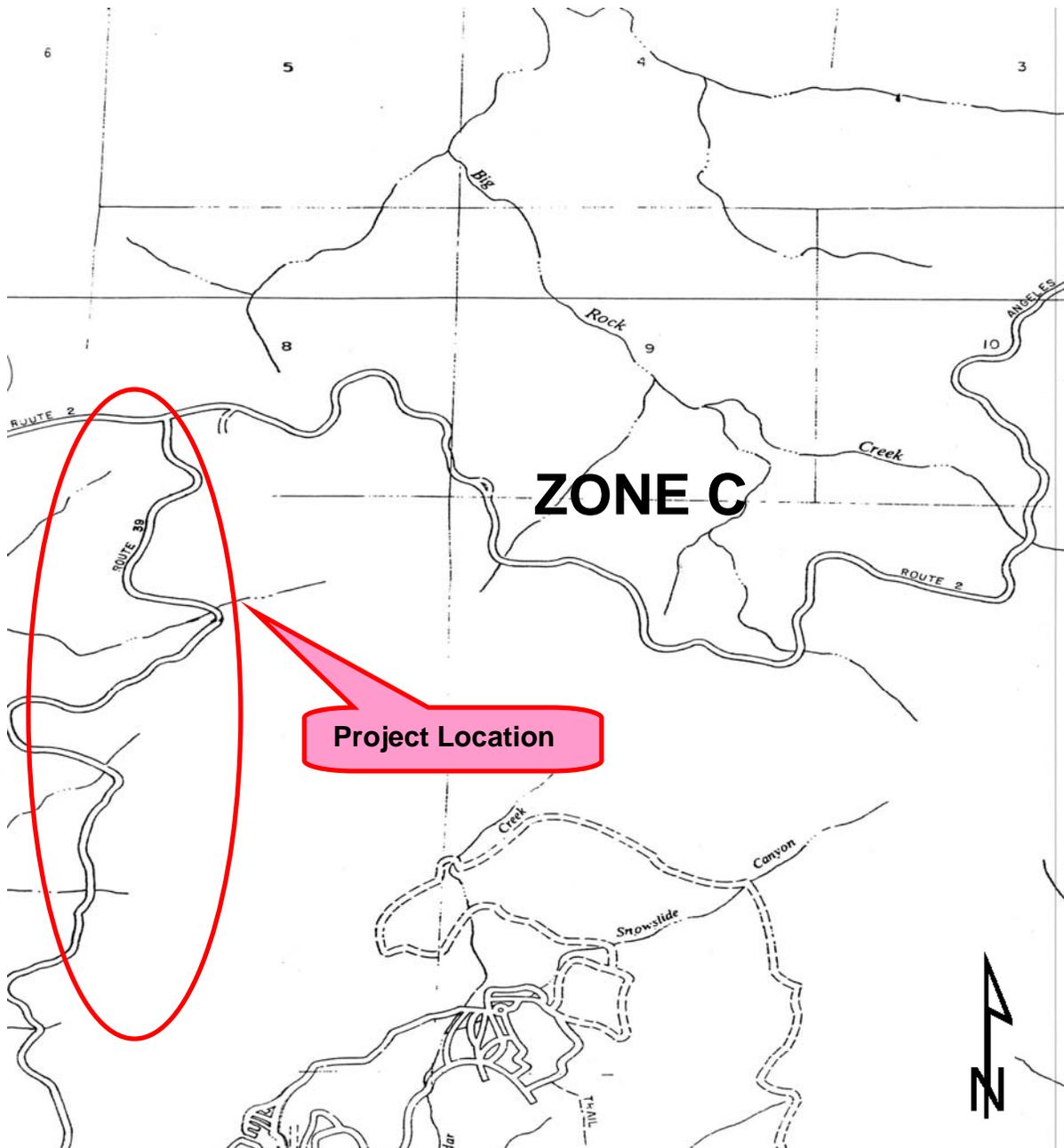
The project is located within an area that contains several natural springs and streams that run along the side of the roadway. These waters collect in the drains and flow into the canyons below. At present, the water flow has been obstructed, causing further erosion of the highway. Erosion occurs when the natural flow of water has been blocked and cannot flow into the canyons below. Since the drains are clogged, the water overflows onto the roadway, causing severe landslides and degradation of the roadway. This problem causes instability and landslides, which flow into debris tracks that have been formed over several years.

The highway crosses a number of debris tracks. Debris tracks are steep areas at which water or other materials flow. Six major debris tracks converge on the roadway in the area of Snow Spring. The debris tracks are narrow ravines of less than 50 feet (15 meters) wide that run down the slope and water and other material collect in the debris tracks, such as, runoff from rainfall and snowmelt flows. Heavy runoff move large boulders and other rock material down slope and into the canyon. Accumulated sediments from the debris tracks have obstructed the culverts and the runoff overtopped and eroded the highway. Over the past years the culvert inlets have not been cleared and have become obstructed, causing the road to flood during heavy rains.

Environmental Consequences

The Caltrans Office of Hydraulic Engineering does not consider the proposed project to constitute a significant floodplain encroachment as defined in 23 Code of Federal Regulations, Section 650.105(q). No impact to any floodplain is expected. The proposed project is outside the limits of the flood hazard area as described by the Federal Emergency Management Agency (FEMA). On August 30, 2007, the Caltrans District Hydraulic Engineer confirmed that the project is located in a non-flood hazard area. The following flood hazard boundary map presents the location of the project within a zone considered to have minimal flood risk.

Figure 2-8. Flood Hazard Boundary Map



Source: Federal Emergency Management Agency (FEMA), Federal Insurance Administration, 1980. FIRM Flood Insurance Rate Map

The previous figure shows the location of the project within Zone C of the FIRM Flood Insurance Rate Map as provided by FEMA and the Federal Insurance Administration. A Zone 3 designation denotes an area of minimal flood risk, in which the proposed project lies completely within. The Location Hydraulic Study prepared for the proposed project confirms that the associated flood risk is low and that it would not contain a longitudinal encroachment, nor support probable incompatible floodplain development.

Avoidance, Minimization, and/or Mitigation Measures

Because the proposed project is outside the limits of the flood hazard area as described by the Federal Emergency Management Agency (FEMA), and no floodplain impacts are anticipated, no avoidance, minimization, and/or mitigation measures are proposed to compensate for any offset.

2.2.2 WATER QUALITY AND STORM WATER RUNOFF

Regulatory Setting. Section 401 of the Clean Water Act (CWA) requires water quality certification from the State Water Resources Control Board (SWRCB) or from a Regional Water Quality Control Board (RWQCB) when the project requires a CWA Section 404 permit. Section 404 of the CWA requires a permit from the U.S. Army Corps of Engineers (Corps) to discharge dredged or fill material into waters of the United States.

Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The SWRCB has developed and issued a statewide NPDES permit to regulate storm water discharges from all Department activities on its highways and facilities. Department construction projects are regulated under the Statewide permit, and projects performed by other entities on Department right-of-way (encroachments) are regulated by the SWRCB's Statewide General Construction Permit. All construction projects over 1 acre require a Storm Water Pollution Prevention Plan (SWPPP) to be prepared and implemented during construction. Department activities less than 1 acre require a Water Pollution Control Program.

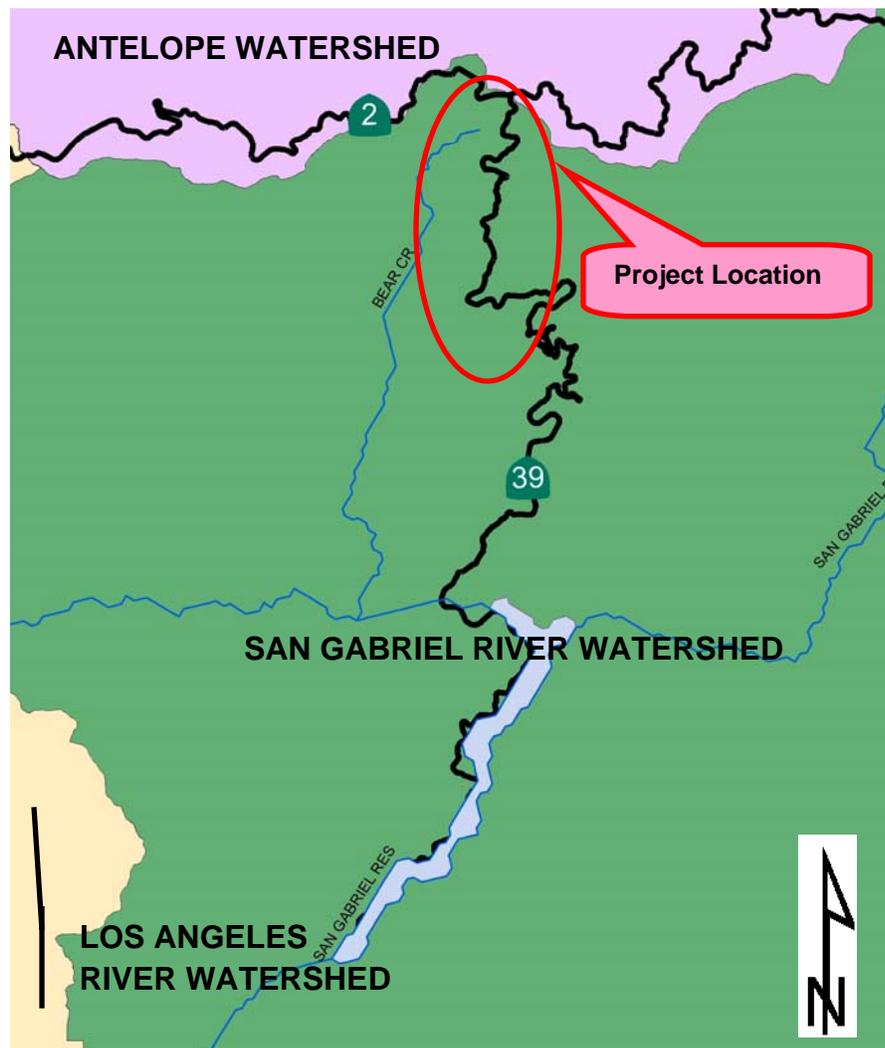
Affected Environment

The ensuing discussion has been adapted from a Storm Water Data Report (Caltrans, May 2007) as prepared by the Caltrans Office of Design, in consideration of the proposed project and any potential storm water impacts that it may cause.

The proposed project area is located within the San Gabriel River watershed, within the Angeles National Forest, between Crystal Lake Road and State Route-2. The project area is located within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB).

According to the RWQCB, the San Gabriel River headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. The areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. The watershed is approximately 9.28 square meters and encompasses the Crystal Lake Recreational Area.

Figure 2-9. Vicinity Map and Project Location, San Gabriel River and Surrounding Watersheds



Established Total Maximum Daily Loads (TMDL)

Trash TMDL for the East Fork of San Gabriel River. The Trash TMDL for the East fork of San Gabriel River has been in effect since December 14, 2000. Since the East Fork San Gabriel River is outside the project area, the aforementioned TMDL does not apply. There are however two established TMDLs that do apply within the project area. These are the Angeles National Forest nutrients TMDL and San Gabriel River watershed bacteria TMDL.

Future Total Maximum Daily Loads (TMDL)

San Gabriel River and Impaired Tributaries Metals and Selenium TMDL. The San Gabriel River and Impaired Tributaries Metal and Selenium TMDL requires Caltrans to meet dry weather waste load allocation in 10 years and wet weather waste load allocations in 15 years. It was anticipated that the TMDL would become effective in 2008. Caltrans will be working with groups of Responsible Agencies in order to achieve the TMDL. Targeted pollutants are copper, lead, zinc and selenium.

Regional Water Quality Control Board Agreements

NPDES-Caltrans Statewide Permit (Order No. 99-06-DWQ) (NPDES No CAS 000003) and Construction General Permit (Order No.99-08-DWQ) (NPDES NO.CAS 000002) apply to this project.

Environmental Consequences

The proposed project is anticipated to result in a total Disturbed Soil Area (DSA) of approximately 2.67 Acres (1.08 hectares). The DSA was calculated by accounting for proposed project site access, staging areas, and temporary road access to the riverbed. This includes the area covered by the construction of Soldier Pile walls with Anchor Tiebacks, and also includes the cut-and-fill slopes, as well as areas that will be affected by associated construction equipment. Additionally, the DSA was calculated in consideration of the area within five feet of the project limits and throughout the length of the segment the project proposes to rehabilitate and reopen. Within the project limits, SR-39 (San Gabriel Canyon Road) is classified within an Urban MS4 Area (Order No. 90-079, NPDES No. CAS0061654). The proposed project's DSA is larger than 1 acre, and therefore, will require a Stormwater Pollution Prevention Plan (SWPPP) pursuant to the Clean Water Act (Section 402).

It is anticipated that the proposed project will discharge to a 303(d) listed water body with each of the following identified pollutants considered Targeted Design Constituents (TDCs): dissolved copper, dissolved lead, and dissolved zinc. The SWPPP would be implemented to minimize long-term water quality impacts, and to address runoff impacts on water quality standards, development of Total Maximum Daily Loads, and watershed planning.

Pursuant to the Clean Water Act (Sections 401 and 404), and potentially at the State level pursuant to Fish and Game Code 1602, Caltrans may need to obtain a Water Quality Certification from the Regional Water Quality Control Board, and Individual or Nationwide Permit from the U.S. Army Corps of Engineers, respectively. This shall occur during the next phase of the project; the Project Specifications and Estimates (PS&E) phase. This CEQA/NEPA document shall be submitted during the application process.

Avoidance, Minimization, and/or Mitigation Measures

Measures to reduce potential storm water impacts:

- 1) Soils containing Aerially Deposited Lead (ADL) shall not be reused.
- 2) Cut and fill areas shall be minimized to reduce slope lengths
- 3) Retaining walls shall be implemented to reduce slope lengths and steepness
- 4) Disturbances to existing slopes shall be minimized
- 5) Best Management Practices (BMPs) shall be implemented as follows
 - a) Temporary Construction Site BMPs to be used on Project
 - Preservation of Existing Vegetation
 - Temporary Fence (Type ESA)
 - Temporary Silt Fence
 - Stream Bank Stabilization
 - Clear Water Diversion
 - Temporary Construction Entrance/Exit
 - Temporary Stream Crossing
 - Sanitary/Septic Waste Management
 - Since the disturbance of soil is anticipated, Temporary Construction Site BMP strategy shall consist of soil stabilization and sediment control. Active areas shall be protected with both soil stabilization and sediment control at the end of each working day and temporary silt fence will be placed at the toe of all excavation and embankment slopes.
 - Concrete wastes shall be managed through the use of concrete washout facilities. Storm drain inlet protection shall be deployed through out project.
 - Non-Storm Water Management includes Vehicle and Equipment Cleaning, Paving and Grinding Operations, Concrete Curing and Concrete and Concrete Finishing. Other Waste Management and Material Pollution Controls comprise material Delivery and Storage and Hazardous Waste Management.
 - b) Maintenance BMPs (Drain Inlet Stenciling)

There is no permanent BMPs provision in this project. Since the project is located adjacent to the freeway and no pedestrian walk is available, no drain inlet stenciling is required within the project limits.

2.2.3 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.

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. Caltrans’ Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects. The current policy is to use the anticipated Maximum Credible Earthquake (MCE), from young faults in and near California. The MCE is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

Affected Environment

The ensuing discussion is adapted from the Preliminary Geotechnical Design Report (URS Corporation, 25 September 2006) and the Preliminary Geotechnical Design Report for Rockfall Hazard Mitigation (Caltrans, 22 January 2009) prepared for the proposed project, and also from research performed by the Caltrans Division of Environmental Planning.

SR-39 is a narrow, two-lane, paved roadway located in a rugged and steep portion of the San Gabriel Mountains along the west-facing slope of Mount Islip. The natural slope along the site varies from 20 to 40 degrees from the horizontal, with elevations varying from about 5600 feet at the south end of the site, to about 5900 feet at the north end. The mountains are characterized by deep, “v-shaped” valleys, steep ridges, and peaks, which are uplifting at a rate of 3 millimeters per year. In general, natural soil cover is very thin along the ridges and peaks and considerably thicker in the valley bottoms near stream channels. Areas adjacent to SR-39 are sparsely forested and subject to intense precipitation and severe freeze-thaw conditions, resulting in heavy natural erosion.

The climate is cool and wet in the winter, and hot and dry in the summer. Precipitation is intense and typically occurs in the winter and early spring months. Average annual precipitation in the vicinity of the project study area is about 30 inches (typically occurring as snowfall).

Subsurface Conditions. The depth of bedrock below the surface of the roadway was determined through borings. The condition of the bedrock was evaluated, and two borings identified Cretaceous age gray quartz diorite, which is typically hard, slightly fractured, and slightly weathered. Three additional borings exhibited fine-grained Granodiorite, which is moderately hard, intensely fractured, and moderately weathered. Due to very close fracture spacing at this location, prominent fractures were indistinguishable. Additional borings also revealed a significant presence of Coarse-grained Gabbro, which is moderately weathered and slightly fractured. The bedrock above and below the roadway is generally covered by a thin and discontinuous cover of colluvium.

Seismicity. Based on the Caltrans Seismic Hazard Map (CSHM), several significant faults surround the subject site. Fault parameters and distances for the three nearest faults to each site are presented in the table below. According to the data, the controlling earthquake fault for the project site would be either the San Gabriel fault or the San Andreas Fault with equal resultant site acceleration.

Table 2-18. Summary of Seismic Parameters

Wall Location	Fault	Maximum Credible Earthquake ¹	Estimated Closest Distance from Site (km) ¹	Fault Type ¹	PBA ²
Walls 1 and 2	San Gabriel (SGL)	7.5	5.5	Reverse/Oblique	0.6
Walls 1 and 2	San Andreas/C (SAC)	8.0	12.5	Strike-Slip	0.5
Walls 1 and 2	Clamshell-Sawpit Canyon (CSC)	6.5	8.0	Reverse/Oblique	0.4
Walls A, B, C and 4	San Andreas/C (SAC)	8.0	8.5	Strike-Slip	0.6
Walls A, B, C and 4	San Gabriel (SGL)	7.5	10.0	Reverse/Oblique	0.5
Walls A, B, C and 4	San Fernando-Sierra Madre-Duarte (SGL)	7.5	12.5	Reverse/Thrust	0.5

Notes: 1. Obtained from Caltrans Seismic Hazard Map (1996) and Technical Report.

2. Obtained from Sadigh et al. (1997); values rounded to the nearest 0.1g.

Corrosion. Corrosion test results taken on fill and bedrock samples from post mile 44.13 revealed minimum resistivity greater than 5,000 ohm-cm and negligible amounts sulfate and chloride content (along with a pH of 7.9 (URS, September 2006)). Due to the consistency of the fill and bedrock materials at post mile 44.13 and the six project site locations covered for this report the soils that are expected to come in contact with buried concrete and metal should be considered potentially non-corrosive to metal and concrete (Corrosion Guidelines, 1996).

Environmental Consequences

Ground Shaking/Ground Rupture and Liquefaction. The Caltrans Division of Engineering Services, Office of Geotechnical Design-South 1 has determined that ground shaking, ground rupture, and liquefaction all have the potential to occur, but implementation of the proposed project would not increase or decrease the potential for design failure as a result of the aforementioned.

Landslides. The project area has a history of landslides. Major landslides have occurred over the last several decades. The proposed project alternatives would be constructed on predominately level ground within the roadway and would not require major grading activities that would cut into the hillside. Implementation of the proposed project would not increase or decrease the potential for landslides.

Rockfall Hazards. The slopes above the segment of SR-39 that this project proposes to rehabilitate and reopen are generating rockfall to various degrees. Elevated rockfall frequency, intensity, and the associated risk have been known since the completion of the highway. To reopen the highway, the elevated rockfall hazard areas would be mitigated and reduced utilizing available project funds.

Current Rockfall Investigation. A recent rockfall investigation was conducted by Caltrans Geotechnical Services using the Rockfall Hazard Rating System (RHRS), which identified 17 sections of rockfall concern. Only the top 9 ranking sections were selected based on elevated potential for rockfall and because of fiscal constraints. The remaining sections still pose elevated rockfall hazard and would be addressed and mitigated when funding is available. The top 9 ranking sections and their locations along SR-39 are presented in the following table.

Table 2-19. Rockfall Sections of Concern

Rank	Post Mile
1	41.78-41.83
2	43.70-43.79
3	44.26-44.33
4	43.80-43.90
5	43.10-43.17
6	43.65-43.70
7	42.28-42.31 (Snow Spring)
8	41.83-41.85
9	44.20-44.26

Avoidance, Minimization and/or Mitigation Measures

Because no adverse impacts are anticipated in relation to ground shaking, ground rupture, or liquefaction, no avoidance, minimization and/or mitigation measures are recommended. As the proposed project advances to the final design stages, mitigation for the 9 sections of rockfall concern will be finalized. Reinforcement measures may include, but are not limited to the installation of anchored mesh, cable drapery, rockfall barriers, and realignment of roadway sections away from the slope. The following additional recommendations and strategies have been made by the Caltrans Division of Engineering Services—Geotechnical Services, to further mitigate any potential rockfall risk. It should be noted that these recommendations and strategies for mitigation are subject to change during the final design process.

Limited access to SR-39 during times of inclement weather. The highway would be open for only three-of-four seasons during the year.

Relocation or separation of the roadway. Relocate or separate the roadway from the area of instability. The slope would be left alone with little to no treatment. Options would include such construction techniques as viaducts/bridges, tunnels, reinforced earth embankments, retaining walls, and realignment of the roadway.

Stabilization. Stabilization of loose rock and prevention of rock movement with techniques such as buttressing, stabilization with anchor bolts, anchored mesh, shotcrete, and slope excavation.

Protection. Control the rockfall trajectory via slope drapery, and stopping or diverting rockfall above the roadway with barriers.

Management. Typical management options include rockfall patrols, rock scaling, rock removal, signage, and temporary road closures.

2.2.4 HAZARDOUS WASTE / MATERIALS

Regulatory Setting. Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for “cradle to grave” regulation of hazardous wastes. 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 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Affected Environment

The Caltrans Office of Environmental Engineering and Corridor Studies (OEECS), Hazardous Waste Branch performed a hazardous waste assessment for the proposed project with the aid of an updated Draft Project Report (May, 2008) and Geotechnical Report (February, 2008). Field visits and site investigations were not warranted primarily because the roadway has been closed to traffic since 1978, and also because there are no known industrial or hazardous waste/material generators within the proximity of the project.

Environmental Consequences

It is anticipated that groundwater/perched water may not be contaminated because the subject project site is in a mountainous area of the Angeles National Forest where no industry or hazardous waste/material generator exists in the vicinity. Since the subject project is located on very steep bedrock, encountering any groundwater/perched water during construction is not anticipated. Soils adjacent to the road are anticipated to be free of Aerially Deposited Lead (ADL). This is primarily due to the road being closed to open traffic since 1978.

Avoidance, Minimization, and/or Mitigation Measures

For all build alternatives, there is a concern that existing yellow thermoplastic/paint striping that requires removal may contain lead and chromium at concentrations that are considered hazardous. Once the traffic stripe removal method is finalized, final analyses of lead and chromium concentration levels will determine whether the waste can be relinquished to the contractor for possible recycling, or whether it must be disposed of at a Class I Facility. Concentrations may be diluted enough so that the disposal at a Class I facility may not be necessary.

2.2.5 AIR QUALITY

Regulatory Setting. The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), lead (Pb), and sulfur dioxide (SO₂).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), and particulate matter (PM). California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the Southern California Association of Governments (SCAG) for Los Angeles County and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the RTP is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter. A region is a “nonattainment” area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called “maintenance” areas. “Hot spot” analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the CO standard to be violated, and in “nonattainment” areas the project must not cause any increase in the number and severity of violations. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Affected Environment

The ensuing discussion is based on an Air Quality Review as performed by the Caltrans Office of Environmental Engineering and Corridor Studies (OEECS), Air Quality Branch (AQB), dated January 29, 2008, and research performed by the Caltrans Division of Environmental Planning.

General Geological, Climatic, and Meteorological Conditions. The proposed project is located in the Angeles National Forest in the San Gabriel Mountain Range, which falls within the South Coast Air Basin (SCAB). The SCAB is comprised of parts of Los Angeles, Riverside, and San Bernardino counties and all of Orange County, and is bounded on the west by the Pacific Ocean and surrounded on the other sides by mountains, which include the San Gabriel Mountain Range in which the proposed project is located within. The mountains trend east-west, but hills along the San Andreas fault trend west-northwest. The

subsection elevation ranges from about 500 feet up to 6000 feet and the mountains tend to channel and confine airflow and trap air pollutants in the basin to the south.

The climate in and around the project area, as with all of Southern California, is controlled largely by the strength and position of the subtropical high pressure cell over the Pacific Ocean. It maintains moderate temperatures and comfortable humidity, and limits precipitation to a few storms during the winter "wet" season. Temperatures are normally mild, except in the summer months, which commonly bring substantially higher temperatures. In all, the local climate is characterized by hot, dry summers and mild-to-cold winters with seasonal heavy precipitation of up to 30 inches that occurs primarily during the winter months. Summer typically has clear skies, high temperatures (95 F) and humidity.

