

# **Ferguson Slide Permanent Restoration Project**

On State Route 140 from 8 miles east of Briceburg to approximately  
7.6 miles west of El Portal in Mariposa County, California

District 10-MPA-140-PM 42.0/42.7

10-0P9200

## **Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment**



Prepared by the  
State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by the California Department of Transportation under its assumption of responsibility pursuant to 23 U.S. Code 327.

**November 2007**



# General Information About This Document

## ***What's in this document?***

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Initial Study/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project in Mariposa County, California. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

## ***What should you do?***

- Please read this Initial Study/Environmental Assessment. Additional copies of this document, as well as the technical studies, are available for review at the Caltrans district office at 1976 E. Charter Way, Stockton, CA 95201, the Mariposa County Library at 4978 10<sup>th</sup> Street, Mariposa, CA 95338, and the El Portal Post Office at 5508 Foresta Road, El Portal, CA 95318.
- Attend the public hearing.
- We welcome your comments. If you have any concerns regarding the proposed project, please attend the public hearing or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

Juergen Vespermann, Chief  
San Joaquin Valley Analysis Branch  
California Department of Transportation  
2015 E. Shields Avenue  
Fresno, CA 93726

Submit comments via email to: [juergen\\_vespermann@dot.ca.gov](mailto:juergen_vespermann@dot.ca.gov).

- Submit comments by the deadline: January 3, 2008.

## ***What happens next?***

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

It should be noted that at a future date, Caltrans, acting through the Federal Highway Administration or another federal agency, may publish a notice in the Federal Register, pursuant to 23 U.S. Code Section 139(l), indicating that a final action has been taken on this project by Caltrans or another federal agency. If such notice is published, a lawsuit or other legal claim will be barred unless it is filed within 180 days after the date of publication of the notice (or within such shorter time period as is specified in the federal laws pursuant to which judicial review of the federal agency action is allowed). If no notice is published, then the lawsuit or claim can be filed as long as the periods of time provided by other federal laws that govern claims are met.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Juergen Vespermann, San Joaquin Valley Analysis Branch, 2015 E. Shields Avenue, Fresno, CA 93726; 559-243-8157 Voice, or use the California Relay Service TTY number, 1-800-735-2929.

On State Route 140 from 8 miles east of Briceburg to approximately  
7.6 miles west of El Portal in Mariposa County, from post miles 42.0 to 42.7

**INITIAL STUDY  
with Proposed Mitigated Negative Declaration  
/ENVIRONMENTAL ASSESSMENT**

Submitted Pursuant to: (State) Division 13, California Public Resources Code  
(Federal) 42 U.S. Code 4332(2)(C), and 23 U.S. Code 327

THE STATE OF CALIFORNIA  
Department of Transportation

Nov 16, 2007  
Date of Approval

Kome Ajise  
Kome Ajise  
District 10 Director  
California Department of Transportation



# Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

## ***Project Description***

The California Department of Transportation (Caltrans) proposes to restore the section of State Route 140 in Mariposa County damaged by the Ferguson rockslide in April 2006.

## ***Determination***

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

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

The proposed project would not affect planned land use and is consistent with the Mariposa County General Plan. The proposed project would have no effect on population and housing, farmland, wetlands, an educational complex, businesses, paleontological resources, air quality, or noise.

In addition, the proposed project would have no significant effect on water quality or storm water runoff, hydrology and floodplain or cultural and geological resources.

In addition, the proposed project would have no significantly adverse effect on natural communities, waters of the United States, animal and plant species, threatened and endangered species, visual resources, a wild and scenic river, or recreation. In addition, the proposed project would not expose the public to hazardous waste or cause the spread of an invasive species because the following mitigation measures would reduce potential effects to insignificance:

- Visual resources would be mitigated by aesthetic treatments, erosion control, and replacement plantings.
- All hazardous waste materials would be identified by soil sampling, testing, and notification would be provided to the offsite disposal facility for proper disclosure and material acceptance.
- Impacts to natural communities, plant and animal species, threatened and endangered species and the Merced River would be mitigated through the use of Environmentally Sensitive Area fencing, replanting of native vegetation, and the restoration of Incline Road for recreation purposes.

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Christine Cox-Kovacevich, Office Chief  
Office of Environmental Management, North  
Central Region Environmental Planning  
California Department of Transportation

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Date



## Summary

The California Department of Transportation (Caltrans) proposes to reopen and restore State Route 140 in Mariposa County at the section damaged by the Ferguson rockslide. The total length of the project is 0.7 mile. In April 2006, rockslides damaged and blocked State Route 140 between Mariposa and El Portal. The Ferguson rockslide covered State Route 140, and the highway was closed to traffic from 8 miles east of Briceburg to approximately 7.6 miles west of El Portal. This blockage required residents of Mariposa County to take an additional 2.5-hour detour, which affected emergency response times and school and work commutes. In addition, a main source of income to Mariposa, tourism revenue, decreased.

The purpose of the project is to reopen and restore full access to the section of State Route 140 damaged by the Ferguson rockslide. Currently, motorists use a temporary bypass route to travel this portion of State Route 140. Restoration of State Route 140 would eliminate detours or extended commute times for residents, businesses, and workers in the area, as well as reestablish economic stability. Restoration of the route would again give travelers a direct route to Yosemite National Park and other destinations along State Route 140. Three build alternatives and one no-build alternative are being considered.

### ***Build Alternatives***

This project is proposing the following build alternatives:

- Alternative C (Open-Cut Realignment) would realign the highway to the northeast, spanning the Merced River and bypassing the rockslide. State Route 140 would cut through the mountain across from the rockslide and then span back across the river where it would meet the existing alignment. Two bridges would be constructed to cross the river.
- Alternative T (Tunnel Realignment) would realign the highway to the northeast, spanning the Merced River and bypassing the rockslide. State Route 140 would tunnel 725 feet through the mountain across from the rockslide and then span back across the river where it would meet the existing alignment. Two bridges would be constructed to cross the river.
- Alternative S (Viaduct Realignment) would realign the highway to the northeast, spanning the Merced River with two bridges and bypassing the rockslide with a hillside viaduct and retaining wall.

### **No-Build Alternative**

Consideration of a No-Build Alternative is required by the National Environmental Policy Act and the California Environmental Quality Act. The No-Build Alternative would leave State Route 140 damaged and blocked by the Ferguson rockslide. As a result of the No-Build Alternative, the temporary detour would become the permanent State Route 140 alignment. The current vehicle length restrictions would remain in place along with the traffic signals controlling the single-lane access through the detour. The structures for the temporary detour were constructed during a declared emergency and were designed as a temporary solution to the closure of State Route 140. These structures would not meet standard design features nor would the detour meet the purpose and need of the project.

A range of environmental studies was conducted to analyze potential environmental impacts of each alternative. Potential effects of the proposed project include the following:

- The proposed project would construct a maximum of two bridge columns within the Wild and Scenic Merced River. These columns would not adversely affect the recreational uses of the river nor alter its natural properties.
- There would be beneficial impacts to the Mariposa County communities, businesses, and Yosemite National Park because the proposed project would restore full access on State Route 140.
- Minor amounts of oak woodland and potential Merced clarkia habitat would be removed as a result of the project.
- Removal of visual resources, such as trees and rock outcroppings, and the addition of structures would affect scenic quality.

Table S.1, Summary of Major Potential Impacts from Alternatives, compares potential impacts for the Build Alternatives and the No-Build Alternative and includes design and environmental information.

**Table S.1 Summary of Major Potential Impacts from Alternatives**

Potential Impact		Alternatives C, T, and S	No-Build Alternative
<b>Land Use</b>	<b>Consistency with the Mariposa County General Plan</b>	Consistent with Mariposa County General Plan	Inconsistent with Mariposa County General Plan
<b>Wild and Scenic Rivers</b>		Minor impacts to river from the placement of bridge columns	Temporary structures would adversely affect a Wild and Scenic River
<b>Parks and Recreation</b>		Minor impacts to recreational uses from placement of columns	Restricts easy access to Merced River and Yosemite National Park
<b>Community Character and Cohesion</b>		None	Disrupts cohesion between communities and could force businesses to close by restricting access
<b>Utilities/Emergency Services</b>		None	Restricts emergency service access between communities
<b>Traffic and Transportation/ Pedestrian and Bicycle Facilities</b>		None	Restricts access between communities for all types of transportation
<b>Visual/Aesthetics</b>		Some tree removal and minor decrease in scenic quality due to structures	Decrease in scenic quality due to temporary structures
<b>Cultural Resources</b>		Avoids bedrock mortar site	None
<b>Hydrology and Floodplain</b>		Minor encroachment on floodplain	Minor encroachment on floodplain
<b>Water Quality and Storm Water Runoff</b>		Short-term construction impacts to surface water	None
<b>Geology/Soils/Seismic/ Topography</b>		Potential for minor rockfalls in cut areas	None
<b>Hazardous Waste/Materials</b>		Potential exposure to elevated levels of arsenic	None
<b>Natural Communities</b>		For Alternatives C, T, and S, 6.22, 3.07, and 2.95 acres, respectively, of oak woodland would be affected	None
<b>Wetlands and other Waters</b>		For Alternatives C, T, and S, 0.06, 0.06, and 0.05 acre, respectively, of Waters of the United States would be affected	A minimal acreage of Waters of the United States would be affected
<b>Plant Species</b>		3 patches of copper moss would be affected	None
<b>Animal Species</b>		For Alternatives C, T, and S, temporary decrease in water quality would indirectly affect Hardhead, and 6.22, 3.07, and 2.95 acres, respectively, of bat habitat would be affected	None
<b>Threatened and Endangered Species</b>		None	None

*Summary*

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<b>Potential Impact</b>	<b>Alternatives C, T, and S</b>	<b>No-Build Alternative</b>
<b>Invasive Species</b>	Disturbance of ground would cause dispersal of non-native weeds	None

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## **List of Abbreviated Terms**

Caltrans  
CEQA  
FHWA  
NEPA  
PM

California Department of Transportation  
California Environmental Quality Act  
Federal Highway Administration  
National Environmental Policy Act  
post mile

# Chapter 1 Proposed Project

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## 1.1 Introduction

The California Department of Transportation (Caltrans) proposes to restore the section of State Route 140 in Mariposa County that was damaged by the Ferguson rockslide. The total length of the project is 0.7 mile.

Unusually heavy rainfall in the Merced River Canyon in March and April 2006 destabilized the steep hillside above State Route 140. The first rockslides in the area began on April 29, 2006. Since April 2006, rockslides have damaged and blocked State Route 140 between Mariposa and El Portal. The Ferguson rockslide closed State Route 140 to traffic from 8 miles east of Briceburg to approximately 7.6 miles west of El Portal.

In August 2006, Caltrans completed the construction of a temporary detour that bypassed the rockslide and reopened State Route 140 to vehicles less than 28 feet in length. The temporary detour consists of two single-lane bridges that cross the Merced River upstream and downstream of the rockslide and connect to a one-lane paved section of Incline Road directly across from the rockslide. Traffic is controlled on this one-lane detour by signals that allow the passage of one-way traffic for 15-minute intervals. The closure of State Route 140 and the restricted vehicle length on the temporary detour has created hardships for residents and businesses in the area, as well as prevented tour buses and deterred many recreational travelers from using State Route 140 to access Yosemite National Park.

State Route 140 is often referred to as the “All-Year Highway” and is the preferred route for accessing Yosemite National Park since other routes are more difficult to maneuver and subject to harsh weather during winter months. Restoring State Route 140 would give tourists direct and easy access to Yosemite, revitalize businesses in Mariposa County that cater to tourism, and provide residents of Mariposa County an uninterrupted access between towns and communities. Figures 1-1 and 1-2 show the project vicinity and location maps.

This project is funded in the State Highway Operation and Protection Plan for fiscal year 2008/2009 under the Major Damage Permanent Restoration Program (201.131). The project has been approved for emergency relief assistance as part of a declared

disaster under Damage Assessment Form number JMD-CT10-001-0, approved by the Federal Highway Administration on September 26, 2006.

## **1.2 Purpose and Need**

### **1.2.1 Purpose**

The project would reopen and restore full access to the section of State Route 140 damaged by the Ferguson rockslide.

### **1.2.2 Need**

Currently, motorists with vehicles less than 28 feet long must use a temporary detour route to travel this portion of State Route 140. Vehicles over this length restriction must travel other more inconvenient routes. Restoration of State Route 140 would eliminate inconvenient detours or extended commute times for residents, businesses, and workers in the area, as well as reestablish economic stability. Restoration of State Route 140 would also provide travelers direct access to Yosemite National Park. Three build alternatives and a No-Build Alternative are being considered.

Closure of State Route 140 restricted and delayed the movement of goods, children traveling to schools, commuters traveling to work, and tourists traveling to Yosemite National Park or other recreational destinations within Mariposa County. Emergency response vehicles have also been affected by the closure. While the temporary detour provided a short-term solution to the closure of State Route 140, it remains insufficient because it cannot accommodate vehicles over 28 feet long, such as tour buses, campers, recreational vehicles, motor homes, trailers, emergency vehicles, garbage trucks, construction equipment, and school buses. In addition, it extends commute times. The detour was designed to be a temporary solution with an agreement with regulatory agencies that the structures used for the detour would be removed once a permanent solution could be constructed.

The Ferguson rockslide damaged and covered a section of State Route 140 approximately 650 feet wide by 800 feet long. The rockslide also encroached into the Merced River nearly 30 feet. The Ferguson rockslide is considered to be active and is expected to continue moving until it reaches a settling point and becomes stable, which may take many years. Earlier rockslides have damaged State Route 140 in the past. Since 1999, nearly \$8 million have been spent on rockslide removal, slope stabilization, rockfall barriers, and the current temporary detour. The permanent

restoration of State Route 140 would maintain full access for all types of commuters ranging from recreational to business and eliminate future repair costs caused by the Ferguson rockslide.

Businesses of Mariposa and El Portal, as well as Yosemite National Park and tourist companies using the park, are all being hurt economically as a result of the closure. Yosemite National Park and communities in Mariposa County rely heavily on full access for many types of transportation that serve tourism and residents of the area. State Route 140 is essential in supporting the Mariposa and Yosemite communities because the route is used for supplying goods and services. Prolonged closure of State Route 140 would continue to affect the economic vitality of Mariposa County, where tourism is the primary source of revenue.

With the initial closure of the highway, approximately 2.5 hours was added to a one-way trip to and from the Mariposa and Yosemite areas. Distances between 70 and 90 miles were added to the commutes of motorists. When the temporary detour opened, travel time for those vehicles that could fit were still delayed by at least 15 minutes in either direction by a stoplight that controls one-lane bridge traffic. Vehicles that are unable to pass through the detour must travel on routes that are harder to maneuver with larger vehicles, drive longer distances on these routes—increasing travel times, and drive in harsh weather conditions during winter months. State Route 140 is the preferred route for linking the communities of Mariposa County and for accessing Yosemite National Park.

Most of the existing emergency services are based on the Mariposa or west side of the Ferguson rockslide and cannot easily respond to emergencies or requests from El Portal and Yosemite Village. The stoplights at the beginning and end of the detour route impede emergency access with time delays, and certain emergency vehicles and equipment cannot be transported through the rockslide area due to the restriction on vehicle length. Timely access to medical care, potential fires, and highway accidents is hindered because of the partial closure of State Route 140.

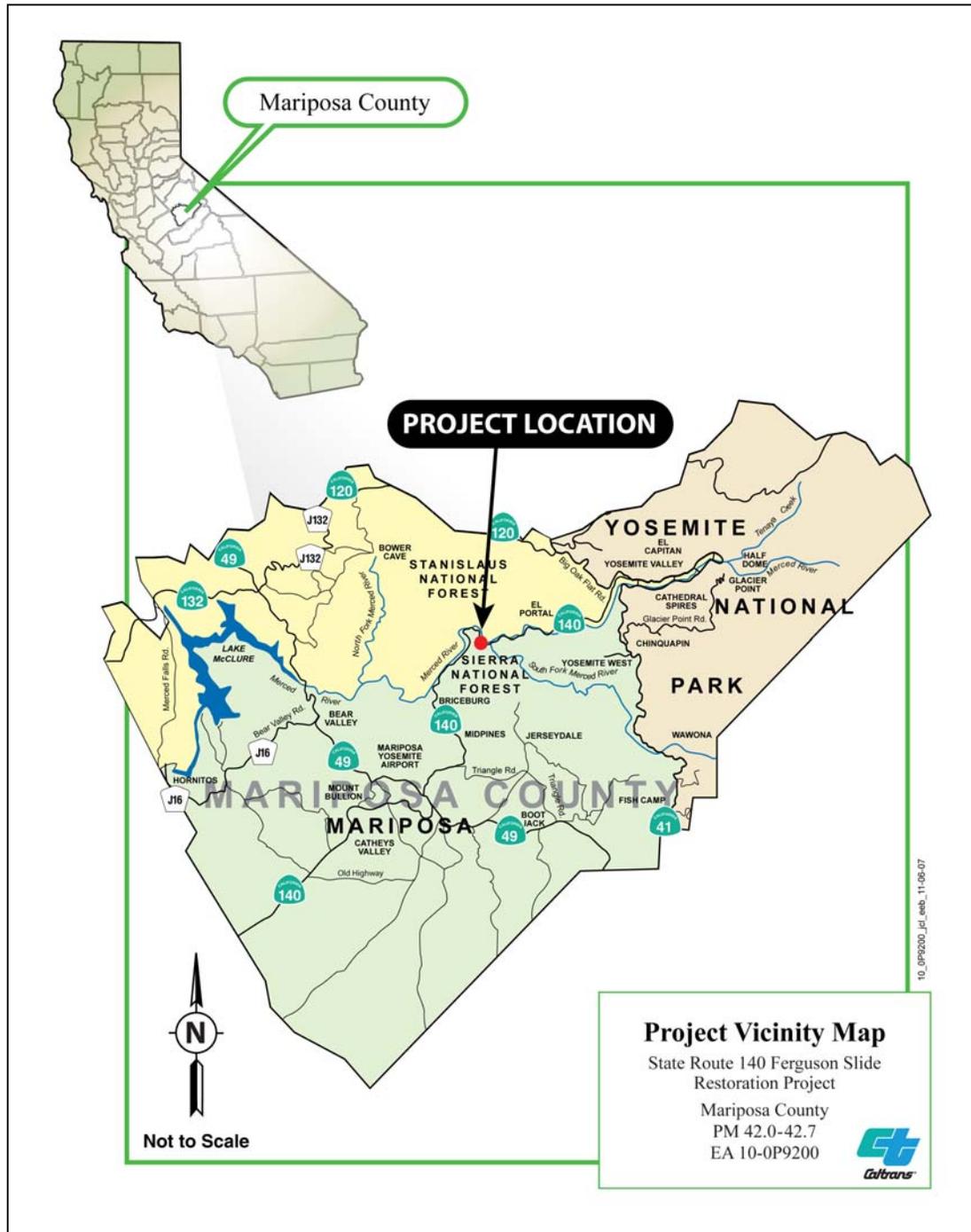
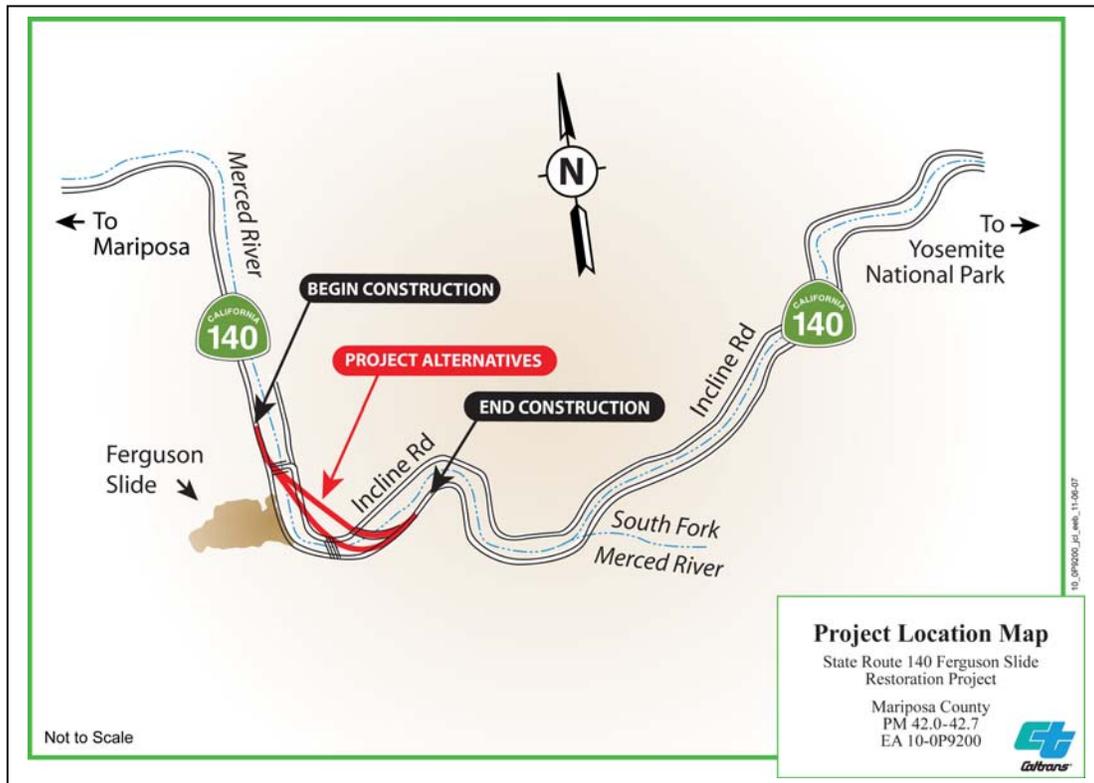


Figure 1-1 Project Vicinity Map



**Figure 1-2 Project Location Map**

### 1.3 Alternatives

The project is located in Mariposa County on State Route 140 from 8 miles east of Briceburg to approximately 7.6 miles west of El Portal where the Ferguson rockslide damaged the highway between post miles 42.0 and 42.7. Within the limits of the proposed project, State Route 140 is a two-lane, undivided highway. The purpose of the project is to reopen and restore full access to the damaged section of State Route 140.

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 C (Open-cut Realignment), Alternative T (Tunnel Realignment), Alternative S (Viaduct Realignment), and the No-Build Alternative.

### **1.3.1 Build Alternatives**

In April 2006, following the rockslide, a State of Emergency was declared within Mariposa County and Caltrans was directed to request federal assistance on reopening State Route 140. On June 17, 2006, Caltrans received approval to proceed with the construction of the temporary detour. The detour was opened to vehicles less than 28 feet long on August 18, 2006. On September 6, 2006, the Federal Highway Administration approved \$2 million to perform preliminary engineering for the development of permanent restoration work.

Caltrans created a project development team to identify alternative solutions. Alternative solutions created by the project development team were based on cost, schedules, environmental effects, level of service, and project mitigation. The project development team ensures that state and federal requirements are followed to meet state design standards and to minimize environmental impacts and cost. The following alternatives propose to fully reopen State Route 140 either on the existing alignment or by realigning the highway north of the Merced River, bypassing the rockslide.

#### ***Unique Features of Build Alternatives***

##### ***Alternative C (Open-Cut Realignment)***

This alternative would realign the highway to the northeast, spanning the Merced River and bypassing the rockslide. State Route 140 would cut through the mountain across from the rockslide and then span back across the river where it would meet the existing alignment. Two bridges would be constructed to cross the river. The lengths of the bridges would be 550 feet and 650 feet. The highway would be constructed with two 12-foot lanes and 8-foot outside shoulders. A 20-foot-wide terrace would be constructed on both sides of the highway and between the cut slopes to catch falling rock debris. See the cross-section in Appendix D. The estimated cost for this alternative would be \$62.2 million in 2007 dollars.

##### ***Alternative T (Tunnel Realignment)***

This alternative would realign the highway to the northeast, spanning the Merced River and bypassing the rockslide. State Route 140 would tunnel 725 feet through the mountain across from the rockslide and then span back across the river where it would meet the existing alignment. Two bridges would be constructed to cross the river. The lengths of the bridges would be 550 feet and 650 feet. The highway and tunnel would be constructed with two 12-foot lanes and 8-foot outside shoulders. The

tunnel would also contain a 5-foot walkway. See the cross-section in Appendix D. The estimated cost for this alternative would be \$72.5 million in 2007 dollars.

*Alternative S (Viaduct Realignment)*

This alternative would realign the highway to the northeast, spanning the Merced River with two bridges and bypassing the rockslide with a hillside viaduct and retaining wall. The lengths of the bridges would be 805 feet and 725 feet. The viaduct and retaining wall section would be 400 feet long and supported by a terrace on the hillside and columns. The highway would be constructed with two 12-foot lanes and 8-foot outside shoulders. See the cross-section in Appendix D. The estimated cost for this alternative would be \$33.3 million in 2007 dollars.

**Common Design Features of the Build Alternatives**

Alternatives C, T, and S would involve extending the current one-lane detour along Incline Road and constructing a third temporary bridge upstream of the current detour bridges. This extension and third bridge would allow traffic to continue to flow through the construction area while the permanent bridges are being constructed. The temporary detour would be extended 393 feet and raised 5.5 feet to accommodate possible flooding. Incline Road would also be paved with asphalt concrete to match the existing detour. The third temporary bridge would be constructed using concrete abutments and piers on each side of the river. The newly formed embankment slopes would be protected with the placement of rocks. The temporary signal system would be relocated upstream as well to facilitate the one-lane traffic operation at the newly constructed temporary bridge.

None of the build alternatives require utility relocations.

Once construction is complete for any of the build alternatives, the temporary detour would require removal. All three temporary bridges would be removed, including the pilings, piers, abutments, and pedestals to at least one foot below the ground. The embankments behind the abutments would be removed and the slopes would be restored to their original contours.

At the request of the National Park Service, all of the build alternatives would maintain access to Incline Road for pedestrians and bicyclists or other recreational users. Incline Road would remain paved along its current alignment.

### **1.3.2 No-Build Alternative**

Consideration of a No-Build Alternative is required by the National Environmental Policy Act and the California Environmental Quality Act. The No-Build Alternative would leave State Route 140 damaged and blocked by the Ferguson rockslide. As a result of the No-Build Alternative, the temporary detour would become the permanent State Route 140 alignment. The current vehicle length restrictions would remain in place along with the traffic signals controlling the single-lane access through the detour. The structures for the temporary detour were constructed during a declared emergency and were designed as a temporary solution to the closure of State Route 140. These structures would not meet standard design features nor would the detour meet the purpose and need of the project.

### **1.3.3 Comparison of Alternatives**

Criteria to evaluate alternatives include project purpose and need, project cost, and potential environmental effects of the proposed project. Table 1.1 compares the alternatives using the evaluation criteria.

**Table 1.1 Comparison of Build Alternatives to the No-Build Alternative**

Potential Impact		Alternatives C, T, and S	No-Build Alternative
<b>Land Use</b>	<b>Consistency with the Mariposa County General Plan</b>	Consistent with Mariposa County General Plan	Inconsistent with Mariposa County General Plan
<b>Wild and Scenic Rivers</b>		Minor impacts to river from the placement of bridge columns	Temporary structures would adversely affect a Wild and Scenic River
<b>Parks and Recreation</b>		Minor impacts to recreational uses from placement of columns	Restricts easy access to Merced River and Yosemite National Park
<b>Community Character and Cohesion</b>		None	Disrupts cohesion between communities and could force businesses to close by restricting access
<b>Utilities/Emergency Services</b>		None	Restricts emergency service access between communities
<b>Traffic and Transportation/ Pedestrian and Bicycle Facilities</b>		None	Restricts access between communities for all types of transportation
<b>Visual/Aesthetics</b>		Some tree removal and minor decrease in scenic quality due to structures	Decrease in scenic quality due to temporary structures
<b>Cultural Resources</b>		Avoids bedrock mortar site	None
<b>Hydrology and Floodplain</b>		Minor encroachment on floodplain	Minor encroachment on floodplain
<b>Water Quality and Storm Water Runoff</b>		Short-term construction impacts to surface water	None
<b>Geology/Soils/Seismic/ Topography</b>		Potential for minor rockfalls in cut areas	None
<b>Paleontology</b>		None	None
<b>Hazardous Waste/Materials</b>		Potential exposure to elevated levels of arsenic	None
<b>Air Quality</b>		None	None
<b>Noise and Vibration</b>		None	None
<b>Natural Communities</b>		For Alternatives C, T, and S, 6.22, 3.07, and 2.95 acres, respectively, of oak woodland would be affected	None
<b>Wetlands and other Waters</b>		For Alternatives C, T, and S, 0.06, 0.06, and 0.05 acre, respectively, of Waters of the United States would be affected	A minimal acreage of Waters of the United States would be affected
<b>Plant Species</b>		3 patches of copper moss would be affected	None

Potential Impact	Alternatives C, T, and S	No-Build Alternative
<b>Animal Species</b>	Temporary decrease in water quality would indirectly affect Hardhead, and for Alternatives C, T, and S, 6.22, 3.07, and 2.95 acres, respectively, of bat habitat would be affected	None
<b>Threatened and Endangered Species</b>	None	None
<b>Invasive Species</b>	Disturbance of ground would cause dispersal of non-native weeds	None

After the public circulation period, all comments will be considered. Caltrans, with input from Mariposa County and the U.S. Forest Service, will select a preferred alternative and make the final determination of the project’s effect on the environment. In accordance with the California Environmental Quality Act, if no unmitigable significant adverse impacts are identified, Caltrans will prepare a Negative Declaration or Mitigated Negative Declaration. Similarly, if the action does not cause a significant impact to the environment, Caltrans, as assigned by the Federal Highway Administration, will issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

*Locally Preferred Alternative*

Presentations by Caltrans staff were held on May 23, 2007 and May 29, 2007 in Mariposa and on June 12, 2007 in El Portal. The presentations gave local government officials as well as the public a chance to comment on the proposed build alternatives and the environmental process, which analyzes those alternatives for their effects on the environment.

The Board of Supervisors of Mariposa County then held discussions on June 19, 2007 regarding the build alternatives for the proposed project. The Board of Supervisors of Mariposa County went on record in support of Alternative S. The Board of Supervisors believes that Alternative S would proceed with fewer delays because of its more traditional design and construction methods and that the costs associated with this alternative are more reasonable. They also believe Alternative S would have fewer environmental constraints than the other alternatives and would not hinder the recreational use of the Wild and Scenic River.

### 1.3.4 Alternatives Considered and Withdrawn

Alternative R (Rock Shed/Tunnel) proposed to construct a rock shed or tunnel through the rockslide talus (rock debris) and restore State Route 140 on the existing alignment. The tunnel would provide two 12-foot lanes, 8-foot outside shoulders, and a 5-foot walkway. The estimated cost for this alternative would be \$76 million in 2007 dollars. This alternative was withdrawn because:

- Constructing the rock shed would result in a longitudinal encroachment on the floodplain. Executive Order 11988 directs that longitudinal encroachments on the floodplain should be avoided unless it is the only practicable alternative.
- Potential dormant rockslides were identified adjacent to the Ferguson rockslide and could affect the rock shed if they become active in the future.
- Constructing the rock shed would result in a take of Limestone salamander habitat, which is fully protected by the State of California. The California Department of Fish and Game cannot issue a permit for any amount of take on this habitat.
- Constructing the rockshed through the rockslide would expose construction personnel, equipment, and structures to potentially falling rocks.

Alternative T-2 (Southern Tunnel Realignment) proposed to realign the highway south of the Ferguson rockslide by tunneling one mile through the mountain from the existing State Route 140 alignment. This alternative was considered during the alternative development process, but was rejected because of an excessive cost of \$378 million and because the duration to construct the tunnel was determined to be too lengthy.

Alternative E (Slide Removal) proposed to remove the rockslide and restore State Route 140 on the existing alignment. This alternative was considered and withdrawn by the project development team for the following reasons:

- The rockslide would have to be removed from the top down and would require constructing a 30-foot-wide, two-lane road to the top of the rockslide.
- The nearest disposal site for the rockslide material would be more than 20 miles away in Midpines.
- To remove the complete rockslide, it would require 266 working days and 200 trips per day on the highway from the project area to Midpines to remove 3,000 tons of rockslide material per day using the typical 15-ton-capacity mining trucks.

- There is a potential that once the rockslide material was removed, additional material upslope could begin to slide down.

## 1.4 Permits and Approvals Needed

The following permits, reviews, and approvals would be required for project construction:

**Table 1.2 Permits and Approvals Needed**

<b>Agency</b>	<b>Permit/Approval</b>	<b>Status</b>
U.S. Forest Service	Biological Evaluation	Submittal anticipated December 2007
U.S. Forest Service	Amendment to Special Use Permit needed to widen easement	Amendment anticipated before construction
U.S. Forest Service	Section 7(a) Wild and Scenic Rivers Act Evaluation	Submittal anticipated November 2007
California Department of Fish and Game	1602 Streambed Alteration Agreement	Submittal anticipated March 2008
California Regional Water Quality Control Board	Section 401 Certification for a Water Discharge Permit	Submittal anticipated March 2008
U.S. Army Corps of Engineers	Section 404 Nationwide Permit 14 for filling or dredging waters of the United States	Submittal anticipated March 2008

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

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This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts from each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

As part of the scoping and environmental analysis conducted for the 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:

- Growth—This project is not anticipated to encourage unplanned growth (Community Impact Assessment, July 2007).
- Farmlands/Timberlands—There is no farmland or timberland in the project area (Community Impact Assessment, July 2007 and Visual Impact Assessment August 2007).
- Paleontology—This project would not affect paleontological resources (Paleontological Identification Report, June 29, 2007).
- Air Quality—This project is exempt from all emissions analysis because Mariposa County is classified as attainment for listed pollutants (Air and Noise Report, August 15, 2007).
- Noise and Vibration—This project is not considered a Type I project and does not require a noise analysis according to the Caltrans Traffic Noise Protocol and Federal Highway Administration Policy regarding Highway Noise Analysis (Air and Noise Report, August 15, 2007).
- Environmental Justice—This project would not disproportionately affect low-income or minority populations (Community Impact Assessment, July 2007).

## **2.1 Human Environment**

### **2.1.1 Land Use**

#### **2.1.1.1 Existing and Future Land Use**

##### ***Affected Environment***

Current land use was identified using Mariposa County's 2003 General Plan. More than half of the land within Mariposa County is federally owned. Most notable is Yosemite National Park, which occupies more than 250,000 acres of Mariposa County. Two national forests, Stanislaus and Sierra, occupy most of the land within the county. The Stanislaus National Forest is west of Yosemite and north of the Merced River, while the Sierra National Forest is west of Yosemite and south of the Merced River. See Figure 1-1. The project area lies within the Sierra National Forest. The Bureau of Land Management also owns segments of land, primarily located along Merced River's wild and scenic corridor.

The land within the project area is considered rural and is managed by the U.S. Forest Service. There are no residences or businesses within the limits of the proposed project. The Merced River, which flows through the project area, is designated as a Wild and Scenic River under the Wild and Scenic Rivers Act (see section 2.1.1.3). The existing State Route 140 operates on a 200-foot easement with the U.S. Forest Service through the issuance of a special-use permit. The temporary detour was constructed on Forest Service land through an agreement with the U.S. Forest Service.

##### ***Environmental Consequences***

The proposed project would not require or encourage a change in land use. The build alternatives would only reestablish full access for motorists using State Route 140. Alternatives C, T, and S would require an amendment to the special-use permit that would provide for the realignment of the highway. Under the No-Build Alternative, the temporary detour would remain in use, which would also require an amendment to the current easement with the U.S. Forest Service.

##### ***Avoidance, Minimization, and/or Mitigation Measures***

No mitigation measures would be required.

### **2.1.1.2 Consistency with State, Regional, and Local Plans**

#### ***Affected Environment***

The Mariposa County General Plan, the Yosemite Valley Plan, and the Economic Strategy for Mariposa County focus on maintaining accessibility to Yosemite National Park, rivers, lakes, national forests, rural scenery, scenic routes, and historic sites within Mariposa County. The plans further promote the enhancement and preservation of the following:

- Yosemite and national forest lands
- Large and intact areas of agricultural and forest lands
- Separate and unique communities that support larger rural developments
- Close proximity to outdoor recreation
- Historic structures, ruins, and monuments

The goals and policies of the U.S. Forest Service focus mainly on habitat preservation and resource management. The Mariposa County General Plan addresses a broader range of goals that include land use, economic development, transit and transportation, and historic resources. Mariposa County is currently in the process of completing an Economic Development Strategy. The primary goal of this strategy is to increase the economy through tourism or people visiting Mariposa County. Efforts to accomplish the goals set forth in the county's general plan and the economic development strategy include the following:

- Facilitating improvements to state highways that serve Mariposa County
- Maintaining an effective transit system
- Maintaining an effective emergency system
- Preserving, protecting, and enhancing regional tourism opportunities and resources
- Creating visitor access to communities and points of interest
- Providing job growth and sustaining county revenues by enhancing and expanding sectors of the economy that serve visitors
- Using the county's historic sites to increase tourism opportunities
- Creating historic districts to preserve the county's historic character

These efforts depend on State Route 140, as well as other routes, to provide complete access to all communities and recreational activities within Mariposa County.

Maintaining the highways and roads in the county is an important part of accomplishing Mariposa County's goals.

### ***Environmental Consequences***

The build alternatives would be consistent with the Mariposa County General Plan, the Yosemite Valley Plan, and the Economic Strategy for Mariposa County by restoring full access to all vehicle types traveling on State Route 140. The No-Build Alternative would not be consistent with state, regional, and local plans because a vital transportation link between communities and access to Yosemite National Park and other tourist activities would be restricted.

### ***Avoidance, Minimization, and/or Mitigation Measures***

No mitigation measures would be required.

#### **2.1.1.3 Wild and Scenic Rivers**

##### ***Regulatory Setting***

Projects affecting Wild and Scenic Rivers are subject to the National Wild and Scenic Rivers Act (16 United States Code 1271) and the California Wild and Scenic Rivers Act (Public Resources Code Section 5093.50 et seq.). There are three possible types of Wild and Scenic Designations:

1. Wild: undeveloped, with river access by trail only
2. Scenic: undeveloped, with occasional river access by road
3. Recreational: some development is allowed, with road access

##### ***Affected Environment***

The Merced River originates in the High Sierra of Yosemite National Park. The river collects its water from Mount Hoffman, Mount Raymond, Tenaya Lake, and the Cathedral Range and flows freely into Yosemite Valley. The Merced River creates deep canyons as it continues through the Sierra and Stanislaus national forests. The river eventually makes its way down into the San Joaquin Valley.

The Merced River has two major branches. The main river branch goes through Yosemite Valley. The South Fork branch starts at the southern end of Yosemite and flows through some of the wildest and least developed land in the Sierra National Forest before it joins the main branch just upstream of the Ferguson rockslide.

Development near the Merced River, including the former Yosemite Valley Railroad line (now Incline Road and State Route 140), occurred because of the river's proximity to Yosemite National Park. The federal Wild and Scenic River designation became necessary to protect the largely undeveloped river from further development since the park continues to be the main tourist attraction in Mariposa County.

The portion of the Merced River that flows through the project area qualifies as recreational because of the presence of the highway and Incline Road and the recreational activities that occur in the river. The river is not designated as wild or scenic in the project area.

“Outstandingly Remarkable Values” are defined by the Wild and Scenic Rivers Act as those characteristics that make the river worthy of special protection. These can include scenery, recreation, fish and wildlife, geology, history, culture, and other similar values that are to be considered in determining eligibility for Wild and Scenic River designation. The outstandingly remarkable values of the Merced Wild and Scenic River within the project area are geology, recreation, wildlife, vegetation, and cultural/historical benefits.