Winds in the project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night the wind generally slows and reverses direction traveling towards the sea. Wind direction will be altered by local canyons, with wind tending to flow parallel to the canyons. During the transition period from one wind pattern to the other, the dominant wind direction rotates into the south and causes a minor wind direction maximum from the south.

Southern California frequently has temperature inversions which inhibit the dispersion of pollutants. Inversions may be either ground based or elevated. Grounds based inversions, sometimes referred to as radiation inversions, are most severe during clear, cold, early winter mornings. Under conditions of a ground-based inversion, very little mixing or turbulence occurs, and high concentrations of primary pollutants may occur local to major roadways. Elevated inversions can be generated by a variety of meteorological phenomena. Elevated inversions act as a lid or upper boundary and restrict vertical mixing. Below the elevated inversion, dispersion is not restricted. Mixing heights for elevated inversions are lower in the summer and more persistent. This low summer inversion puts a lid over the South Coast Air Basin (SCAB) and is responsible for the high levels of ozone observed during summer months in the air basin.

Santa Ana winds have a strong effect on the local climate. They are strong, extremely dry offshore winds that characteristically sweep through in Southern California and northern Baja California in late fall into winter, and can often create ideal wildfire conditions in the project study area and the Angeles National Forest, in general. They can range from hot-to-cold, depending on the prevailing temperatures in the source regions, the Great Basin and upper Mojave Desert. However, the winds are remembered most for the hot, dry weather that they bring in the fall. As discussed earlier in the document, wildfires that are often a result of Santa Ana wind events, are a major contributor to "bad air days" throughout the SCAB.

Criteria Pollutants. Since the passage of the Federal Clean Air Act (FCAA) and subsequent amendments, the US EPA has established and revised the NAAQS. The NAAQS was established for six major pollutants or criteria pollutants. The NAAQS are two tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property). The six criteria pollutants are ozone (O₃), carbon monoxide (CO), particulate matter (PM₁₀ and PM_{2.5}), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead (Pb). **Table XX** presents the state and national ambient air quality standards.

Ozone (O₃). Ozone is a toxic gas that irritates the lungs and damages materials and vegetation. Ozone is a secondary pollutant; it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO₂, which occur only in the presence of bright sunlight. Pollutants emitted from areas cities react during transport downwind to produce the oxidant concentrations experienced in the area.

Particulate Matter (PM₁₀ and PM_{2.5}). Particulate matter includes both aerosols and solid particles of a wide range of size and composition. Of particular concern are those particles between 10 and 2.5 microns in size (PM₁₀) and smaller than or equal to 2.5 microns (PM_{2.5}). The size of the particulate matter is referenced to the aerodynamic diameter of the particulate.

The PM10 criteria is aimed primary at what the U.S. EPA refers to as “course particles.” Course particles are often found near roadways, dusty industries, construction sites, and fires. The PM2.5 criteria, which are directed at particles less than 2.5 microns in size, are referred to as “fine particles.” These particles can also be directly emitted and they can also form when gases emitted from power plants, industries and automobiles react in the air. The principal health effect of airborne particulate matter is on the respiratory system. Studies have linked particulate pollution with irritation of the airways, coughing, aggravated asthma, irregular heartbeat, and premature death in people with heart or lung disease.

Carbon Monoxide (CO). Carbon monoxide is a colorless and odorless gas, which, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Carbon monoxide combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High carbon monoxide concentrations can lead to headaches, aggravation of cardiovascular disease, and impairment of central nervous system functions. Carbon monoxide concentrations can vary greatly over comparatively short distances. Relatively high concentrations are typically found near crowded intersections, along heavily used roadways carrying slow moving traffic, and at or near ground level. Even under the most severe meteorological and traffic conditions, high concentrations of carbon monoxide are limited to locations within a relatively short distance (300 to 600 feet [90 to 185 meters]) of heavily traveled roadways. Overall carbon monoxide emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

Nitrogen Oxides (NOX). Nitrogen oxides from automotive sources are some of the precursors in the formation of ozone and secondary particulate matter. Ozone and particulate matter are formed through a series of photochemical reactions in the atmosphere. Because the reactions are slow and occur as the pollutants are diffusing downwind, elevated ozone levels are often found many miles from the source of precursor emission. The effects of nitrogen oxides emission are examined on a regional basis.

Lead (Pb). Lead is a stable compound, which persists and accumulates both in the environment and in animals. In humans, it affects the blood forming or hematopoietic, the nervous, and the renal systems. In addition, lead has been shown to affect the normal functions of the reproductive, endocrine, hepatic, cardiovascular, immunological, and gastrointestinal systems, although there is significant individual variability in response to lead exposure. Since 1975, lead emissions have been in decline due in part to the introduction of catalyst-equipped vehicles, and decline in production of leaded gasoline. In general, an analysis of lead is limited to projects that emit significant quantities of the pollutant (i.e. lead smelters) and are not applied to transportation projects.

Sulfur Oxides (SOx). Sulfur oxides constitute a class of compounds of which sulfur dioxide (SO₂) and sulfur trioxide (SO₃) are of greatest importance. The oxides are formed during combustion of the sulfur components in motor fuels. Relatively few sulfur oxides are emitted from motor vehicles since motor fuels are now de-sulfured. The health effects of sulfur oxides include respiratory illness, damage to the respiratory tract, and bronchia-constriction.

Table 2-20. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²			
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷	
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry	
	8 Hour	0.070 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)			
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	20 µg/m ³		—			
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	15.0 µg/m ³			
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	None	Non-Dispersive Infrared Photometry (NDIR)	
	1 Hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)			
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		—			—
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Gas Phase Chemiluminescence	
	1 Hour	0.18 ppm (339 µg/m ³)		—			
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m ³)	—	Spectrophotometry (Pararosaniline Method)	
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³)			
	3 Hour	—		—			0.5 ppm (1300 µg/m ³)
	1 Hour	0.25 ppm (655 µg/m ³)		—			—
Lead ⁸	30 Day Average	1.5 µg/m ³	Atomic Absorption	—	—	—	
	Calendar Quarter	—		1.5 µg/m ³			
	Rolling 3-Month Average ⁹	—		0.15 µg/m ³			
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards			
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography				
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence				
Vinyl Chloride ⁸	24 Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography				

Source: California Air Resources Board, 11/17/2008

- California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current federal policies.
- Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr, ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
- National Primary Standards: the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
- The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effect determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- National lead standard, rolling 3-month average: final rule signed October 15, 2008

Environmental Consequences

State Route-39 has been closed to public access for more than 30 years, and its reopening is essentially subject to air quality conformity requirements. It is important to note that the build alternatives will allow for more direct access to the various facilities within the San Gabriel Mountains. This will reduce circuitous travel, leading to reduced air pollution emissions in all categories.

Particulate Matter. In an effort to comply with conformity requirements, the proposed project was forwarded to the Southern California Association of Governments Transportation Conformity Working Group (SCAG TCWG) for review and concurrence by various interest groups including the Environmental Protection Agency (EPA), the Federal Highway Administration (FHWA), and Caltrans. The SCAG TCWG provides a means of interagency consultation for determination on particular matters as mandated by the Clean Air Act and its amendments. At a monthly meeting on January 22, 2008, SCAG TCWG has concurred that the project would not be of air quality concern for PM₁₀ and PM_{2.5}; and therefore, the project is considered as meeting the conformity requirements for particular matters without a qualitative hot-spot analysis. The proposed project, however, is located within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) and is required to comply with all applicable regulations, (i.e. SCAQMD Rules 401, 402, and 403, to mitigate fugitive dusts and other pollutants during construction).

Carbon Monoxide. A project-level hot-spot analysis was conducted to demonstrate conformity with the applicable carbon monoxide state implementation plan, utilizing *Transportation Project-Level Carbon Monoxide Protocol* (UCD-ITS-RR-97-21, Revised December 1997). The project proposes a roadway re-opening and is not expected to affect the percentages of vehicles operating on cold start mode. The proposed project, however, is anticipated to increase traffic volume in excess of 5 percent (1,800 ADT in the opening year of 2012 and 5,160 in the horizon year of 2030 compared to 0 for the existing year and no-build in the horizon year) and will worsen traffic flows in comparison to the existing.

The proposed project is not expected to result in higher CO concentrations than those locations in the attainment demonstration because the proposed project is anticipated to experience lower traffic lane volumes; no vehicles operating in cold start mode; no heavy duty gas or diesel trucks; and better background concentrations. Therefore, the project is deemed satisfactory and no further analysis for CO is required.

Regional Air Quality Conformity. While the proposed project is not listed individually in the 2008 RTP or the RTIP, it is included in the RTP and RTIP as a lump sum category of LALS02, a SHOPP funding category for roadway rehabilitation, which brings it into conformance with both the RTP and RTIP. Currently, the project has been programmed in the SHOPP 2009-2010 fiscal year under the HA23 Program. The design concept and scope of the proposed project is consistent with the project description in the RTP, the RTIP, and the assumptions in the SCAG regional emissions analysis.

The primary agencies responsible for regulations to improve air quality in the SCAB are the SCAQMD and the California Air Resources Board (CARB). The SCAG is an important partner to the SCAQMD, as it is the designated metropolitan planning authority for the area and produces estimates of anticipated future growth and vehicular travel in the basin which are used for air quality planning. The SCAQMD sets and enforces regulations for non-vehicular sources of air pollution in the basin and works with SCAG to develop and implement Transportation Control Measures (TCM). TCM measures are intended to reduce and improve vehicular travel and associated pollutant emissions.

CARB was established in 1967 by the California Legislature to attain and maintain healthy air quality, conduct research into the causes and solutions to air pollution, and systematically attack the serious problem caused by motor vehicles, which are the major causes of air pollution in the State. CARB sets and enforces emission standards for motor vehicles, fuels, and consumer products. It sets the health based California Ambient Air Quality Standards (CAAQS) and monitors air quality levels throughout the state. The board identifies and sets control measures for toxic air contaminants. The board also performs air quality related research, provides compliance assistance for businesses, and produces

education and outreach programs and materials. CARB provides assistance for local air quality districts, such as SCAQMD.

The U.S. Environmental Protection Agency (U.S. EPA) is the primary federal agency for regulating air quality. The EPA implements the provisions of the FCAA. This Act establishes the NAAQS that are applicable nationwide. The EPA designates areas with pollutant concentrations that do not meet the NAAQS as non-attainment areas for each criteria pollutant. States are required by the FCAA to prepare State Implementation Plans (SIP) for designated non-attainment areas. The SIP is required to demonstrate how the areas will attain the NAAQS by the prescribed deadlines and what measures will be required to attain the standards. The EPA also oversees implementation of the prescribed measures. Areas that achieve the NAAQS after a non-attainment designation are redesignated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the NAAQS.

The proposed project qualifies under the Section 6005 Pilot Program of the SAFETEA-LU. The FHWA has not delegated the responsibilities for conformity determination for the Section 6005 projects; and an air quality conformity analysis will need to be prepared and submitted to the FHWA once a preferred alternative is selected.

The SCAB was designated as moderate non-attainment of the PM10 standards when the designations were initially made in 1990 with a required attainment date of 1994. In 1993, the basin was redesignated as serious non-attainment with a required attainment date of 2006 because it was apparent that the basin could not meet the PM10 standard by the 1994 deadline. At this time Basin has met the PM10 standards at all monitoring stations except the western Riverside where the annual PM10 standard has not been met. However, on September 21, 2006, the U.S. EPA announced that it was revoking the annual PM10 standard as research had indicated that there were no considerable health effects associated with long-term exposure to PM10. With this change the basin is technically in attainment of the federal PM10 standards although the redesignation process has not yet begun. Designations of criteria pollutants for the SCAB are presented in the following table.

Table 2-21. Designations of Criteria Pollutants for the SCAB

Pollutant	Federal	State
8- Hour Ozone (O ₃)	Severe-17 Non-attainment (2021)	Non-attainment
Respirable Particulate Matter (PM ₁₀)	Serious Non-attainment (2006)	Non-attainment
Fine Particulate Matter (PM _{2.5})	Non-attainment (2015)	Non-attainment
Carbon Monoxide (CO)	Attainment/Maintenance (2000)	Attainment
Nitrogen Dioxide (NO ₂)	Attainment/Maintenance (1995)	Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Lead	Attainment	Attainment
Visibility Reducing Particles	n/a	Unclassified
Sulfates	n/a	Unclassified
Hydrogen Sulfide	n/a	Attainment
Vinyl Chloride	n/a	Attainment

Notes:

1. The Federal 1-hour Ozone (O₃) standard was rescinded effective June 15, 2005 with the implementation of the 8-hour standard. Prior to this the SCAB was designated Extreme Non-Attainment for the 1-hour O₃ standard with attainment date of 2010.
2. EPA changed the PM_{2.5} 24-hour standard from 65 to 35 µg/m³ with an effective date of December 2006. Until new area designations become effective in early 2010 based on the new standard, project-level conformity determinations must still consider the 1997 PM_{2.5} standards because these are the standards upon which the current PM_{2.5} non-attainment designations are based.

In July 1997, U.S. EPA issued NAAQS for fine particulate matter (PM_{2.5}). The PM_{2.5} standards include an annual standard set at 15 micrograms per cubic meter (µg/m³), based on the three-year average of annual mean PM_{2.5} concentrations and a 24-hour standard of 35 µg/m³, based on the three-year average of the 98th percentile of 24-hour concentrations. Implementation of these standards was delayed by several lawsuits. On January 5, 2005, EPA took final action to designate attainment and non-attainment areas under the NAAQS for PM_{2.5} effective April 5, 2005. The SCAB was designated as non-attainment with an attainment required as soon as possible but no later than 2010. EPA may grant attainment date extensions of up to five years in areas with more severe PM_{2.5} problems and where emissions control measures are not available or feasible. It is likely that the SCAB will need this additional time to attain the standard

Note that, although there is now a PM_{2.5} standard, adequate tools are not currently available to perform a detailed assessment of PM_{2.5} emissions and impacts at the project level. Analysis of PM_{2.5} impacts is complex because it is both directly emitted from sources, like CO, and formed in the atmosphere from reactions of other pollutants, like ozone. Further, there are no good sources for the significance thresholds for PM_{2.5} emissions at this time. Until tools and methodologies are developed to assess the impacts of projects on PM_{2.5} concentrations, the analysis of PM₁₀ will need to be used as an indicator of potential PM_{2.5} impacts.

On September 21, 2006, the U.S. EPA announced that the 24-hour PM_{2.5} standard was lowered to 35 µg/m³. Attainment/non-attainment designations for the revised PM_{2.5} standard will be made by December of 2009 with an attainment date of April 2015 although an extension of up to five years could be granted by the U.S. EPA.

Project Level Conformity. The CCAA required all air pollution control districts in the state to prepare a plan prior to December 31, 1994 to reduce pollutant concentrations exceeding the CAAQS and ultimately achieve the CAAQS. The districts are required to review and revise these plans every three years. The SCAQMD satisfies this requirement through the publication of an Air Quality Management Plan (AQMP). The AQMP is developed by SCAQMD and SCAG in coordination with local governments and the private sector. The AQMP is incorporated into the SIP by CARB to satisfy the FCAA requirements discussed above. The following table lists the current attainment designations for the SCAB. For the Federal standards, the required attainment date is also shown. The Unclassified designation indicates that the air quality data for the area does not support a designation of attainment or non-attainment.

The previous Table 2-19 shows that the U.S. EPA has designated SCAB as Severe-17 non-attainment for ozone, serious non-attainment for PM₁₀, non-attainment for PM_{2.5}, and attainment/maintenance for CO and NO₂. The basin has been designated by the state as non-attainment for ozone, PM₁₀, and PM_{2.5}. The federal classifications of Severe-17 and Serious affect the required attainment dates as the federal regulations have different requirements for areas that exceed the standards by greater amounts at the time of attainment/non-attainment designation.

The SCAB is designated as in attainment of the State and Federal SO₂ and lead as well as the state CO, NO₂, SO₂, lead, hydrogen sulfide, and vinyl chloride. In July 1997, U.S. EPA issued a new ozone NAAQS of 0.08 ppm using an 8-hour averaging time. Implementation of this standard was delayed by several lawsuits. Attainment/non-attainment designations for the new 8-hour ozone standard were issued on April 15, 2004 and became effective on June 15, 2005. The SCAB was designated severe-17 non-attainment, which requires attainment of the Federal Standard by June 15, 2021. As a part of the designation, the EPA announced that the 1-hour ozone standard would be revoked in June of 2005. Thus, the 8-hour ozone standard attainment deadline of 2021 supersedes and replaces the previous 1-hour ozone standard attainment deadline of 2010.

The SCAQMD is requesting that U.S. EPA change the non-attainment status of the 8 hour ozone standard to extreme. This will allow the use of undefined reductions (i.e. "black box") based on the anticipated development of new control technologies or improvement of existing technologies in the

attainment plan. Further, the extreme classification could extend the attainment date by three years to 2024.

On April 28, 2005 CARB adopted an 8-hour ozone standard of 0.070 ppm. The California Office of Administrative Law approved the rulemaking and filed it with the Secretary of State on April 17, 2006. The standard became effective on May 17, 2006. California has retained the 1-hour concentration standard of 0.09 ppm. To be redesignated as attainment by the state the basin will need to achieve both the 1-hour and 8-hour ozone standards.

The SCAB has not had any violations of the federal CO standards since 2003. Therefore, the SCAB has met the criteria for CO attainment. The SCAQMD formally requested the U.S. EPA to redesignate the Basin as attainment for CO. The U.S. EPA designated the basin as an attainment/maintenance area for CO on June 11, 2007.

The federal annual NO₂ standard was met for the first time in 1992 and has not been exceeded since. The SCAB was redesignated as attainment for NO₂ in 1998. The basin will remain a maintenance/attainment area until 2018, assuming the NO₂ standard is not exceeded.

Table 2-18 shows that SCAB is designated as in attainment of the SO₂ and lead NAAQS as well as the state CO, NO₂, SO₂, lead, hydrogen sulfide, and vinyl chloride CAAQS. Generally, these pollutants are not considered a concern in the SCAB.

Potential Construction-Related Air Quality Effects. During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and various other activities. Emissions from construction equipment also are anticipated and would include CO, nitrogen oxides (NO_x), volatile organic compounds (VOCs), directly-emitted particulate matter (PM₁₀ and PM_{2.5}), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from NO_x and VOCs in the presence of sunlight and heat.

Site preparation and roadway construction would involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. If not properly controlled, these activities would temporarily generate PM₁₀, PM_{2.5}, and small amounts of CO, SO₂, NO_x, and VOCs. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Construction activities for large development projects are estimated by the Environmental Protection Agency (EPA) to add 1.09 tonne (1.2 tons) of fugitive dust per acre of soil disturbed per month of activity. If water or other soil stabilizers are used to control dust, the emissions can be reduced by up to 50 percent. Caltrans' Standard Specifications (Section 10) pertaining to dust minimization requirements requires use of water or dust palliative compounds and will reduce potential fugitive dust emissions during construction.

In addition to dust-related PM₁₀ emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO₂, NO_x, VOCs and some soot particulate (PM₁₀ and PM_{2.5}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

SO₂ is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Off-road diesel fuel meeting Federal standards can contain up to 5,000 parts per million (ppm) of sulfur, whereas on-road diesel is restricted to less than 15 ppm of sulfur. However, under California law and Air Resources Board regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel, so SO₂-related issues due to diesel exhaust will be minimal. Some phases of construction, particularly asphalt paving, would result in short-term odors in the immediate area of each paving site(s). Such odors would be quickly dispersed below detectable thresholds as distance from the site(s) increases.

Naturally Occurring Asbestos (NOA). Though not required for a project-level air quality analysis, it is routine and an established local practice in Caltrans District 7 to include a discussion pertaining to NOA. This discussion is limited to NOA and the Memorandum Addressing Naturally Occurring Asbestos in CEQA Documents released by the Governor's Office of Planning and Research. Discussions relating to all other types of asbestos are deferred to the Caltrans' hazardous waste or other environmental reports.

The purpose of the discussion is to establish the impact of NOA entrainment during construction. The two common sets of NOA are the serpentine and ultramafic rocks. The project is located in Los Angeles county, which is among the counties listed as containing serpentine and ultramafic rock. However, only the Catalina Island portion of Los Angeles County has been found to contain such rock; hence, it is not found in the project area. Therefore, no potential impacts from NOA during project construction would occur.

Mobile Source Air Toxics (MSAT). In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards (NAAQS), EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources. 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent.

California's vehicle emission control and fuel standards are more stringent than Federal standards, and are effective sooner, so the effect on air toxics of combined State and Federal regulations is expected to result in greater emission reductions, more quickly, than the FHWA analysis shows. The FHWA analysis, with modifications related to use of the California-specific EMFAC model rather than the MOBILE model, would be conservative.

This EIR/EA includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this EIR/EA. Due to these limitations, the following discussion

is included in accordance with CEQ regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information:

Information that is Unavailable or Incomplete. Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

Emissions. The EPA and California tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While both MOBILE 6.2 and EMFAC (either 2002 or the recently-released 2007 version) are used to predict emissions at a regional level, they have limitations when applied at the project level. Both are a trip-based models--emission factors are projected based on a typical trip of around 7.5 miles, and on average speeds for this typical trip. This means that neither model has the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, both models can only approximate emissions from the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the MOBILE 6.2 model results are not sensitive to average trip speed; however, particulate matter (PM) emissions from the EMFAC model are sensitive to trip speed, so for California conditions diesel PM emissions are treated the same as other emissions. Unlike MOBILE 6.2, the EMFAC model does not provide MSAT emission factors; off-model speciation of EMFAC's Total Organic Compounds output must be used to generate MSAT emissions. The emissions rates used in both MOBILE 6.2 and EMFAC are based on a limited number of vehicle tests.

These deficiencies compromise the capability of both MOBILE 6.2 and EMFAC 2002/2007 to estimate MSAT emissions. Both are adequate tools for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but neither is sensitive enough to capture the effects of travel changes caused by smaller projects or to predict emissions near specific roadside locations.

Dispersion. The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide (CO) to determine compliance with the NAAQS. The CALINE4 model used in California is an improvement on the CALINE3-based EPA models, but like them was built primarily for CO analysis, has not been specifically validated for use with other materials such as MSATs, and is difficult to use for averaging periods of more than 8 hours or so (health risk data for MSATs are typically based on 24-hr, annual, and long-term (30-70 years) exposure). Dispersion models are appropriate for predicting maximum concentrations that can occur at some time at some location within a geographic area, but cannot accurately predict exposure patterns at specific times at specific locations across an urban area to assess potential health risk. The NCHRP is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of adequate monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

Exposure Levels and Health Effects. Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately

calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs.

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at <http://www.epa.gov/iris>. The following toxicity information for the six prioritized MSATs was taken from the IRIS database Weight of Evidence Characterization summaries. This information is taken verbatim from EPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures. The five organic-based MSATs listed below are also listed as toxic air contaminants by the California Air Resources Board.

- **Benzene** is characterized as a known human carcinogen
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure
- **Diesel exhaust (DE)** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases. The particulate matter fraction of diesel exhaust (Diesel PM) has been identified by the CARB as a toxic air contaminant due to long-term cancer risk
- **Diesel exhaust** is also connected with chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes -- particularly respiratory problems. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of impacts based upon theoretical approaches or research methods generally accepted in the scientific community.

Because of the uncertainties outlined above, a reliable quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

MSAT Emissions in the Project Area. In this document, FHWA has provided a quantitative analysis of MSAT emissions relative to the various alternatives, (or a qualitative assessment, as applicable) and has acknowledged that (some, all, or identify by alternative) the project alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

As previously discussed, the technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSATs, it can give a basis for identifying and comparing the potential differences among MSAT emissions—if any—from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at:

<http://www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm>

For each alternative in this EIR/EA, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for each of the build alternatives is not expected to be the same as that for the no-build alternative as the no-build alternative does not anticipate any traffic volumes to be accommodated. Although the level of emissions from the build alternatives is likely to increase in comparison to the no-build alternative, traffic volumes and VMTs anticipated for the build alternatives are relatively low (5160 vehicles projected in 2030) and will not result in significant MSAT emissions. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of the EPA's and California's control programs that are projected to reduce MSAT emissions by at least 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projects in terms of fleet

mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The proposed project is located in the national forest and there are no sensitive receptors as identified in the California Air Resources Board's "Air Quality and Land use Handbook"; residential areas, schools, hospitals, and other health care facilities, day care and other child care facilities, and parks and playgrounds; and will not result in significant MSAT impacts. On a regional basis, the EPA's and California's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Avoidance, Minimization, and/or Mitigation Measures

Measures to Avoid and/or Minimize Construction-Related Effects. Most of the construction impacts to air quality are short-term in duration and, therefore, will not result in adverse or long-term conditions. Implementation of the following measures will reduce any air quality impacts resulting from construction activities:

- The construction contractor shall comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 of Caltrans' Standard Specifications (1999).
 - o Section 7, "Legal Relations and Responsibility," addresses the contractor's responsibility on many items of concern, such as: air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; and convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 7-1.01F specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
 - o Section 10 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.
- Water or dust palliative will be applied to the site and equipment as frequently as necessary to control fugitive dust emissions.
- Soil binder will be spread on any unpaved roads used for construction purposes, and all project construction parking areas.
- Trucks will be washed off as they leave the right of way as necessary to control fugitive dust emissions.
- Construction equipment and vehicles shall be properly tuned and maintained. Low-sulfur fuel shall be used in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
- Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.
- To the extent feasible, establish ESAs for sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited.
- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.
- Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to reduce PM10 and deposition of particulate during transportation.
- Remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.