### *Geology*

The Merced River Canyon is a steep inner gorge with highly fractured rocks that formed as a result of tectonic uplifting and the cutting of the Merced River. Exposure of the rocks within the canyon has provided an opportunity for understanding the geologic history of the area. Within the Merced River near the rockslide, there appears to be a rapid that probably formed from deposits left by a previous rockslide. The Ferguson rockslide is considered to be a natural feature that is thousands of years old. It is unlikely that State Route 140 aggravated or initiated the most recent movement of the rockslide.

### *Recreation*

The recreational outstandingly remarkable value consists of three primary recreational activities, which are whitewater boating, camping, and hiking. Whitewater boating is the most popular activity on the river within the project area and has been occurring on the river since the 1970s, averaging nearly 8,000 to 10,000 boaters annually. The Merced River draws boaters from other states as well as from some of the major cities within California. The whitewater boating season typically begins in March and ends in June or July depending on the snow pack.

Camping is considered very rare because of the steep canyon walls found in the project area. More suitable camping opportunities such as flat open areas are found upstream of the project area near Foresta Bridge. Incline Road provides opportunities for hiking and biking and is occasionally used by equestrian riders.

### *Wildlife*

Limestone salamanders (*Hydromantes brunus*) live in crevices of cliffs and ledges and in limestone under the canopy of foothill-oak woodland, especially where the rocks are overgrown with moss. They are active during the fall, winter, and spring rains, especially during cold spells. The Limestone salamander only occurs along some segments of the Merced River drainage, all of which are within an approximately 5-mile radius of the project area. The limestone salamander was designated as a threatened species by the State of California in 1971. It is also designated as fully protected, which means that an impact to this species cannot be authorized through the usual permitting process.

### *Vegetation*

The Merced River Canyon is renowned nationally and internationally for the spectacular display of wildflowers that may be seen in a good rain year. People are especially attracted to the South Fork Trail that leads to Hite's Cove, but the entire river corridor is an attraction because of the flowers' visual appeal. During plant surveys, the Forest Service sensitive plants Mariposa clarkia (*Clarkia biloba* spp. *australis*) and the elongate copper moss (*Mielichhoferia elongate*) were identified. Two rare plants, the smallflower monkeyflower (*Mimulus inconspicuus*) and Tompkins' sedge (*Carex tompkinsii*), were also identified.

### *Cultural/History Benefits*

The Merced River contains a site where there is evidence of occupation or use by Native Americans. The site may have national or regional importance for interpreting prehistory. Sites are of particular importance if they are listed in or eligible for inclusion in the National Register of Historic Places. The Merced River corridor contains features associated with historic mining, logging, and transportation. These features include the Yosemite Valley Railroad Grade, Jenkins Hill Trail, and State Route 140.

The Merced River has a known historic association with the Southern Sierra Miwok. River-related resources such as plants and animals are important to them. The

American Indian Council of Mariposa has shown interest in the resources of the river, especially the use of plants for cultural purposes.

### **Environmental Consequences**

Alternatives C, T, and S would construct bridges that require the placement of columns within the banks of the Merced River.

A total of four columns supporting the bridges would be constructed within the banks of the Merced River for Alternatives C and T. The columns have been labeled A, B, C, and D and are each 11 feet in diameter (see Figure 2-1). The affected area was determined by calculating the area the bridge piers would occupy in the designated Wild and Scenic River area after construction.

- Column A, downstream from the rockslide, would be constructed 81 feet from the edge of the water. The column would occupy a total area of 0.0022 acre of terrain or riverbank. Sixty-eight feet or the entire width of the river in the area of this column would not be affected.
- Column B, downstream from the rockslide, would be constructed within the river 10 feet from terrain. The column would occupy 0.0022 acre of river area. A river width of 70 feet would not be affected in the area of this column.
- Column C, upstream from the rockslide, would be constructed 125 feet from the edge of the water. The column would occupy 0.0022 acre of terrain. Eighty feet or the entire width of the river in the area of this column would not be affected.
- Column D, upstream from the rockslide, would be constructed with 8 feet of its diameter within the river and the remaining 3 feet on the terrain. The column would occupy 0.0012 acre of river. A river width of 103 feet would not be affected in the area of this column.

A total of four columns supporting the bridges would be constructed within the banks of the Merced River for Alternative S as well, but in a different orientation (see Figure 2-2). As with the columns in Figure 2-1, the columns in Figure 2-2 have been labeled A, B, C, and D and are each 11 feet in diameter.

- Column A, downstream from the rockslide, would be constructed 75 feet from the edge of the water. The column would occupy a total area of 0.0022 acre of terrain. Sixty-seven feet or the entire width of the river in the area of this column would not be affected.

- Column B, downstream from the rockslide, would be constructed 18 feet from the edge of water. The column would occupy 0.0022 acre of terrain. Seventy-five feet or the entire width of the river in the area of this column would not be affected.
- Column C, upstream from the rockslide, would be constructed 2 feet from the edge of the water. The column would occupy 0.0022 acre of terrain. Ninety-five feet or the entire width of the river in the area of this column would not be affected.
- Column D, upstream from the rockslide, would be constructed within the river directly adjacent to the terrain. The column would occupy 0.0022 acre of river. A river width of 54 feet would not be affected in the area of this column.

Alternatives C, T, and S would also require a third temporary bridge with two support columns to be constructed within the banks of the river. The columns have been labeled A and B and are 4 feet in diameter (see Figure 2-3).

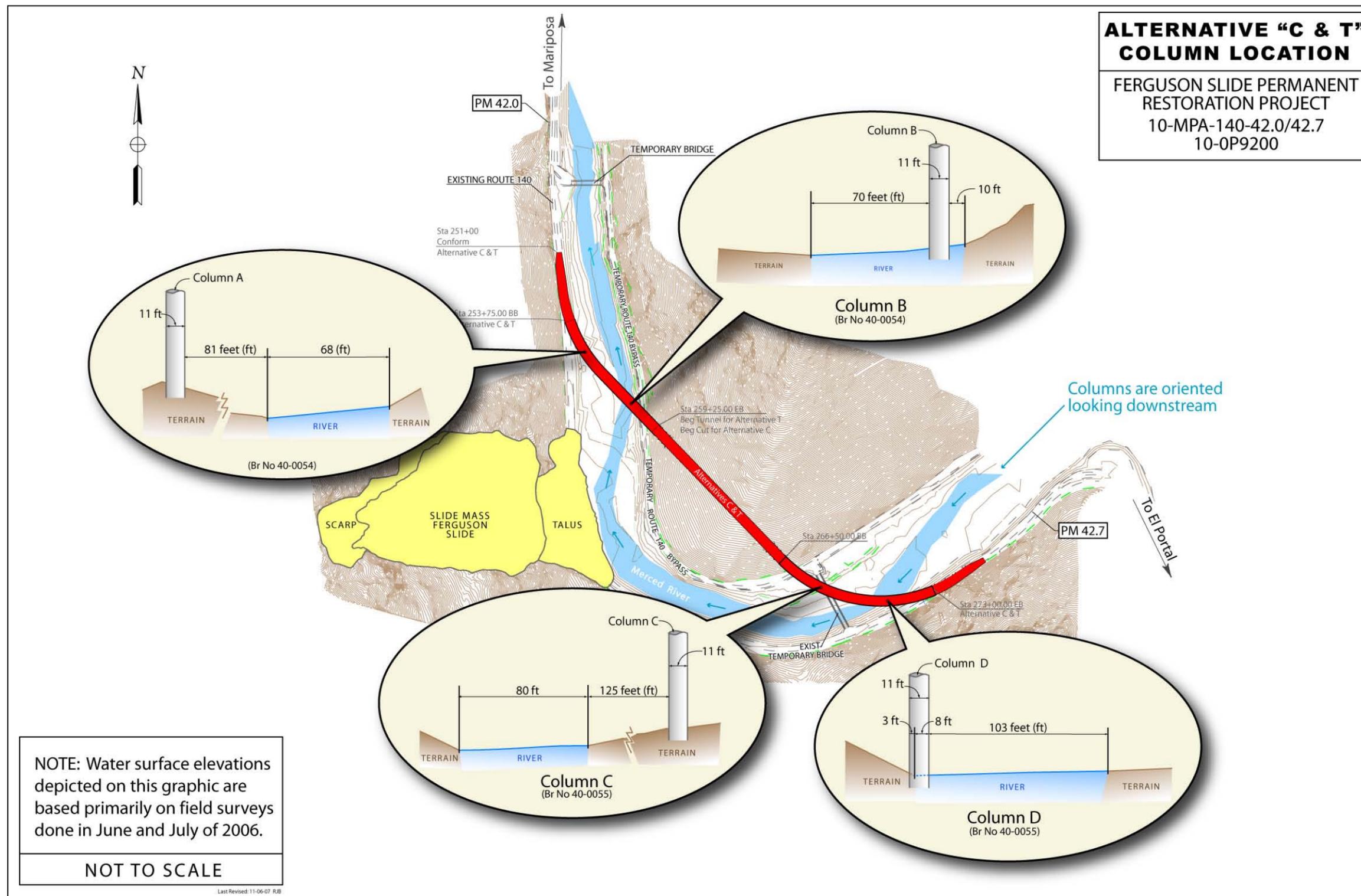


Figure 2-1 Alternative C and T Column Locations

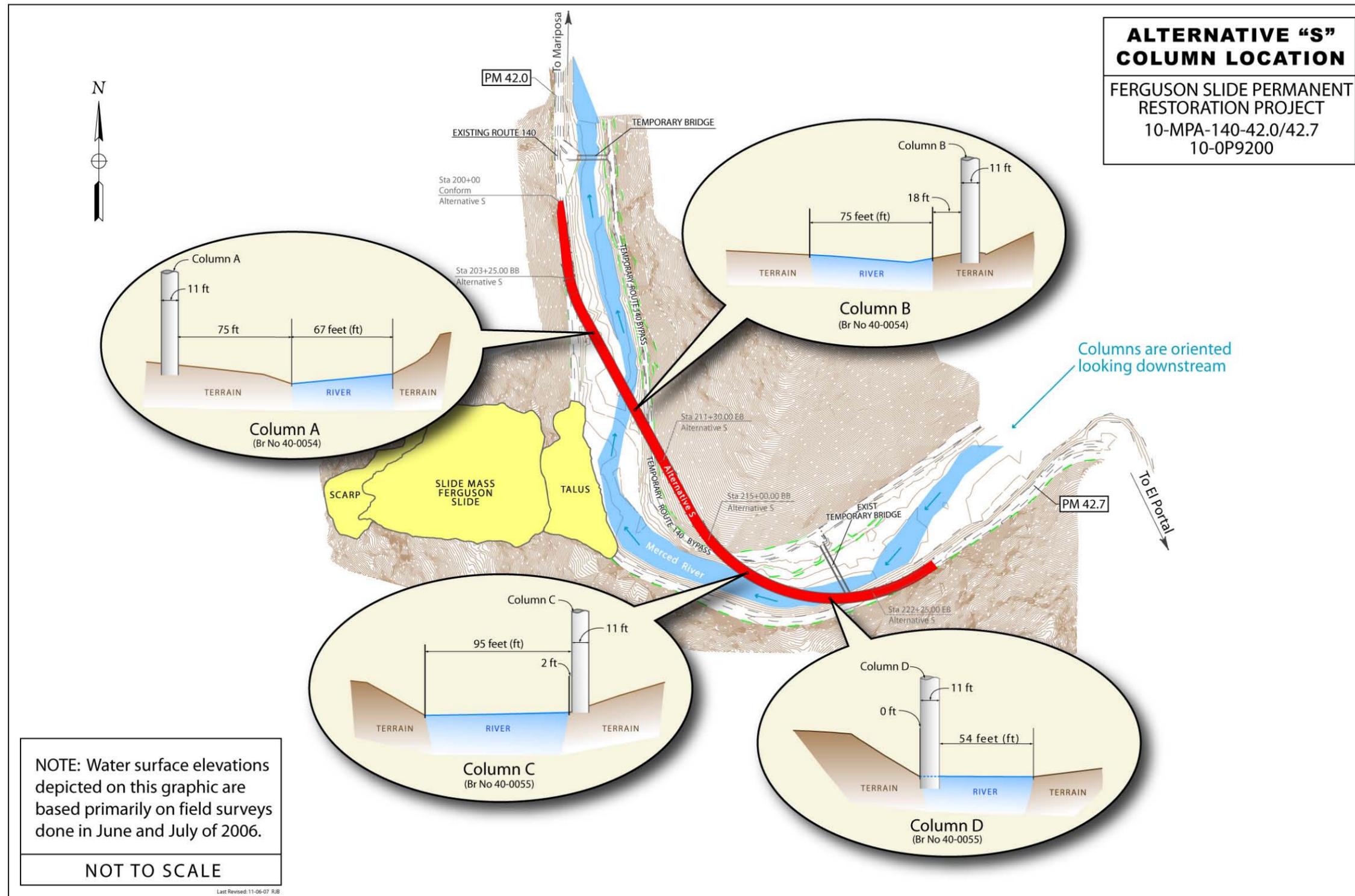


Figure 2-2 Alternative S Column Locations

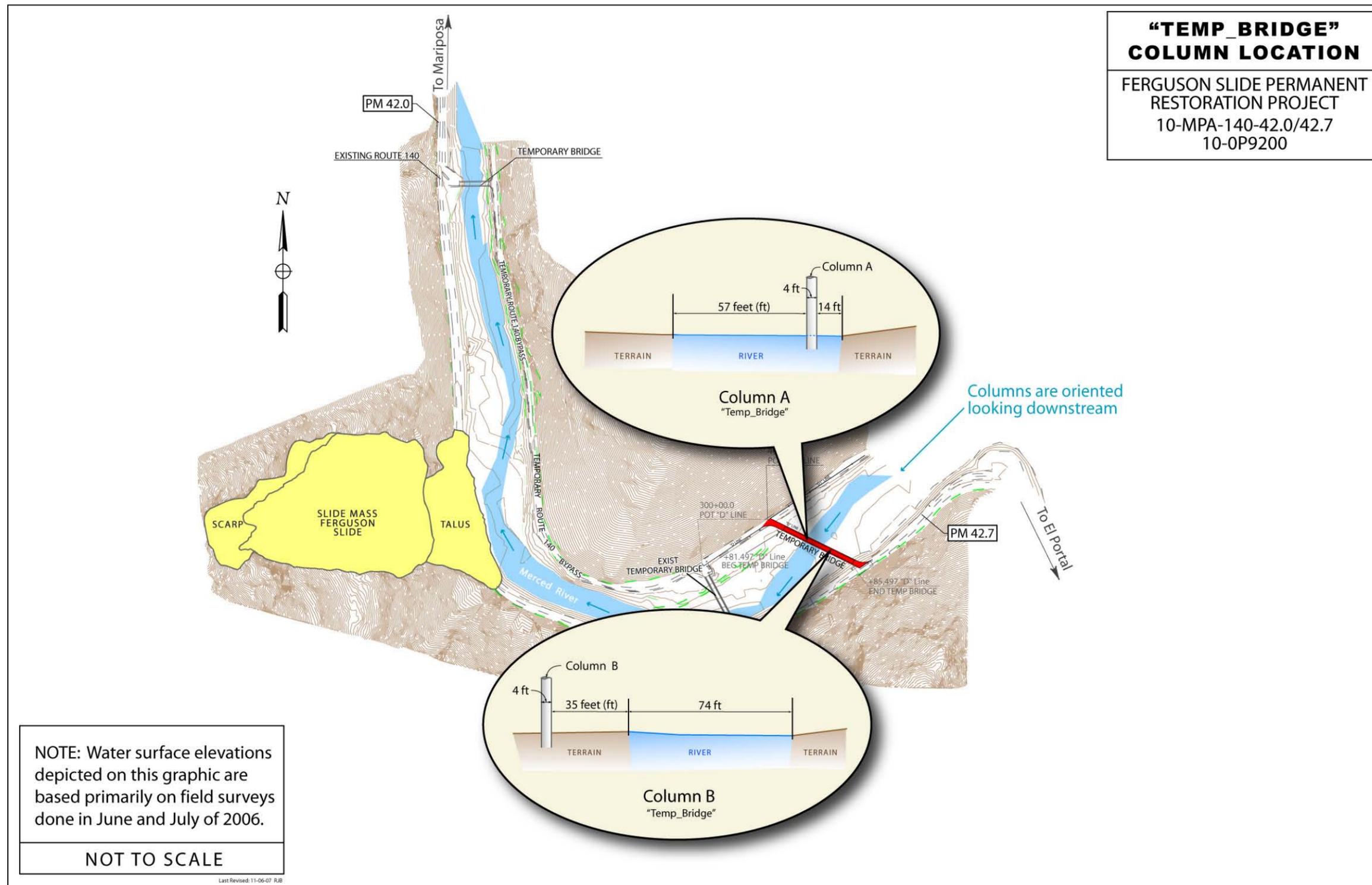


Figure 2-3 Temporary Bridge Column Locations



- Column A, upstream from the rockslide, would be constructed within the river 14 feet from the edge of the terrain. The column would occupy 0.00028 acre of river. In addition to the 14 feet of river between the column and terrain, 57 feet of river would not be affected.
- Column B, upstream from the rockslide, would be constructed 35 feet from the edge of water. The column would occupy 0.00028 acre of terrain. Seventy-four feet or the entire width of the river in the area of this column would not be affected.

Once construction is complete for any of the build alternatives, the temporary detour would be removed. All three temporary bridges would be removed, including the pilings, piers, abutments, and pedestals to at least 1 foot below the ground. The embankments behind the abutments would also be removed, and the slopes would be restored to their original contours.

### *Geology*

Alternative C would generate 360,000 cubic yards of excess material that could not be used within the project limits. The cut and fill slopes for all build alternatives would not be erosive because the bedrock exposed during excavation is made of hard phyllite and chert. However, the colluvium or loose soil at the surface could erode. The alluvium within the river channel could potentially scour or wear from high-river flows whereas the bedrock would not scour. Rock falls could occur as a result of slopes being cut. There are several other features adjacent to the Ferguson rockslide that could be dormant rockslides.

Short-term impacts to surface water quality could occur during the construction of this project. The potential surface water quality impacts are as follows:

- Increases in sediments, turbidity (cloudiness), and total dissolved solids
- Toxicity due to chemical substances originating from construction activities

### *Recreation*

The build alternatives would place bridges within the bed and banks of the Merced River. Depending on the build alternative, one to two columns would be placed within the river resulting in impeded flow, however most of the river width would remain unobstructed by the columns. Impacts to whitewater boating would be minimized by the measures provided below under Avoidance, Minimization, and/or Mitigation Measures. The proposed project would enhance Incline Road for

pedestrian and bicycle use and improve access to the Merced River for other recreational activities.

Short-term construction impacts would affect both whitewater boating and the use of Incline Road. Measures to minimize these impacts are currently being addressed by Caltrans and cooperating agencies.

#### *Wildlife*

Alternatives C, T, and S would completely avoid impacts to the Limestone salamander.

#### *Vegetation*

Alternatives C, T, and S would completely avoid the known populations of Tompkins' sedge and Mariposa clarkia and is not likely to affect the smallflower monkeyflower plant species. Three patches of the copper moss that are along the highway and the temporary detour would be removed.

#### *Cultural/History Benefits*

The Historical Property Survey Report concluded that the proposed project would not affect the historic values of the Merced River. The State Historic Preservation Officer concurred with Caltrans' findings on October 10, 2007. See Section 2.1.6 Cultural Resources for additional information.

Caltrans is currently coordinating with the U.S. Forest Service and the Bureau of Land Management regarding the effects the proposed project would have on the Merced Wild and Scenic River. This ongoing coordination would result in a determination that considers the "outstandingly remarkable values" for the Merced River and whether the proposed project would adversely affect those values, for which the river was designated. See Chapter 3 Comments and Coordination for additional information.

#### ***Avoidance, Minimization, and/or Mitigation Measures***

The following mitigation measures would be used to protect the natural and recreational values of the Merced River.