- To the extent feasible, route and schedule construction traffic to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area.

2.2.6 NOISE AND VIBRATION

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). 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 such measures are not feasible. The rest of this section will focus on the NEPA-23 CFR 772 noise analysis; please see Chapter 3 of this document for further information on noise analysis under CEQA.

National Environmental Quality Act (NEPA) and 23 CFR 772. For highway transportation projects with FHWA (and Caltrans, 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 contain 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 2-22. Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, dBA $L_{eq}(h)$	Description of Activities
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	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	–	Undeveloped lands
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Figure 2-10. Noise Levels of Common Activity

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

In accordance with Caltrans' Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006, a noise impact occurs when the future noise level with the project results in a substantial increase in 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.

Caltrans' 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 5 dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources and safety 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, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978 and the cost per benefited residence.

Affected Environment

Caltrans Office of Environmental Engineering and Corridor Studies (OEECS), Noise and Vibration Branch conducted the noise analyses in April 2008 to determine the noise and vibration effects of the proposed project. The Angeles National Forest consists of open space and undeveloped land with native vegetation. The study focused on the predicted future traffic and construction noise levels.

As a result of the road being closed since 1978, existing ambient noise levels were not measured. Predicted future traffic volumes (460 vehicles/hour or 10 percent of the predicted 2030 ADT vehicles of 4600) were used to develop the traffic noise model for the area, which was then used to predict expected traffic noise levels. The following tables present the predicted future traffic noise levels and provide a summary of the construction equipment noise emission impacts.

Table 2-23. Predicted Future Traffic Noise Levels

Distance From Center Line (Ft.)	Predicted Traffic Noise Level After-Project Leq _{avg} dBA*
50	60
100	57
200	54
400	51
600	48

* Predicted traffic noise levels are worst-case scenario. The actual noise levels may be less.

The noise analysis indicated that construction activities, particularly the use of impact drill rigs, would temporarily but significantly increase noise levels in the area. As indicated in the below table, construction equipment is expected to generate noise levels of up to 88dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of about 6dBA per doubling of distance.

Table 2-24. Drill Rig Noise Emission Levels

Distance From Drill Rig (Ft.)	Predicted Traffic Noise Level After-Project Leq _{avg} dBA
50	88
100	82
200	76
400	70
800	64
1600	58

Environmental Consequences

FHWA regulations (23CFR772) state that noise abatement will usually be necessary where noise impacts are predicted and only where frequent human use occurs, and where a lowered noise level would be of benefit. Since this project is not a Type -1 project, only traffic and construction noise abatement are addressed.

For all the build alternatives, the noise analysis indicated that construction activities, particularly the use of impact drill rigs with noise emission levels of 88 dBA at 50 feet from the construction site with a typical noise drop-off of 6 dBA per doubling of distance, would increase noise levels in the area. Also the predicted average traffic noise level after the reopening of State Route 39 was calculated to be 60 dBA at 50 feet from the roadway centerline with a typical noise drop-off of 3 dBA per doubling of distance. A traffic volume of 460 vehicles per hour was used to predict peak hour noise levels for this project. This traffic volume represents 10 percent of the predicted 2030 ADT of 4600 vehicles.

Based on the analyses, it was determined that the ambient noise levels in the Angeles National Forest would increase due to traffic noise from the reopening of this segment of SR-39 and would experience significant but temporary noise increase during the construction phase of the project.

Avoidance, Minimization, and/or Mitigation Measures

Since this project is not a Type -1 project, only traffic and construction noise abatement are addressed. The abatement measures can consist of noise suppressing sound blankets, use of alternative equipment and ensuring that all equipment are in good working order. In addition, the following measures would minimize temporary construction noise impacts:

1. Equipment Noise Abatement should be applied to old equipment so that both old and new equipment noise levels are attenuated.
 - a. Mufflers are very effective devices, which reduce the noise emanating from the intake or exhaust of an engine, compressor or pump. The fitting of effective mufflers on all new equipment and retrofitting of mufflers on existing equipment is necessary to yield an immediate noise reduction at all types of road construction sites.
 - b. Sealed and lubricated tracks for crawler mounted equipment will lessen the sound radiated from the track assembly resulting from metal to soil and metal to metal contact. Contractors and site engineers and inspectors should ensure that the tracks are kept in excellent condition by periodic maintenance and lubrication.
 - c. Lowering exhaust pipe exit height closer to the ground can result in an off-site noise reduction. Barriers are more effective in attenuating noise when the noise source is closer to ground level.
 - d. General noise control technology can have substantially quieter construction equipment when manufacturers apply the state of the art technology to new equipment or repair old equipment to maintain original equipment noise levels.
2. In-Use Noise Control where existing equipment is not permitted to produce noise levels in excess of specified limits. Any equipment that produces noise levels less than the specified limits would not be affected. However, those exceeding the limit would be required to meet compliance by repair, retrofit, or elimination. New equipment with the latest noise sensitive components and noise control devices are generally quieter than older equipment, if properly maintained and inspected regularly. They should be repaired or replaced if necessary to maintain the in-use noise limit. All equipment applying the in-use noise limit would achieve an immediate noise reduction if properly enforced.
3. Site Restrictions shall be applied to achieve noise attenuation through modifying the time, place and method of operation of a particular source. The methods include shielding with barriers for equipment and site, truck rerouting and traffic control, time scheduling, and equipment relocation.

- a. Shielding with barriers should be implemented at an early stage of a project to reduce construction equipment noise. The placement of barriers must be carefully considered to reduce limitation of site access. Barriers may be natural or man-made, such as excess landfill used as a temporary berm strategically placed to act as a barrier.
 - b. Efficient rerouting of trucks and control of traffic activity on construction site will reduce noise due to vehicle idling, gear shifting and accelerating under load. Planning proper traffic control will result in efficient workflow and reduce noise levels. In addition, rerouting trucks does not reduce noise levels but transfer noise to other areas that are less sensitive to noise.
 - c. Time scheduling of activities should be implemented to minimize noise impact on exposed areas. Local activity patterns and surrounding land uses must be considered in establishing site curfews. However, limiting working hours can decrease productivity. Sequencing the use of equipment with relatively low noise levels versus equipment with relatively high noise levels during noise sensitive periods is an effective noise control measure.
 - d. Equipment location should be as far from noise sensitive land use areas as possible. The contractor should substitute quieter equipment or use quieter construction processes at or near noise sensitive areas.
4. Personal Training of operators and supervisors should be mandated to ensure that all personnel working on the job site become more aware of the construction site noise problem, and implement the various methods of improving the conditions.

The construction noise minimization measures listed above are only preliminary and will be finalized once an alternative is chosen and design plans are fully completed.

2.3 BIOLOGICAL ENVIRONMENT

The Biological Environment Section of this EIR/EA is broken into the following subsections:

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

For each of the above-mentioned subsections, the analysis will begin with a discussion of the regulatory setting (applicable environmental laws), followed by a discussion of the affected environment (existing condition), which in turn will be followed by a discussion of the environmental consequences (the project's impacts to the affected environment). The subsection will end with a discussion of the project's avoidance, minimization, and mitigation measures.

The environmental consequences discussions will focus on the effects of implementation of the proposed project on plant communities, common and special-status plant and wildlife species, special-status habitats and wildlife movement corridors and whether these effects exceed a threshold of significance. Because most biological resources are dependant upon the characters of specific habitat types, impacts on these resources are generally discussed in terms of the effect of project –related activities on plant communities. Direct impacts to specific plant and wildlife are evaluated and discussed when impacts could be considered significant.

There are four alternatives for the proposed project. Alternative 1 is the “No Build” and alternatives 2, 3 and 4 include variations of improvements at numerous locations along SR-39 between PM 39.9 and 44.4. Alternative 2 and 4 are similar with the only differences being in the type of retaining walls used at various locations and a 10-foot road realignment along a 150-foot section of the highway as part of alternative 4. Also, Alternative 2 proposes geo-synthetic reinforcement at the Snow Spring slide area and Alternative 4 proposes only a catchment area at the same location. Alternative 3 is similar to both 2 and 4 with retaining walls at various locations but in addition it proposes to construct two bridges to span scree slopes at two separate locations – one at the Snow Spring Slide Area. All three of the build alternatives propose to install cable netting at various locations to reduce rock fall onto the highway. The footprint of the impact area is the same for Alternatives 2, 3 and 4. Therefore, the impact analysis and discussion will apply to all of them. Where alternatives in project design would effect the natural environment differently, such as the Snow Spring Slide area, these differences will be noted. Because Alternative 1 would have no effect on the existing conditions, there would be no significant impact to the natural environment with the “No Build” Alternative.

This entire Biological Environment Section is based on the Caltrans-prepared Natural Environment Study Report (biological technical study) dated November 2008.

2.3.1 NATURAL COMMUNITIES

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

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in the Threatened and Endangered Species subsection. Likewise, wetlands and other

waters are discussed in the Wetlands and Other Waters subsection of this Biological Environment Section.

Affected Environment

PLANT COMMUNITIES

Mixed Coniferous Forest. Portions of the study area, above the cliff areas and below the existing road, is a mixed coniferous forest. It is characterized by pine and fir species including Ponderosa pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), white fir (*Abies concolor*), incense cedar (*Calocedrus decurrens*), Coulter pine (*Pinus coulteri*) and big-cone Douglas fir (*Pseudotsuga macrocarpa*). Canyon live oak (*Quercus chrysolepis*) is also present in this community. In more mesic areas, big leaf maple (*Acer macrophyllum*) and Mexican elderberry (*Sambucus mexicana*) are present but uncommon.

The shrub layer of this coniferous forest, typically in more open areas, is comprised of curl-leaf mountain mahogany (*Cercarpus ledifolius*), Parry's manzanita (*Arctostaphylos parryana*), coffee berry (*Rhamnus californica*), rubber rabbitbrush (*Chrysothamnus nauseosus*) Sierra gooseberry (*Ribes roezlii*) and California brickellbush (*Brickellia californica*). At higher elevations snow bush (*Ceanothus cordulatus*) was common and great basin sagebrush (*Artemisia tridentata*) was occasional.

Understory contains a number of forbes and grasses including golden yarrow (*Eriophyllum confertiflorum*), naked-stemmed buckwheat (*Eriogonum nudum*), western wallflower (*Erysimum capitatum*), Martin's paintbrush (*Castilleja applegatei* ssp. *martini*), short-stemmed buckwheat (*Eriogonum wrightii* ssp. *subscaposum*), Grinnell's penstemon (*Penstemon grinnellii*), happy plant (*Gayophytum* sp.), late lupine (*Lupinus hyacinthinus*), spear-leaved agoseris (*Agoseris retrorsa*) and California fuchsia (*Epilobium canum*). Grasses present included cheat grass (*Bromus tectorum*), Malpais blue grass (*Poa secunda*), California brome (*Bromus carinatus*) and squirreltail (*Elymus elymoides*).

Canyon Live Oak Woodland. Portions of the slopes below the highway are dominated by stands of canyon live oak with a scattering of pine and big-cone Douglas fir. The shrub layer consists of curl-leaf mountain mahogany, rubber rabbitbrush, rosemary flat-topped buckwheat (*Eriogonum fasciculatum* ssp. *polifolium*), snow bush, Parry's manzanita, hairy yerba santa (*Eriodictyon trichocalyx*), chaparral bedstraw (*Galium angustifolium*), southern deer brush (*Ceanothus integerrimus*), orangebush monkey flower (*Mimulus aurantiacus*), California brickellbush, chaparral yucca (*Yucca whipplei*) and sand wash butterweed (*Senecio flaccidus*).

The ground cover within the openings of the shrub layer consisted of Martin's paintbrush, happy plant, Malpais blue grass, giant blazing star (*Mentzelia laevicaulis*), golden yarrow, California brome, prickly phlox (*Leptodactylon pungens*), cheat grass, Davidson's buckwheat (*Eriogonum davidsonii*), prickly cryptantha (*Cryptantha muricata*), speckled-pod rock cress (*Arabis sparsiflora*), Parish's tauschia (*Tauschia parishii*), squirreltail, Pacific fescue (*Vulpia microstachys*), Nevin's birds beak (*Cordylanthus nevinii*) and naked-stemmed buckwheat.

Mixed Montane Chaparral. Montane chaparral is uncommon and scattered throughout the study area, existing mostly west of the existing road. The co-dominant plants found in this community are southern deer brush, Parry's manzanita, chaparral whitethorn (*Ceanothus leucoermis*) and rosemary flat-topped buckwheat. Subdominant plants are chaparral yucca, poodledog bush (*Turricula parryi*), rubber rabbitbrush, California brickellbush, orangebush monkey flower, snow bush, deerweed (*Lotus scoparius*) and curly-leaf mountain mahogany. Another plant uncommonly found in this community is canyon live oak.

The understory is comprised of Martin's paintbrush, Grinnell's penstemon, cheat grass, white everlasting (*Gnaphalium canescens*), golden yarrow, Malpais blue grass, giant blazing star, foxtail fescue (*Vulpia myuros*), Davidson's buckwheat, splendid gilia (*Gilia splendens*), rough muilla (*Mullia maritime*), cobweb

thistle (*Cirsium occidentale*), prickly cryptantha, field suncup (*Camissonia hirtella*) and strigose lotus (*Lotus strigosus*).

Xeric and Mesic Cliff Faces. Steep cliffs located above the existing road characterize the majority of the study area. Most of these steep cliffs are covered only by rock, some loose. At some locations on the drier exposures there is an open, mostly very sparse, shrub cover of canyon live oak, curl-leaf mountain mahogany, rubber rabbit brush, rosemary flat-topped buckwheat, California brickellbush, chaparral yucca, Parry's manzanita and snow bush.

Grasses and forbes on these steep slopes included California fuchsia, Parish's buckwheat (*Eriogonum parishii*), prickly poppy (*Argemone munita*), speckled-pod rock cress, Parish's catchfly (*Silene parishii*), western mountain phlox (*Phlox austromontana*), splendid gilia, Parish's spinebract (*Oxytheca parishii*), chicory-leaved wreath plant (*Stephanomeria cichoriacea*), Mojave linanthus (*Linanthus breviculus*), Davidson's buckwheat, prickly phlox, and cheat grass.

The mesic slopes had many similar species including canyon live oak, rubber rabbitbrush, California brickellbush and curl-leaf mountain mahogany. Other shrub species more restricted to these aspects were rock spirea (*Holodiscus microphyllus*), pink-flowered- currant (*Ribes nevadense*), orangebush monkey flower, coffee berry, pipestem virgin's bower (*Clematis lasiantha*), hairy yerba santa, chaparral bedstraw, cuneate-leaved goldenbush (*Ericameria cuneata*), mountain mahogany (*Cercocarpus betuloides*) and sand wash butterweed.

Herbaceous species on these slopes consisted of Green's cinquefoil (*Potentilla glandulosa*), golden yarrow, prickly phlox, coastal wood fern (*Dryopteris arguta*), bushy spike moss (*Selaginella bigelovii*), Davidson's phacelia (*Phacelia davidsonii*), happy plant, few branched dudleya (*Dudleya cymosa*), imbricate phacelia (*Phacelia imbricate*), California goldenrod (*Solidago californica*), California brome, California fuchsia, Malpais blue grass, Grinnell's penstemon, prickly phlox, cheat grass and rock buckwheat (*Eriogonum saxatile*).

Riparian Herb. Several of the ephemeral drainages and seeps have a herbaceous riparian community. This habitat was characterized by dense growths of Durango root (*Datisca glomerata*) and sedges (*Carex* spp.) Other species in these areas were scarlet monkey flower (*Mimulus cardinalis*), green willow herb (*Epilobium ciliatum*), Hookers' evening primrose (*Oenothera elata*), California goldenrod, showy monkey flower (*Mimulus floribundus*), rosilla (*Helenium puberulum*), blue wild rye (*Elymus glaucus*), cheat grass, common dandelion (*Taraxacum officinale*), rushes (*Juncus* spp.) and weedy cudweed (*Gnaphalium luteoalbum*), rubber rabbitbrush, mulefat (*Baccharis salicifolia*) and pipestem virgin's bower.

Riparian Scrub. Riparian scrub was observed along the two perennial springs and some of the larger drainages along the study area; however, downslope and outside of the impact area of the proposed project. This community consists of fairly dense stands of arroyo willow (*Salix lasiolepis*), narrow-leaved willow (*Salix exigua*), mulefat, Mexican elderberry, pipestem virgin's bower and pink-flowered currant. Sub-dominant species include white alder (*Alnus rhombifolia*), California bay laurel (*Umbellularia californiaca*) and Fremont cottonwood (*Populus fremontii*). White alderscrub was observed within a few drainages, but these were confined to areas below the existing roadway.

Herbaceous species in these riparian areas included sedges, scarlet monkey flower, showy monkey flower, California goldenrod, Durango root, Greene's cinquefoil, Hooker's evening primrose, green willow herb and white yarrow (*Achillea millefolium*).
Ruderal (Invasive Plant Species)

Ruderal. Non-native annual plant species occur along areas directly adjacent to the existing roadway. Dominant plant species in these areas include cheat grass, Jerusalem oak (*Chenopodium botrys*), ripgut brome (*Bromus diandrus*), yard knotweed (*Polygonum arenastrum*), Fremont's goosefoot (*Chenopodium fremontii*), foxtail fescue, jimson weed (*Datura wrightii*), summer mustard (*Brassica geniculata*), Russian thistle (*Salsola tragus*), weedy cudweed and Indian tree tobacco (*Nicotiana glauca*). These plant species

are common to ruderal areas. Subdominant plants species observed within these areas include native plant species such as rubber rabbitbrush, Parish's buckwheat, prickly poppy, California fuchsia, Nevada lotus (*Lotus nevadensis*), happy plant, Mojave linanthus and rock buckwheat.

WILDLIFE CORRIDORS

Wildlife movement corridors are linkages of natural habitat between larger areas that are not contiguous or otherwise connected. The purpose of these linkages is to prevent isolating populations, provide for seasonal travel routes or connecting important resources.

The proposed project site is located within a large contiguous open space area of the Angeles National Forest in the San Gabriel Mountains. As such there are no regional corridors linking two or more non-contiguous area of natural habitat within the region of the project site. Corridors within a contiguous open space could exist for a particular species if physical barriers are present such as mountain ranges, rivers or impenetrable habitats, which could act to funnel or channel wildlife. In the situation with bighorn sheep an overgrown plant community, particularly chaparral could create such a barrier and in effect channel individuals. Although wildfires have not burned the area surrounding the project site in many years no such data has been collected to indicate a localized corridor exists within the vicinity of the project site.

There are however large mammals such as the bighorn sheep, which use the area seasonally and move through it while traveling to adjacent areas. As stated above the bighorn sheep within the vicinity of the project site will travel from winter-spring ranges at lower elevations to higher elevation summer ranges within or near the project site and once on that summer range make daily movements within or near the project site in search of seasonally between summer and winter ranges and daily between important resources. During the breeding season (early October through the middle of December) adult males travel into and out of the area in search of female mates. They also likely travel at times in an east/west fashion between important resources or geographic locations. State Route 39 could potentially be used as a travel route for seasonal movement because of its' upslope/down-slope orientation or for daily movements between local resources. Bighorn sheep have been observed on numerous occasions within 250 feet of SR-39 and therefore presumably use it as a travel route at times or cross it. On a few occasions during field investigations larger mammals, including bighorn sheep, black bear and coyote, have been observed walking along SR-39. However, bighorn sheep have also been observed on numerous occasions using other travel routes well away (more than 250 feet) from SR-39. It should be noted that SR-39 could be used to a greater extent than other travel routes because of the ease of use. Little evidence is available to support any conclusion about the use of SR-39 as a travel route by large mammals.

Because of the vast contiguous open space that occurs in all directions around the project site and numerous other travel routes in the vicinity, SR-39 itself should not be considered a wildlife movement corridor linking two otherwise disconnected open spaces but rather one of many possible localized travel routes available to large mammals. However, In a letter from United States Forest Service (USFS) District Ranger Marty Dumpis to Caltrans Deputy District Director Mr. Ronald Kosinski dated March 4, 2003 Mr. Dumpis states that "[T]he area near Snow Spring Slide, which is outside the project limits, was identified as a specific movement corridor for this animal [bighorn sheep]." It is unknown how this area of Snow Spring slide became identified as such. The letter further states, "...we feel that there is a need to verify that the Snow Spring Slide area is in fact the primary movement corridor for bighorn sheep between Sheep Mountain and San Gabriel Wilderness areas. It is recommended that Caltrans conduct a three to five year study to answer this important question." It is for this reason, in part, that Caltrans initiated the on-going multi-year study of the Nelson's bighorn sheep. Data collected during Phase I of Caltran's focused study of the bighorn sheep reveals no sheep observations at the Snow Spring area along SR-39. See Figure 2 Bighorn Sheep Observations of State Route 39 Bighorn Sheep Study Spring 2005 Survey Report prepared by CH2MHill (CH2MHill 2005) for a summary of the findings. If, in the future, a specialized bighorn sheep movement corridor is identified at the Snow Spring slide area near SR-39, project design would be modified to accommodate and preserve the corridor.

Movement between ewe groups does occur at times by rams and occasionally by ewes (Holl 2004). This movement would require an east/west travel route to or from the Iron Mountain subgroup generally located to the east of the project site. Daily movement between important resources might also require movement in an east/west fashion. Because SR-39 is generally oriented north/south sheep might have a need to cross it to access adjacent groups and during daily movements. As such, SR-39 could potentially act as a barrier for sheep travel therefore isolating open spaces or groups. The potential for this to occur would depend on the amount of vehicle traffic along SR-39 at certain times of day.

Environmental Consequences

The study area for the permanent and temporary impact zone of the proposed project is approximately 100 feet on both sides of the existing roadway from PM 39.9 to 44.4. This total area is approximately 56 acres. The proposed project would permanently convert a total of 6.9 acres of natural habitat to an improved roadway. An additional 9.8 acres would be temporarily impacted during the construction phase. Please refer to the below table for a summary of impacts to each of the natural plant communities. It should be noted that impacts to plant communities as a result of implanting the proposed project would occur within an easement maintained by Caltrans. Impacts to common habitat types are discussed below.

Table 2-25. Natural Plant Community Impacts

	Permanent Impacts (acres)	Temporary Impacts (acres)	Area of Angeles National Forest (acres)	Area of San Gabriel Mountains (acres)
Mixed Coniferous Forest	1.0	1.5	-	-
Canyon Live Oak Woodland	0.0	0.0	-	-
Xeric and Mesic Cliff Faces	0.4	0.0	-	-
Riparian Herb and Scrub	0.0	0.0	-	-
Mixed Montane Chaparral	1.5	3.0	-	-
Ruderal (Invasive Plant Species)	4.0	5.3	-	-
TOTALS	6.9	9.8	650,000	658,414

Mixed Coniferous Forest. The direct impact of implantation of the proposed project on mixed coniferous forest is to permanently convert 1.0 acre to an improved roadway. An additional 1.5 acres would be temporarily impacted during the construction phase.

Temporary impacted areas would be replanted with native plants species that are typical of this plant community. Details of the planting plan will be provided in a separate document and will be coordinated with the USFS. Although this plant community is not special-status and does not require preservation or replanting to achieve a “no net loss” under state or federal law the project site is surrounded by a National Forest. The replanting will occur on temporary impacted areas within Caltrans’ Right-of-Way to preserve the scenic views and recreational value of the National Forest for which the highway was originally constructed.

The existing mixed coniferous forest habitat is low to moderately disturbed along the road shoulders where the proposed project construction activities would occur. There has been relatively little on-going disturbance when compared to other similar roadways since the time of the original construction in the 1960’s. The road has been closed to public traffic for the past 30 years and little maintenance has been conducted with the exception of localized rock-slide clean-up. The project site is located in a remote mountainous region with large areas of high quality undisturbed mixed coniferous forest habitat. Because of the disturbed condition of the habitat, although low in some areas, and because of the relative small

amount of habitat that would be converted to a developed condition relative to the surrounding areas, and due to the non-special-status ranking given by CDFG, the conversion of this habitat to a developed condition would be a less than significant impact. Temporary impact areas will be re-planted by Caltrans using plants of the same type and similar composition as those that were impacted.

Canyon Live Oak Woodland. Canyon live oak woodland was noted within the study area upslope and downslope from the existing roadway and the proposed construction locations. Construction design avoids this plant community. The implementation of this proposed project is not expected to impact this plant community.

Xeric and Mesic Cliff Faces. The impact of implementation of the proposed project on this habitat type would be to permanently convert 0.4 acres for the widening of the shoulder in various locations. With the implementation of Alternative 4, an additional 0.1 acres would be permanently impacted from realigning the road. These cliff faces have been disturbed previously during the original construction of the highway and occasionally during the routine maintenance. Because this community on the project site does not currently support populations of special-status plant or wildlife species and because of the already disturbed nature, the loss of this habitat with the implementation of the proposed project, including Alternative 4, would not be a less than significant impact.