#### *Geology*

Existing rock outcroppings would be retained where possible. The three temporary bridges would be removed, and the surrounding disturbed areas would be restored. An erosion control plan approved by the U.S. Forest Service would be applied to all

disturbed areas. Erosion control would be applied to all disturbed slopes and rock outcroppings. Erosion control seed species, origin, and application strategy would be determined through coordination efforts between Caltrans' biologists and landscape architects and U.S. Forest Service biologists. Retaining walls would be constructed at the bridge abutments and along the riverbank to avoid placing fill material into the river.

To avoid rock fracturing, the slopes for the proposed alternatives should be cut at a 1:4 ratio or flatter. Since the cuts would produce minor rockfalls, a 22-foot-wide area should be cut adjacent to and at the same grade as the highway to prevent rocks from falling onto the highway. Excess material would require removal from the project area by hauling the material to multiple disposal sites. Management measures and Best Management Practices would be needed to address any water quality impacts. Alternatives C, T, and S would avoid topographic features adjacent to the Ferguson rockslide that could be dormant rockslides.

### *Recreation*

The following measures would minimize impacts to the recreational value of the Merced River:

- A 2.5-mile-long section of Incline Road was improved with the emergency opening project during the summer of 2006. These improvements enhanced access for recreational use of the river.
- The two proposed permanent bridges for Alternative S would be designed with a 350-foot-long center span to provide the maximum unobstructed opening between the bridge columns. The bridges for Alternatives C and T would be designed with a 274-foot-long center span.
- The shoulder transitions approaching the bridges from the existing State Route 140 would be modified from the standard design to minimize encroachment into the banks of the river.
- The minimum standard curving for the highway realignment would be used to minimize the bridge lengths.
- Environmentally Sensitive Areas would be fenced to protect sensitive vegetation and rock outcroppings not in direct conflict with construction.
- Aesthetic treatments would be incorporated into the bridge design to lessen the visual impacts of the structures.
- Natural vegetation would be protected to the maximum extent possible and would be removed only within the limits of excavation and embankment construction.

- Newly graded slopes would be left with a rough appearance to create an aged look. Exposed rock cuts would be treated to give a weathered appearance.

### *Wildlife*

Environmentally Sensitive Area fencing would be placed along the southern slope of the canyon to prevent any construction equipment from entering that area. No construction activities would occur on the south side of the river between December and March unless a full time biological monitor is present. The proposed bridge approaches would be adjusted to avoid cutting into the southern slope of the canyon.

### *Vegetation*

The clumps of copper moss found within the project area are small and few and represent an insignificant portion of the population of this species in the canyon. The clumps of moss that would be removed are on ledges of human-made rock faces that were created when the highway and rail beds were originally built. Any further cuts into these rock faces that create vertical walls and/or underhangs would only reestablish new habitat for the moss rather than diminish any habitat.

### *Cultural/History Benefits*

The cultural site would be protected during construction by designating the site as an Environmentally Sensitive Area. Before construction, a Professionally Qualified Staff archaeologist would oversee the placement of environmentally sensitive area fencing around the site. A Native American monitor may also be present during the establishment of the fencing.

## **2.1.1.4 Parks and Recreation**

### ***Affected Environment***

Yosemite National Park is the main tourist attraction of Mariposa County. People from around the world visit the park to sightsee, hike and camp. Yosemite National Park had 3,304,144 recreational visitors in 2005 and 3,242,644 recreational visitors in 2006.

The Sierra National Forest also offers many recreational activities including hunting, fishing, hiking, and camping. Incline Road is used as a bicycle and pedestrian trail. Refer to Section 2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities.

Within the project area, the Merced River is used for whitewater rafting. Operating under permit from local, state, and federal governing agencies, several commercial

whitewater rafting outfitters provide rafting services on the river. Rafters can rent boats out of El Portal at the Red Bud Picnic Area and Whitewater Rafting Put-in or at the Briceburg Put-in and Take-out areas. Whitewater rafting occurs from April to July, depending on the winter snow pack. Peak flows of the river occur during April and May.

Camping is popular in the Sierra National Forest. The U.S. Bureau of Land Management manages several campgrounds along the Merced River. Three campgrounds below Briceburg—McCabe Flat, Willow Placer, and Railroad Flat—offer both tent and recreational vehicle campsites. Because of the rockslide, many recreational vehicles seeking recreational activities within the Sierra National Forest on either side of the rockslide cannot maneuver beyond the temporary detour because of their length.

### ***Environmental Consequences***

State Route 140 has gentle grades and curves. The Ferguson rockslide eliminated State Route 140 as the most direct and accessible route for tour buses entering Yosemite National Park's Arch Rock entrance. As a result, revenues at the Arch Rock entrance decreased roughly 50 percent between 2005 and 2006. Revenues from all park entrances combined decreased nearly 5 percent between 2005 and 2006, indicating that a substantial number of visitors used State Route 140 to access the park. State Routes 120 and 41 offer access to Yosemite National Park, but are difficult to maneuver with larger vehicles, especially during the winter months.

The build alternatives would allow visitors and recreation users full access to Yosemite National Park, Sierra National Forest, and whitewater rafting opportunities. The No-Build Alternative would continue to limit the number of visitors that could access Yosemite National Park via State Route 140. Other recreational activities, including whitewater rafting, would remain hindered by the restricted access caused by the temporary detour.

Because the river is a recreational resource, it is also protected by Section 4(f) of the Department of Transportation Act of 1966. River rafting is the main recreational activity within the project limits with an average of 8,000 to 10,000 boaters a year. Hikers and bikers also utilize Incline Road. The 4(f) evaluation, which would be prepared in conjunction with cooperating agencies, would be circulated for public review prior to finalizing the environmental document.

## **Avoidance, Minimization, and/or Mitigation Measures**

For the build alternatives, see Avoidance, Minimization, and/or Mitigation Measures in Section 2.1.1.3.

There would be no feasible avoidance, minimization, and/or mitigation measures for the effects of the No-Build Alternative.

### **2.1.2 Community Impacts**

#### **2.1.2.1 Community Character and Cohesion**

##### ***Regulatory Setting***

The National Environmental Policy Act of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 United States Code 4331(b)(2)]. The Federal Highway Administration in its implementation of the National Environmental Policy Act [23 United States Code 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 Community Impact Assessment was completed in July 2007, and an Economic Impact Report was completed on May 25, 2007. Mariposa County is an international destination because of Yosemite National Park. Every year, millions of visitors come to Yosemite. Visitors can access the park by vehicle or as part of a bus tour. The state routes that access the park are Highways 140, 41, 120, and 132.

### *Communities*

Communities in the affected area include the towns of Mariposa and Midpines on the western side of the rockslide and the towns of El Portal and Yosemite Village within Yosemite National Park on the east side of the rockslide. Mariposa is the largest town in the county and supports the county's greatest amount of tourist accommodations. El Portal is a high-density residential area with a business and resort center near the entrance to Yosemite National Park. Midpines is a residential area that surrounds a small commercial center minutes east of Mariposa. Yosemite Village has the second largest population in the county. Yosemite Village houses employees of the park as well as individuals who provide services for the park.

### *Schools and Childcare Facilities*

A number of schools and childcare facilities serve the Mariposa County area. Childcare facilities include the Almost Like Home Before and After Schooling Center, the Mariposa Children's Center, Mariposa County Head Start, Mariposa Lutheran Childhood Discovery Program, the El Portal Child Development Center, and the Yosemite Valley Daycare Center. Schools in the Yosemite area include Yosemite Valley School, El Portal Elementary School, and Yosemite Park High School. The Mariposa area schools include Mariposa High School and Mariposa Elementary School. Many children that live in one community and attend schools or childcare facilities in other communities need full access between those communities.

### *Economy and Jobs*

Because State Route 140 provides a direct all-weather route to the Yosemite Valley, the communities along State Route 140 serve as hosts to thousands of tourists a year. The Mariposa County economy is described mainly as a service-producing economy, with most of its employment in the accommodations industry, government services, retail trade, and food service establishments.

More than half of the private economic activity and private sector jobs in Mariposa County can be attributed to tourism, mainly from visitors to Yosemite, and a large share of governmental expenditures relate to tourism. The economy has typically been dependent on the seasonal fluctuation of tourism. During the summer months, tourism activity increases and as a result seasonal job opportunities increase. During the winter months, tourism and jobs tend to decrease. There is still a core economy in Mariposa that serves the local residents, businesses, and government employees, but the main economy in Mariposa County is based on tourism-serving businesses.

State Route 140 is essential in supporting the Mariposa and Yosemite area because it is the route used for supplying goods and services to the different communities. The accessibility of State Route 140 and the services its use provides are the basis of the cohesiveness between communities.

### ***Environmental Consequences***

Businesses throughout the communities along State Route 140 are suffering economic losses from the lack of tourists using food service, retail, and lodging businesses.

Limited access to State Route 140 has already resulted in the following impacts:

- A retail music shop, gift shop, tour-guide company, and a taxi company have closed. Other businesses are reporting an ongoing annual loss of \$1.7 million until full access can be restored to the highway.
- Delaware North is a supplier for Yosemite National Park, managing a network that offers food, hospitality, and facilities management in the Yosemite area. Delaware North has reported a loss of \$4 million since the temporary detour has been closed to tour buses and recreational vehicles.
- A concrete and supply company has lost 60 percent of its business. Trucks, equipment, and supplies are much more costly to deliver now that access to large parts of the company's market takes an extra 2 or 3 hours of travel time. The company has suffered a loss of more than \$1 million from not being able to supply concrete to areas north of the rockslide.
- Motels in the Mariposa County area have reported a 30 percent reduction in room reservation revenues.
- Restaurants that cater mainly to tourists have lost a large portion of their income.
- Gas stations have seen their gas receipts decline 50 percent, and a grocery store experienced a 10 percent decline in 2006. Similar declines are expected for 2007.
- Local gift and retail shops are reporting sales down 20 to 30 percent for 2007.
- The number of people looking for real estate in Mariposa has dropped 10 to 15 percent overall since the Ferguson rockslide occurred.
- The Mariposa Museum and History Center has seen its tours decrease by approximately 50 percent, and there has been a reduction in the number of patrons coming to the museum.

In addition, tour bus companies, which are a major provider of tourists to the area, are no longer able to access Yosemite National Park via State Route 140. The buses are being forced to take tourists on different routes, bypassing the communities along State Route 140, and the companies are no longer renewing contracts that use State Route 140. For additional information on tour buses, see Section 2.1.4.

The No-Build Alternative would affect business survival in Mariposa and all of the small towns between Mariposa and Yosemite National Park. Based on the existing proportion of area jobs focused on tourism, it is estimated that at least 50 percent of local jobs could be lost due to the lack of tourism. Firms would not be able to relocate to capture the Yosemite tourism market, and even fewer employees would be able to find suitable jobs within a reasonable commuting distance. The closure of State Route 140 would disturb the activities of the major employers of the area and eventually eliminate these types of service jobs in the Mariposa area. Dwindling jobs are affecting the ability of residents to stay in the community, maintain assets, and provide community continuity. Job losses also have the potential to diminish local demand for goods and services.

The detour is also affecting the Mariposa Unified School District. To transport students using the detour, the school district had to acquire a smaller bus at the cost of \$93,000 and employ an additional driver. Using a smaller bus that can access both sides of the rockslide requires additional trips and drivers, which has increased the school district's transportation costs by approximately \$7,300 following the construction of the temporary detour in 2006. The time delay caused by the detour traffic signals has also increased the time needed to transport children to the schools.

The No-Build Alternative would continue to disrupt community cohesion by restricting access to schools and childcare facilities in the Mariposa County area. The Mariposa Unified School District would be unable to transport children in a cost-effective and timely manner from one community to another.

These ongoing effects are causing a decline in the local economy and a substantial degradation in the character and cohesion of the communities.

The build alternatives would allow full access throughout the communities and to tourist attractions, which is important in maintaining community stability and family and school district cohesion. Tour buses and the tourists themselves would once again

be able to access Yosemite through State Route 140 and subsequently support the Mariposa County economy and tourism-related businesses.

Community cohesion would be restored as goods and services would no longer be restricted and could efficiently be supplied between the communities. In addition, school buses would no longer be restricted by time delays caused by the temporary detour. The Mariposa Unified School District's transportation costs would improve as larger buses could once again be used and subsequently reduce the number of trips needed to transport children through the temporary detour.

### ***Avoidance, Minimization, and/or Mitigation Measures***

The build alternatives would restore community cohesion and therefore not require any avoidance, minimization, and/or mitigation measures.

## **2.1.3 Utilities/Emergency Services**

### ***Affected Environment***

Caltrans prepared a Community Impact Assessment (July 2007) for the proposed project.

### ***Law Enforcement***

The Mariposa County Sheriff's office is the primary law enforcement agency for Mariposa County, which includes federally owned lands. The Sheriff's office provides services for the county, such as coroner/public administrator, animal control, search and rescue, boating and safety on county waterways, civil service, court security, corrections, and emergency 911 dispatch. The Sheriff's office also provides limited services for Yosemite National Park since the park has its own law enforcement unit. The California Highway Patrol is responsible for traffic enforcement and accident investigation along the highways in the county.

### ***Fire Protection***

The California Department of Forestry operates five fire stations in Mariposa County, one of which is located in the town of Mariposa. The Yosemite Fire Department provides wildland and structural fire protection and responds to hazardous material spills, emergency medical calls, searches and rescues, public service, and motor vehicle accidents. The Yosemite Fire Department provides these services to Yosemite Valley, Wawona, El Portal, and other areas of Mariposa County. The Mariposa Public Utility District Fire Department has been providing fire protection to the historic

district of Mariposa. This fire department will also provide and receive aid to and from the Mariposa County Fire Department and the California Department of Forestry.

### *Hospitals*

West of the rockslide, the John C. Fremont Hospital District operates as a countywide independent district. The hospital is located in Mariposa and provides a clinic, an extended-care facility, in-patient beds, 24-hour trauma services, and a helicopter for emergency air transport. East of the rockslide, the National Park Service contracts with Doctors Medical Center for medical services within Yosemite National Park at the Yosemite Medical Clinic. This clinic is able to treat minor injuries and medical conditions and provide first aid for incidents occurring within the park and the El Portal area. Larger medical emergencies must be handled by the John C. Fremont Hospital on the other side of the rockslide.

### *Utilities*

There are underground AT&T telephone facilities and Pacific Gas and Electric overhead power facilities within the project area.

### ***Environmental Consequences***

Most of the existing emergency services are based on the Mariposa or west side of the Ferguson rockslide, and they cannot easily respond to emergencies or requests from El Portal and Yosemite Village. The stoplights at the beginning and end of the detour delay emergency access. Because the current detour route has a vehicle-length restriction that does not allow vehicles over 28 feet long to cross, the following effects are occurring:

- Fire equipment such as a ladder truck and a tractor trailer used for transporting a bulldozer are both located in Mariposa and cannot access the three-story motels in El Portal or fight brush fires on the east side of the rockslide.
- Only three of the nine water trucks used to fight fires can pass through the detour, limiting the amount of water available for fire protection east of the rockslide.
- The California Highway Patrol often requires additional emergency services when responding to accidents east of the rockslide; these services, which can include tow trucks, fire trucks, and ambulances, are delayed by the traffic signals controlling access through the detour route.

- The Mariposa County Sheriff's response time to emergencies on the east side of the rockslide is also delayed by the traffic signals.
- Because of its 40-foot length, the Mobile Command Center, which is operated by the Sheriff's office, cannot be dispatched across the bridges.
- Ambulances, as well as residents in the Yosemite and El Portal areas, needing to access the John C. Fremont Hospital are experiencing delays caused by the traffic signals.
- There has been a drop in the hospital's revenue from the lack of tourists in the area needing medical attention and the rockslide hindering residents from seeking routine medical care.

The No-Build Alternative would permanently reduce emergency services being provided to the El Portal and Yosemite areas. Response times for sheriff and firefighting services would remain delayed because of the need to use less direct routes.

The build alternatives all offer full access for emergency services, but there would be a short-term impact on access due to the detour, until the completion of a build alternative. The build alternatives would result in a restored State Route 140 providing full access for law enforcement and medical services. Emergency response times would be improved, and the use of the emergency equipment would no longer be hindered. The public would have timely and easy access to medical care.

No utility relocations are anticipated.

### ***Avoidance, Minimization, and/or Mitigation Measures***

There would be no feasible avoidance, minimization, and/or mitigation measure for the effects of the No-Build Alternative. The build alternatives would benefit emergency services and therefore would not require any avoidance, minimization, and/or mitigation measures.

## **2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities**

### ***Affected Environment***

The Ferguson rockslide is blocking the section of State Route 140 that links the town of Mariposa to Yosemite National Park. Yosemite National Park and the communities

of Mariposa County rely heavily on full access for many types of transportation that serve tourism and residents of the area.

### *Transit*

Transit systems provide transportation services to the public by using State Route 140 to access Mariposa County and Yosemite National Park from other counties as well as within the county. The VIA-Adventures Tour Service operates 45-foot-long buses between the City of Merced and Yosemite Valley via State Route 140. Yosemite Area Regional Transportation System, known as YARTS, is another service that provides inter-county transit to Yosemite National Park. It is designed to provide an alternative mode of transportation for both Yosemite National Park visitors and employees.

### *Buses, Recreational, and Commercial Vehicles*

Because of the detour route and its limitations on vehicle length, towing vehicles, tour buses, school buses, recreational vehicles, and commercial vehicles such as waste hauling and construction trucks have all been affected by the rockslide and limited closure of State Route 140.

Waste hauling services have to use smaller vehicles that carry smaller amounts of waste and must make more trips to accomplish needed services. Construction equipment, tow trucks, and other heavy service vehicles cannot use the partially closed roadway between Mariposa and Yosemite due to the limited length on vehicles and narrow width of the roadway.

The main vehicle for tourism is the tour bus. These buses generally measure 45 feet long and prefer roads like State Route 140 with relatively minor curves and flatter surfaces to avoid accidents and delays. The tour buses also provide tourists access to motels, food and drinking establishments, and retail goods while on the way to Yosemite National Park.

### *Pedestrian and Bicycle Facilities*

There are no designated pedestrian and bicycle facilities in the project area. However, Incline Road serves as a hiking and bicycle trail.

### **Environmental Consequences**

Limited access to State Route 140 is having the following impacts:

- VIA-Adventures has reported a \$100,000 loss in operations. Tourists riding YARTS have declined by 37 percent, and employee use of the system has

declined by 48 percent. YARTS is suffering economically due to the acquisition of smaller buses that can cross the detour. These smaller buses cannot accommodate as many riders as the larger buses and therefore the income of YARTS has decreased.

- The inability of tow trucks, recreational vehicles, commercial equipment, and waste hauling vehicles to cross the detour has reduced the amount of services normally provided to communities and tourists on the east side of the rockslide. Operating costs of the services being provided by these vehicles are greatly increased because of the need to use other routes. Gas stations, restaurants, grocery stores, and RV parks are experiencing a reduction in profits from the decrease in these motorists.
- Tour bus operators are either re-routing service temporarily to other roads or are canceling bus service to Yosemite altogether. Buses that are diverted to other routes face more difficult driving conditions, such as snow and winding roads, and are at an increased risk of having an accident. During the winter of 2006, 14 bus accidents occurred on alternate routes. Tour buses can also cause delays for other motorists when using different routes with steeper grades and more curves.
- Loss of the tour bus industry due to the limitations of the detour is having an impact on the Mariposa area economy. Since the tour buses have declined, motel and restaurant reservations have diminished and tourist-related gifts, services, and apparel shops continue to suffer from reduced incomes. See Section 2.1.2 for economic impacts.

The No-Build Alternative would continue to restrict and delay access for all transit, tour, and school buses, as well as residential and commercial traffic using State Route 140. Vehicles that exceed the length restriction would be forced to use other routes that would add approximately 2 1/2 hours to commute times. This impact would place a severe hardship on Yosemite National Park and businesses and residents of Mariposa County. The No-Build Alternative would eliminate tour bus services for Yosemite National Park via State Route 140. Loss of the tour bus industry would affect the Mariposa area economy, which relies on tourism for approximately 50 percent of its jobs.

The build alternatives would accommodate all vehicles, including transit, tour buses, recreational vehicles, garbage trucks, construction equipment, and regulation-sized

school buses by restoring full access on State Route 140. There would be a short-term impact on access due to the detour route, until the completion of a build alternative.