Riparian Herb and Scrub. Riparian herb and scrub habitat occurs down-slope from the existing roadway and the proposed construction locations. The implementation of this proposed project is not expected to directly impact this plant community. However, impacts could occur from erosion from water runoff and potential rockslides caused from the construction activities. Because this habitat is typically associated with jurisdictional resources and because special-status species could occur here in the future there is a potential for a significant impact should excessive water runoff or rockslides occur during the construction phase.

Construction design has incorporated measures to reduce the potential for the run-off of sediment during the construction phase by installing silt fencing and berms. With these measures incorporated into the project design, no impact is expected to this plant community with the implementation of the proposed project.

Mixed Montane Chaparral. The direct impact of implementation of the proposed project on mixed montane chaparral is to permanently convert 1.5 acres of this habitat to a developed condition. An additional 3.0 acres would be temporarily impacted during the construction phase.

Temporary impacted areas would be replanted with native plants species that are typical of this plant community. Details of the planting plan will be provided in a separate document and will be coordinated with the Angeles NF. Although this plant community is not special-status and does not require preservation or replanting to achieve a "no net loss" under state or federal law the project site is surrounded by a National Forest. The replanting will occur on temporary impacted areas within Caltrans' Right-of-Way to preserve the scenic views and recreational value of the National Forest for which the highway was originally constructed.

No special-status plant or animal species were observed within this habitat type. Because no special-status plant or animal species were observed during field studies, because this community is not considered to be sensitive by resources agencies, and because the amount of habitat affected is relatively small when compared to the surrounding area, the loss of 1.5 acres of mixed montane chaparral is not considered a substantial loss of wildlife habitat. Therefore, this loss is not considered a significant impact. Temporary impact areas will be re-planted by Caltrans using plants of the same type and similar composition as those that were impacted.

Ruderal (Invasive Plant Species). The direct impact of implementation of the proposed project on this habitat is to permanently convert 4.0 acres to a developed condition. An additional 5.3 acres would be temporarily impacted during the construction phase.

Temporary impacted areas would be replanted with native plants species that are typical of surrounding native plant communities. Details of the planting plan will be provided in a separate document and will be coordinated with the USFS. Although this plant community is not special-status and does not require preservation or replanting to achieve a “no net loss” under state or federal law the project site is surrounded by a National Forest. The replanting will occur on temporary impacted areas within Caltrans’ Right-of-Way to preserve the scenic views and recreational value of the National Forest for which the highway was originally constructed.

The existing habitat is highly disturbed by past construction activities and infrequent maintenance. Although small amounts of ruderal vegetation exists, there is no available habitat on the site for animals to nest or roost and little opportunity for wildlife to forage. Because of the low biological value of this area and because no special-status resources occur in this area the loss of this habitat would not be a significant impact.

Another consideration regarding invasive plant species when evaluating impacts is the effect the proposed project would have increasing the propagation of non-native invasive plant species. Following a disturbance to the soil of any natural habitat, a plant succession follows over time. As typical with most areas within the region of the project site more aggressive rapid growth non-native species would become established instead of native species after a soil disturbance, such as with the construction of the proposed project or routine maintenance. These non-native pioneer plants would then alter conditions and make it difficult for native plants to re-grow. Because the project proposes improvements within areas that have been previously disturbed by the construction of the existing road and ongoing maintenance, with a few relatively minor exceptions, no significant intrusion of non-native plant species is expected into areas not already disturbed. Therefore, no significant impact due to non-native species is expected with the implementation of the proposed project.

WILDLIFE CORRIDORS

The project site is not a part of a regional wildlife movement corridor as previously stated. Therefore, implementation of the proposed project would not impact a wildlife movement corridor.

Opening SR-39 would reintroduce vehicular traffic to an area that has been closed to public access for approximately 30 years. Although emergency and maintenance vehicles travel SR-39 occasionally, an increase from public traffic could impact the sheep in several ways.

The physical presence, noise and lighting from vehicles along a roadway are known stressors for wildlife. Several studies have been conducted to evaluate the flight and avoidance reactions wildlife have toward human disturbances. These studies concluded that mule deer and bighorn sheep are less likely to flee from motor vehicles and mountain bikers than hikers, presumably because the former activities are habitual in nature and hikers are less predictable and pose more of a threat (Eckstein et al. 1979, MacArthur et al. 1982, Freddy et al. 1986, Papouchis et al. 2001). It is thought that human activities that are predictable and non-threatening have less of an affect to bighorn sheep because they become habituated to the routine (Geist 1971a, 1971b, Leslie and Douglas 1980, MacArthur et al. 1982).

Typically wildlife can detect the presence of vehicles for some distance depending on the type and volume of traffic. On relatively larger thoroughfares that allow for trucks and larger vehicles and that have a more consistent traffic flow, such as major interstate routes, noise levels are higher and the ambient light from vehicles is brighter. It can be assumed that noise and bright lights would disturb wildlife and they would tend to avoid such areas. In situations like this a major highway would become a barrier to natural wildlife movement. Avoidance of these areas does not appear to occur when wildlife migrates between seasonal ranges or must cross a road to reach a specific resource such as water or a mineral lick.

A study conducted by Arizona Transportation Research Center along highway US-93 in Arizona indicates that a well-traveled roadway such as US-93 can be a barrier for wildlife, especially to bighorn sheep. The study included fixing radio-tracking collars to 34 bighorn sheep to track their movements. The highway represented the boundary of home ranges for many individual sheep. Data revealed that many animals approached the highway but did not cross (McKinney and Smith 2007). It is not known if the highway acted as a barrier creating an unusually high number of ranges with US-93 as a boundary or if the number of ranges with US-93 as its' boundary was within an expected amount. Data representing ranges bisected by US-93 was not presented. However, the study report also states that 41 percent of radio collared sheep did cross the highway. Because US-93 in Arizona is comparatively a greater traveled highway with higher vehicles speeds it is expected that SR-39 would pose less of a barrier.

In rural locations with smaller, less traveled roads wildlife would not detect vehicles at such a distance and would be expected to approach closer than with larger multi-lane highways. With intermittent traffic wildlife would have opportunity to cross such a highway without detecting a vehicle. State Route 2 in the Angeles National Forest is such a two-lane highway and intersects the portion of State Route 39 that is proposed for re-opening.

Wildlife has been observed crossing SR-2 during many of the field investigations. The bighorn sheep population in the vicinity of the project site has been observed on both the north and south sides of SR-2 and thus presumably cross it successfully as no bighorn sheep road kill data exists from Caltrans, CDFG or USFS.

Because the existing SR-39 is a rural mountainous two-lane roadway with expected traffic patterns to be similar to SR-2, relatively low and intermittent traffic, and because wildlife is known to successfully cross SR-2, the presence of vehicles traveling on SR-39 is not expected to create a barrier to wildlife movement attempting to cross it.

Relatively low volume of intermittent traffic in a rural environment presents a potential for direct impacts to wildlife. As wildlife attempt to cross a roadway they are at risk of being struck by a vehicle. The potential for this to occur would depend on the speed of the vehicle, among other things. It is safe to assume that the faster a vehicle is traveling with limited sight conditions, such as around a curve or at night, the less time a driver would have to react to avoid a collision. Bighorn sheep collisions are known to occur each year along Arizona highway US-93 near the border between Arizona and Nevada. Within a 17 mile section of roadway more than three collisions between vehicles and bighorn sheep occurred each year from 1980 and 2002 (McKinney and Smith 2007). This stretch of highway in Arizona is traveled significantly more than what is expected along SR-39 and has gentle curves allowing vehicle speeds of 55 mph or greater. With a reduced vehicle speed limit as would be naturally determined by the winding roadway of SR-39 collisions with wildlife would be decreased. Included as part of the proposed project design the speed limit would be reduced to 30 mph along the straight portions of the highway to further reduce the potential for wildlife collisions. Signage indicating wildlife crossings would be installed to remind drivers of the potential hazard.

Another factor that could affect the potential for direct impact to wildlife is the ability for wildlife to escape approaching vehicles. Median separators could prevent crossing of most wildlife and effectively channel them along the roadway to a point of crossing. As part of the design of the proposed project no median barriers would be used. Because of the expected lower volume of traffic similar to SR-2 and with this measure included as part of the project design, directs impacts to individual wildlife attempting to cross SR-39 would be considered a less than significant impact.

Other mitigation measures considered but found not feasible were: wildlife overpasses – due to physical constraints of steep adjacent slopes; and tunnel underpasses – same as above and incompatibility with open space needs for predator escape. One of the alternatives includes the construction of two bridges over scree slopes. If this alternative is selected these bridges could be used as an underpass by sheep depending on the height and width of the underpass and the stability of the slope. McKinley (2007) states

that bighorn sheep do not often use underpasses. Scree slopes are known to be unstable slides of rock. If the stability is questionable the use of it as an under-crossing could be limited.

SR-39 has been closed to public traffic for approximately 30 years. During that time wildlife have had the opportunity to become accustomed to using SR-39 as a travel route. With the re-opening to public traffic wildlife would be forced to use other routes paralleling SR-39. During the period immediately after re-opening SR-39 any wildlife accustomed to using SR-39 could be at a greater risk of vehicle collisions until they became familiar with using a parallel route. The construction phase of the proposed project would expose the wildlife to a gradual increase in traffic flow along SR-39. To further moderate the increasing rate of traffic flow SR-39 would be opened to public use in a controlled fashion such as a “soft” opening – not announced to the public immediately. Because of the measures included in the project design and those implemented during and after the construction phase, the potential direct impact to individual wildlife resulting from use of SR-39 as a travel route would be considered a less than significant impact.

As mentioned, the project site is not a part of a regional corridor and the implementation of the proposed project would not impact an identified corridor. Should any species-specific corridor be identified in the future, perhaps resulting from the multi-year sheep study, the proposed project design would be altered to provide for adequate wildlife use of the corridor. Such changes would include modifying the slope protection structures to allow for use by wildlife.

Because the project is not part of a corridor and would not impact a movement corridor, and because the re-opening of SR-39 is not expected to create a barrier to wildlife movement accustomed to traversing the highway, similar to SR-2, or using it as a travel route the implementation of the proposed project and re-opening the highway would not be considered a significant impact.

Also, please refer to the subsection entitled “Cumulative Impacts” for a discussion of cumulative impacts.

Avoidance, Minimization, and/or Mitigation Measures

These items have been incorporated and discussed above within this subsection.

2.3.2 WETLANDS AND OTHER WATERS

Regulatory Setting. Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States 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 Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can 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 (ACOE) with oversight by the Environmental Protection Agency (EPA).

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration, 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 Department of Fish and Game (CDFG) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600-1607 of the 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 CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG 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 ACOE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section for additional details.

Affected Environment

Surface Waters. A jurisdictional delineation was conducted for the proposed project limits. There are nine drainages that occur on the proposed project site which are under the jurisdictional authority of Army Corps of Engineers, Water Quality Control Board and California Department of Fish and Game. The limits of these resources agencies' jurisdiction are described in Section 2.1 Regulatory Requirements of the Caltrans-prepared Natural Environment Study Report (biological technical study) dated November 2008. Likewise, a map depicting the locations of these drainages are presented in Figure 4 of the Caltrans-prepared Natural Environment Study Report (biological technical study) dated November 2008.

Drainages 1, 3, 4, 5, and 6 are ephemeral streambeds, drainage 2 is a perennial streambed and drainage 8 is a natural spring known as Snow Spring. The following describes the drainages and the amount of ACOE and CDFG jurisdiction.

- Drainage 1 is ephemeral and located at PM 40.72. It occurs on both sides of the highway and is 200 feet in length. The ACOE jurisdiction of this streambed is 0.02 acres (800 square feet) and the CDFG jurisdiction is 0.09 acres (4,000 square feet).
- Drainage 2 is perennial and located at PM 40.83. It occurs on both sides of the highway and is 200 feet in length. The ACOE jurisdiction of this streambed is 0.005 acres (200 square feet) and the CDFG jurisdiction is 0.05 acres (2,000 square feet).
- Drainage 3 is ephemeral and located at PM 41.31. It occurs on both sides of the highway and is 200 feet in length. The ACOE jurisdiction of this streambed is 0.01 acres (400 square feet) and the CDFG jurisdiction is 0.05 acres (2,000 square feet).
- Drainage 4 is ephemeral and located at PM 41.32. It occurs on both sides of the highway and is 200 feet in length. The ACOE jurisdiction of this streambed is 0.015 acres (600 square feet) and the CDFG jurisdiction is 0.07 acres (3,000 square feet).
- Drainage 5 is a perennial streambed that is fed by an active spring known as Snow Spring. It is located at PM 40.72. The drainage occurs on both sides of the highway and is 200 feet in length. Snow Spring is located approximately 100 feet on the east side of the highway and flows to a gravel/sand area directly adjacent to SR-39. At this point the flow of water disappears and presumably flows subsurface under SR-39 to the southwest where it eventually meets with Bear Creek. The ACOE jurisdiction of this streambed is 0.02 acres (800 square feet) and the CDFG jurisdiction is 0.09 acres (4,000 square feet).
- Drainage 6 is ephemeral and located at PM 43.3. It occurs on the west both sides of the highway and is 1200 feet in length. The ACOE jurisdiction of this streambed is 0.012 acres (4800 square feet) and the DFG jurisdiction is 0.059 acres (24,000 square feet).

Wetlands and Other Waters Coordination Summary. A jurisdictional determination was conducted for all drainages and potential jurisdictional areas within the impact zone of the proposed project. A Jurisdictional Delineation is in progress and will be completed by the end of the 2008 calendar year. Results of the Jurisdictional Determination indicate jurisdictional resources are present on the proposed project site and would be impacted with the implementation of the project. A Section 1600 Streambed Alteration Agreement with the Department of Fish and Game, Section 404 permit from Army Corps of Engineers and a Section 401 permit from the Regional Water Quality Control Board are required prior to project initiation.

Environmental Consequences

There is a total of 0.008 acres (360 square feet) of ACOE jurisdictional area that will be temporarily impacted and a total of 0.016 (720 square feet) acres of CDFG area that temporarily impacted. Permanent impacts to each would be: ACOE – 0.008 acres and CDFG – 0.016 acres. A summary of impact to each of the drainages is below:

- Drainage 1 – A total of 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be permanently impacted as a result of the implementation of this project. An additional 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be temporarily impacted as a result of the implementation of this project.
- Drainage 2 – A total of 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be permanently impacted as a result of the implementation of this project. An additional 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be temporarily impacted as a result of the implementation of this project.
- Drainage 3 – A total of 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be permanently impacted as a result of the implementation of this project. An additional 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be temporarily impacted as a result of the implementation of this project.
- Drainage 4 – A total of 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be permanently impacted as a result of the implementation of this project. An additional 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be temporarily impacted as a result of the implementation of this project.
- Drainage 5 – A total of 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be permanently impacted as a result of the implementation of this project. An additional 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be temporarily impacted as a result of the implementation of this project.
- Drainage 6 – A total of 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be permanently impacted as a result of the implementation of this project. An additional 40 square feet within ACOE jurisdiction and 80 square feet within CDFG jurisdiction would be temporarily impacted as a result of the implementation of this project.

Impacts to jurisdictional resources are considered to be potentially significant. Prior to the start of initial site clearance all required permits and agreements shall be obtained from the ACOE, RWQCB and CDFG. Areas that will be temporary impacted will be replanted after the construction phase is completed. A mitigation and monitoring plan will be prepared that addresses planting procedures, location, success criteria and maintenance. Mitigation for areas that will be permanently impacted will be achieved by purchasing similar habitat within the region of the project site at a rate of 5:1. This land will be turned over for management in perpetuity to an organization that is approved by CDFG and USFS.

The Least Environmentally Damaging Practicable Alternative (LEDPA) shall be identified after the public comment period so that all formal comments may be first taken into consideration.

Wetlands Only Practicable Finding. A wetland delineation is in progress and will be completed by the end of the 2008 calendar year. Upon its completion, the wetland delineation report shall be included in the Appendices of the Final EIR/EA, and its conclusions shall be included in this subsection. At that time, the Wetlands Only Practicable Finding analysis shall also be prepared and included in this subsection.

2.3.3 PLANT SPECIES

Regulatory Setting. The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) share regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Also, please refer to the Threatened and Endangered Species subsection within this section for detailed information regarding these species.

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

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

Affected Environment

Also, please refer to the Natural Communities subsection. A total of six plant communities were observed along the portion of highway 39 within the study. The six communities are: (1) mixed coniferous forest, (2) canyon live oak woodland, (3) xeric and mesic cliff faces, (4) riparian herb and scrub, (5) mixed montane chaparral and (6) ruderal. The classification of these communities generally follows Department of Fish and Game The Vegetation Classification and Mapping Program “List of California Terrestrial Natural Communities Recognized by The California Natural Diversity Database” Sept 2003 Edition, and as further described within “A Manual of California Vegetation” by Sawyer and Keeler-Wolf (1995). Descriptions of cliff faces follow concepts presented by Gray and Bramlet 1992. A more detailed description of each plant community follows.

Environmental Consequences

Please refer to the Natural Communities subsection.

Avoidance, Minimization, and/or Mitigation Measures

Please refer to the Natural Communities subsection.

2.3.4 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 (NOAA) Fisheries and the California Department of Fish and Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in the Threatened and Endangered Species subsection. All other special-status animal species are discussed in this subsection, including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

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

State laws and regulations pertaining to wildlife include the following:

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

In addition to state and federal laws regulating impacts to wildlife, there are often local regulations (example: county or city) that need to be considered when developing projects. If work is being done on federal land (BLM or USFS, for example), then those agencies' regulations, policies, and Habitat Conservation Plans are followed.

Affected Environment

Common Wildlife Resources. Discussed below are representative common wildlife species (those not provided a sensitivity status by regulatory agencies) that were observed on the project site during the field surveys. Because wildlife typically utilize a variety of plant communities, wildlife species observed or likely to occur on the site are described by taxonomic group. A complete list of wildlife species observed on the project site is provided in tabular form in **Appendix D** of the Caltrans-prepared Natural Environment Study Report (biological technical study) dated November 2008.

Amphibians and Reptiles. The project site has nine perennial and ephemeral drainages and springs located along the route in several locations. Because of the project site is located at or very near the headwater, water generally occurs in the drainages only after recent rains and remains for a relatively short period of time. The two natural springs along SR-39 provide a source of water throughout the spring, summer and fall and likely become limited during the winter due to snowfall and periodic freezing temperatures. These springs provide a constant source of water throughout amphibian breeding period; however, they are relatively small and provide a limited resource for breeding.

Amphibian populations on the project site are expected to be low or non-existent due to the lack of sufficiently large enough bodies of continuous available water. If present they are expected to be localized to the available water sources. No amphibian species were heard or observed on any of the surveys.

Common reptile species observed on the site include: western whiptail (*Cnemidophorus tigris*), sagebrush lizard (*Sceloporus graciosus*) and side-bloched lizard (*Uta stansburiana*).

Birds. The diversity of structure and plant communities present on site provides both forage and nesting habitat for several locally occurring common bird species. Some species are known to be closely associated with specific plant communities, whereas other species utilize a variety of habitat types for foraging and breeding. Birds that were regularly observed in the mixed coniferous habitats include: Clark's nutcracker (*Nucifraga columbiana*), Stellar's jay (*Cyanocitta stelleri*), mountain chickadee (*Poecile gambeli*) and White-breasted nuthatch (*Sitta carolinensis*). Several species including mourning dove (*Zenaid macroura*), red-shafted flicker (*Colaptes auratus*), western scrub jay (*Aphlecoma californica*) were also observed regularly. Few raptor bird species were observed on the site but those that were observed include Red-tailed hawk (*Buteo jamaicensis*). For a complete list of birds observed at the site, please refer to **Appendix D** of the Caltrans-prepared Natural Environment Study Report (biological technical study) dated November 2008.

Mammals. A variety of mammal species occur in the vicinity of the site. Large species including Nelson's bighorn sheep, mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*) and black bear (*Ursus americanus*) were observed or detected by scat, tracks and during historic field surveys. Other mammal species observed and known to occur in the vicinity of the site include bobcat (*Felis rufus*), coyote (*Canis latrans*), California ground squirrel (*Spermophilus beecheyi*), western gray squirrel (*Sciurus griseus*) and Merriam's chipmunk (*Eutamias merriami*).

Most of the locally occurring bat species typically feed on insects over aquatic habitats. A few bat species (*Myotis* sp.) could potentially forage and temporarily roost on site. However, as the site does not support ideal roosting habitat and is not situated adjacent to permanent open water, bat species known to occur in the project vicinity would not be expected to utilize on-site resources on more than an infrequent basis. For a complete list of mammals observed at the site, please refer to the Caltrans-prepared Natural Environment Study Report (biological technical study) dated November 2008.

Environmental Consequences

Common Wildlife. Initial construction activities could temporarily disturb common wildlife species on and immediately adjacent to the project site. Many of the high mobility species would be expected to relocate to suitable habitat within the vicinity. However, species of low mobility have a higher vulnerability to mortality and those that are able to relocate would be subjected to higher competition for resources and predation. However, much of the construction impacts would be temporary and the majority of the permanent improvements would be within the shoulder to an existing highway. Because of the relatively low amount of habitat that would be impacted to the surrounding Forest with the relatively common nature of these species no significant impacts are expected to occur to common wildlife species.

Construction activities could result in the direct loss of a nest or the abandonment of an active nest. Depending on the number of nests lost and the particular species the loss of active bird nests could be a potentially significant impact.

Avoidance, Minimization, and/or Mitigation Measures

The Migratory Bird Treaty Act prohibits the take of any active bird nests of most avian species. However, the project design has included measures to reduce or eliminate the potential for take of any active nest. A qualified biologist will conduct a pre-construction nesting bird survey within three days of the initial ground clearance and monitor/protect any active nests found until fledglings are no longer dependant on the nest site.

2.3.5 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 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

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

Affected Environment

CONSULTATION

Federal Endangered Species Act Consultation Summary. Consultation with U.S. Fish & Wildlife Service or National Marine Fisheries Service (NMFS) is not required as there will be no effect to any species listed as Endangered, Threatened or proposed as Endangered or Threatened under the Federal Endangered Species Act with the implementation of the proposed project. A list of species with protection under the Federal ESA that have a potential to occur within the vicinity of the proposed project was requested from the USFWS on November 30, 2000 and again on October 7, 2008. USFWS responses are included in the Caltrans-prepared Natural Environment Study Report (biological technical study) dated November 2008. A species list was not requested of NMFS since the project site is located inland.

California Endangered Species Act Consultation Summary. Status of Nelson’s bighorn sheep under the California Endangered Species Act (CESA) and California Fish and Game Code (Code), particularly whether it was a California Fully Protected species as listed in Section 4700, was in question. After a detailed review of the CESA and the Code Caltrans understood that the San Gabriel Mountains population of Nelson’s bighorn sheep was not afforded protection under CESA or the Code. A letter to confirm this position was sent to CDFG on October 7, 2008 and CDFG responded via email on October 31, 2008. Correspondence is included in the Caltrans-prepared Natural Environment Study Report (biological technical study) dated November 2008. Southwestern willow flycatcher and least Bell’s vireo presence/absence protocol surveys were conducted because of interest expressed by CDFG on the potential for these species to occur near the project site.

Other Conformity Goals/Coordination. Highway improvements associated with this proposed project are consistent with the vision of the USFS which is to ‘continue to offer a variety of recreation opportunities that meet the changing trends in visitor use’ and is also consistent with USDA National Forest General Plan, Strategic Goal #3 Provide Outdoor Recreation Opportunities which is designed ‘to help meet the nation’s recreational demands while sustaining natural resources.’ One objective under

Goal #3 is to improve public access to National Forest System land and water and provide opportunities for outdoor health enhancing activities.’ (USFS General Plan, 1983). With the implementation of the proposed project and associated mitigation measures access to public lands would be improved and USFS Sensitive Species – Nelson’s bighorn sheep – habitat would be improved.

The Migratory Bird Treaty Act prohibits the ‘take’ of most North American bird species and their active nests. To reduce the potential for impact to bird species within or adjacent to the proposed project limits a pre-construction nesting bird survey would be conducted no more than three days prior to initiation of site clearing activities.

SPECIAL STATUS PLANT SPECIES

CDFG Wildlife and Habitat Data Analysis Branch has developed a “List of California Terrestrial Natural Communities.” The most recent version of this list, Dated June 2008, is derived from the CNDDDB and is intended to supersede all other lists developed from the CNDDDB. It is based on the detailed classification put forth in A Manual of California Vegetation (Sawyer and Keeler-Wolf 1995).

The primary purpose of the CNDDDB classification is to assist in the characterization and rarity of various vegetation types. For the purpose of this evaluation, plant communities denoted on the list as Rare in the June 2008 version, or are otherwise regulated by local, state or federal resource agencies are considered special-status.

Upon review of the on-site habitat characteristics when compared to the CNDDDB classification system described above no special-status plant communities were identified on the project site.

The following is a discussion of special-status plant species observed within the vicinity or potentially occurring on the project site. Results and conclusions are based on habitat types present on the site, a review of the CNDDDB (2008) and CNPS (2008) databases and other pertinent literature, known geographic ranges of these species, and data collected during general and focused field surveys.