The proposed project improved the recreational use of Incline Road with the construction of the temporary detour. At the request of the National Park Service, all of the build alternatives would maintain access to Incline Road for pedestrians and bicyclists or other recreational users. Incline Road would remain paved along its current alignment.

### ***Avoidance, Minimization, and/or Mitigation Measures***

There would be no feasible avoidance, minimization, and/or mitigation measure for the effects of the No-Build Alternative.

During construction of any of the build alternatives, a Traffic Management Plan would accommodate traffic on the existing temporary detour. The Traffic Management Plan would include:

- Limited short-term closures and night and weekend work
- Construction staging

Public notification would be provided through media press releases, local cable and news broadcasts, a project web page, and the Caltrans Public Information Office. Message and special construction signs, plus highway advisory radio, would inform motorists traveling through the construction zone. The Construction Zone Enhanced Enforcement Program would also be used. This program improves project safety through the use of supplemental California Highway Patrol units that assist in the management of traffic going through the construction zone.

### **2.1.5 Visual/Aesthetics**

#### ***Regulatory Setting***

The National Environmental Policy Act of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* and culturally pleasing surroundings [42 United States Code 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act [23 United States Code 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 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” [California Public Resources Code Section 21001(b)].

### **Affected Environment**

Caltrans completed a Visual Impact Assessment (August 16, 2007) for the project. State Route 140 runs northeast and west within the western slopes of the Sierra Nevada mountain range. State Route 140 is designated as a Scenic Highway from its junction with State Route 49 in Mariposa to Yosemite National Park. The landforms within this area include steep slopes and ravines, which create a series of jagged crests and valleys. Surface water is an important visual and recreational element in the area, with the Merced River being the most notable water source.

Along with jagged outcroppings and the open space created by the river, vegetation is dispersed throughout the project area. Vegetation consists of mixed oak woodland, some broadleaf evergreens, and an understory of range grass.

The highway, the main development in the area, is bordered by the winding river on one side and sloping terrain on the other. Because of the position of the highway, vistas are confined and uphill slopes restrict the views of motorists on the surrounding landscape. A few other developments, such as the abandoned railroad grade and some paved roads, lend themselves to the historic nature of the area, but they are typically dominated by the rural landscape created by the mountains.

Two viewing locations best show the project’s effect on the visual character as seen by highway users. The first viewing location is the view a motorist would have of the project area when traveling south to southeast or toward Yosemite National Park. The second viewing location is the view from the highway of the project area when traveling north to northwest or to Mariposa. The visual quality and experiences are the same at the project site no matter which direction the observer is traveling. Another view of the project area is from the river itself, of individuals rafting along the river. The river rafters would be moderately aware of the proposed structures since their focus would be mainly on the river.

Criteria used to describe the visual character of the project area includes the following:

- Vividness or the memorable strength of the landscape components as they combine in a distinctive visual pattern. The existing vividness of the site is moderately high, but somewhat reduced since it is typical of the region and not individually memorable.
- Intactness or the visual integrity of the landscape and its freedom from non-typical encroaching elements. The existing intactness of the views is high, although reduced somewhat due to the engineered characteristics of the excavated roadway.
- Unity or the visual harmony of the landscape considered as a whole. The existing views earn a relatively high rating for visual unity due to the harmonious aesthetic patterns created by the existing vegetation and rock formations, which are overlaying the landform. Typical of this situation, the height of the cut slope is visually dominating over the masses of trees and the sweeping movement of the adjacent river.

### ***Environmental Consequences***

The viewer's expectation of the project area is generally high in regard to scenic quality. As a result of this project, minor changes in visual resources would occur.

The unity and intactness would be lowered due to the hardscape of the proposed structure, the built appearance of the new cut slope and the loss of existing vegetation. Vividness would decrease due to the encroachment of human-made objects that may diminish the memorable experience of the views. Mature trees, which remain adjacent to the toe of the proposed slope are expected to greatly reduce visibility of the slope from offsite viewing areas.

These changes would be mainly due to the increased visibility of the bridges, tunnel, and retaining wall that are being proposed by Alternatives C, T, and S. Changes in the landscape would include disturbed slopes, removal of existing mature trees, and alterations to the rock formations.

Figures 2-1, 2-2, 2-3, and 2-4 show visual simulations of what the proposed alternatives could resemble if the project were constructed.

With the implementation of the proposed project, the visual quality from both viewing locations would be reduced slightly. Views of the Merced River Canyon from the bridge would be slightly improved due to the elevated nature of the bridge

and the opening of filtered long-distance views. Motorists would be exposed to the view from the bridge and of the bridge from a distance for brief periods while traveling to and from Yosemite.

Both the unity and intactness would be lowered due to the rough appearance of the proposed structures, the built appearance of the new cut slope and the loss of existing oak trees. Vividness would remain the same, and the proposed project is not expected to increase or decrease the memorable experience of the view. The greatest negative visual impact would be in the area of the new structures, yet the full viewing experience of the highway and surrounding areas would not be greatly diminished.

Views from the river depend on the flow and agitation caused by the water flow. Viewers would consist of hikers, fishermen, boaters and rafters. The number of these viewers is extremely low for this rural area, which is sparsely populated, and the limited time the river is accessible for rafting, fishing or other outdoor activities. This group would be moderately aware of the visual changes to the area since the experience would be brief. Motorists through the area may not be aware of the pre-slide visual condition of the area and may see only the human-made structures as an intrusion of the natural vista. Their opportunities for these views would be dictated by the flow of the water; the number of these viewers is based on the seasonal conditions of the river or by seasonal access of the area to hiking.



**Figure 2-4 Alternative C Visual Simulation**



**Figure 2-6 Alternative T Visual Simulation**



**Figure 2-7 Alternative S Visual Simulation**

A short-term decrease in the natural scenery would also occur as these structures are constructed. Once the project were constructed, there would be short-term visual impacts, mainly from the change in views created by the proposed new alignment. These impacts are expected to diminish as the project site weathers, and regular users of the highway become accustomed to the new alignment and the mitigation measures become established. The relative scale of this specific project would not detract from the high quality of the visual environment.

The regional landscape can accommodate the proposed additional pavement width, earthwork, and tree loss associated with this project without losing much visual quality. The greatest visual impact would occur from the construction of any of the proposed structures. However, this impact would not greatly diminish the viewing experience of the surrounding area.

Several projects have been constructed along this highway corridor in recent years. These projects include curve corrections, passing lanes, and maintenance operations. The combined visual effect of these projects as experienced by the highway motorist or area visitor has the potential to change the character of the corridor and region.

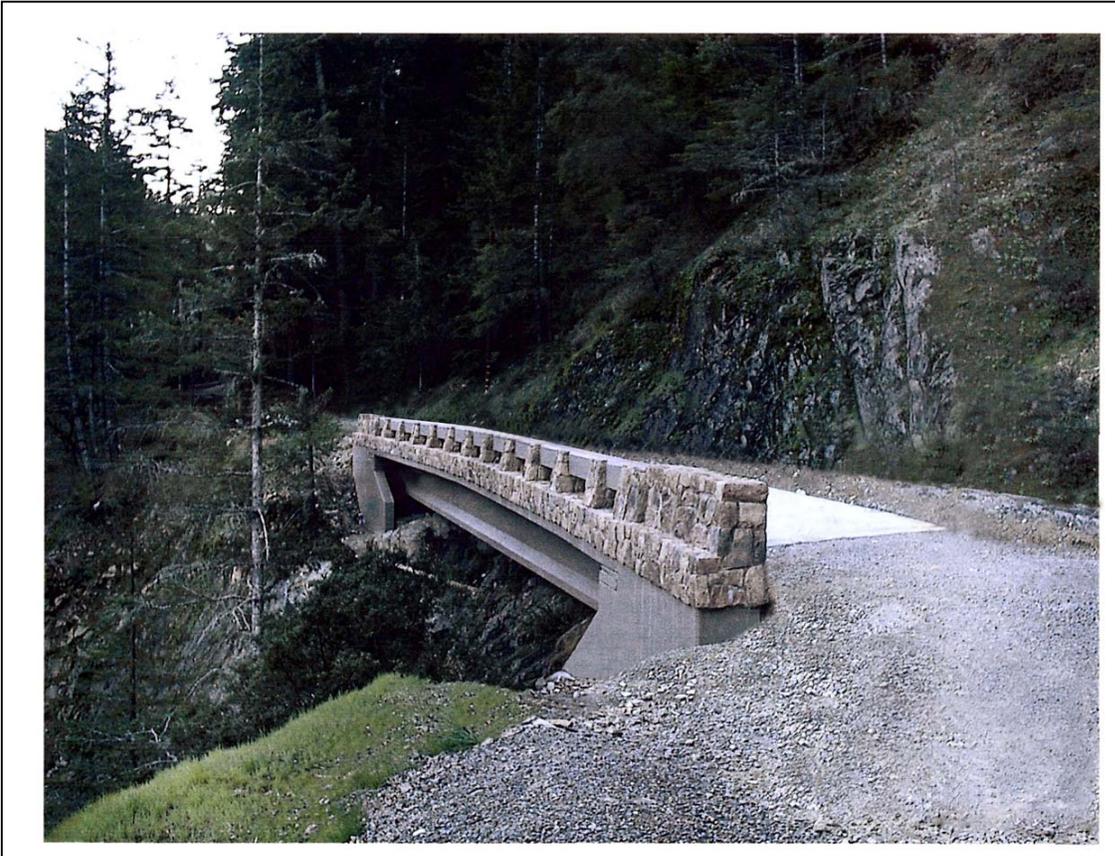
Cumulatively, the high quality of the visual experience along the highway would not be lessened. Long-range views from the surrounding hillsides to the highway are limited and are screened by vegetation and controlled access. These views would not be adversely affected by the cumulative effect of past projects.

### ***Avoidance, Minimization, and/or Mitigation Measures***

With the implementation of mitigation measures, the visual impacts of this project would be reduced and would not result in substantial changes in scenic quality. The mitigation measures would further avoid affecting the designation of State Route 140 as a Scenic Highway. The following mitigation measures would maintain the visual quality of the area if the project were built:

- Construct cut slopes in a way that would save existing trees.
- Excavate in a way that does not expose roots of trees adjacent to affected trees.
- Retain existing rock outcroppings where possible.
- Treat exposed rock outcroppings to give them a weathered appearance.
- Finish graded slopes with a rough appearance to create an aged look.
- Replace in terms of acreage all removed trees with native species using a 3:1 ratio and maintenance program determined by Caltrans and U.S. Forest Service biologists and landscape architects.
- Undulate the perimeter of tree groupings to increase the natural appearance.
- Vary plant spacing for a more natural appearance.
- Re-apply duff and topsoil on disturbed slopes to reduce the newly constructed look and promote natural re-vegetation.
- Apply erosion control to all disturbed slopes and rock outcroppings.
- Determine erosion control seed species, origin, and application strategy through coordination efforts between Caltrans' biologists and landscape architects and U.S. Forest Service biologists.
- Include aesthetic treatments on structures so that they blend into the existing environment.
- Construct bridges so that the views of the surrounding areas from them would not be impeded.
- Locate the bridge columns as far as structurally possible from the ordinary water surface elevation of the Merced River.

Figure 2-5 represents an aesthetic treatment that could potentially be used to enhance the proposed bridges. Additional potential aesthetic treatments will be presented at the public hearing, and input from the community will be taken into consideration during final design.



**Figure 2-8 Example of Aesthetic Bridge Treatment**

## **2.1.6 Cultural Resources**

### ***Regulatory Setting***

“Cultural resources” as used in this document refers to historic and archaeological resources, regardless of significance. Laws and regulations dealing with historic and archaeological resources include the following:

The National Historic Preservation Act of 1966, as amended, 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 the National Historic Preservation Act 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 Code of Federal Regulations 800). On January 1, 2004, a Section 106 Programmatic Agreement among the Advisory Council, the Federal Highway Administration, the State Historic Preservation Officer, and Caltrans went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration's responsibilities under the agreement have been assigned to Caltrans as part of the Surface Transportation Delivery Pilot Program (23 Code of Federal Regulations 773) (July 1, 2007).

The Archaeological Resources Protection Act applies when a project may involve archaeological resources located on federal or tribal land. This act 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.

Historical resources are considered under the California Environmental Quality Act, as well as California Public Resources Code Section 5024.1, which established the California Register of Historical Resources. Section 5024 of the Public Resources Code 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.

### ***Affected Environment***

An Archeological Survey Report was completed for the project in June 2007. A Historic Resource Evaluation Report was completed in August 2007. And a Historic Property Survey Report was completed in September 2007.

The Area of Potential Effects encompasses all of the proposed ground disturbance and development activities proposed by the build alternatives. The Area of Potential Effects is defined on the south by the slope immediately above State Route 140, on the north side approximately 1,400 to 1,650 feet above Incline Road, in the west at

post mile 42.0, and in the east at post mile 42.7. Caltrans conducted record searches and field surveys within the Area of Potential Effects to identify cultural resources.

### ***Archaeology***

Caltrans previously surveyed the project area for archaeological resources following severe storm damage to State Route 140 in 1997. During that survey, two archaeological sites were recorded within the current project area. The sites are prehistoric bedrock mortars and concrete piers and debris. The bedrock mortar site is considered eligible for the National Register of Historic Places without Caltrans conducting subsurface testing or surface collection.

### ***Architectural History***

Following the Ferguson rockslide in 2006, Caltrans conducted emergency surveys and identified resources that would be affected by the emergency detour and the proposed permanent restoration of State Route 140. These resources include the Yosemite Valley Railroad Grade, Jenkins Hill Trail, and State Route 140. The concrete bridge piers, Yosemite Valley Railroad, Jenkins Hill Trail, and State Route 140 were determined not to be eligible for inclusion on the National Register of Historic Places.

### ***Environmental Consequences***

The build alternatives would not alter the condition of the bedrock mortar site.

Caltrans consulted with the State Historic Preservation Officer on the cultural resources determinations without objection per stipulation VIII.c.5.a of the January 2004 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation. The California State Historic Preservation Officer concurred with Caltrans findings on October 10, 2007, See Appendix E for concurrence letter.

### ***Avoidance, Minimization, and/or Mitigation Measures***

The bedrock mortar site would be protected during construction by designating the site as an Environmentally Sensitive Area. Before construction, a Professionally Qualified Staff archaeologist would oversee the placement of environmentally sensitive area fencing around the site. A Native American monitor may also be present during the establishment of the fencing. During construction, the

archaeologist and a Caltrans Construction Liaison would regularly inspect the fencing to determine that it is intact and that the site is undisturbed.

If cultural materials were discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist could assess the nature and significance of the find.

If human remains were discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities would stop in any area or nearby area suspected to overlie remains, and the county coroner contacted. Per Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission, which would then notify the Most Likely Descendent. At this time, the person who discovered the remains would contact the District 10 Heritage Resources Coordinator who would work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code Section 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. Requirements for compliance are outlined in 23 Code of Federal Regulations 650 Subpart A.

To comply, the following must be analyzed:

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

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

### ***Affected Environment***

A Location Hydraulic Study and a Floodplain Evaluation Report Summary were completed in September 2007 using Flood Insurance Rate Maps for the unincorporated areas of Mariposa County.

The Location Hydraulic Study analyzed the potential impacts that the proposed project could have on the floodplain. According to the Flood Insurance Rate Maps, the section of river in the project area is within the 100-year base floodplain and is designated as “Zone A.” Zone A is defined as special flood areas inundated by the 100-year flood with no base flood elevations determined. It has been determined that the existing highway within the project area would be inundated by the base flood and the highway with or without the proposed structures would be unusable during such a flood.

### ***Environmental Consequences***

The upstream and downstream bridges that are being proposed by Alternatives C, T, and S would also be placed within the base floodplain, but they are not considered longitudinal encroachments. The structures for Alternatives C, T, and S would increase the water surface elevation approximately 4.54 feet. This rise in water elevation is substantial, but only occurs between the upstream and downstream bridges and not throughout the entire floodplain. The upper portions of these bridges would be above the base floodplain, but the approaches connecting the bridges to the existing roadway would be below the base floodplain.

There would be no substantial effects on natural or beneficial floodplain values. Because the existing highway would become inundated during a 100-year flood, none of the proposed structures would have a substantial encroachment on the base floodplain. Since the Merced River Canyon walls are mainly composed of rock, the slight increase in water velocity should not cause a great increase in erosion.

### ***Avoidance, Minimization, and/or Mitigation Measures***

No mitigation measures would be required.

## **2.2.2 Water Quality and Storm Water Runoff**

### ***Regulatory Setting***

Section 401 of the Clean Water Act requires water quality certification from the State Water Resources Control Board or from a Regional Water Quality Control Board when the project requires a Clean Water Act Section 404 permit to dredge or fill within a water of the United States.

Along with Section 401 of the Clean Water Act, Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the National Pollutant Discharge Elimination System program to the State Water Resources Control Board and nine Regional Water Quality Control Boards. The State Water Resources Control Board and Regional Water Quality Control Boards 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 State Water Resources Control Board has developed and issued a statewide National Pollutant Discharge Elimination System permit to regulate storm water discharges from all Caltrans activities on its highways and facilities. Caltrans construction projects are regulated under the statewide permit, and projects performed by other entities on Caltrans right-of-way (encroachments) are regulated by the State Water Resources Control Board's Statewide General Construction Permit. All construction projects require a Storm Water Pollution Prevention Plan to be prepared and implemented during construction.

### ***Affected Environment***

A Water Quality Report was completed for the project on August 15, 2007.

The project site lies within the South Valley Floor Hydraulic Unit 537.30 of the North Fork Merced River watershed. Major streams in this area are the Merced and South Fork rivers.

### ***Environmental Consequences***

Short-term impacts to surface water quality could occur during the construction of this project. The potential surface water quality impacts are as follows:

- Increases in sediments, turbidity (cloudiness), and total dissolved solids
- Toxicity due to chemical substances originating from construction activities

Impacts may occur from exposing loose soil during excavation, as well as grading and filling activities. Suspended solids, dissolved solids, and organic pollutants in surface water runoff could increase when nearby soils are disturbed and dust is generated. Changes in storm water drainage could potentially affect the water quality as well.

No groundwater impacts are expected and no adverse short-term or long-term impacts are anticipated as a result of the proposed project because minimization and/or mitigation measures would be incorporated into the project as explained below.

### ***Avoidance, Minimization, and/or Mitigation Measures***

Management measures and Best Management Practices would be needed to address any water quality impacts. Best Management Practices for roads, highways, and bridges include the following:

- Protect areas that provide important water quality benefits or are particularly susceptible to erosion.
- Limit land disturbance such as clearing, grading, cutting, and filling to prevent erosion.
- Limit disturbance of natural drainage features and vegetation.
- Position bridge structures so that sensitive and valuable aquatic ecosystems are protected.
- Prepare and implement an approved Storm Water Pollution Prevention Plan.
- Ensure proper storage and disposal of toxic material.
- Incorporate pollution prevention into operation and maintenance procedures.
- Develop and implement runoff pollution controls for existing road systems.

The following pollution prevention measures are being proposed in the design of this project:

- Culverts would discharge surface runoff from the project to unlined channels. To minimize scour (erosion), check dams, drainage inlets, and energy dissipation systems would be incorporated into the drainage design.

- Flared end sections and energy dissipation devices would be constructed at all culvert outlets.
- All ditches would be stabilized with erosion control.
- Embankment slopes would be constructed with a slope of 4:1 or flatter.
- The newly constructed slopes would be stabilized with erosion control.

This project is covered by the Caltrans Statewide National Pollutant Discharge Elimination System Permit Federal Order No. CA000003 (State Order No. 99-06-DWQ) (Caltrans Permit), issued by the California Regional Water Quality Control Board. This permit authorizes Caltrans to discharge storm water from the construction site to surface waters, providing that measures are taken to control pollutants. Pursuant to its permit, Caltrans submitted to the California Regional Water Quality Control Board the required Statewide Storm Water Management Plan, which commits to addressing potential impacts to water quality such as erosion, discharges of hazardous material, and the disruption of natural drainage patterns in the planning, design, and construction phases of the project. The project is consistent with the Statewide Storm Water Management Plan, pursuant to the Caltrans Permit.

### **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 Caltrans projects. The current policy is to use the anticipated Maximum Credible Earthquake from young faults in and near California. The Maximum Credible Earthquake is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

### **Affected Environment**

The Preliminary Geotechnical Report (August 1, 2007) documented the literature review and surface/subsurface explorations used to evaluate the nature and extent of the geologic and geotechnical conditions of the project area.

The project lies in the Merced River Canyon, which is in the west-central portion of the Sierra Nevada Geomorphic Province. The canyon is bounded by the Sierra Nevada fault system to the east and the Great Valley to the west. The Forest Hill-Melones fault zone lies 12 miles southwest of the project area and is considered active.

The bedrock that underlies the project area and the Ferguson rockslide are part of the Calaveras Complex, which is made of very hard metamorphic rock called phyllite and chert. In some places, the bedrock is exposed at the surface. At other locations, such as the slopes, the bedrock is covered with a thin layer of soil and angular pieces of rock called colluvium. The river channel is made of alluvium, which is composed of rounded cobbles and boulders.

The Ferguson rockslide occurred from the phyllite being fractured and folded to a near vertical position. When the rocks became unstable, approximately 60 percent of the slide material came down and covered State Route 140. The volume of slide material remaining on the slope is roughly 700,000 cubic yards. Other dormant slides may exist adjacent to the Ferguson rockslide. In addition, minor rockfalls could occur from natural slopes and existing cuts.

Ground water in the form of seeps was found along the highway and the detour alignment.

### **Environmental Consequences**

The Forest Hill-Melones fault would not cause surface rupture and liquefaction at the project area. The cut and fill slopes for the proposed build alternatives would not be erosive because the bedrock exposed during excavation is made of hard phyllite and chert. The material that would be used for the fill is likely to be coarse grained. However, the colluvium or loose soil at the surface could erode. The alluvium within the river channel could potentially scour or wear from high-river flows whereas the bedrock would not scour.

There are several other features adjacent to the Ferguson rockslide that could be dormant rockslides.

Ground water could be encountered during the excavation of the proposed cut slopes.

### ***Avoidance, Minimization, and/or Mitigation Measures***

To avoid rock fracturing, the slopes for the proposed alternatives should be cut at a 1:4 ratio or flatter. Since the cuts would produce minor rockfalls, a 22-foot-wide area should be cut adjacent to and at the same grade as the highway to prevent rocks from falling onto the highway.

Drains may be required to control unanticipated ground water flows, maintain slope stability, and prevent rockfalls.

Alternatives C, T, and S would avoid topographic features adjacent to the Ferguson rockslide that could be dormant rockslides.

## **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 main federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. The Resource Conservation and Recovery Act provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include the following:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety & Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

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 mainly 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***

Caltrans completed an Initial Site Assessment (June 13, 2007) for the project. Field surveys and record searches were used to identify potential hazardous waste concerns within the project area. The project area consists of State Route 140 running along the base of the Merced River Canyon slopes and adjacent to the Merced River. The surrounding land is owned by the U.S. Forest Service and consists of steep mountain slopes with vegetation. A former railroad alignment exists on the north side of the Merced River; a segment of that alignment was converted into the one-lane paved detour around the rockslide.

Soil samples collected adjacent to the former railroad alignment and current one-lane paved detour were analyzed for Title 22 metals. Title 22 metals include elemental, organic, and inorganic compound forms of antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. Hazardous levels of many of these metals and their numerous compounds can be found in many common contaminant sources, including motor oil, manufacturing/processing wastes, and mine tailings. In some areas, they can be found occurring naturally in rock outcrops.

Elevated arsenic levels were the only potential concern identified within the project area.

### ***Environmental Consequences***

The results of the analysis identified elevated arsenic levels (24 to 56 micrograms per kilogram) in three of four surface soil samples. The source of the elevated arsenic

levels could be associated with the former railroad alignment, historical mining operations, or localized bedrock mineralized zones.

Elevated arsenic levels may present a health hazard to construction workers working in the area of the detour and anyone occupying the area for future recreational purposes.

### ***Avoidance, Minimization, and/or Mitigation Measures***

Before offsite disposal of any excess soil generated from excavations within the vicinity of the one-lane detour, soil sampling, testing, and notification of arsenic levels would be provided to the offsite disposal facility for proper disclosure and material acceptance.

Caltrans construction and maintenance personnel and contractors would be properly notified of potential risks associated with elevated arsenic levels in the soil. Dust control and proper hygiene would be practiced during construction. Any planned pedestrian and/or recreational uses of the one-way detour would incorporate risk management controls such as using dirt free of hazardous materials or the use of pavement to minimize exposure.

## **2.3 Biological Environment**

### **2.3.1 Natural Communities**

#### ***Regulatory Setting***

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

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Threatened and Endangered Species, Section 2.3.5. Wetlands and other waters are discussed in Section 2.3.2.

### **Affected Environment**

Oak woodland communities make up a major portion of California's ecosystems, occupying about 10 million acres in land. Many animal species are dependent on oak woodlands, which are also the favored habitat of many plant species. Within the project area, 76 of the 218 plant species observed are native species found under oaks. Included in this number are four rare plant species: Tompkins' sedge (*Carex tompkinsii*), Mariposa clarkia (*Clarkia biloba* ssp. *australis*), Merced clarkia (*Clarkia lingulata*), and smallflower monkeyflower (*Mimulus inconspicuus*).

These species provide a good example of the specific benefits oaks provide. Tompkins' sedge and smallflower monkeyflower were found growing in the shade of oaks, often directly beneath them and thus benefiting from the temperature and light provided by the shade. These species may also be benefiting from the nutrients particular to oak woodland soils. The *Clarkia* species, in contrast, were usually found in open areas between oaks, but always where they were shaded by an oak or by a rock face. They may be benefiting either directly from the shade produced by the oaks or indirectly by the lower grass density found in the partly shaded open areas between the oaks.

Oak woodland communities encompass the entire project area outside of the Merced River channel and its adjacent riparian corridor.

### **Environmental Consequences**

The proposed project would have the following impact on oak woodlands:

- Alternative C would remove 6.22 acres
- Alternative T would remove 3.07 acres
- Alternative S would remove 2.95 acres

### **Avoidance, Minimization, and/or Mitigation Measures**

Caltrans biologists and landscape specialists would continue to coordinate with the U.S. Forest Service and the National Park Service regarding the planting of appropriate vegetation during and after construction. The resulting vegetation would include native oak species as well as other native shrubs and plants. Current coordination efforts have included discussions with the National Park Service about collecting and planting seed from the project area to mitigate for the removal of oaks. See Chapter 3 Comments and Coordination for additional information.

Any unused portions of the existing State Route 140 immediately to the east and west of the Ferguson rockslide would be removed, re-graded, and replanted according to a mitigation plan approved by the U.S. Forest Service and California Department of Fish and Game.

Caltrans would specifically mitigate for oaks at a 3:1 ratio based on the acreage of impact. For Alternatives C, T, and S, offsite mitigation would be necessary to fulfill the 3:1 ratio. This would be made possible by restoring a currently disturbed site or purchasing and preserving an intact oak woodland. All mitigation plans onsite or offsite would be approved by the California Department of Fish and Game and the U.S. Forest Service.

### **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 United States Code 1344) is the main 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 with oversight by the Environmental Protection Agency.

The Executive Order for the Protection of Wetlands (Executive Order 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, and Caltrans as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game and the Regional Water Quality Control Boards. 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 would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement would be required.

The California Department of Fish and Game's 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 Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the Department of Fish and Game.

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

### ***Affected Environment***

The U.S. Army Corps of Engineers has an extensive definition of areas that are considered Waters of the United States. These areas include waters, lakes, rivers, and streams. The Merced River fits under the definition of a jurisdictional Waters of the United States. The Merced River has also been designated as a valuable Wild and Scenic river (for recreational designation) and is protected through the National Wild and Scenic Rivers Act. For more information on the impacts to the Merced River, see Section 2.1.1.3.

There are no wetlands in the project area.

### **Environmental Consequences**

The following amount of fill material in the form of bridge columns would be placed below the ordinary high water mark of the Merced River channel:

- Alternative C would place 0.06 acre of fill into the river
- Alternative T would place 0.06 acre of fill into the river
- Alternative S would place 0.05 acre of fill into the river

The acreage calculated for the Waters of the United States impacts incorporates the three dimensional encroaching volume of each column (surface area times the depth of fill). The acreage calculated for the Wild and Scenic River impacts incorporates only the encroaching surface area of each column. Therefore, the affected acreage for the Waters of the United States is slightly higher.

### **Avoidance, Minimization, and/or Mitigation Measures**

Caltrans biologists and landscape specialists would continue to coordinate with the U.S. Forest Service and the National Park Service regarding the planting of appropriate vegetation during and after construction. The resulting vegetation would include onsite planting of native riparian shrubs and trees. Additional mitigation for impacts to the Waters of the United States may include monetary compensation at a 1.5:1 ratio through the U.S. Army Corps of Engineers' National Fish and Wildlife Foundation.

A Section 404 Nationwide Permit 14 for filling or dredging Waters of the United States would need to be obtained through the U.S. Army Corps of Engineers. Caltrans has contacted the U.S. Army Corps of Engineers about the proposed project and the need for an Individual Permit. A 1602 Streambed Alteration Agreement from the California Department of Fish and Game and a Section 401 Certification for a Water Discharge would also be required from the California Regional Water Quality Control Board. See Chapter 3 Comments and Coordination for additional information about coordination with these agencies.

### **2.3.3 Plant Species**

#### **Regulatory Setting**

The U.S. Fish and Wildlife Service and California Department of Fish and Game 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 and/or the California Endangered Species Act. See the Threatened and Endangered Species, Section 2.3.5, in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including California Department of Fish and Game fully-protected species and species of special concern, U.S. Fish and Wildlife Service candidate species, and non-listed California Native Plant Society rare and endangered plants.

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

### ***Affected Environment***

A Natural Environmental Study was completed for the project on November 12, 2007.

#### ***Tompkins' Sedge***

Tompkins' sedge (*Carex tompkinsii*) is a Sierra Nevada species known mainly from the Kings River drainage in Fresno County and the Merced and Tuolumne river drainages in Mariposa and Tuolumne counties. Its preferred habitat is dry, rocky soil found in canyon sides and canyon bottoms between 1,900 and 2,950 feet in elevation. Within the project area, Tompkins' sedge occurs on the south side of the river on north and east facing slopes. This plant species is Forest Service Sensitive and California Native Plant Society Rare 4.

#### ***Mariposa Clarkia***

Mariposa clarkia (*Clarkia biloba* ssp. *australis*) is a Sierra Nevada species that ranges from Mariposa to Tuolumne counties and resides within the Merced River Canyon along the south fork of the Merced River and in the main stem of the river down to

Briceburg. It is also present along Bear Creek from Briceburg to Midpines. It appears to favor sites where there is shade from interior live oak and few shrubs. Large populations of Mariposa clarkia begin above the cut banks of the highway and continue uphill to the edge of the Ferguson rockslide and on intact portions of the rockslide. This plant species is Forest Service Sensitive and California Native Plant Society Rare 1B.

#### ***Copper Moss***

Copper moss (*Mielichhoferia elongate*) is geographically widespread with a range that includes North America, Europe, and Asia. It is found within the Merced River Canyon between Briceburg and El Portal, usually tucked into a corner of a narrow ledge. Its critical habitat factors are low soil-water pH and high concentrations of sulphite ions. Within the project area, four small patches of the moss were observed. Three were found on human-made rock overhangs along the highway and temporary detour; the fourth was on a natural rock overhang on the west-facing slope of the canyon. This plant species is Forest Service Sensitive and California Native Plant Society Rare 2.

#### ***Smallflower Monkeyflower***

The smallflower monkeyflower (*Mimulus inconspicuus*) is found in scattered populations of a few individuals in shaded banks of small streams, meadow edges or the north-facing slopes of the canyon. It has threadlike stems, few leaves, and a few pale pink flowers. Its current known distribution is entirely within California. It is known to occur in the Sierra Nevada foothills from El Dorado County to the Transverse Ranges in Los Angeles County and Glenn and Butte counties.

Within the project area, the smallflower monkeyflower population was found beginning about 80 feet above the highway in the deep shade of oaks on the northeast-facing slope and on the eastern side of the rockslide. There are several small patches of about 10 to 200 individuals scattered on the hillside. This plant species is California Native Plant Society Rare 4.

### ***Environmental Consequences***

#### ***Tompkins' Sedge***

Alternatives C, T, and S would completely avoid the known populations of Tompkins' sedge.

### *Mariposa Clarkia*

Alternatives C, T, and S would completely avoid the known populations of Mariposa clarkia.

### *Copper Moss*

Alternatives C, T, and S would remove the three patches of the copper moss that are along the highway and the temporary detour.

### *Smallflower Monkeyflower*

None of the proposed alternatives are likely to affect this population of smallflower monkeyflower.

## **Avoidance, Minimization, and/or Mitigation Measures**

### *Tomkins' Sedge*

No mitigation measures would be required.

### *Mariposa Clarkia*

No mitigation measures would be required.

### *Copper Moss*

The clumps of copper moss found within the project area are small and few and represent an insignificant portion of the population of this species in the canyon. The clumps of moss that would be removed are on ledges of human-made rock faces that were created when the highway and rail beds were originally built. Any further cuts into these rock faces that create vertical walls and/or underhangs would only reestablish new habitat for the moss rather than diminish any habitat.

### *Smallflower Monkeyflower*

No mitigation measures would be required.

## **2.3.4 Animal Species**

### **Regulatory Setting**

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Fisheries Service, and the California Department of Fish and Game 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

Section 2.3.5. All other special-status animal species are discussed here, including California Department of Fish and Game fully protected species and species of special concern, and the U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Fisheries Service candidate species.

Federal laws and regulations pertaining to wildlife include the following:

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

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1601–1603 of the Fish and Game Code
- Sections 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 (for example, county or city) that need to be considered when developing projects. If work is being done on federal land (Bureau of Land Management or Forest Service, for example), then those agencies' regulations, policies, and Habitat Conservation Plans are followed.

### ***Affected Environment***

A Natural Environmental Study was completed for the project on November 12, 2007.

#### ***Hardhead***

Hardhead (*Mylopharodon conocephalus*) fish are primarily found in low-to mid-elevation streams in the main Sacramento and San Joaquin drainage, spawning mainly in April and May. Hardhead are much less abundant in Central California than they once were, but are still widely distributed in foothill streams. Although surveys for this fish were not conducted, hardhead could be present in the Merced River within the project area. This species is Forest Service Sensitive.

#### ***Pallid Bat***

Pallid bats (*Antrozous pallidus*) frequent rocky outcrops in lower elevations up into the forested oak and pine regions. Daytime roosts consist of rock crevices and

buildings where they can retreat out of sight and wedge themselves into tight places. They are intolerant of disturbance and may abandon a roost when disturbed and not return for years. Pallid bats were observed and their calls were identified during surveys within the project area. Additionally, a significant night roost was observed on the South Fork Merced River Bridge only a few miles east of the project area. This species is Forest Service Sensitive.

#### *Western Red Bat*

Western red bats (*Lasiurus blossevillii*) roost alone in the foliage of large shrubs and trees, frequently in streamside habitats dominated by cottonwoods, oaks, sycamores, and walnuts, but will also roost in fruit orchards within suburban areas. Western red bats or their calls were not positively identified. However, some calls were heard that were similar and could not be ruled out as not being this species. This species is Forest Service Sensitive.

#### *Migratory Birds*

The project area contains trees and shrubs that provide nesting habitat for birds protected by the Migratory Bird Treaty Act.

### ***Environmental Consequences***

#### *Hardhead*

Alternatives C, T, and S would place columns in the river channel. The construction of these bridge columns may temporarily affect hardhead fish by increasing the turbidity of the water. Indirect impacts from this decrease in water quality may also occur to downstream habitat.

#### *Pallid Bat*

The project would remove rocks and forested areas that provide roosting and foraging habitat for pallid bats. The following potential impacts to roosting and foraging habitat would occur:

- Alternative C would remove 6.22 acres
- Alternative T would remove 3.07 acres
- Alternative S would remove 2.95 acres

#### *Western Red Bat*

See impacts to the pallid bat above.

### *Migratory Birds*

The build alternatives would remove trees and shrubs that provide nesting habitat for birds.

### ***Avoidance, Minimization, and/or Mitigation Measures***

#### ***Hardhead***

Disturbance to the Merced River Channel would be minimized and regulated in part by the 1602 Streambed Alteration Agreement issued by the California Department of Fish and Game, the Section 401 Water Quality Certification issued by the California Regional Water Quality Control Board, and the Section 404 Nationwide Permit 14 for filling or dredging waters of the United States issued by the U.S. Army Corps of Engineers. A “no in-stream work” window of April and May would be established to avoid impacts during the spawning season.

#### ***Pallid Bat***

Alternatives C, T, and S would install four bat boxes approved by the California Department of Fish and Game and the U.S. Forest Service in each of the two bridges.

#### ***Western Red Bat***

See mitigation measure for pallid bat above.

### *Migratory Birds*

Non-standard special provisions would be included in the construction contract that would allow the removal of trees only during the non-nesting season. The nesting season is defined as February 15 through September 1.

## **2.3.5 Threatened and Endangered Species**

### ***Regulatory Setting***

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United States Code, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend.

Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, and Caltrans as assigned, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Fisheries Service to

ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species.

The outcome of consultation under Section 7 is a Biological Opinion or an incidental take statement. Section 3 of the Federal Endangered Species Act 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, California Fish and Game Code, Section 2050, et seq. The California Endangered Species Act 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 is the agency responsible for implementing the California Endangered Species Act. 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.” The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the California Department of Fish and Game.

For projects requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Game may also authorize impacts to the California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

### **Affected Environment**

A Natural Environmental Study was completed for the project on November 12, 2007.

#### *Merced Clarkia*

Merced clarkia (*Clarkia lingulata*) is an extremely endemic plant species known to be located in only two confirmed locations. One is on either side of the Ferguson rockslide; the other is at an upstream location where the south fork and the main stem of the Merced River meet. The downstream location is on the slope at the north tip of

the Ferguson Ridge. This species is listed as endangered by the California Department of Fish and Game.

From surveys conducted in the past, there were two unconfirmed sightings of Merced clarkia within the project area. An intermediate form or what appeared to be a hybrid of the Mariposa clarkia and the Merced clarkia was also observed during surveys. If the plant observed is in fact a hybrid, this information is of scientific significance and underscores the importance of this site for historic and modern research purposes. These supposed, although not yet confirmed, hybrid plants were observed both on the south slope and on the eroding soil bank adjacent to the highway. A definitive test of whether these plants are Mariposa clarkia, Merced clarkia, or a hybrid would be a chromosome count since the two parent species differ in chromosome number.

### *Limestone Salamander*

Limestone salamanders (*Hydromantes brunus*) are excellent climbers that live in crevices of cliffs and ledges and in limestone under the canopy of foothill-oak woodland, especially where the rocks are overgrown with moss. They are active during the fall, winter, and spring rains, especially during cold spells. This species has been found only along the Merced River drainage in Mariposa County.

The limestone salamander was designated as a threatened species by the State of California in 1971. It is also designated as fully protected, which means that an impact to this species cannot be authorized through the usual permitting process.

Limestone salamanders were observed during surveys at various locations on the south side of the Merced River within the project area. All areas on the north side of the river within the project area were characterized as unsuitable or potentially poor habitat.

### **Environmental Consequences**

Caltrans met with the California Department of Fish and Game to request its concurrence that impacts to the limestone salamander would be completely avoided with implemented avoidance measures. The California Department of Fish and Game also discussed the issuance of a 2081 permit for any impacts to Merced clarkia from the build alternatives. See Chapter 3 Comments and Coordination for additional information on coordination.

### *Merced Clarkia*

Alternatives C, T, and S would completely avoid impacts to this species.