Special-status plant species include those that are: (1) state or federally listed as Rare, Threatened, or Endangered; (2) proposed for state or federal listing as Rare, Threatened or Endangered; (3) federal candidate species for listing; or (4) considered to be a Federal Species of Concern. Plants included on the Lists 1 and 2 of the CNPS inventory are also considered to be special status. CNPS List 1 and 2 species are included because the CNPS is a recognized authority by the CDFG on the status of Rare plant populations in California and because the criteria for plant species to be placed on Lists 1 and 2 are similar to criteria that CDFG and USFWS use for species considered as candidates for listing or that are already listed as Threatened or Endangered.

Plant species at higher elevation typically have a later blooming period than species closer to sea level. The focused special-status plant surveys that were conducted in 2008 were carried out during the summer, July, to coincide with the most likely optimal flowering period for the species that are known to occur or are potentially occur within the vicinity of the project site.

Table 2-26 below, “Special-Status Plant Species Known to Occur in the Project Site Area,” addresses 36 special-status plant species that are known to occur in the project vicinity and were consequently the focus of site surveys.

No special-status plant species were detected during focused surveys and therefore none are expected to occur on the project site.

Table 2-26. Special-Status Plant Species Occurring Within the Vicinity of the Project Site from the CNDDB

Common and Scientific Name	Status			Habitat (Requirements)	Potential Occurrence
	Federal	State	CNPS		
<i>Slender silver-moss</i> <i>Anomobryum julaceum</i>	--	--	List 2.2	Broad-leaved upland forest, lower montane coniferous forest, north coast coniferous forest, grows on damp rocks and soil; usually seen on roadcuts, 100-1000M.	<i>Not expected:</i> Not observed during focused surveys.
Greata's aster <i>Aster greatae</i>	--	--	List 1B.3	Chaparral, cismontane woodland; mesic canyons.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Braunton's milk-vetch <i>Astragalus brauntonii</i>	FE	--	List 1B.1	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; recent burs or disturbed areas, gravelly soils overlying granite or limestone, 4-640M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
San Antonio milk-vetch <i>Astragalus lentiginosus var. antoniuis</i>	--	--	List 1B.3	Lower montane coniferous forest, upper montane coniferous forest; dry slopes in open yellow pine forest, 1500-2600M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Big Bear Valley woollypod <i>Astragalus leucolobus</i>	--	--	List 1B.2	Lower montane coniferous forest, pebble plain, pinyon and juniper woodland, upper montane coniferous forest; dry pine woods, gravelly knolls among sagebrush, or stony lake shores in the pine belt.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Davidson's saltscale <i>Atriplex serenana var. davidsonii</i>	--	--	List 1B.2	Coastal bluff scrub, coastal scrub; alkaline soils 3-250M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Nevin's barberry <i>Berberis nevinii</i>	FE	CE	List 1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub; on steep north-facing slopes or in low grade sandy washes.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Scalloped moonwort <i>Botrychium renulatum</i>	--	--	List 2.2	Bogs and fens, meadows, lower montane coniferous forest, freshwater marsh; moist meadows, near creeks.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Thread-leaved brodiaea <i>Brodiaea filifolia</i>	FT	CE	1B.1	Cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; usually associated with annual grassland and vernal pools. Clay soils.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Slender mariposa lily <i>Calochortus clavatus var. gracilis</i>	--	--	List 1B.2	Chaparral, coastal scrub; shaded foothill canyons, often grassy slopes within other habitat. 420-760M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Plummer's mariposa lily <i>Calochortus plummerae</i>	--	--	List 1B.2	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest; occurs on rocky and sandy sites, usually of granitic or alluvial material. 90-1610M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Alkali mariposa lily <i>Calochortus striatus</i>	--	--	List 1B.2	Chaparral, chenopod scrub, mojavean desert scrub, meadows; alkaline meadows and ephemeral washes. 90-1595M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Mt. Gleason Indian paintbrush <i>Castilleja gleasonii</i>	--	Rare	List 1B.2	Lower montane coniferous forest; on open flats or slopes in granitic soils.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Slender-horned spineflower <i>Dodecahema leptoceras</i>	TE	CE	1B.1	Chaparral, coastal scrub (alluvial fan sage scrub); flood deposited terraces and washes.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.

Common and Scientific Name	Status			Habitat (Requirements)	Potential Occurrence
	Federal	State	CNPS		
San Gabriel River dudleya <i>Dudleya cymosa</i> ssp. <i>crebrifolia</i>	--	--	1B.2	Chaparral, coastal scrub; on granitic cliffs and outcrops. 365M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
San Gabriel Mountains dudleya <i>Dudleya densiflora</i>	--	--	1B.1	Chaparral, coastal scrub, lower montane coniferous forest; in crevices and on decomposed granite on cliffs and canyon walls, 300-520M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Many-stemmed dudleya <i>Dudleya multicaulis</i>	--	--	1B.2	Chaparral, coastal scrub, valley and foothill grassland; in heavy clayey soils or grassy slopes. 0-790M.	<i>Not expected:</i> conditions not suitable on the site.
Southern alpine buckwheat <i>Eriogonum kennedyi</i> var. <i>alpigenum</i>	--	--	1B.3	Alpine boulder and rock fields, subalpine coniferous forest; dry granitic gravel.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Johnston's buckwheat <i>Eriogonum microthecum</i> var. <i>johnstonii</i>	--	--	1B.3	Subalpine coniferous forest, upper montane coniferous forest; slopes and ridges on granite or limestone. 2210-2900M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Hot springs fimbriatylis <i>Fimbristylis thermalis</i>	--	--	2.2	Alkaline meadows; near hot springs.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
San Gabriel bedstraw <i>Galium grande</i>	--	--	1B.2	Cismontane woodland, chaparral, broadleaved upland forest, lower montane coniferous forest; open chaparral and low open oak forest, on rocky slopes.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Mesa horkelia <i>Horkelia cuneata</i> ssp. <i>puberula</i>	--	--	1B.1	Chaparral, cismontane woodland, coastal scrub; sandy or gravelly sites, 70-800M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Robinson's pepper-grass <i>Lepidium virginicum</i> var. <i>robinsonii</i>	--	--	1B.2	Chaparral, coastal scrub; dry soils, shrubland.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Short-sepaled lewisia <i>Lewisia brachycalyx</i>	--	--	2.2	Lower montane coniferous forest, meadows; dry to moist meadows in rich loam.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Lemon lily <i>Lilium parryi</i>	--	--	1B.2	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest; wet, mountainous terrain, generally in forested areas on shady edges of streams, in open boggy meadows and seeps.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
San Gabriel linanthus <i>Linanthus concinnus</i>	--	--	1B.2	Lower montane coniferous forest, upper montane coniferous forest; dry rocky slopes, often in Jeffery pine/canyon oak forest.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Lupinus peirsonii <i>Peirson's lupine</i>	--	--	1B.3	Joshua tree woodland. Upper montane coniferous forest, decomposed granti slide and talus, on slopes and ridges. 1000-2000M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Hall's monardella <i>Monardella macrantha</i> ssp. <i>hallii</i>	--	--	1B.3	Broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, valley and foothill grassland; dry slopes and ridges in openings. 695-2195M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Short-joint beavertail <i>Opuntia basilaris</i> var. <i>brachyclada</i>	--	--	1B.2	Chaparral, Joshua tree woodland, Mohavean desert scrub, pinyon juniper woodland, riparian woodland; sandy soil or coarse granitic loam. 425-1800M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.

Common and Scientific Name	Status			Habitat (Requirements)	Potential Occurrence
	Federal	State	CNPS		
Woolly mountain-parsley <i>Oreonana vestita</i>	--	--	1B.3	Subalpine coniferous forest, upper montane coniferous forest; high ridges on talus or gravel. 2410-3500M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Rock Creek broomrape <i>Orobanche valida ssp. valida</i>	--	--	1B.2	Chaparral, pinyon juniper woodland; slopes of loose decomposed granite, parasitic on various chaparral shrubs. 1705-1820M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Mountain oxtrope <i>Oxytropis oreophila var. oreohila</i>	--	--	2.3	Alpine boulder and rock field, subalpine coniferous forest; gravelly or rocky sites, 3400-3800M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Fringed grass-of-parnassus <i>Parnassia cirrata</i>	--	--	1B.3	Lower montane coniferous forest, upper montane coniferous forest; mesic sites, 2135-3000M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Ewan's cinquefoil <i>Potentilla glandulosa ssp. ewanii</i>	--	--	1B.3	Lower montane coniferous forest; edges of seeps and springs, small waterways, 1900-2400M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
San Bernardino aster <i>Symphyotrichum defoliatum</i>	--	--	1B.2	Meadows and seeps, marshes and swamps, coastal shrubs, cismontane woodland, lower montane coniferous forest, grassland; vernal mesic grassland or near ditches, streams and springs, disturbed areas, 2-2040M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.
Sonoran maiden fern <i>Thelypteris puberula var. sonorensis</i>	--	--	2.2	Meadows and seeps; along streams, seepage areas, 50-550M.	<i>Not expected:</i> conditions not suitable on the site. Not observed during focused surveys.

STATUS KEY:

State:

CE = California Endangered
CT = California Threatened

Federal:

FE = Federal Endangered
FT = Federal Threatened

SPECIAL STATUS WILDLIFE SPECIES

The following is a discussion of special-status wildlife species observed or potentially occurring on the project site. Results and conclusions are based on habitat types present on the site, a review of the CNDDDB (2008) and other pertinent literature known geographic ranges of these species and data collected during general and focused field surveys.

The term special-status wildlife includes those species that are state or federally listed as Threatened or Endangered, have been proposed or are candidates for listing as Threatened or Endangered, are considered State Species of Special Concern, CDFG Special Animals, California Protected or Fully Protected Species, or are Federal Species of Concern.

One special-status wildlife species, Nelson's bighorn sheep, was observed on the project site or would be reasonably expected to occur on the project site. However, a total of 23 potential species are addressed in this report based on an evaluation of on-site habitat compared with each species' life history requirements, occurrences records of species in the project vicinity and documented geographic distribution of each species. All special-status wildlife species addressed in this report are listed in Table 2 Special-Status Wildlife Species Known to Occur or Potentially Occur in the Project Area. Nelson's bighorn sheep is discussed in more detail below.

In addition, Caltrans has been advised to evaluate potential impacts to four special-status wildlife species, least Bell's vireo, southwestern willow flycatcher, mountain yellow-legged frog and San Gabriel Mountain slender salamander that could be located within a riparian system downstream of the project site. A more detailed discussion of these species is further below.

Table 2-27. Special-Status Wildlife Species Occurring Within the Vicinity of the Project Site

Common and Scientific Name	Status		Habitat Requirements	Potential Occurrence
	Federal	State		
San Gabriel Mountains blue butterfly <i>Plebejus saepiolus aureolus</i>	--	CSC	Wet meadow seep in yellow pine forest; host/foodplant is <i>Trifolium wormskioldii</i> .	Not Expected: No host/food plant on site.
San Gabriel Mountains elfin butterfly <i>Callophrys mossii hidakupa</i>	FE	--	Southern mixed evergreen forest in San Gabriel and San Bernardino Mountains; foodplant is <i>Sedum spathulifolium</i> . 1000-1800M	Not Expected: No host/food plant on site.
Santa Ana Speckled dace <i>Rhinichthys osculus</i> ssp. 3	--	CSC	Headwaters of the Santa Ana and San Gabriel rivers. Requires permanent flowing streams with summer temps of 17-20C. Usually inhabit shallow cobble and gravel riffles.	Not Expected: No suitable aquatic habitat on site.
Arroyo chub <i>Gila orcuttii</i>	--	CSC	Los Angeles basin south coastal streams; slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	Not Expected: No suitable aquatic habitat on site.
Santa Ana sucker <i>Catostoma santaanae</i>	FT	CSC	Endemic to Los Angeles basin south coastal stream; habitat generalist but prefers sand-rubble-boulder bottoms, cool clear water and algae.	Not Expected: No suitable aquatic habitat on site.
Coast range newt <i>Taricha torosa torosa</i>	--	CSC	Coastal drainages from Mendocino county to sand diego county; lives in terrestrial habitats and will migrate over 1 KM to breed in ponds, reservoirs and slow moving stream.	Not Expected: No suitable aquatic habitat on site.
Mountain yellow-legged frog <i>Rana muscosa</i>	FE	CSC	Always encountered within a few feet of permanent water. Tadpoles may require 2-4 years to complete metamorphose.	Not Expected: No suitable aquatic habitat on site.
Southwestern pond turtle <i>Emys marmorata pallida</i>	--	CSC	Permanent or nearly permanent body of water in many habitat types; below 6000 ft; requires basking sites such as partially submerged logs, vegetation mats or open mud banks.	Not Expected: No suitable aquatic habitat on site.
San Gabriel Mountains slender salamander <i>Batrachoseps gabrieli</i>	--	CSC	Found under rocks wood, fern fronds and on soil at the base of talus slopes; most active on the surface in winter and early spring.	Not expected: conditions not suitable on the site.
Two-striped garter snake <i>Thamnophis hammondi</i>	--	CSC	Coastal California from Salinas to Baja, from sea to 7000 feet; highly aquatic, found in or near permanent fresh water, often along streams with rocky beds and riparian.	Not Expected: No suitable aquatic habitat on site.
Coast horned lizard <i>Phrynosoma coronatum (blainvillii)</i>	--	CSC	Inhabits coastal sage and chaparral in arid and semi-arid climates; prefers friable, rocky or shallow sandy soils.	Not expected: conditions not suitable on the site.
Least Bell's vireo <i>Vireo bellii pusillus</i>	FE	CE	Nesting - low riparian vegetation in the vicinity of water or in dry river bottoms; below 2000 feet; nests places along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, mesquite	Not Expected: No suitable habitat on site.
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	FE	SE	Migrant. Breeds in willow, cottonwood and tamarisk thickets and woodlands along streams and rivers.	Not Expected: No suitable habitat on site.
Black swift <i>Cypseloides niger</i>	--	CSC	Breeds on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs.	Not Expected: No suitable habitat on site.
Southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	--	CSC	Coastal sage scrub and sparse mixed chaparral; frequents relatively steep, often rocky hillside with grass and forb patches.	Not Expected: No suitable habitat on site.

Common and Scientific Name	Status		Habitat Requirements	Potential Occurrence
	Federal	State		
Western yellow bat <i>Lasiurus xanthinus</i>	-	CSC	Valley foothill riparian, desert riparian, desert wash and palm oasis habitats; roosts in trees, particularly palms, forages over water and among trees.	<i>Not expected:</i> No suitable habitat on the site.
Yuma myotis <i>Myotis yumanensis</i>	--	CSC	Open forests and woodlands with sources of water to forage; closely tied to open bodies of water; maternity colonist in caves, mines, buildings or crevices.	<i>Not expected:</i> No suitable habitat on the site.
Big free-tailed bat <i>Nyctinomops macrotis</i>	--	CSC	Low-lying areas in southern California; needs high cliffs or rocky outcrops for roosting sites.	<i>Not expected:</i> No suitable habitat on the site.
Southern coast marsh vole flycatcher <i>Microtus californicus stephensi</i>	--	CSC	Tidal marshes.	<i>Not expected:</i> No suitable habitat on the site.
Northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	--	CSC	Coastal scrub, chaparral, grasslands, sagebrush; sandy herbaceous areas usually in association with rocks or coarse gravel.	<i>Not Expected:</i> No suitable habitat on site.
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	--	CSC	Coastal scrub; moderate to dense canopies preferred, abundant in rock outcrops and rocky cliffs and slopes.	<i>Not Expected:</i> No suitable habitat on site.
Lodgepole chipmunk <i>Neotamias speciosus speciosus</i>	--	CSC	Summits of isolated piute, usually found in open-canopy forests; habitat is usually lodgepole pine forests.	<i>Not Expected:</i> No suitable habitat on site.
Nelson's bighorn sheep <i>Ovis canadensis nelsoni</i>	SS	CFP	Open, rocky, steep areas with available water and herbaceous forage.	<i>Present:</i> This species is known to occur in the project vicinity and on occasion crosses State Route 39.

STATUS KEY:

<u>Federal</u>		<u>State</u>	
FE:	Federally Endangered	CE:	California Endangered
FT:	Federally Threatened	CT:	California Threatened
FC:	Federal Candidate	CSC:	California Special Concern
SS:	United States Forest Service (USFS) Sensitive Species	CFP:	California Fully Protected

Nelson's bighorn sheep (*Ovis canadensis nelsoni*): Federal status – None; State status – None ; Forest Service Status – Sensitive Species.

Taxonomy of the bighorn sheep has changed in recent time. Scientific genetic studies indicate there are three subspecies that occur in North America, two of which are found in California. Because of changes in classification, common and scientific names have also changed.

Department of Fish and Game currently recognizes the Sierra Nevada Bighorn Sheep (*Ovis canadensis sierrae*), formerly known as California bighorn sheep (*O. c. californiana*), as a distinct subspecies occurring in the Sierra Nevada Mountains. This sub-species is listed by DFG as Endangered and Fully Protected. It is also listed by FWS as Endangered (DFG, May 2008; FWS, 2008).

Nelson's bighorn sheep (*O. c. nelsoni*) are uncommonly found within the Transverse, Peninsular, and other desert mountain ranges of California. This subspecies is synonymized with the previously known subspecies *O. c. cremnobates* which is the population that occurs within the Peninsular ranges and was listed endangered by the U.S. Fish and Wildlife Service and threatened by the Department of Fish and Game. Since the time *O. c. cremnobates* was listed, bighorn sheep occurring within the Peninsular and Transverse ranges were united under one subspecies Nelson's bighorn sheep (*O. c. nelsoni*). However, the population occurring within the Peninsular ranges is currently identified as a Distinct Vertebrate Population Segment and only this population of *O. c. nelsoni* is listed by DFG as Threatened. In addition, DFG identifies *O. canadensis* as a Fully Protected Species (Fish and Game Code, Section 4700 (b)), except Nelson bighorn sheep (subspecies *O. c. nelsoni*) as provided by subdivision (b) of Section 4902. After a review of the provision, and taking into account the Department of Fish and Game's action to capture and relocate individual Nelson's bighorn sheep from the San Gabriel Mountain population to reintroduce them to an isolated desert mountain range, Caltrans determined that the San Gabriel Mountain population could meet the criteria for the exemption. In a letter dated October 7, 2008 Caltrans requested the Department's concurrence that the San Gabriel population of Nelson bighorn sheep met the exemption criteria and therefore was not fully protected. The Department concurred.

FWS lists Nelson's bighorn sheep that occur in the Peninsular range as as Endangered. The population in the San Gabriel Mountains, a transverse range, is not listed as threatened or endangered under the Federal or California Endangered Species Act.

The US Forest Service Regional Forester listed Nelson's bighorn sheep, including the population within the vicinity of the project site, as a Sensitive Species. CEQA guidelines states that a potentially substantial adverse effect, whether 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 CDFG or USFWS must be evaluated. Because the US Forest Service identifies the Nelson's bighorn sheep as Sensitive and because this species is listed as an indicator species in its' Regional Plan potential impacts to this species must be evaluated under CEQA.

Nelson's bighorn sheep have specific habitat requirements. Grazing occurs on a variety of plants but browse is preferred (Perry et al. 1987). Feeding areas are open habitats that are located near steep terrain which allow for escape from predators. Areas with overgrown vegetation limits the distribution of local sheep populations due to lower accessibility (Bleich et al. 2008). The sheep will also use the steep rugged terrain for bedding and lambing. Water sources are important and occur within the boundary and vicinity of the project site. Mineral licks have been identified as important resources and are used by bighorn sheep in the San Gabriel Mountains (Holl and Bleich 1987), although none are known to occur in the project area. Travel routes are required linking these various areas of foraging, lambing, bedding, watering and mineral licks.

Bighorn sheep are diurnal. The Gabriel Mountain population is active year around with some individuals making seasonal migrations between lower elevation winter-spring ranges and higher elevation summer-fall ranges. Ewes and adult rams may use different areas. Ewes in the vicinity of the project site have

been observed individually or in sub-groups from 2-6. There is no defense of a particular territory; however, ewes generally stay within a range. Rams are polygamous and may travel between ewe groups and sub-groups, especially during the rut, early October to mid-

The sheep within the San Gabriel Mountain population are distributed among four groups: Cucamonga group, Mount San Antonio group, Iron Mountain group and Twin Peaks group. Sheep from the Twin Peaks group, which is the western most group of the four, use the area around or on the project site. The winter-spring range for this group is in the San Gabriel Wilderness, with summer ranges on Twin Peaks, Mount Waterman, Kratka Ridge, the tunnel areas above SR-2, and the steep slopes along the northern portion of SR-39. The remaining three groups are located east of the project site (Holl, 2002).

Little is known about the population of the bighorn sheep within the San Gabriel Mountains prior to 1975. Previous studies (Hein 1967, Light et al 1967, Weaver et al 1972) suggest that bighorn sheep were abundant with a stable population estimated at 500 individuals. In 1976 the population was up to 665 and from 1976 to 1982 the population increased with the highest estimate being in 1980 at 740 (+/- 49). At that time there were an estimated 160 bighorn sheep in the Twin Peaks group (Holl and Bleich 1983). The entire population declined to about 501 (+/- 30) in 1989 and continued to decline until 1995 when the population was estimated at 130 individuals; the population has increased since then (Holl and Bleich, manuscript) and is currently estimated at slightly more than 300 individuals. A population study conducted under contract to Caltrans as part of a multi-phase bighorn sheep study estimates the population of sheep within the area of the project site to be around 10 individuals in 2005 and 2006 (P&D Consultants, 2007).

It is thought that the fires improved habitat quality for bighorn sheep by reducing vegetation cover allowing more suitable conditions for predator escape and providing for the higher valued plant growth which occurs in the initial stages of vegetation succession (Holl et al. 2004, Bleich et al. 2008). The largest population increases that occurred after 1995 occurred in the Iron Mountain and Cucamonga subgroups which burned in 1997 and 2003, respectively (Holl and Bleich, in prep). Habitat suitability is low in the Twin Peaks winter-spring range because it has not burned since 1957. Most of the summer range is low suitability because it has not burned in more than 20 years; however, habitat on the east side of Mt. Islip burned in 2002 or 2003 and is high suitability habitat.

Special-status Species that don't occur on site but could be indirectly impacted:
Mountain yellow-legged frog (*Rana muscos*): Federal status – Endangered; State status – Species of Special Concern; Forest Service Status – None.

Isolated locations of mountain yellow-legged frog are found in southern California in the San Gabriel Mountains, San Bernardino Mountains, San Jacinto Mountains and Mount Palomar. The nearest observation of yellow-legged frog noted in the CNDDDB is approximately two miles north and west from the project site in a separate drainage known as Little Rock Creek. This area is closed to the public to protect the frog. The CNDDDB also notes that suitable habitat occurs approximately six miles downstream from the proposed project site.

Mountain yellow-legged frogs inhabit rocky open streams and lake edges with a gentle slope between 984 to over 12,000 feet elevation. Water depth of two to three inches is preferred. These frogs are diurnal and emerge from their burrows just after snow melt in the spring. They are found within a few feet of a suitable water source.

A closely related subspecies, *Rana muscosa sierra*, occurs in the Sierra Nevada Mountains. Studies have indicated that this population is in rapid decline in numbers due to impacts from native transplanted fish and contaminants in the water. Because amphibians respire through their skin they take in contaminants within water more readily than air breathing animals and are therefore more susceptible to health problems.

San Gabriel Mountain slender salamander (*Batrachoseps gabrieli*): Federal status – None; State status – Species of Special Concern; Forest Service Status – Sensitive Species.

This salamander is found under rocks wood, fern fronds and on soil at the base of talus slopes located near a stream. It is most active on the surface in winter and early spring. The only known locations of this species is in the eastern part of the San Gabriel Mountains; one site is near the Crystal Lake Campground. Although there are numerous talus slope or scree slopes located within the project boundary there are no apparently sufficient water sources located within the project boundary. It is thought by Forest Service biologists that there is a potential for this species to occur near Snow Spring. Because this species has been found near the project site at the Crystal Lake Campground

Least Bell's Vireo (*Vireo bellii pusillus*): Federal status – Endangered; State status – Endangered; Forest Service Status – None

Least Bell's vireo is a migrant that summers in southern California. They inhabit low riparian growth in vicinities of water or in dry river bottoms below 2,000 feet elevation. Although the project site is located much higher in elevation and no observations of least Bell's vireo have been noted in the CNDDDB within the region focused protocol surveys were conducted for this species in conjunction with southwestern willow flycatcher since they typically occur in similar habitat. The focused protocol survey was conducted by Peter H. Bloom to determine absence/presence of the southwestern will flycatcher in 2001. Although no suitable habitat was identified on the proposed project site potential habitat was noted in the Bear Creek drainage several hundred meters. No least Bell's vireo was observed on the project site or in the Bear Creek drainage. Therefore, this species is not expected to occur on the project site or within the drainage immediately downstream.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*): Federal status – Endangered; State status – Endangered; Forest Service Status – None

Southwestern willow flycatcher (WIFL) most often occurs in broad, open river valleys or large mountain meadows with lush growth and shrubby willows. Several observations of this species occurring downstream from the project site were noted in the CNDDDB. Mr. Peter H. Bloom conducted focused protocol surveys in 2001 to determine presence/absence for this species on the project site or within the immediate vicinity. No suitable habitat occurs on the project site and the nearest potential habitat for this species is located within a drainage approximately 200 yards down-slope of the project at Post Marker 42.3. No WIFL was noted during the surveys on the project site or within the drainage below PM 42.3. Therefore, no southwestern willow flycatcher is expected to occur on the project site or within the immediate vicinity.

Environmental Consequences

SPECIAL STATUS PLANTS

Special Status Plant Communities. As previously stated, no special-status plant communities were identified on the proposed project site. Therefore, no impacts would occur to special-status plant communities with the implementation of the proposed project.

Special-status Plant Species. Although a few special-status plant species were observed within the vicinity during the focused plant surveys or historical botanical surveys, none were observed within the limits of construction or impact zone, temporary or permanent, for any of the alternatives. Therefore, no direct impacts to special-status plants species is expected to occur with the implementation of this proposed project. Because no impacts to special-status species are expected no mitigation measures are required.

SPECIAL STATUS ANIMALS

Nelson's Bighorn Sheep. The implementation of the proposed project has the potential to impact Nelson's bighorn sheep in several ways. Potential direct and indirect impacts to bighorn sheep and its' habitat are discussed in the following paragraphs. Impact analysis on movement of the bighorn sheep as with other wildlife is discussed in the previous subsection entitled, "Wildlife Movement/Corridors."

Since 1975 the Bighorn Sheep population in the San Gabriel Mountains has fluctuated between 130 to 740 individuals. Holl (2004a, and in prep.) presents a hypothesis for population fluctuation. The population increase in the late 1970's is attributed to the increased quality of sheep forage habitat resulting from wildfires occurring from 1968-1979. The decrease in the population that occurred after 1982 was associated with a decline in habitat suitability because of the lack of wildfires. After 1989, a sharp decline occurred because of increased mountain lion predation that culminated in a bighorn sheep population estimate of 130 individuals in 1995 (Holl and Bleich, manuscript). The population then increased in response to lower predation rates and two large fires that improved habitat suitability (Holl and Bleich, in prep.).

Current population estimates are approximately 300 individuals (Barboza pers comm.), approaching the goals described in a management plan titled "Implementation Strategy to Restore the San Gabriel Mountains Bighorn Sheep Population" (2006). It is thought that the bighorn sheep population responded positively to the wildfires that occurred in the eastern San Gabriel Mountains in 2003 and 2004 because the most significant increases of sub-populations came in the area of the wildfires (Barboza pers. comm.).

Stephen Holl in a 2004 paper titled "Population dynamics of bighorn sheep in the San Gabriel Mountains, California, 1967-2002" states that viability of subgroups on individual winter-spring ranges and the entire population within the San Gabriel Mountains is questionable by citing reviews of other bighorn sheep populations which revealed smaller populations are more susceptible to extinction than larger populations (Berger 1990) and estimated populations with fewer than 15 females had a 60-70 percent probability of extinction after five years (Ernst et. al 2002). As of 2002 the four subgroups within the San Gabriel Mountain totaled approximately 90 individuals. Although more recent population estimates have indicated an increase in numbers any loss of an individual bighorn sheep before the goals described within the recovery plan are met should be considered a potentially significant impact.

A collaborative effort of an interagency team including the Department of Fish and Game, United States Forest Service, Los Angeles County Fish and Game Commission with leadership of professional expert Steven A. Holl resulted in the preparation of an "Implementation Strategy To Restore The San Gabriel Mountains Bighorn Sheep Population." The purpose of the implementation strategy is to "identify[ies] management actions that are expected to result in the restoration of a well distributed, self sustaining population of bighorn sheep (*Ovis canadensis nelsoni*) in the San Gabriel Mountains." The document identifies "Limiting Factors" for the recovery of the population as: (1) reduced habitat suitability from post-fire succession on chaparral-dominated winter/spring ranges and (2) and mountain lion predation. It further describes a restoration objective:

RESTORATION OBJECTIVE: Restore the San Gabriel Mountains bighorn sheep population to a self-sustaining level that provides diverse recreation and educational opportunities.

- **Establish a self-sustaining population.** A self-sustaining population will be established when both criteria described below have been achieved. At this point, the population would be sufficiently large enough that it would not qualify for listing as a federal threatened or endangered species.
- **Criterion 1.** Based on monitoring results, at least 30 ewes are present in each of South Fork Lytle Creek; Deer, Cucamonga, and Barrett-Cascade Canyons; Cattle Canyon, East Fork San Gabriel River, and San Gabriel Wilderness, and 15 ewes are present in the Middle Fork of Lytle Creek for 6 consecutive years.

- **Criterion 2.** Based on monitoring results, at least 322 bighorn sheep are well distributed among the groups of bighorn sheep for 6 consecutive years.

Remove the Population from the Forest Service Sensitive Species List. The San Gabriel bighorn sheep population should be removed from the Forest Service Sensitive Species list when the criterion described below is achieved.

- **Criterion 1.** Based on monitoring results, at least 500 bighorn sheep are well distributed among the subpopulations, for 6 consecutive years. Well-distributed means at least 260 bighorn sheep in the Cucamonga Peak group and at least 80 bighorn sheep in the each of the Mount San Antonio, Iron Mountain, and Twin Peaks groups.”

The document goes on to state the “Actions Needed” to meet the goals of the strategic plan as:

- **Actions Needed:** The population has been stable from 1995-2002, apparently limited by adult mortality. Therefore, mortality must be reduced by reducing the incidence of predation. Concurrently, habitat availability and suitability must be increased on winter-spring ranges to increase adult and lamb survivorship. Additionally, potential impacts from recreation, primarily during summer, must be evaluated and mitigation implemented where necessary.”

The strategic plan specifically identifies the need to evaluate the opening of SR-39 and the potential impacts to bighorn sheep, especially the potential impact it could have as a barrier to sheep movement. This topic is addressed in Section 4.1.8 Wildlife Movement/Corridor. The strategic plan also suggests prohibiting new roads and trails within 300 feet of mineral licks. No mineral licks have been identified within 300 feet of SR-39 during the studies conducted by Caltrans and its’ consultants. Therefore, the implementation of the proposed project would have no conflict with this implementation strategy.

The implementation strategy plan also identifies the need for the USFS to conduct prescribed burns in various areas to improve habitat suitability. In Holl (2004) he states, “Prescribed fire is the only practical tool available to improve habitat conditions for bighorn sheep in the San Gabriel Mountains.” Monitoring of various aspects is also outlined in the strategic plan. Total costs for the implementation strategies for the first five-year period are estimated to be \$3,899,176. Costs are not estimated beyond this time because if all the habitat restoration projects are completed the bighorn sheep would benefit for approximately 12 years.

As previously stated, a total of 6.9 acres of natural habitat would be temporarily impacted and a total of 9.8 acres would be permanently impacted. Bighorn sheep could use any of the plant communities on the project site for feeding, traveling and escaping predators. Therefore, any loss of habitat on the project site should be considered a loss of bighorn sheep habitat and a potentially significant impact.

Alternatives 2, 3 and 4 propose to install steel cable netting on cliff faces to protect vehicles from rock fall. If installed the netting would pose a trip hazard for any sheep attempting to climb the cliff face resulting in potential take of individual sheep. The presence of the netting could deter the sheep from using the cliff faces altogether which are potentially important predator escape routes. Although the use of the cable netting would not likely pose an impact to other wildlife or plant resources, the use of netting would result in a potentially significant impact to Nelson’s bighorn sheep.

To mitigate the trip hazard below a significant level fencing would be installed in strategic locations diverting sheep away from the netting. Although the fencing would reduce the trip hazard to a less than significant impact it would remove the cliff faces from potentially useful sheep habitat. To mitigate impacts to bighorn sheep habitat and any short-term direct impacts resulting from vehicle collisions, should they occur, Caltrans would contribute funds to USDA Forest Service for the implementation of the strategic plan to improve habitat quality and bighorn sheep population monitoring in the vicinity of the proposed project site.

During a bighorn sheep Technical Advisory Committee meeting on December 17, 2008 Forest Service representatives presented the realities of conducting a controlled burn in the Angeles National Forest. Because of the constraints in preparing for one in a highly populated area such as Los Angeles County it cannot be guaranteed that a controlled burn would be conducted within any given period. Forest Service representatives presented an alternative to improving Bighorn Sheep habitat quality. A mechanical mulcher could be used to thin overgrown vegetation giving similar results as a fire. The mechanical mulcher would be used to improve habitat quality at a rate of 5 to 1 acres of impacted sheep habitat. Forest Service representatives estimated the cost of mechanical mulching at approximately \$1,000 per acre, depending on slope aspect and accessibility. With the implementation of this proposed mitigation, the impact to bighorn sheep habitat would be reduced to a less than significant level.

An investigation of the listing status of Nelson's bighorn sheep, California Fully Protected or not, and ensuing discussion at the Technical Advisory Committee meeting on December 17, 2008 has raised a question about Caltrans' ability to fully mitigate the potential impact to a sheep attempting to cross SR-39. Although Caltrans and the Department of Fish and Game (as stated in their reply email) have determined that the Nelson's bighorn sheep within the San Gabriel Mountain's population to be exempt from Fully Protected status this impact analysis and the proposed mitigation measures are based on the assertion that a loss of one individual is considered to be a significant impact. Potential impacts resulting from reasonably unexpected events or illegal acts cannot be evaluated and results of such incidents are not part of this impact evaluation. The mitigation measures presented in this report are adequate to reduce the potential impact to an individual bighorn sheep attempting to cross SR-39 to a level that is not expected.

Special-status Species that Do Not Occur on Site but Could be Indirectly Impacted

Mountain Yellow-Legged Frog. The federal government listed mountain yellow-legged frog as Endangered in 2002 and critical habitat was designated in September 2006. Critical habitat does not exist within the footprint of the proposed project however it is located within adjacent drainages one-quarter mile to the north and west, but not within the same drainage or downstream of the proposed project. Therefore, there will be no effect to critical habitat of this species. Because no habitat for this species exists within the footprint of the project site there will be no loss of habitat as a result of the implementation of the proposed project.

There is one observation of an individual mountain yellow-legged frog noted in the CNDDDB approximately two miles downhill of the proposed project in a separate drainage for Soldier Creek and additional observations in a drainage to the north and west known as Little Rock Creek. The CNDDDB also notes potential habitat for the mountain yellow-legged frog exists approximately six miles further downstream from the project site near the confluence of the West Fork and East Fork of the San Gabriel River. Although there is no potential for an impact to the individual noted in Soldier Creek or its' surrounding habitat or Little Rock Creek area since they are in separate drainage systems, there is a possibility for sedimentation or contaminants generated from the construction phase of the proposed project to reach potential habitat further downstream during the construction phase. Best management practices have been incorporated as part of the project design to prevent such an occurrence. Siltation fences and berms will be placed immediately downstream at the edge of the project footprint to capture any runoff during the construction phase. Temporary parking, staging and refueling of vehicles will be done in an enclosed bermed area and any spills will be cleaned and disposed of immediately. Because no individual mountain yellow-legged frogs are expected to occur within the footprint of the proposed project and because the above BMP's are included as part of the project design, there will be no effects to the mountain yellow-legged frog. Because frogs have a potential to migrate between drainages, focused surveys to determine absence/presence within the immediate area surrounding the proposed project site should be conducted prior to the initiation of construction related activities. Focused surveys will be conducted in winter-summer 2009.

San Gabriel Mountain Slender Salamander. As stated previously, this salamander is found under rocks wood, fern fronds and on soil at the base of talus slopes located near a stream. Although there are numerous talus slope or screen slopes located within the project boundary there are no apparently sufficient water sources located within the project boundary. Because suitable habitat is not present on the project site this species is not expected to occur within the limits of the project boundary. As such, no impact to the San Gabriel Mountain slender salamander is expected to occur.

It is thought by Forest Service biologists that there is a potential for this species to occur near Snow Spring. Because this species has been found near the project site at the Crystal Lake Campground presence/absence surveys will be conducted prior to the initiation of construction related activities. Any individuals found within the project limits will be relocated to nearby appropriate habitat within the Angeles National Forest. If individuals are discovered downstream from the project site Best Management Practices have been incorporated into the project design, such as the use of siltation fences and berms, to prevent erosion or slides from reaching natural drainages outside the project impact footprint.

Southwestern Willow Flycatcher. Few observations of this species occurring approximately 1 mile downstream are noted in the CNDDDB. Also, marginal habitat for this species is located a few hundred yards down slope of the project site. Although no individuals or their habitat were observed on the project site and no individuals are expected to occur on the site a potential exists to affect individuals and their habitat further downstream.

During the construction phase of the proposed project there is potential for rock slides and erosion to occur, thereby potentially impacting habitat downstream. Best management practices, such as the use of siltation fences and berms, have been incorporated into the project design to prevent erosion or slides from reaching natural drainages outside the project impact footprint.

Avoidance, Minimization, and/or Mitigation Measures

To mitigate impacts to bighorn sheep habitat and any short-term direct impacts resulting from vehicle collisions, should they occur, Caltrans will contribute funds (at a rate of \$X per acre or X% of the total costs or for one year or perhaps a fixed amount) to USFS for the implementation of the strategic plan to improve habitat quality by prescribed burns and bighorn sheep population monitoring in the vicinity of the proposed project site. The details will be finalized and included in the final EIR/EA.

2.3.6 INVASIVE SPECIES

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

Affected Environment

Please refer to the Plant Communities headings of the Natural Communities subsection for a discussion of ruderal/invasive plant communities.

Environmental Consequences

Please refer to the Plant Communities headings of the Natural Communities subsection for a discussion of ruderal/invasive plant communities.

Avoidance, Minimization, and/or Mitigation Measures

Several locations that would be temporarily disturbed would be replanted with native plants typical of the surrounding plant community. Approved plant palettes would be coordinated with USFS biologists. A Biological Resources Assessment and Biological Evaluation will be produced by Caltrans and submitted to the USFS. The USFS would need to issue a permit to Caltrans prior to construction activities could be initiated within National Forest boundaries.

Also, please refer to the Plant Communities headings of the Natural Communities subsection for a discussion of ruderal/invasive plant communities.

2.3.7 CUMULATIVE IMPACTS

The proposed project would permanently convert 6.9 acres of natural habitat within the Angeles National Forest to a developed roadway condition. Several other Caltrans' projects to repair or improve highways on SR-2 and SR-39 within the Forest have recently been approved or are in the approval process. A list of these projects follows:

- SR-2 Bridge repair east of the proposed project at PM 74.08; under construction
- SR-39 Soldier pile retaining walls located at PM 34.10 and 34.16; in approval process
- SR-39 Bridge repair located at PM 31.6; in approval process
- SR-39 Bridge repair located at PM 30.1; in construction
-

Although there are four other highway related projects in the Forest that are currently under construction or in the approval process these projects would cumulatively convert relatively little native habitat to a developed condition when compared to the surrounding forested area. The combined permanent impacts to native plant communities for all five Caltrans' projects, including this proposed project, are estimated to be less than 10 acres. Natural Plant Community Impacts the total area of the Angeles National Forest is 650,000 acres and the area of the San Gabriel Mountains is 658,414 acres. The improvements to these roads are intended to provide better access to a public resource in a safer manner.

A discussion about the consistency with the USFS General Plan and the more specific Angeles National Forest Land Management Plan (2006) is presented in Section 2.1.1. An increasing rate of development has occurred at the foothills and margins of Angeles National Forest boundary. Each of these projects could potentially have an edge effect on the resources within the Forest. However, each of these recent and future developments would be evaluated by natural resource agencies, including the USFS, as a stakeholder or regulatory permitting agency and potentially significant impacts to the Forest would be mitigated as appropriate on a project-by-project basis. No other construction projects within the Angeles National Forest are proposed at this time. Because of the relatively low impact to biological resources the cumulative affect of this proposed project in conjunction with the others that are proposed within the Forest boundary is less than significant.

2.4 CUMULATIVE IMPACTS

Regulatory Setting. Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines as follows:

- “Cumulative impacts” refer to two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts.
 - a) The individual effects may be changes resulting from a single project or a number of separate projects.
 - b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CCR Title 14, Chapter 3, Section 15355, as amended September 7, 2004).

A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations as follows:

A “cumulative impact” is the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The existing environmental conditions are provided in Chapter 2 of this Draft EIR/EA; the analysis of impacts to each environmental resource serves as the basis for the cumulative impact analysis. The following analysis that follows considers the potential cumulative effects, if any, that would result from construction and the operation of the proposed project, along with the effects of other related projects.

2.4.1 AFFECTED RESOURCES

This section discusses the cumulative impacts on given resources, defined by Resource Study Areas (RSA). Each resource has a specific RSA, which is delineated to include the project area as well as areas outside of the project where the proposed project’s activities, in combination with activities in the other projects in the area, could contribute to cumulative impacts on the resource. Potential cumulative impacts on each resource are evaluated for both construction and operation of the proposed project. For the purpose of this analysis, the build alternatives are considered to have similar cumulative impacts. The No Build alternative would not contribute to cumulative impacts.

Land Use. The RSA for land use includes the proposed project area, which is primarily defined by the State Route 39 corridor, the City of Azusa and Wrightwood, a United States Census Designated Place. Within the project area, SR-39 is bound by Angeles National Forest lands, the proposed project falls within an area designated as Open Space by Los Angeles County’s General Plan. The Counties of Los Angeles and San Bernardino General Plans recognize the Angeles National Forest Land Management Plan as the land use document for the project area. The Angeles National Forest Land Management Plan encompasses the project area and promotes the protection of forestland and sensitive biota, and provides for increased recreation opportunities. The project area is within rural mountainous terrain, and development such as residences and urban centers, do not occur.

Multiple transportation related projects along SR-39 and the Angel Crest Highway (State Route 2), which is adjacent to the project area, could be in construction during the same time frame as the proposed

project. Although cumulative effects may occur, in relation to dust creation and runoff, the occurrences would be separated by distance. In addition, Best Management Practices would be in place in an effort to control any occurrences. Construction effects are temporary and would not permanently harm the adjacent forestland. For these reasons cumulative effects on the use of Angeles National Forest Land, associated with construction, are not expected.

The proposed project would not require the acquisition of additional land under the protection of the Angeles National Forest, and therefore would not reduce the amount of park-designated lands. Once completed the project would provide a much-needed connection between Los Angeles and San Bernardino County's urban regions to the Angeles National Forest, and to SR-2. Implementation of the proposed project would satisfy goals and policies outlined in the Angeles National Forest Land Management Plan.

With the additional projects planned and in construction along SR-2, access to parklands will greatly increase, as will access to privately owned ski resorts and the community of Wrightwood. Currently, the community of Wrightwood is not recognized by a General Plan and is within Angeles National Forest land. In a cumulative sense the proposed project and projects along SR-2 will not be contrary to local land use. The project will facilitate economic growth and stability within the community. Action on the part of San Bernardino County officials, including a potential amendment to the General Plan to include the community of Wrightwood, may be necessary in the future to increase accessibility within the region, as growth continues.

An increase in accessibility to parklands from the Los Angeles urban areas will lead to an increase in traffic through the City of Azusa. The City of Azusa's General Plan incorporates rural recreation areas north of the city and is identified as the "gateway to the Angeles National Forest". An increase in traffic could also lead to an overall increase in land converted for development purposes. An increase in the development of businesses and residences would fall within the City's land use specifications. The cumulative effects on land use caused by this project and other similar projects would be consistent with the City of Azusa's general plan and community values; therefore no significant adverse cumulative impacts are anticipated.

Growth. The RSA for growth includes the same areas as Land Use, described above.

Since the project area is currently closed to traffic and has been since 1978, construction activities would not produce growth related cumulative impacts, as they would neither encourage nor impede growth. Transportation projects on both SR-39 and SR-2 are being implemented in response to four needs: (1) correcting design deficiencies and storm damage, (2) increasing access to recreation facilities located within the Angeles National Forest, (3) providing economic benefits to local businesses such as camp grounds and ski resorts and (4) providing routes for Fire Suppression forces for the Forest areas and helping the LA County Sheriff's Department for search and rescue activities. Implementation of this project, as described in the Land Use section, will increase traffic and economic stimulus within the communities of Azusa and Wrightwood. The proposed project is consistent with local plans, in regard to respective improvements and local land planning activities. Therefore, the project, in keeping with local land use goals and values, would accommodate growth and would not produce a cumulative impact in regards to growth inducement.

Community Impacts. The RSA for community impacts is the same as that listed in the above Growth and Land Use sections.

Since the project area is currently closed to traffic and has been since 1978, construction activities would not produce community related cumulative impacts. The project is within a sufficient distance from any community of concern; disturbances from construction related activities would not be felt by near by communities.

The proposed project, as well as other similar projects in the area, does not require the acquisition of businesses or other privately owned properties, and therefore would not cause a negative cumulative impact to local community populations. The ski resorts at Mt. Waterman and Mt. Kratka may provide

limited seasonal employment during winter months, and, other commercial centers, such as Newcomb's Ranch and Wrightwood provide limited employment opportunities. The proposed project will not pose any negative impacts on local business and employment, but may have positive effects rather, on seasonal recreational activities, employment and access.

Once operational, the proposed project would be a benefit to local communities. An increase in access to the recreational facilities located within the Angeles National Forest would benefit the local economy, by increasing the amount of accessibility and travel through communities located within the proposed project region. Many of the users of the forest are people that enjoy outdoor activities and enjoy the forest experience as a change from the daily pressure of urban life. By increasing access to the Angeles National Forest, there would be an increase in the availability of recreation opportunities for the urban communities of Los Angeles and San Bernardino. For these reasons, it has been determined that the proposed project would have a beneficial cumulative effect on communities.

Utilities and Emergency Services. The RSA for utilities and public services would include utilities that exist within the vicinity of the proposed project area as well as areas served by local area emergency service providers.

Construction activities and the eventual operation of the proposed project, in conjunction with other similar projects in the area, would not lead to an impact on utilities, since there are none located within the vicinity of the proposed project.

A cumulative impact on emergency services could be caused by construction activities associated with the proposed project. SR-39 is one of the two major routes providing movement for fire suppression forces in the protection of several watersheds. In addition, it has been used as an important access route for search and rescue activities by the Los Angeles County Sheriff Department. Alternative routes for these services would be developed prior to construction, which could impede emergency service response times. Interagency communication during the period of construction would collectively determine the best alternative access routes necessary in order to minimize the impacts construction would have on response times. It is anticipated that related projects would apply the same procedures so that there would be no cumulative effects to public services.

Once operational, the proposed project and other projects in the vicinity would create a beneficial impact on emergency services. These improvements would lead to more efficient travel in the area and improved response times for local emergency services.

Traffic and Transportation. The RSA for traffic and transportation would include the immediate project area, the City of Azusa and Wrightwood, a Census Designated place.

Construction of the proposed project would not cause any lane closures or impede traffic in the region due to the fact that the roadway has been closed since 1978. Once operational the project could have a cumulative impact on traffic in the communities of Azusa and Wrightwood. The affected communities would gain improved access to the forest and experience increased traffic flow through the region. With proper planning and management, the proposed project and other similar projects would have an overall beneficial cumulative impact on traffic and transportation in the region.

There are no pedestrian or bicycle facilities located within the project area, and the project would not create the need for such facilities. The proposed project would not contribute to cumulative impacts related to pedestrian or bicycle facilities.

Visual Resources and Aesthetics. The RSA for visual resources and aesthetics includes the immediate view shed from the proposed project.

Due to the relatively mountainous terrain the number of people with views to the specific project site is very limited. Views of the project from an offsite location only occur at Islip Saddle and at the Jarvi

Memorial Vista Point located along SR-2, approximately 0.5 mile west of the junction. Islip Saddle does not provide a clear view of SR-39 since it is located on the other side of SR-2. The Jarvi Memorial Vista Point provides visitors a glimpse of the roadway as they look out into the San Gabriel Wilderness. As a result of the project only minimal impacts to the visual character of the area will occur, mainly as a result of an increase in the visibility of “built” characteristics. With the proposed design features, the potential for cumulative impacts on visual resources is low.

Cultural Resources. The RSA for cultural resources is the immediate proposed project area.

No previously identified archaeological resources were identified in the vicinity of the project during an archival search. No such resources were identified by local jurisdictions, or as a result of field investigations. Without archaeological resources in the vicinity of the proposed project, an adverse cumulative impact will not occur. However, should the project unearth cultural resources, a qualified archeologist will assess the resources for their significance and deposits would be recovered in accordance with existing laws and regulations. Without know archeological resources in the area, the potential for cumulative impacts are very low.

Previous studies along SR-39 have identified a Mechanically Stabilized Earthen (MSE) wall at post mile 43.4 as a build resource. This MSE wall, known more commonly as a “French Wall”, was completed in 1972 and was the first of its kind in North America. The historic significance and proper treatment of this resource will be taken into account during all phases of the proposed project. Therefore, due to the precautions that will be taken to preserve this historic resource, no cumulative impact will occur.

Water Resources. The RSA for water resources is the immediate proposed project area, which extends along the ridgeline of Mount Islip, within the drainage area of Bear Creek. The highway is adjacent to the San Gabriel Wilderness area, which includes most of the watershed of Bear Creek and is 2.3 miles west of the boundary of the Sheep Mountain Wilderness area. Other important geographical features in the region include the North Fork of the San Gabriel River and the Coldbrook Creek tributary.

During construction there is a potential for cumulative impacts to occur in regards to surface water quality. Such effects would depend on the schedule of the project and other similar projects in the area. These impacts will be minimized by applying Best Management Practices and the implementation of a Storm Water Prevention Plan, as required by law.

It has been deemed unnecessary to conduct a floodplain hydraulic study, since the project area is not located within a floodplain. Due to this fact, it has been determined that the proposed project would not have a cumulative impact on local flood plains.

Geology, Soils, Seismicity and Topography. The RSA for geology and soil resources is restricted to the proposed project area.

During construction and operation of the project there would be the potential for disturbance to existing geology, soils, seismic, and topography. Potential geologic, soils, and seismic impacts would be addressed through incorporation of geotechnical recommendations, engineering standards, and applicable regulations and practices. It is anticipated that similar adjacent projects would adhere to similar standards, and as a result no cumulative impacts would occur. Adjacent communities and development are of a sufficient distance from the proposed project that they would not be affected by cumulative geologic and soil impacts caused by the project.

The proposed project is located in a seismically active portion of southern California and is likely to experience moderate to severe ground shaking. Moderate seismic shaking can be effectively addressed through appropriate design specifications. Due to these design specifications, no cumulative impacts are expected. There is still potential for the project to be affected by a major seismic event, in that case there is probability for unavoidable cumulative impacts, in regards to seismicity.

Paleontology. The RSA for paleontological resources would be limited to the construction areas of the proposed project.

The construction of the proposed project and like projects in the area could have the potential to disturb paleontological resources. The likelihood of such events taking place is unknown, and would not be known until the construction period of the proposed project. Adequate protection of such resources would be in place at the time of construction, and resources would be recovered in an appropriate fashion. Due to these protective measures, the potential for cumulative impacts is minimal.

Hazardous Waste/Materials. The RSA for hazardous waste and materials is the same as described above in the paleontology section.

During construction of the proposed project, the primary material-related impacts would be that of handling yellow thermoplastic/paint striping. In areas where yellow traffic stripes would be removed along with asphalt or concrete, the waste would be relinquished to the contractor for possible recycling or disposal at a Class I facility. If the stripes are removed by themselves, the residue may contain lead and chromium concentrations that are considered hazardous and require disposal at a Class I facility. Due to these precautions and the fact that similar projects in the area would be implemented following these standard practices, a cumulative impact would not occur.

The project is located in a mountainous area of the Angeles National Forest. There are no industrial or hazardous waste/material generators in the vicinity. Therefore, it is anticipated that no contaminated ground or perched water would be encountered during the construction of the proposed project. Due to the absence of such hazards, a cumulative impact is not anticipated.

Air Quality. The RSA for air quality is Los Angeles County, which is located within the South Central Coast Air Basin (Basin). Projects within the Basin that could potentially affect air quality would contribute to cumulative air quality impacts. The proposed project is located within the jurisdiction of the SCAQMD and is required to comply with all applicable regulations, *i.e.*, SCAQMD Rules 401, 402, and 403, to mitigate fugitive dusts and other pollutants during construction.

Construction activities due to the proposed project, and related projects in construction within the same time period, would cause temporary air quality impacts. Criteria pollutants such as oxides of nitrogen, carbon monoxide and fugitive dust, would be generated by all highway related construction activities. Due to overlapping schedules of related projects in the area, a cumulative impact would occur at the time of construction. However, this impact would be temporary and controlled to the extent practicable by control measures such as, sound construction practices and preventative measures required by law and regulations.

The project will lead to an anticipated increase in traffic volumes in excess of 5 percent (1,800 ADT in opening year of 2012 and 5,160 in the horizon year of 2030 compared to 0 for existing year and no-build in the horizon year) and will increase traffic flows in comparison to the existing flow. Due to the increase in future traffic flow; in conjunction with related projects in the area, the proposed project would have a cumulative impact on air quality in the region.

Noise. The RSA for noise is the area immediately adjacent to the proposed project area. During construction and operation of the proposed project noise levels will increase. These levels are not expected to exceed levels deemed unacceptable. There are no sensitive receptors located within the project area. Due to the absence of these receptors, a cumulative impact related to noise is not expected to occur.

Energy. The RSA for energy consumption is southern California in general.

The construction activities of the proposed project, and the construction of similar projects in the vicinity, would require the consumption of energy. Energy would also be required for the manufacturing and

assemblage of materials used for the construction process. The energy required for these activities would largely be derived from fossil fuels. However, the amount of energy that would be required for these projects is a minimal fraction of all the projects currently ongoing in southern California. The energy consumption for the proposed project is short-term and does not augment the overall supply and demand for energy within the region; therefore it does not constitute an adverse cumulative impact.

Biological Resources. The RSA for the purposes of this discussion is generally southern California, the Angeles National Forest lands in particular, wherein a variety of biological resources occur.

A total of six plant communities were observed along the portion of highway 39 within a biological study conducted by a qualified biologist. The six communities are: (1) mixed coniferous forest, (2) canyon live oak woodland, (3) xeric and mesic cliff faces, (4) riparian herb and scrub, (5) mixed montane chaparral and (6) ruderal. A review of the on-site habitat characteristics compared to the California Natural Diversity Database (CNDDDB) classification system resulted in no special-status plant communities being identified on the project site. With design specifications, construction limited to the right-of-way, avoidance measures, landscaping with native plants and other projects in the area taking similar measures a cumulative impact on these plant communities is not anticipated.

Amphibian populations on the project site are expected to be low or non-existent due to the lack of sufficiently large enough bodies of continuous available water. If present they are expected to be localized to the available water sources. No amphibian species were heard or observed on any of the biological surveys conducted. With Best management Practices, avoidance measures and other projects in the area taking the same precautionary measures a cumulative impact on amphibian populations is not deemed to occur.

The diversity of structure and plant communities present on site provides both forage and nesting habitat for several locally occurring common bird species. Some species are known to be closely associated with specific plant communities, whereas other species utilize a variety of habitat types for foraging and breeding. With frequent biological surveys and avoidance measures the proposed project is not anticipated to have a cumulative impact on bird communities.

A number of mammals occur within the project area, one such mammal of particular concern is the special-status wildlife species, Nelson's bighorn sheep. Bighorn sheep within the vicinity of the project site will travel seasonally between summer and winter ranges and daily between important resources. State Route 39 could potentially be used as a travel route for seasonal movement because of its' upslope/down-slope orientation or for daily movements between local resources. Because of the vast contiguous open space that occurs in all directions around the project site and numerous other travel routes in the vicinity, SR-39 itself should not be considered a wildlife movement corridor linking two otherwise disconnected open spaces but rather one of many possible localized travel routes available to large mammals. Data collected during Phase I of Caltrans focused study of the bighorn sheep reveals no sheep observations at the Snow Spring area along SR-39. If, in the future, a specialized bighorn sheep movement corridor is identified at the Snow Spring slide area near SR-39, project design would be modified to accommodate and preserve the corridor. With the proposed avoidance and monitoring measures, an adverse cumulative effect on the bighorn sheep and wildlife movement within the region is not expected to occur.

Taking the above into account, it is not anticipated that a cumulative impact to biological resources would occur during the construction or operation of the proposed project. Once operational, the project would not contribute to long-term cumulative impacts on biological resources in the region.

2.4.2 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

With implementation of standard minimization measures and mitigation measures proposed in this EIR/EA, project contributions to cumulative impacts would be considered less than cumulatively considerable, and no additional mitigation measures are required.

CHAPTER 3 | CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) EVALUATION

3.1 DETERMINING SIGNIFICANCE UNDER CEQA

The proposed project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA's responsibility for environmental review, consultation, and any other action required in accordance with NEPA and other applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327. Caltrans is the lead agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or some lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

Chapter 2 identifies the impacts of the project alternatives and abatement measures intended to reduce or eliminate adverse project effects. All impacts determined to be significant under CEQA are discussed below.

3.1.1 DISCUSSION OF SIGNIFICANCE OF IMPACTS

Noise and Vibration (Section 2.2.6). 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 such measures are not feasible. All build alternatives for the proposed project would involve the construction or improvements to existing highway facilities. Based on the analyses, it was determined that the ambient noise levels in the Angeles National Forest would increase due to traffic noise from the reopening of the SR-39 and would experience significant but temporary noise increase during the construction phase of the project.

For all the build alternatives, the noise analysis indicated that construction activities, particularly the use of impact drill rigs with noise emission levels of 88 dBA at 50 feet from the construction site with a typical noise drop-off of 6 dBA per doubling of distance, would increase noise levels in the area. Also the predicted average traffic noise level after the reopening of State Route 39 was calculated to be 60 dBA at 50 feet from the roadway centerline with a typical noise drop-off of 3 dBA per doubling of distance. A traffic volume of 460 vehicles per hour was used to predict peak hour noise levels for this project. This traffic volume represents 10 percent of the predicted 2030 ADT of 4600 vehicles. Traffic and noise abatement will be addressed.

The reopening of the SR-39 would experience significant but temporary noise increase during the construction phase of the project. The determination is based on information in the record and, to the extent feasible, on scientific and factual data. Noise abatement measures are proposed under section 2.2.6 entitled, Noise and Vibration.

Biological Environment (Section 2.3). Prior to the completion of the Natural Environmental Study, Caltrans anticipated significant environmental effects resulting from the project. Given the environmental setting, Caltrans concluded that an EIR would be the appropriate CEQA document to address impacts related to the biological environment. Potential direct and indirect impacts could occur to wildlife, specifically the big-horn sheep movement, with the re-opening of the closed section of State Route 39.

Several special-status plants and wildlife species, including Nelson's bighorn sheep, were detected or are known to occur within the vicinity of the project site. Special attention was given to the study and analysis of impacts to Nelson's big-horn sheep as it is a California fully protected species. Results and conclusions are based on habitat types present on the site. Please refer to chapter 2.3, entitled Biological Environment.

The Natural Environmental Study concluded that no significant impacts, direct or indirect, are expected to occur to any plant or wildlife with the implementation of the proposed project. With the implementation of abatement and standard minimization measures proposed in this EIR/EA, project contributions to cumulative impacts would be considered less than cumulatively considerable. For a full discussion, please refer to chapter 2.3 entitled, Biological Environment.

3.1.2 LESS-THAN-SIGNIFICANT EFFECTS OF THE PROPOSED PROJECT

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

- Coastal Zone
- Wild and Scenic Rivers
- Farmlands
- Timberlands
- Relocations
- Paleontology

Reference Chapter 2 for a more in-depth discussion of the less-than-significant impacts of the proposed project.

3.1.3 SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

There is the potential to significantly impact Nelson's Bighorn Sheep indirectly through modification of habitat, but measures are being discussed and proposed through continuing consultation with the United States Fish & Wildlife Service to mitigate any potential impacts to a level below significance. For more information, please reference Section 2.3, Biological Environment.

3.1.4 UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL EFFECTS

The proposed project would not pose any unavoidable significant environmental effects, consequently, there is no further discussion in this environmental document.

3.1.5 GROWTH-INDUCING IMPACTS

No growth-inducing impacts are anticipated, given the proposed project's limited scope and the protected wilderness of the surrounding area. It is worth noting that there is some long-term potential that economic pressures for growth and tourist services could occur, but any growth beyond existing projections is not anticipated. For a more detailed discussion, please reference Section 2.1.2.

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CHAPTER 4 | COMMENTS AND COORDINATION

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and 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 meetings, a scoping meeting, and a public hearing. This chapter summarizes the results of Caltrans' efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

4.1 SCOPING

A formal scoping process was conducted for the project in effort to solicit public concerns and ensure early consultation. Letters briefly describing the project were mailed to the public, elected officials, state, federal and local agencies in early February 2002. A request for written comments and an invitation to a scoping meeting held at the Caltrans, District 7 Office on February 20th, 2002 was sent to resource agencies and interested parties. Public Scoping notification ads were placed in the following newspapers on the following dates:

- San Gabriel Valley Tribune, February 13th, 2002
- Los Angeles Times, February 13th, 2002
- La Opinion, February 14th, 2002

The following comments were received from the public, public agencies and elected officials during the 2002 Scoping Process:

- Request to prepare an Environmental Impact Report to evaluate all significant impacts on the San Gabriel Wilderness and Sheep Mountain Wilderness areas.
- Sensitive biological resources within the San Gabriel Wilderness area.
- Project cost exceeds benefits.
- Unstable and highly active geological area.
- Potential water quality and riparian habitat impacts downstream near Bear Creek.
- Threatened and endangered species present in the adjacent areas.
- Sedimentation and erosion impacts to Bear Creek tributaries and the San Gabriel Wilderness area.
- Increased public use would destroy the natural resources present.
- Emergency Vehicle access.
- Traffic data needs to be incorporated into the Traffic Analysis representative of today's population utilizing that section of the road.
- Drain cleaning cycles.

A Notice of Preparation (NOP) letter was sent to elected officials, states, federal and local agencies on June 1st, 2006. The notice briefly described the proposed project, location, potential environmental effects and the type of Environmental Document.

Comments raised from the Notice of Preparation included the following:

- The Azusa City Council is strongly in favor of reopening SR 39 but wishes not to be negatively impacted.
- Potential Impacts to erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones, archeological and cultural resources, and the County Oak Tree Ordinance should be addressed.

- Reopening SR 39 would be a benefit to all emergency services and the travel time in responding to emergencies in the area would be drastically reduced.

Table 4-1. Summary of Consultation and Coordination with Other Agencies

Public Agency	Date	Consultation/Coordination
California Department of Fish and Game	3/20/2001	Conducted a site visit to discuss the nature of proposed activities. In addition, attendees gained an understanding of the project area and biological resources in the area. Caltrans presented mitigation measures with a proposal for a wildlife corridor study. Attendees came into agreement that a complete Biological Assessment is necessary in order to evaluate possible impacts by the proposed project.
	5/30/2001 10/1/2002 3/12/2003 4/25/2003	Caltrans received comments during circulation of draft environmental document.
	7/17/2006	Caltrans received comments during circulation of draft environmental document.
	12/17/2008	Caltrans participated in consultation with the California Department of Fish and Game, United State Forest Service, and ECORP Consultants regarding the protected status of Nelson’s Bighorn Sheep. Consultation is ongoing. Reference Section 2.3 for more details.
United States Fish and Wildlife Service	2/25/2001	A meeting between Caltrans and USFWS to discuss potential threatened and endangered species present in the adjacent areas. Early consultation and recommendations for possible mitigation measures were discussed.
United States Army Corps of Engineers (USACOE)	2/5/2001	The discussion included the permits necessary to obtain from the USACOE. It was concluded that no permits were required from USACOE since the threshold for permits was not met.
Angeles National Forest (ANF)	1/30/2001	A meeting between Caltrans and ANF was held to discuss the proposed project work. Discussion topics included: complete analysis of the area must be presented in a Biological Assessment/Biological Evaluation and a permit must be obtained from the USFS before any construction begins.
Habitat Conservation & Natural Resource Planning	2/26/2003	Caltrans received comments during circulation of draft environmental document.
Southern California Association of Governments	3/3/2003	Caltrans received comments during circulation of draft environmental document.
United States Forest Service	3/4/2003	Caltrans received comments during circulation of draft environmental document.
	5/28/2003 5/30/2003	Caltrans received comments during circulation of final IS / EA
	7/20/2008	Decision Document received
	12/17/2008	Caltrans participated in consultation with the California Department of Fish and Game, United State Forest Service, and ECORP Consultants regarding the protected status of Nelson’s Bighorn Sheep. Consultation is ongoing. Reference Section 2.3 for more details.
County of Los Angeles, Department of Public Works	3/6/2003	Caltrans received comments during circulation of draft environmental document.
United States Department of the Interior	3/7/2003	Caltrans received comments during circulation of draft environmental document.
	6/12/2003	Caltrans received comments during circulation of final IS / EA
County of Los Angeles, Fire Department	3/20/2003	Caltrans received comments during circulation of draft environmental document.
	7/22/2003	Caltrans received comments during circulation of final IS / EA

4.2 PUBLIC PARTICIPATION

The draft Initial Study / Environmental Assessment was circulated for public comment from February 7th, 2003 to March 10th, 2003 and a public hearing was held on February 27th, 2003 at Azusa City Hall. The purpose of the meeting was to provide an opportunity for agencies and the public to learn more about the

project and to provide input on potential environmental issues to be considered in the environmental review process.

Public meeting notification ads were placed in the following newspaper on the following dates:

- PennySaver, February 12th, 2003
- La Opinion, February 12th, 2003
- San Gabriel Valley Tribune, February 11th and February 18th, 2003
- Pasadena Star News, February 11th, 2003

The following comments were received from the 2003 Public Participation Process:

- Do not open the road. It will lead to the trashing of the remaining portion of State Route 39 and State Route 2.
- There have been 2 major fires in the area and opening State Route 39 will improve the safety of the area.
- Request to review data Caltrans has collected and work in coordination with Caltrans.
- Rehabilitating State Route 39 will restore economic activity to the area.

Another Public Meeting will be scheduled 30 days after the approval of the Draft EIR/EA. Ads shall be placed in the same newspapers, and notifications letters and flyers shall be sent to interested individuals, elected and city officials and responsible review agencies.

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CHAPTER 5 | LIST OF PREPARERS

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CHAPTER 6 | DISTRIBUTION LIST

Elected Officials

Salutation	First Name	Last Name	Title	Office/Agency/Organization
The Honorable	Joseph R.	Rocha	Mayor	City of Azusa
The Honorable	Angel	Carrillo	Mayor Pro Tem	City of Azusa
The Honorable	Keith	Hanks	Council Member	City of Azusa
The Honorable	Uriel E.	Macias	Council Member	City of Azusa
The Honorable	Robert	Gonzales	Council Member	City of Azusa
The Honorable	Karen	Davis	Mayor	City of Glendora
The Honorable	Mark	Kelly	Mayor Pro Tem	City of Glendora
The Honorable	Gary M.	Clifford	Council Member	City of Glendora
The Honorable	Ken	Herman	Council Member	City of Glendora
The Honorable	Doug	Tessitor	Council Member	City of Glendora
The Honorable	Michael D.	Antonovich	Supervisor	County of Los Angeles, Board of Supervisors, District 5
The Honorable	Gloria	Molina	Supervisor	County of Los Angeles, Board of Supervisors, District 1
The Honorable	Sharon	Runner	Assembly Member	California State Assembly, 36th District
The Honorable	Anthony J.	Portantino	Assembly Member	California State Assembly, 44th District
The Honorable	Ed	Hernandez	Assembly Member	California State Assembly, 57th District
The Honorable	George	Runner	Senator	California State Senate, District 17
The Honorable	Gloria	Romero	Senator	California State Senate, 24th District
The Honorable	Bob	Margett	Senator	California State Senate, District 29
The Honorable	David	Dreier	Congress Member	United States House of Representatives, 26th District
The Honorable	Hilda L.	Solis	Congress Member	United States House of Representatives, 32nd District
The Honorable	Howard P.	McKeon	Congress Member	United States House of Representatives, 25th District
The Honorable	Adam	Schiff	Congress Member	United States House of Representatives, 29th District
The Honorable	Barbara	Boxer	Senator	United States Senate
The Honorable	Dianne	Feinstein	Senator	United States Senate

Local, Regional, County, State, and Federal Government Agencies

Salutation	First Name	Last Name	Title	Office/Agency/Organization	Department
Mr.	Conal	McNamara	Assistant Community Development Director	City of Azusa	Economic and Community Development
Mr.	Tito Alberto	Haes	Public Works Director/Assistant City Manager	City of Azusa	Public Works Department
Mr.	James	Makshanoss	Assistant City Manager	City of Azusa	
Mr.	Kurt E.	Christiansen	Director of Economic and Community Development	City of Azusa	Economic and Community Development
	Robert B.	Garcia	Police Chief	City of Azusa	
Mr.	Francis	Delach	City Manager	City of Azusa	
Mr.	Joe	Shu	Director	City of Azusa	Light and Water Department
Ms.	Sandra	Benavides		City of Azusa Redevelopment Agency	Economic Development Department
Mr.	Dave	Davies	Director of Public Works	City of Glendora	Public Works
Mr.	Jeff	Kugel	Planning and Redevelopment Director	City of Glendora	Planning and Redevelopment Department
Mr.	Patrick	Sanchez	Acting Community Services Director	City of Glendora	Community Services Department
	Charles	Montoya	Police Chief	City of Glendora	
	Charles	Montoya	Police Chief	City of Glendora Police Department	Police Department

Mr. Donald	Wolfe	Director	Los Angeles County Department of Public Works
Mazan	Dudar		Los Angeles County Department of Public Works San Gabriel Region
Leroy D.	Baca	Sheriff	Los Angeles County Sheriff's Department
Michael	Freeman	Chief	Los Angeles County Fire Department
David R.	Leininger		Los Angeles County Fire Department Prevention Services Bureau
Mr. Bruce W.	McClendon	Director of Planning	Los Angeles County Department of Regional Planning Regional Planning
Ms. Kitty	Shih	Senior Civil Engineer	Los Angeles County Flood Control District
Ms. Darline	Robles	Superintendent	Los Angeles County Office of Education
Ms. Marta	Sheffield	Chief	Los Angeles County Department of Health Services Facilities Management Health Services Administration
Ms. Cathy	Jiles	Supervisor	Los Angeles County Dalton Park
Mr. Russ	Guiney	Director	Los Angeles County Parks and Recreation Department
Mr. Dave	Diotalevi	District Engineer	Los Angeles County Northeast/Northwest Areas, District 1
Mr. Jared	Deck	Senior Civil Engineer	Los Angeles County Department of Public Works Flood Maintenance Division
Mr. Keith	Lee		Los Angeles County Department of Public Works Traffic Operations
Ms. Gail	Farber	Director	Los Angeles County Department of Public Works Water Resources
Mr. Norm	Hickling	Deputy Director	County of Los Angeles, Board of Supervisors, District 5
Mr. Juventino "J"	Gomez	Deputy Director	County of Los Angeles, Board of Supervisors, District 5
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Ms. Suzanne	Manriquez	Senior Field Deputy	Office of Supervisor Gloria Molina, District 1 East Los Angeles Office
Thom	Wellman	Division Chief	San Bernardino County Fire Department, North Desert Battalion
		Watch Commander	San Bernardino County Sheriff's Office- Phelan Substation
Mr. Jonathan	Bishop	Executive Officer	Los Angeles Regional Water Quality Control Board (RWQCB)
Terry	Roberts	State Clearinghouse Director	Governor's Office of Planning and Research
Mr. Milford Wayne	Donaldson	State Historic Preservation Officer	State Office of Historic Preservation
Mr. Ryan	Broddrick	Director	California Department of Fish and Game
Mr. Randy	Walker	President	California Wildlife Federation, Inc.
C.F.	Raybrook		California Department of Fish and Game

Ms. Catherine	Witherspoon	Executive Director	California Air Resources Board
Mr. Andre	Amy	Regulatory Assistance Officer	California Department of Toxic Substances Control
Mr. John	Barna	Executive Director	California Transportation Commission
Mr. Stephen	Maller		California Transportation Commission Los Angeles Area Office
Mr. Darryl W.	Young	Director	California Department of Conservation
Mr. Stephen	Sellers		California Office of Emergency Services Southern Regional Branch
Mr. Mike	Chrisman	Secretary of Energy	California Energy Commission
Mr. B.B.	Blevins	Executive Director	California Energy Commission
Ms. Linda	Adams	Secretary of EPA	California Environmental Protection Agency
Ms. Rosa	Munoz	Utilities Engineer	California Public Utilities Commission
Mr. William	Ahern	Executive Director	California Public Utilities Commission
Mr. Kent	Vangelder	Field Representative	California Department of Education School Facilities Planning
Captain Gerald	Flavin	Captain	California Highway Patrol Antelope Valley Office (545)
Ms. Cathleen	Moore	Division Director	California Department of Education School Facilities Planning Division
Mr. Larry	Myers	Executive Secretary	California Native American Heritage Commission
Mr. Mark	Stuart	District Chief	California Department of Water Resources
Mr. Paul	Thayer	Executive Director	California State Lands Commission
Mr. Ruben	Grijalva	Director	California Department of Forestry & Fire Protection
Ms. Lynn	Jacobs	Director	California Department of Housing and Community Development
	Andre Primeaux	Public Affairs Officer	California Highway Patrol, Altadena Office (575)
Mr. John P.	Donnelly	Executive Director	California Wildlife Conservation Board
Mr. Stephen	Testa	Executive Director	State Board of Mining and Geology
Mr. Barry	Wallerstein	Executive Officer	South Coast Air Quality Management District
Mr. Andre	Darmanin	Regional Transit Planner	Southern California Association of Governments
Mr. Robert	Huddy		Southern California Association of Governments
Ms. Karen	Fortus	Resource Officer	U.S. Department of Agriculture, Forest Service
	L'Tanga Watson	District Ranger	U.S. Department of Agriculture, Forest Service
		Office of the Secretary	U.S. Department of Agriculture

Mr. Alex	Dornstauder	Commander	U.S. Army Corps of Engineers	Los Angeles District, Regulatory Branch
Ms. Nedenia	Kennedy	Chief	U.S. Army Corps of Engineers - Los Angeles District	Environmental Policy Group
Ms. Jodi	Clifford	Chief, Environmental Resources Branch	U.S. Army Corps of Engineers	
Mr. Steven	John	Director	U.S. Environmental Protection Agency	Southern California Field Office
Mr. Wayne	Nastri	Regional Administrator	U.S. Environmental Protection Agency	
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Local Organizations

Salutation	First Name	Last Name	Title	Office/Agency/ Organization	Department
Mr.	Marcus	Mack	Scout Executive	San Gabriel Valley Council	Smiser Scout Center
Mr.	John	Narcia	Superintendent	Santa Fe Dam Recreation Area	
Mr.	Ben	White		San Gabriel Mountains Trailbuilders	
Mr.	Stephen	Beaulieu	General Manager	Azusa Greens Country Club	
			President	Pacific Shippers Association	
			Executive Director	Downtown Azusa Business Association	
Ms.	Veta	Gwinn	Administrator	Silverado Senior Living	
Ms.	Irene C.	Villapania	Executive Director	Azusa Chamber of Commerce	
Mr.	Clark	Fleup	Past President	Wrightwood Chamber of Commerce	
Ms.	Loretta	Thompson	President	Wrightwood Chamber of Commerce	
Pastor	Jay	Scott	Pastor	Calvary Chapel San Gabriel Valley	
Rev. Fr.	Gustavo	Castillo	Administrator	St. Frances of Rome Catholic Church	
			Sr. Pastor	Christian Faith Center	
	Edgar	Ruano	Sr. Pastor	Azusa Foursquare Church Christian Family Center	
			Sr. Pastor	Christian Family Center	
			Sr. Pastor	Azusa Community Church of the Nazarene	
			Sr. Pastor	Emmanuel Baptist Church	
	Logan	Westbrooks	Pastor	Faith Temple Church of God In Christ	
			Sr. Pastor	First Assembly of God	
			Sr. Pastor	Indonesian Evangelical Church	
			Sr. Pastor	Indonesian Seventh-Day Adventist Church	
			Sr. Pastor	Jesus Is Lord Church	
			Sr. Pastor	Praise Chapel Azusa	
The Rev.	Ruth	Santana-Grace	Executive Presbyterian	San Gabriel Presbytery	
			Sr. Pastor	Rosa De Saron Church	
Rev. Fr.	Gustavo	Castillo	Administrator	Sister Superior	
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	Gilbert J.	Grigolla	Grand Knight	Knights of Columbus - Manresa Council - 3522	
			The Grand Master	Glendora Masonic Temple	
	Annie	Warner	Recreation Supervisor	City of Glendora Timothy Daniel Crowther Teen & Family Center	Community Services Department

Mr. Larry	Setters	Administrator/VP of Operations	Foothill Presbyterian Hospital	
Dr. Shafeeq	Shamsid-Deen	Director	Azusa Health Center	
Mr. Garry G.	Van Zee	Executive Director	California Pediatric & Family Services, Inc.	
		Administration	Glenbrook Hospital & Mental Health Center	
Mr. Alt	Roya	Public Affairs Officer	City of Hope	Public Affairs
Mr. Albert	Tovar	Library Director	Azusa City Library	
Ms. Dena	Simpson		Azusa Pacific University Libraries - Marshburn Memorial Library	
Mr. John	Thompson	Library Director	Citrus College - Hayden Memorial Library	
Ms. Robin	Weed-Brown	Library Director	Glendora Library	
Mr. John	Fowler	Executive Director	Advisory Council on Historic Preservation	
Mr. Mike	Chrisman		Biodiversity Council, c/o CAL FIRE FRAP	Mojave/South Coast Bioregion
Ms. Belinda V.	Faustinos	Executive Officer	Rivers and Mountains Conservancy (Watershed Conservation Authority)	
Mr. Ron	Silverman	Senior Chapter Director	Sierra Club - Angeles Chapter	
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Ms. Mary	Gatti		Rainbow Ranch Equestrian Facilities	
Ms. Suzanne	Avila		Taylor Property - Taylor House, c/o CA Resource Connections, Inc.	
			Canyon Inn Property	
			Mountain Cove Homeowners Association, c/o Euclid Management Service Center	
Ms. Lorena	Vasquez	Property Manager	Angeles Volunteer Association	
Ms. Suzanne	Avila	Board Member	California Resource Connections	
Ms. Susan	Willson	Southern CA Regional Representative	Pacific Crest Trail Association	
	Thaw	Ma Bote Dhi	Venerable	Brahma Vihara Buddhist Monastery - Progressive Buddhist Association
Ms. Celina	Lugo	Administrative Assistant	Azusa Chamber of Commerce	
Mr. Barry	Wetherby		Highway 39	

				Committee
Mr.	Bob	Cruz		Southern California Gas Company
Mr.	John	Lee	Program Manager, Hwy 39	Caltrans District 7
Mr.	Anthony	Glassman		CA Amforge Corporation & CAER Representative
Mr.	Adam	Samrah		Crystal Lake Snack Bar and Store
Mr.	Steve	Castro		Eagle Photography
Ms.	Loretta	Thompson	President	Wrightwood Chamber of Commerce
Ms.	Renee	Merline	Publicity/Public Relations	Wrightwood Chamber of Commerce
Ms.	Nancy	Cosgrove	President	Piñon Hills Chamber of Commerce
Ms.	Jeanne	Corsaro	President	Phelan Chamber of Commerce
Ms.	Ronni	Di Giovanni	President	Littlerock Chamber of Commerce
Ms.	Lori	Weatherbie	President	Juniper Hills Community Association
Mr.	Perry	Chamberlain	Environmental Issues	Juniper Hills Community Association
Ms.	Trisha	Pritchard	Community Library Manager	Littlerock Library
Ms.	Lisa	Garcia	Branch Manager	Serrano Library
			Library Director	Wrightwood Library

Schools

Salutation	First Name	Last Name	Title	Office/Agency/ Organization	Department
Ms.	Ginny	Dadaian		Azusa Pacific University	Office of Community Relations
Mr.	Terry A.	Franson, Ph.D.	Senior Vice President for Student Life/Dean of Students	Azusa Pacific University	
Ms.	Cynthia	Cervantes	Superintendent	Azusa Unified School District	
Mr.	John Steven	Coke, Sr.	Principal	Azusa High School	
Ms.	Catherine J.	Nichols, Ed.D	Superintendent	Glendora Unified School District	
Mr.	Scott	Baxter	Director of Maintenance and Operations	Glendora Unified School District	
Ms.	Lynn	Boop	Principal	Pearblossom Elementary School	
Mr.	Garry	Goldman	Principal	Pearblossom Private School Inc.	
Dr.	Linda	Wagner	Superintendent	Keppel Union School District	
Dr.	Arthur J.	Golden	Superintendent	Snowline Joint Unified School District	
Ms.	Sharon	Schlegel	Principal	Serrano High School	
Mr.	Dave	Smith	Principal	Chaparral High School	
Ms.	Stacey	Stewart	Principal	Phelan Elementary School	

Mr. Burt	Umstead	Principal	Piñon Mesa Middle School
Mr. Dennis	Zimmerman	Principal	Quail Valley Middle School
Mr. David E.	Smith	Principal	Eagle Summit Community Day School
Mr. David E.	Smith	Principal	Desert View Independent School
Mr. John	Garner	Principal	Heritage School
Mr. Dale	Levine	Principal	Wrightwood Elementary School
Ms. Bettina	Hut	Principal	Gladstone Street Elementary School
Ms. Rita	Ruminski	Principal	Mountain View School
Ms. Saida	Valdez	Principal	Clifford D. Murray Elementary School
Ms. Victoria	Avila	Principal	Paramount Elementary School
Zepure	Hacopian	Principal	Valleydale Elementary School
Ms. Ann	Somers	Principal	Slauson Middle School (6-8)
Ms. Geraldine M.	Perri, Ph.D.	Superintendent/President	Citrus College
Mr. Jon R.	Wallace, DBA	President	Office of the President, Azusa Pacific University

APPENDIX A | CEQA CHECKLIST

Environmental Significance Checklist

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 in Section VI following the checklist. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
II. AGRICULTURE 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. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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:				

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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V. CULTURAL RESOURCES -- Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

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. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iv) Landslides? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Less Than Significant			
	Potentially Significant Impact	With Mitigation Incorporation	Less Than Significant Impact	No Impact

VII. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

VIII. HYDROLOGY AND WATER QUALITY -- Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Less Than Significant		
	Potentially Significant Impact	With Mitigation Incorporation	Less Than Significant Impact	No Impact

XI. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XII. 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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XIII. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. 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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

XV. TRANSPORTATION/TRAFFIC -- Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

e) Result in inadequate emergency access?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) Result in inadequate parking capacity?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVI. UTILITIES AND SERVICE SYSTEMS –

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Less Than Significant		
Potentially Significant Impact	With Mitigation Incorporation	Less Than Significant Impact	No Impact	

XVII. 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, 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?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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)?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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APPENDIX B | TITLE VI POLICY STATEMENT

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY (916) 653-4086



*Flex your power!
Be energy efficient!*

January 14, 2005

**TITLE VI
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, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

A handwritten signature in black ink that reads "Will Kempton".

WILL KEMPTON
Director

APPENDIX C | DRAFT ENVIRONMENTAL COMMITMENTS RECORD

Mitigation Type	Responsible Party	Implementation/Monitoring Phase	Mitigation Measure
BIOLOGY			
Animal Species Mitigation	Biology/ Generalist/PM/ Resident Engineer	PS&E	The Migratory Bird Treaty Act prohibits the take of any active bird nests of most avian species. However, the project design has included measures to reduce or eliminate the potential for take of any active nest. A qualified biologist will conduct a pre-construction nesting bird survey within three days of the initial ground clearance and monitor/protect any active nests found until fledglings are no longer dependant on the nest site.
Threatened/Endangered Species	Biology/ Resident Engineer	Construction	To mitigate impacts to bighorn sheep habitat and any short-term direct impacts resulting from vehicle collisions, should they occur, Caltrans will contribute funds to USFS for the implementation of the strategic plan to improve habitat quality by prescribed burns and bighorn sheep population monitoring in the vicinity of the proposed project site. The details will be finalized and included in the final EIR/EA.
Wetland/Riparian/Uplands Mitigation	Biology/ Generalist/PM/ Resident Engineer	PS&E	There is a total of 0.008 acres (360 square feet) of ACOE jurisdictional area that will be temporarily impacted and a total of 0.016 (720 square feet) acres of CDFG area that temporarily impacted. Permanent impacts to each would be: ACOE – 0.008 acres and CDFG – 0.016 acres. Impacts to jurisdictional resources are considered to be potentially significant. Prior to the start of initial site clearance all required permits and agreements shall be obtained from the ACOE, RWQCB and CDFG. Areas that will be temporary impacted will be replanted after the construction phase is completed. A mitigation and monitoring plan will be prepared that addresses planting procedures, location, success criteria and maintenance. Mitigation for areas that will be permanently impacted will be achieved by purchasing similar habitat within the region of the project site at a rate of 5:1. This land will be turned over for management in perpetuity to an organization that is approved by CDFG and USFS.
Invasive Species Considerations (coordination w/Landscape Architecture)	Landscape Architecture/ Biology/ Resident Engineer	PS&E	Several locations that would be temporary disturbed would be replanted with native plants typical of the surrounding plant community. Approved plant palettes would be coordinated with USFS biologists. A Biological Resources Assessment and Biological Evaluation will be produced by Caltrans and submitted to the USFS. The USFS would need to issue a permit to Caltrans prior to construction activities could be initiated within National Forest boundaries.
Clearing and grubbing	Resident Engineer/ Biology	Construction	In order to avoid/minimize impacts to nesting birds or tree roosting bats, CALTRANS will require that all vegetation/tree clearing and grubbing be performed outside the time period of February 15 through September 15.
Biological contamination	Resident Engineer	Construction	Maintenance and Construction equipment shall be checked and maintained daily by contractor so as to prevent leaks or other potential contamination problems. Contractor maintenance equipment and repair items are to be stored in an area that is currently paved, and that will not impair the road in any way or impact the biological diversity of the area.

Vehicle operational checks	Resident Engineer	Construction	At the start of each workday before moving mechanical equipment, contractor and maintenance personnel shall look under it for animals (reptiles, amphibians, and mammals) that may use the equipment for cover.
Vegetation	Landscape Architecture/ Resident Engineer/ Biology	PS&E Construction	Temporary impacted areas would be replanted with native plants species that are typical of this plant community. Details of the planting plan will be provided in a separate document and will be coordinated with the USFS. Although this plant community is not special-status and does not require preservation or replanting to achieve a "no net loss" under state or federal law the project site is surrounded by a National Forest. The replanting will occur on temporary impacted areas within Caltrans' Right-of-Way to preserve the scenic views and recreational value of the National Forest for which the highway was originally constructed.
Wildlife Crossing			Included as part of the proposed project design the speed limit would be reduced to 30 mph along the straight portions of the highway to further reduce the potential for wildlife collisions. Signage indicating wildlife crossings would be installed to remind drivers of the potential hazard.
GEOLOGY			
Rockfall Mitigation	Design/Geotechnical Services	PS&E	As the proposed project advances to the final design stages, mitigation for the 9 sections of rockfall concern will be finalized. Reinforcement measures may include, but are not limited to the installation of anchored mesh, cable drapery, rockfall barriers, and realignment of roadway sections away from the slope.
VISUAL/LANDSCAPE			
Special Architectural Treatments	Landscape Architecture/ Design/ Resident Engineer	PS&E	Retaining walls would be visually compatible with the surrounding highway corridor theme.
Special Architectural Treatments	Landscape Architecture/ Design/ Resident Engineer	PS&E	Material, color, and texture for soldier pile retaining walls, MSE walls, rock drapery, etc. would to match or blend into the surrounding environment, i.e. existing wall or rock slope.
Rock Outcropping Special Architectural Treatments	Landscape Architecture/ Design/ Resident Engineer	PS&E	Rock outcroppings exposed during construction would be treated to give a weathered appearance.
Special Architectural Treatments	Landscape Architecture/ Design/ Resident Engineer	PS&E	Finish-grade of the slopes would have a rough appearance, where feasible, to create the look of age.

Revegetation measures	Landscape Architecture/ Design/ Resident Engineer	PS&E	Realignment of existing road would be revegetated after recontouring landform.
Vegetation Removal Mitigation Measures	Landscape Architecture/ Design/ Resident Engineer	PS&E	Removed trees would be replaced using an appropriate planting ratio and maintenance program determined by Caltrans biologists and Landscape Architects ensuring plant establishment and long-term success.
Vegetation Removal Mitigation Measures	Landscape Architecture/ Design/ Resident Engineer	PS&E	Replacement plantings would be as appropriate as determined by Caltrans biologists and Landscape Architects in consultation with United States Forest Service (USFS) plant resource specialists.
Erosion Control /Invasive species considerations (coordination w/Biology)	Landscape Architecture/ Design/ Resident Engineer	PS&E	All disturbed slopes would be revegetated with native plant materials and erosion control.
Natural Appearance Treatments	Landscape Architecture/ Design/ Resident Engineer	PS&E	An appropriate number of felled trees and boulders would be saved, then placed at locations in disturbed areas to create a natural appearance, as determined by the Caltrans Landscape Architects.
Erosion Control/Invasive species considerations (coordination w/Biology)	Landscape Architecture/ Design/ Resident Engineer	PS&E	Erosion control seed species, origin and application strategy would be determined by Caltrans Landscape Architects in consultation with Caltrans biologists and USFS plant resource specialists.
Bridge Structure Special Architectural Treatments	Landscape Architecture/ Design/ Resident Engineer	PS&E	Bridge structures would be designed to minimize their visual impact and to blend into, and be visually compatible with the surrounding environment.
CULTURAL RESOURCES			
Unearth Human Remains/Cultural Materials Provisions	Generalist/ Cultural/ Resident Engineer	Construction	If human remains/cultural materials are discovered during construction, all earth moving activity within and around the immediate discovery area and contact shall be made with the Caltrans Division of Environmental Planning. Construction shall be diverted until a qualified archaeologist can assess the nature and significance of the find.

Unearth Human Remains Provisions	Generalist/ Cultural/ Resident Engineer	Construction	If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. 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). At this time, the person who discovered the remains will contact Gary Iverson, Caltrans District 7, Heritage Resource Coordination at (213)880-2010.
Requirements set forth by Secretary of the Interior's Standards for the Treatment of Historic Properties.	Cultural/Design/Resident Engineer	PS&E	The only aspect of the project that involves an historic property is the proposed repair of the French Wall. The repairs incorporate the Secretary of the Interior's Standards for the Treatment of Historic Properties – Rehabilitation (limited to in-kind repair of the existing cable railing system and the 84-inch diameter culvert) and as a result will not have an effect on the qualities for which it was determined eligible for the National Register. For the same reason it was also determined that this project will have no adverse effect on state-owned buildings and structures within the APE that meet National Register and/or California Historical Landmarks eligibility criteria. Pursuant to CEQA Guidelines Section 15064.5(b), PQS has determined a finding of no substantial adverse change, as the impacts to the French Wall will be mitigated below the level of significant impact by using the Secretary of the Interior's Standards for the Treatment of Historic Properties.
PALEONTOLOGY			
Unexpected Discovery Provisions	Paleontology/ Resident Engineer	Construction	If paleontological resources are discovered during construction, the paleontologist (or paleontological monitor) will recover them. Construction work in these areas will be halted or diverted to allow recovery of fossil remains in a timely manner. Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, repaired, sorted, and cataloged. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will then be deposited in a scientific institution with paleontological collections.
COMMUNITY/SOCIAL IMPACTS			
Measures to minimize debris, litter, and pollution	Resident Engineer	Construction	At the end of the day when operations are complete debris or trash shall be removed from the work area and properly disposed of by contractor. All personnel working within the project area will follow all litter and pollution laws.

NOISE ATTENUATION			
Construction equipment noise control	Resident Engineer	Construction	Mufflers are very effective devices, which reduce the noise emanating from the intake or exhaust of an engine, compressor or pump. The fitting of effective mufflers on all new equipment and retrofitting of mufflers on existing equipment is necessary to yield an immediate noise reduction at all types of road construction sites.
Construction equipment noise control	Resident Engineer	Construction	Sealed and lubricated tracks for crawler mounted equipment will lessen the sound radiated from the track assembly resulting from metal to soil and metal to metal contact. Contractors and site engineers and inspectors should ensure that the tracks are kept in excellent condition by periodic maintenance and lubrication.
Construction equipment noise control	Resident Engineer	Construction	Lowering exhaust pipe exit height closer to the ground can result in an off-site noise reduction. Barriers are more effective in attenuating noise when the noise source is closer to ground level.
Construction equipment noise control	Resident Engineer	Construction	General noise control technology can have substantially quieter construction equipment when manufacturers apply the state of the art technology to new equipment or repair old equipment to maintain original equipment noise levels.
Construction equipment noise control	Resident Engineer	Construction	In-Use Noise Control where existing equipment is not permitted to produce noise levels in excess of specified limits. Any equipment that produces noise levels less than the specified limits would not be affected. However, those exceeding the limit would be required to meet compliance by repair, retrofit, or elimination. New equipment with the latest noise sensitive components and noise control devices are generally quieter than older equipment, if properly maintained and inspected regularly. They should be repaired or replaced if necessary to maintain the in-use noise limit. All equipment applying the in-use noise limit would achieve an immediate noise reduction if properly enforced.
Noise Abatement	Resident Engineer	Construction	Shielding with barriers should be implemented at an early stage of a project to reduce construction equipment noise. The placement of barriers must be carefully considered to reduce limitation of site access. Barriers may be natural or man-made, such as excess landfill used as a temporary berm strategically placed to act as a barrier.
Additional noise control measures	Resident Engineer	Construction	Efficient rerouting of trucks and control of traffic activity on construction site will reduce noise due to vehicle idling, gear shifting and accelerating under load. Planning proper traffic control will result in efficient workflow and reduce noise levels. In addition, rerouting trucks does not reduce noise levels but transfer noise to other areas that are less sensitive to noise.

Additional noise control measures	Resident Engineer	Construction	Time scheduling of activities should be implemented to minimize noise impact on exposed areas. Local activity patterns and surrounding land uses must be considered in establishing site curfews. However, limiting working hours can decrease productivity. Sequencing the use of equipment with relatively low noise levels versus equipment with relatively high noise levels during noise sensitive periods is an effective noise control measure.
Additional noise control measures	Resident Engineer	Construction	Equipment location should be as far from noise sensitive land use areas as possible. The contractor should substitute quieter equipment or use quieter construction processes at or near noise sensitive areas.
Additional noise control measures	Resident Engineer	Construction	Personal Training of operators and supervisors should be mandated to ensure that all personnel working on the job site become more aware of the construction site noise problem, and implement the various methods of improving the conditions.
AIR QUALITY			
Dust Control and other Best Management Practices	Resident Engineer	Construction	Section 7, "Legal Relations and Responsibility," addresses the contractor's responsibility on many items of concern, such as: air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; and convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 7-1.01F specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
Dust Control and other Best Management Practices	Resident Engineer	Construction	Section 10 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.
Dust Control and other Best Management Practices	Resident Engineer	Construction	Water or dust palliative will be applied to the site and equipment as frequently as necessary to control fugitive dust emissions.
Dust Control and other Best Management Practices	Resident Engineer	Construction	Soil binder will be spread on any unpaved roads used for construction purposes, and all project construction parking areas.
Dust Control and other Best Management Practices	Resident Engineer	Construction	Trucks will be washed off as they leave the right of way as necessary to control fugitive dust emissions.
Equipment specifications	Resident Engineer	Construction	Construction equipment and vehicles shall be properly tuned and maintained. Low-sulfur fuel shall be used in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
Dust Control and other Best Management Practices	Resident Engineer	Construction	Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

Dust Control and other Best Management Practices	Resident Engineer	Construction	Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.
Dust Control and other Best Management Practices	Resident Engineer	Construction	To the extent feasible, establish ESAs for sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited.
Dust Control and other Best Management Practices	Resident Engineer	Construction	Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.
Dust Control and other Best Management Practices	Resident Engineer	Construction	Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to reduce PM10 and deposition of particulate during transportation.
Dust Control and other Best Management Practices	Resident Engineer	Construction	Remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.
Dust Control and other Best Management Practices	Resident Engineer	Construction	To the extent feasible, route and schedule construction traffic to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
Dust Control and other Best Management Practices	Resident Engineer	Construction	Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area.
HAZARDOUS MATERIALS INVESTIGATION/TREATMENT			
Road Striping Paint Lead Provisions	Hazardous Waste	PS&E	For all build alternatives, there is a concern that existing yellow thermoplastic/paint striping that requires removal may contain lead and chromium at concentrations that are considered hazardous. Once the traffic stripe removal method is finalized, final analyses of lead and chromium concentration levels will determine whether the waste can be relinquished to the contractor for possible recycling, or whether it must be disposed of at a Class I Facility. Concentrations may be diluted enough so that the disposal at a Class I facility may not be necessary.
Unexpected discovery of contaminants	Hazardous Waste/Resident Engineer	Construction	Should any contaminants be discovered during testing, standard protocols for the protection of construction workers, and neighboring properties shall be implemented pursuant to state regulatory measure include but not limited to Cal OSHA standards. Project construction would be conducted with a contingency plan in place in the event that unknown hazardous materials are unexpectedly encountered during construction.

WATER QUALITY REQUIREMENTS			
Storm Water Control Measures	Design/ Water Quality/ Stormwater/ Resident Engineer	PS&E/ Construction	Soils containing Aerially Deposited Lead (ADL) shall not be reused.
Storm Water Control Measures	Design/Water Quality/ Stormwater/ Resident Engineer	PS&E/ Construction	Cut and fill areas shall be minimized to reduce slope lengths.
Storm Water Control Measures	Design/Water Quality/ Stormwater	PS&E	Retaining walls shall be implemented to reduce slope lengths and steepness.
Storm Water Control Measures	Design/Water Quality/ Stormwater	PS&E	Disturbances to existing slopes shall be minimized.
Stormwater Management Plan (SWMP)/Water Pollution Control Program (WPCP)	Design/Water Quality/ Stormwater/ Resident Engineer	PS&E/ Construction	Best Management Practices (BMPs) shall be implemented as follows: Temporary Construction Site BMPs to be used on Project, Preservation of Existing Vegetation, Temporary Fence (Type ESA), Temporary Silt Fence, Stream Bank Stabilization, Clear Water Diversion, Temporary Construction Entrance/Exit, Temporary Stream Crossing, Sanitary/Septic Waste Management, Since the disturbance of soil is anticipated, Temporary Construction Site BMP strategy shall consist of soil stabilization and sediment control. Active areas shall be protected with both soil stabilization and sediment control at the end of each working day and temporary silt fence will be placed at the toe of all excavation and embankment slopes. Concrete wastes shall be managed through the use of concrete washout facilities. Storm drain inlet protection shall be deployed through out project. Non-Storm Water Management includes Vehicle and Equipment Cleaning, Paving and Grinding Operations, Concrete Curing and Concrete and Concrete Finishing. Other Waste Management and Material Pollution Controls comprise material Delivery and Storage and Hazardous Waste Management.