### *Limestone Salamander*

Alternatives C, T, and S would completely avoid impacts to this species.

## **Avoidance, Minimization, and/or Mitigation Measures**

### *Merced Clarkia*

Environmentally Sensitive Area fencing would be placed around the supposed Merced clarkia hybrid populations to protect them to the maximum extent possible. The pure Merced clarkia is a state endangered species that requires consultation with the California Department of Fish and Game and a 2081 permit to authorize any impacts from the construction of the build alternatives.

## **2.3.6 Invasive Species**

### **Regulatory Setting**

On February 3, 1999, President Bill 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 National Environmental Policy Act analysis for a proposed project.

### **Affected Environment**

A Natural Environmental Study was completed for the project on November 12, 2007. Within the project area, 40 plant species are not native. Most of these non-native species occur exclusively or primarily as roadside weeds. Several are pervasive weeds of open grassy areas, and five are special-status noxious weeds. The weeds are cheat grass (*Bromus tectorum*), tocalote (*Centaurea melitensis*), Himalayan blackberry (*Rubus discolor*), milk thistle (*Silybum marianum*), and woolly mullein (*Verbascum thapsus*). These species are not listed as noxious weeds by either the State of California or the federal government.

### **Environmental Consequences**

Construction-related activities would potentially promote the distribution of invasive plant species through ground disturbance.

### **Avoidance, Minimization, and/or Mitigation Measures**

A re-vegetation plan for erosion control would be implemented to prevent the spread of invasive plant species. Caltrans would continue to coordinate with the U.S. Forest Service and the National Park Service to find the most feasible program for planting during and after construction.

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project would not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions would be taken if invasive species were found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

## **2.4 Climate Change under the California Environmental Quality Act**

### **Regulatory Setting**

While climate change has been a concern since at least 1988 as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years.

In 2002, with the passage of Assembly Bill 1493, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the Air Resources Board to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions; these regulations will apply to automobiles and light trucks beginning with the 2009-model year. Greenhouse gases related to human activity include carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this executive order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020, and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32, the Global Warming Solutions Act of 2006. Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06, signed on October 17, 2006, further directs state agencies to begin implementing Assembly Bill 32, including the recommendations made by the state's Climate Action Team.

Climate change and greenhouse gas reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change.

### **Affected Environment**

According to *Recommendations by the Association of Environmental Professionals on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases.

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emissions reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans (December 2006).

One of the main strategies in Caltrans' Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0 to 25 miles per hour) and speeds over 55 miles per hour.

Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in greenhouse gas emissions.

### ***Environmental Consequences***

Vehicles currently stopped at either end of the Ferguson rockslide detour can be delayed for up to 15 minutes, causing increased emissions in the area. Construction of the build alternatives would reduce vehicle congestion and/or vehicle time delays caused by the current single-lane detour and traffic signals and contribute to reduced carbon dioxide emissions.

Caltrans recognizes the concern that carbon dioxide emissions raise for climate change. However, modeling and gauging the impacts associated with an increase in greenhouse gas emission levels, including carbon dioxide, at the project level is not currently possible. No federal, state, or regional regulatory agency has provided methodology or criteria for greenhouse gas emissions and climate change impact analysis. Therefore, Caltrans is unable to provide a scientific- or regulatory-based conclusion regarding whether the project's contribution to climate change is cumulatively considerable.

### ***Avoidance, Minimization, and/or Mitigation Measures***

No mitigation measures would be required.

Caltrans continues to be actively involved on the Governor's Climate Action Team as the Air Resources Board works to implement Assembly Bills 1493 and 32. As part of the Climate Action Program at Caltrans (December 2006), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, transit-oriented communities, and high-density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority.

Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars and light and heavy-duty trucks. However, it is important to note that control of fuel economy standards is held by the U.S. Environmental Protection Agency and the Air Resources Board.

Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California at Davis.

## Chapter 3      Comments and Coordination

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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, interagency coordination meetings, public information meetings, and Native American consultation. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

### ***Early and Ongoing Coordination***

Caltrans project management and various members of the project development team have regularly presented project information to the Mariposa County Board of Supervisors, the U.S. Forest Service, and public officials. All of the Mariposa County officials and the U.S. Forest Service employees are interested in this project and support its construction.

### ***Coordination with Public Agencies***

#### *California Department of Fish and Game*

- **March 2007:** Caltrans received approval in electronic mail from Julie Vance for the proposed surveys for limestone salamander.
- **6 April 2007:** Caltrans requested the use of the Programmatic Streambed Maintenance Agreement for the geotechnical field operations.
- **13 April 2007:** Caltrans met with Julie Vance and Wendy Cabrera to tour the project site.
- **13 September 2007:** Caltrans met with Julie Vance and Laura Peterson-Diaz to request their concurrence that impacts to the limestone salamander would be completely avoided with implemented avoidance measures. Also discussed were mitigation measures for impacts to bats, oak woodland, and hardhead fish.
- **3 October 2007:** Received email from Laura Peterson-Diaz accepting Caltrans proposal of avoidance and mitigation measures for bats, oak woodland, limestone salamander, and hardhead fish.

### *U.S. Army Corps of Engineers*

**1 February 2007:** Caltrans spoke with Tom Cavanaugh regarding the need for an Individual Permit if the Forest Service determines the project will have an adverse impact on the Merced River, which has a Wild and Scenic designation.

### *National Park Service*

**7 October 2007:** Caltrans spoke by phone with Lisa Acree regarding plant species they use for erosion control, as well as the feasibility of collecting and growing local native seed to use on the Ferguson Slide Project.

### *National Oceanic and Atmospheric Administration Fisheries Service*

**9 October 2007:** Caltrans had a phone conference with Madelyn Martinez and Doug Hampton to discuss the potential for essential fish habitat at the project site. Both said they would have no jurisdiction over this project area.

### *U.S. Forest Service, Sierra National Forest*

- **16 February 2007:** Caltrans submitted an operating plan for cultural work to the Forest Service for permitting purposes.
- **March 2007:** Caltrans visited the Forest Service's District Archaeologist office to review cultural files of the project area.
- **10 April 2007:** Caltrans discussed the preparation of the Section 7(a) Wild and Scenic Rivers Act Evaluation with Dave Martin, District Ranger, and Jackie Diedrich of the U.S. Forest Service. The preparation should follow the guidance provided in the October 2004 Wild and Scenic Rivers Act technical document.
- **8 May 2007:** Caltrans talked with the Forest Service about the "outstandingly remarkable values" used to determine a project's effect on a Wild and Scenic River. These values should be applied to the discussion on the Merced River's Wild and Scenic River evaluation as appropriate.
- **9 May 2007:** Caltrans met with Joanna Clines, Sierra National Forest botanist, at the project site to discuss potential project impacts to special-status plants, avoidance and mitigation measures, and Forest Service policies.
- **17 May 2007:** Caltrans spoke with Kevin Williams regarding the potential presence of special-status animals at the project site.
- **17 May 2007:** The Forest Service attended a pre-public information meeting to provide input on the Wild and Scenic Merced River informational display.

- **18 May 2007:** Caltrans requested a sensitive animal species list from Kevin Williams. Caltrans also forwarded the results of the surveys for limestone salamanders.
- **22 May 2007:** Caltrans received a sensitive plant list, noxious and invasive non-native weeds of concern list, and the weed prevention practices of the Forest Service.
- **14 June 2007:** Caltrans received a sensitive animal species list from the Forest Service.
- **25 July 2007:** The Forest Service suggested that the Bureau of Land Management should also be a reviewing agency of the Section 7(a) Wild and Scenic Rivers Act Evaluation. The Bureau of Land Management is responsible for issuing permits for whitewater rafting on the Merced River. Also, various Forest Service specialists will be reviewing the evaluation.
- **26 July 2007:** Caltrans biology and landscape architecture staff met with Joanna Clines to discuss erosion control measures and post-construction plantings.
- **10 August 2007:** Caltrans sent the Forest Service a copy of the Public Information Meetings Summary Report.
- **21 August 2007:** The Forest Service informed Caltrans that they would be working with their Wild and Scenic River Coordinator on clearly defining the “outstandingly remarkable values.” These values should help Caltrans with the Section 7(a) analysis of the Merced River.
- **29 August 2007:** Caltrans and the Forest Service discussed the Merced River and whether it has been designated as recreational in terms of being a Section 4(f) resource or just for the purposes of a Wild and Scenic River. The Merced River was determined to be a 4(f) resource.
- **1 November 2007:** Caltrans provided the Forest Service with a copy of the Section 7(a) Merced Wild and Scenic River Evaluation for their review. Comments will be provided once the review is complete.
- **5 November 2007:** The project development team held a meeting that included the Forest Service about the construction methods and restrictions to be used on this project.
- **6 November 2007:** Caltrans provided the Forest Service with a copy of the Ferguson Slide Permanent Restoration Project Draft Environmental Document.

- **9 November 2007:** Caltrans met with the Forest Service and the Bureau of Land Management to discuss impacts on the Merced Wild and Scenic River.

#### *Bureau of Land Management*

- **8 October 2007:** Caltrans provided the Bureau of Land Management with the proposed alternatives for the project for review.
- **1 November 2007:** Caltrans provided the Bureau of Land Management a copy of the Section 7(a) Merced Wild and Scenic River Evaluation for review.
- **6 November 2007:** Caltrans provided the Bureau of Land Management a copy of the Ferguson Slide Permanent Restoration Project Draft Environmental Document.
- **7 November 2007:** Caltrans talked with Bureau of Land Management about rafting regulations and safety within the project area. Comments on the Section 7(a) Merced Wild and Scenic Rivers Act Evaluation will be provided with regard to the rafting usage of the river.

#### *State Office of Historic Preservation*

- **5 September 2007:** Caltrans sent the completed Historic Property Survey Report to the State Historic Preservation Officer.
- **10 October 2007:** The State Historic Preservation Officer concurred with the findings presented in the Historic Property Survey Report.

#### ***Coordination with Native American Groups***

##### *Native American Heritage Commission*

**29 June 2006:** Caltrans contacted Debbie Pilas-Treadway about the project. Caltrans was asked to notify several Native American communities and individuals.

##### *Native American Tribes, Groups, and Individuals*

- **27 June 2006 and 29 May 2007:** Caltrans sent letters about the project to the following groups or individuals:
  - Anthony C. Brochini, Tribal Chair, American Indian Council of Mariposa County
  - Randy Sales, Southern Sierra Miwuk
  - Michelle Demirs, Tribal Administrator, North Fork Mono Rancheria
  - Shannon Brawley, Executive Director, California Indian Basket Weavers Association
  - Ron Goode, Tribal Chair, North Fork Mono Tribe

- Robert Cox, Cultural Resources Director, Tuolumne Band of Me-Wuk
- Alex Flores, Environmental Department, North Fork Mono Rancheria
- Reba Fuller, Central Sierra Me-Wuk Cultural and Historical Preservation Committee
- Judy Fink, Tribal Chair, North Fork Mono Rancheria
- **9 August 2007:** Caltrans attended a Tribal Council meeting held by the American Indian Council of Mariposa County. Caltrans staff presented the proposed alternatives and addressed questions.

### **Public Participation**

#### *Public Information Meetings*

- **23 May 2007:** Caltrans held a Public Information Meeting in the Board of Supervisors Chambers at the Mariposa County Government Center in Mariposa. Caltrans staff planned and implemented the public information meeting to conform to the requirements of applicable federal and state laws, including the National Environmental Policy Act and California Environmental Quality Act. This meeting was the first of two public information meetings and was publicized through a direct mail announcement to residents, local businesses, public agencies, and other interested parties. Caltrans sent letters of invitation to federal, state, and local elected officials. A public notice for the meeting appeared in the *Mariposa Gazette* on May 10 and May 17, 2007.

Approximately 68 residents and interested parties attended. Caltrans provided each attendee an information sheet containing a project map, an illustration of the project location, a project description, the project cost and purpose, background information, funding sources, and a project timeline. Caltrans explained the format of the public information meeting, and attendees were encouraged to ask questions of the project team. Information stations containing project maps, graphics, and display boards were located around the meeting room. Caltrans personnel were available at each information station to explain the displays and answer questions. Attendees were encouraged to submit written comments. All informational displays presented at the meeting have been made available on the Caltrans District 10 website.

Caltrans received 31 comments from the Mariposa meeting. A majority of the comments received from this meeting showed a preference for Alternative S.

- **29 May 2007:** Caltrans held Public Information Meeting in the Board of Supervisors Chambers at the Mariposa County Government Center in Mariposa for local government officials.
- **12 June 2007:** Caltrans held second Public Information Meeting at the El Portal Community Center (Clark Hall) in El Portal. The notice for this second public information meeting was distributed through the Yosemite National Park Public Information Officer. The public notice was also distributed throughout the communities of Briceburg, Midpines, El Portal, and Mariposa.

Approximately 63 residents and interested parties attended. This meeting was presented in the same format as the one held in Mariposa. Caltrans received 45 comments from the El Portal meeting. A majority of the comments received from this meeting showed a preference for Alternative R.

#### *River Rafting Companies*

- **17 July 2007:** Following the public information meetings for the project, Caltrans received comments from Zephyr Whitewater Expeditions. Concerns were expressed about having the proposed bridges span the entire river if possible or to avoid placing the piers in the middle of the river. In addition, it would be important for the construction of the project to avoid negatively affecting the rafting season, which is typically April through July.

## Chapter 4 List of Preparers

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This document was prepared by the following Caltrans Central Region staff:

Timothy J. Beck, Senior Engineering Geologist, Certified Engineering Geologist #1399, Registered Geologist #4182. B.A., Geology, University of California, Santa Barbara; 27 years engineering geology experience. Contribution: Geotech Team Leader and Preliminary Geotechnical Report preparation.

Carrie Blickenstaff, Environmental Planner. B.S., Biology, California State University, Fresno; 8 years biology experience. Contribution: Biological surveys and preparation of Natural Environmental Study.

Jon L. Brady, Associate Environmental Planner/Architectural Historian. B.A., Political Science and Anthropology; M.A., History, California State University, Fresno; over 26 years experience as a consulting archaeologist and historian. Contribution: Historic Resources Evaluation Report.

Anthony Cipponeri, P. E., District Hydraulics Engineer, Caltrans District 10, Stockton, California. Contribution: Location Hydraulic Study

Rajeev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 16 years environmental technical studies experience. Contribution: Preparation of Water Quality Assessment and Air and Noise Report.

Susan Greenwood, Associate Environmental Planner. B.S., Environmental Health Science, California State University, Fresno; 17 years environmental health, hazardous waste, and hazardous material management experience. Contribution: Hazardous waste surveys and coordination of Initial Site Assessment.

Peter Hansen, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; 1 year hazardous waste experience, 7 years paleontology/geology experience. Contribution: Preparation of Paleontological Identification Report.

Sarah Johnston, Associate Environmental Planner. M.A., Public Administration, California State University, Fresno; B.A., Anthropology, California State University, Sacramento; 10 years environmental program management experience; 30 years cultural resource management experience. Contribution: Archaeological surveys and preparation of Archaeological Survey Report and Historic Properties Survey Report.

Joseph Llanos, Graphic Designer III. B.A., Graphic Design, California State University, Fresno; 12 years visual design and public participation experience. Contribution: Preparation of environmental document graphics and public informational displays and materials.

Jennifer Lugo, Environmental Planner. M.A., History, California State University, Fresno; B.A., History, Minor Political Science, California State University, Fresno. Contribution: Environmental Document Preparation.

Grace Magsayo, P.E., Senior Transportation Engineer. B.S., Civil Engineering, Cal Poly State University, San Luis Obispo; 11 years in civil engineering. Contribution: Project Management.

Richard Putler, Associate Environmental Planner. M.A., City and Regional Planning, California State University, Fresno; 8 years environmental planning experience. Contribution: Programmatic Section 4(f) preparation.

Patricia Teczon, Associate Transportation Engineer (Specialist), Professional Engineer in Civil Engineering. B.S., Civil Engineering, University of the Pacific, Stockton; 23 years experience in project development and design. Contribution: Project Engineer and development of Project Report, plans, specifications, and estimate.

Juergen Vespermann, Senior Environmental Planner. Engineering Degree, Fachhochschule Muenster, Germany; 20 years transportation planning/environmental planning. Contribution: Environmental Unit Supervisor.

James Von Dohlen, Associate Landscape Architect. B.S., Environmental Design, Landscape Architecture California Polytechnic University, Pomona; 25 years as a Licensed Landscape Architect, State of California, 8 years community planning, 17 years planning and Caltrans Environmental document writing and 19 years of environmental mitigation and restoration. Contribution: Preparation of Visual Impact Assessment.

Matthew Voss, Associate Environmental Planner. B.S., Biological Sciences, California State University, Fresno; 7 years environmental planning and document writing experience. Contribution: Environmental planning coordinator and document preparation.



## Chapter 5 Distribution List

Table 5.1 lists the recipients of the Notice of Availability of the Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment.

**Table 5.1 Name and Affiliation of Notice of Availability Recipients**

First Name	Last Name	Title	Organization
Michael E.	Lichtenstein		Gateway Community Resident
Michael J.	Tollefson	Superintendent	U.S. National Park Service
Jim	Wilson	Chief	Mariposa County Fire Department
Gary	Walker		Coalition of Concerned Citizens of Mariposa
Candy	O'Donel Browne		EDC
Bradford	Aborn	Supervisor	Mariposa County Board of Supervisors, District 1
Lou	Carter		El Portal Market
Elijah	Meeks		University of California, Merced
Jeanetta	Phillips		Local Business Property Owner
Leroy	Radanovich		Yosemite-Mariposa Co. Tourism Bureau
Ruth L.	Sellers		
Greg	Fritz		Happy Burger Diner
Bobbie	Hensley		Property Owner
Marilyn	Lidyoff		Mariposa County Economic Development
Katherine M.	Burnes		Fabled Kottage Antiques
Dianne	Fritz	Supervisor	Mariposa County Board of Supervisors, District 4
James Patrick	Bodin		
Janet	Bibby	Chairman	Mariposa County Board of Supervisors, District 3
Rosann	Burley		Concerned Citizen
Dave	Cogdill	Senator	California State Senate, 14 <sup>th</sup> District
Richard C.	Hutchinson		Citizen
K John	Flaherty		Sierra Club, Tehypete Chapter
John	Phillips		
Wendy	Harrell		Property Owner
Anika	Ronay		
Dan	Anthonijsz		
Barbara	Garcia		Property Owner
Jack	Phinney		
Dan	Fillius		
Rod	Kennec		
Kenneth A.	Gosting	Executive Director	Transportation Involves Everyone
Renea	Kennec		
A.	Roberts		
Michael E.	Ross		Property Owner
Stan	Haye		
Alison	Colwell	Botanist	Parsons Corp.
Greg	Adair		Friends of Yosemite Valley
George	Whitmore	Chairman	Sierra Club's Yosemite Committee
David	Andrews	Chairman	Yosemite-Mono Lake Paiute Indian Community

Denise	Della Santina		Property Owner
Bridget	McGinniss Kerr		Property Owner
Laurel	Anderson		Property Owner
Peggy	Moore		
Jon M.	Sturtevant		
Vicki	McMichael	Program Manager	DNC Parks & Resorts - Yosemite, Inc.
Thomas	Guarino		
Dick	Whittington	Manager	YARTS
Kris	Schenk	Director	Mariposa County Planning
Dana S.	Hertfelder	Director	Mariposa County Public Works
Laura	Whitney		U. S. Army Corp of Engineers
Dorothy	Kuhnel	Executive Director	Mariposa Chamber of Commerce
Elnora	George	CFO	John C. Fremont Healthcare District
Joanna	Clines	Forest Botanist	U. S. Forest Service
Kevin	Shelton		Mariposa Tourism Advisory Council
Julie	Vance	Senior Environmental Scientist	California Department of Fish and Game
Roger	Biery		Economic Development Corporation of Mariposa
Dr. Patrick	Holland		Mariposa County Unified School District
George	Radanovich	U. S. Representative	U. S. House of Representatives
Barbara	Boxer	Senator	U. S. Senate
Dianne	Feinstein	Senator	U. S. Senate
Tom	Berryhill	Assembly Member	California State Assembly
Lyle	Turpin	Supervisor	Mariposa County Board of Supervisors, District 2
Bob	Pickard	Supervisor	Mariposa County Board of Supervisors, District 5
Lt. Jennie	Baldon		Mariposa County CHP
Adrienne	Freeman		National Park Service, Yosemite
Rick	Benson	County Administrative Officer	Mariposa County
Jim	Allen	Sheriff	Mariposa County
Dave	Martin	District Ranger	U. S. Forest Service
Teri	Drivas	Lands and Recreation Officer	U. S. Forest Service
Randy	Sales		Southern Sierra Miwuk
Judy	Fink	Tribal Chair	North Fork Mono Rancheria
Reba	Fuller	Monitor	Central Sierra Me-Wuk, Tuolumne Band of Me-Wuk, Cultural and Historical Preservation Committee
Alex	Flores		North Fork Mono Rancheria
Robert	Cox	Cultural Resources Director	Tuolumne Band of Me-Wuk
Ron	Goode	Tribal Chair	North Fork Band of Mono Indians
Shannon	Brawley	Executive Director	California Indian Basket Weavers Association
Michelle	Demirs	Tribal Administrator	North Fork Mono Rancheria
Anthony	Brochini	Tribal Chair	American Indian Council of Mariposa County
			Best Western Yosemite Way Station
Sue	Carney		Yosemite Gifts

			Mariposa Lodge # 24 F&AM
			Mariposa Museum & History Center
Jim	Dulcich		Coast Hardware-Do It Best
			Mariposa County APCD
Art	Lee		China Station
Curtis	Riggs	President	VIA Adventures
Gopal	Das		Comfort Inn
Bob	Linnenan		Mariposa Gazette
Bob	Ferguson	President	Zephyr Whitewater Expeditions
Tolley	Gorham		Mariposa Properties
Miriam	Costello		Miriam's Place
Marcelo	Rodriguez		Bonton Café
			Tuolumne County Visitor's Bureau
			High Country Health Food & Café
Tracy	Rogge	Vice President of Operations	Delaware North Company
Ceslie	Brandon		Miner's Inn
			49er Market
Amy	Eaton		Pony Espresso
			Odella's Antiques & Nostalgia
			Yosemite/Mariposa KOA
Lisa	Green		Mother Lode Lodge
			Mariposa County Library
Jesse	Figueroa		Mercy Medical Transportation, Inc.
Brad	Leduc		Mariposa Chevron
Dieter	Dubberke		Pioneer Market
			Martha's Boutique Gift Gallery
Niki	Nicholas, Ph. D	Chief, Resources Management & Science	National Park Service
			All Outdoors Rafting
			American River Recreation
			ARTA Whitewater Rafting
			Mariah Wilderness Expeditions
			O.A.R.S. Inc.
			Whitewater Excitement
			Whitewater Voyages



# Appendix A California Environmental Quality Act Checklist

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The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Initial Study/Environmental Assessment. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2.



Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

**AESTHETICS** - Would the project:

- |   |                          |                                     |                          |                                     |
|---|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?                                    | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**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 that, 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"/> |

**AIR QUALITY** - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 that exceed quantitative thresholds for ozone precursors)?

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

d) Expose sensitive receptors to substantial pollutant concentration?

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

e) Create objectionable odors affecting a substantial number of people?

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

**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 type="checkbox"/>	<input checked="" 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, and 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"/>
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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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

**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"/>
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b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Archaeological resources are considered “historical resources” and are covered under (a).

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Disturb any human remains, including those interred outside of formal cemeteries?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**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"/>
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ii) Strong seismic ground shaking?

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

iii) Seismic-related ground failure, including liquefaction?

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

iv) Landslides?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Result in substantial soil erosion or the loss of topsoil?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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 offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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"/>
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e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 material, 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 that 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"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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"/>
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**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 that 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"/>
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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 that would result in substantial erosion or siltation on or offsite?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 that would result in flooding on or offsite?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) Otherwise substantially degrade water quality?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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 that would impede or redirect flood flows?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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) Result in inundation by a seiche, tsunami, or mudflow?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**LAND USE AND PLANNING - Would the project:**

a) Physically divide an established community?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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a) 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 checked="" type="checkbox"/>	<input type="checkbox"/>
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c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**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"/>
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**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 type="checkbox"/>	<input checked="" type="checkbox"/>
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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"/>
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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 type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

**POPULATION AND HOUSING -** Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

**PUBLIC SERVICES -**

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

Police protection?

Schools?

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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Parks?

Other public facilities?

**RECREATION -**

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

**TRANSPORTATION/TRAFFIC -** Would the project:

a) Cause an increase in traffic that 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)?

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

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

e) Result in inadequate emergency access?

f) Result in inadequate parking capacity?

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

**UTILITY AND SERVICE SYSTEMS -** Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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 determination by the wastewater treatment provider that 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"/>

**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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects that 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"/>



# Appendix B Title VI Policy Statement

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STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

**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

*"Caltrans improves mobility across California"*



# Appendix C Minimization and/or Mitigation Summary

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The following tables summarize the mitigation and minimization measures required as a result of the proposed project's impacts to the environment.

## Summary of Mitigation

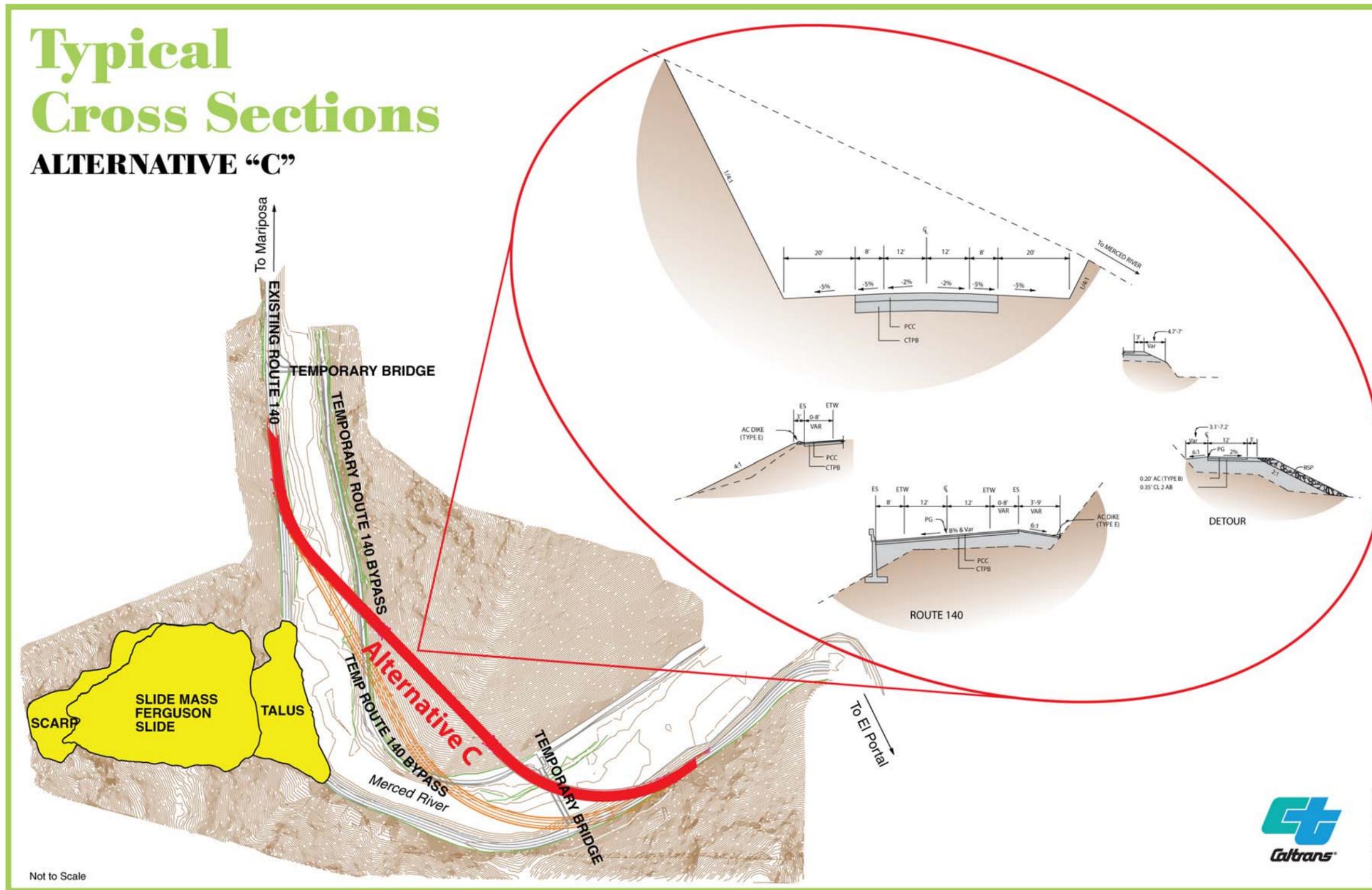
Area	Impact	Mitigation
<b>Oak Woodlands</b>	Affect between 2.95 and 6.22 acres of habitat	Replace habitat with a three to one ratio based on acreage
<b>Animal Species</b>	Indirect effect to hardhead fish and removal of bat habitat	Environmentally Sensitive Area fencing, bat boxes, and the use of construction windows for fish, bats, and migratory birds
<b>Waters of the United States</b>	Placement of 0.05 to 0.06 acre of fill into the banks of the Merced River	Onsite planting of native shrubs and trees and monetary compensation at a 1.5 to 1 ratio through the Army Corps of Engineers National Fish and Wildlife Foundation
<b>Visual Resources</b>	Removal of trees and minor decrease in scenic quality	Replace and replant removed trees and shrubs, apply erosion control, and apply aesthetic treatments on structures
<b>Wild and Scenic Rivers</b>	Placement of bridge columns in river	Restoration of Incline Road and incorporation of design features that minimize the effects to the river

### Summary of Minimization and Monitoring

Area	Impact	Mitigation
<b>Cultural Resources</b>	Potentially eligible bedrock mortar site	Protect site with Environmentally Sensitive Area fencing
<b>Geological Resources</b>	Minor rockfalls on cut slopes	Provide 22-foot-wide area adjacent to highway to catch rocks
<b>Water Quality and Hydrology</b>	Short-term increase in sediment and turbidity (cloudiness) in surface water	Apply erosion control and implement a Storm Water Pollution Prevention Plan during construction and a Storm Water Management Plan after construction
<b>Hazardous Waste Materials</b>	Exposure to elevated levels of arsenic	Classify and properly dispose of all hazardous waste materials at a Class 1 landfill

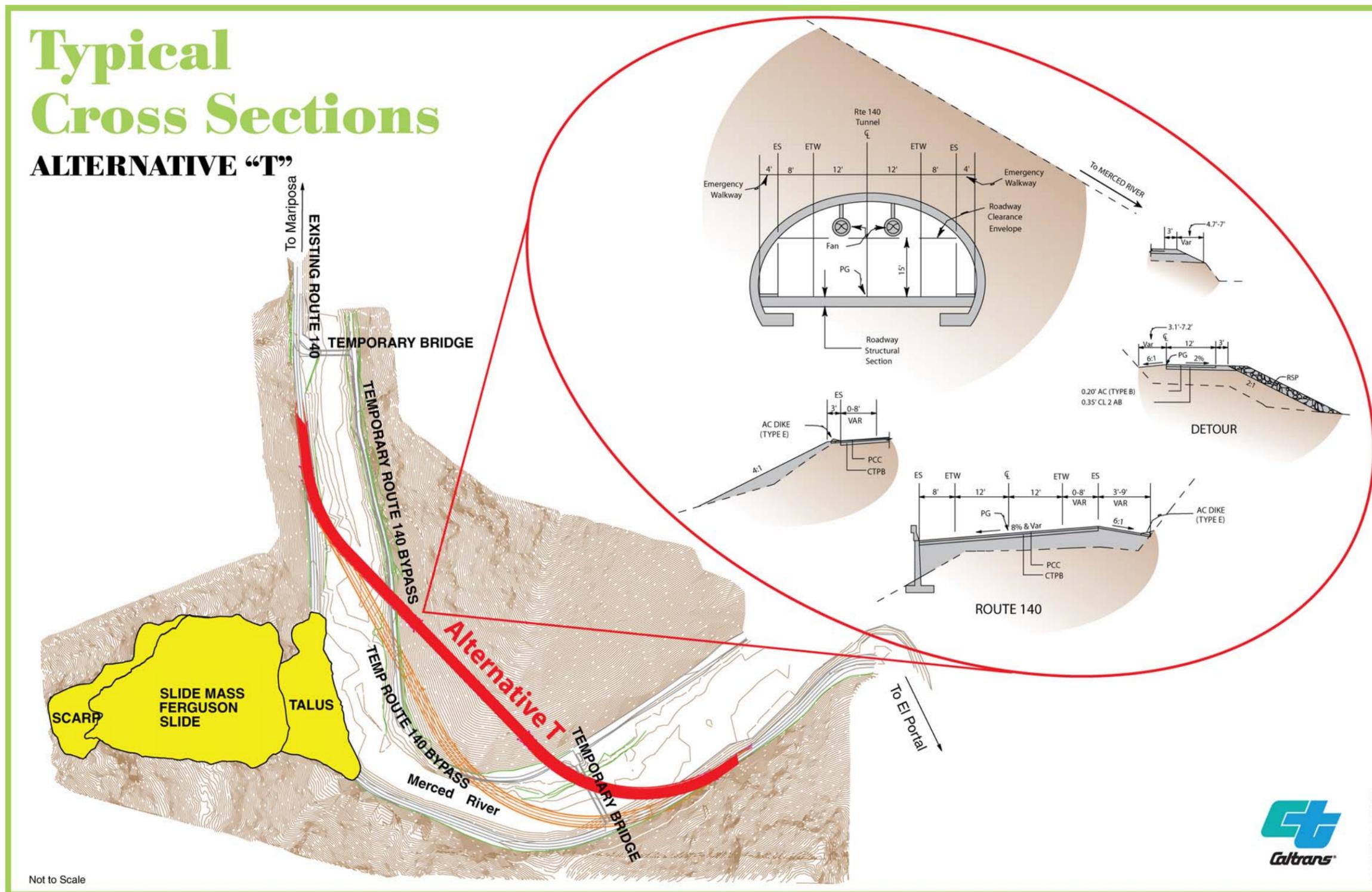
For more detailed information on mitigation, minimization, and monitoring commitments, please see Chapter 2, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures for these impact areas.

# Appendix D Typical Cross Sections



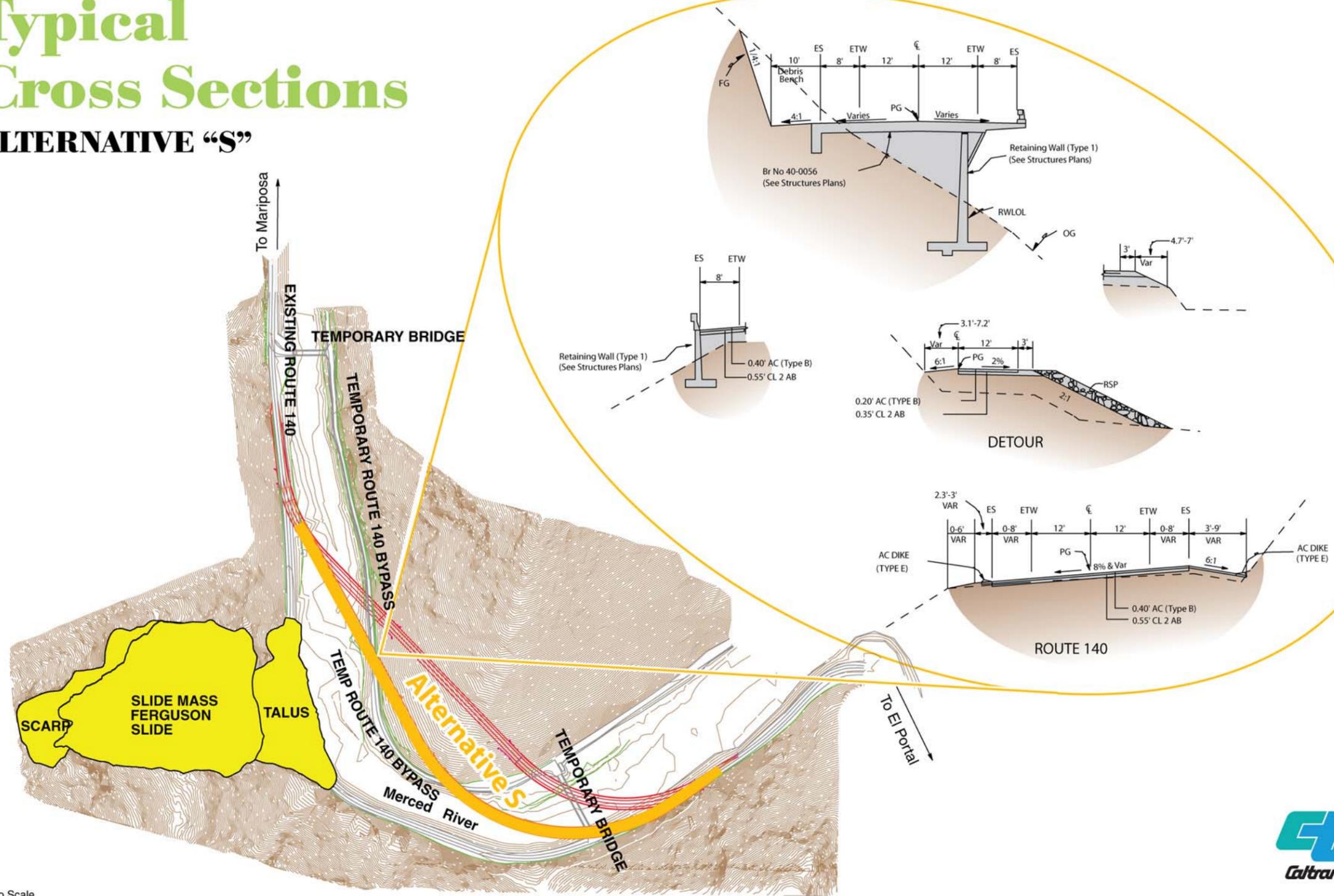
# Typical Cross Sections

## ALTERNATIVE "T"



# Typical Cross Sections

## ALTERNATIVE "S"



Not to Scale



10\_0P92001\_pd\_eab\_11-7-07



# Appendix E SHPO Concurrence Letter

OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION  
P.O. BOX 942896  
SACRAMENTO, CA 94296-0001  
(916) 653-6624 Fax: (916) 653-9824  
calshpo@ohp.ca.gov  
www.ohp.ca.gov



October 10, 2007

Reply To: FHWA070910A

Jeanne Binning, Branch Chief  
Central California Cultural Resources Branch  
Department of Transportation  
2015 East Shields Avenue, Suite A-100  
Fresno, CA 93726-5428

Re: Determinations of Eligibility for the Ferguson Slide Permanent Restoration Project,  
Mariposa County, CA

Dear Ms. Binning:

Thank you for consulting with me about the subject undertaking in accordance with the Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (PA).

The California Department of Transportation is requesting my concurrence, pursuant to Stipulation VIII.C.5 of the PA, that the following properties are not eligible for the National Register of Historic Places:

- CA-MRP-001552H
- Yosemite Valley Railroad Grade
- Jenkins Hill Trail
- State Route 14

Based on my review of the submitted documentation, I concur.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 654-0631 or e-mail at [nlindquist@parks.ca.gov](mailto:nlindquist@parks.ca.gov) or Bill Soule at (916) 654-4614 or e-mail at [wsoule@parks.ca.gov](mailto:wsoule@parks.ca.gov).

Sincerely,

Milford Wayne Donaldson, FAIA  
State Historic Preservation Officer



## **List of Technical Studies that are Bound Separately**

Air Quality Report

Noise Study Report

Water Quality Report

Natural Environment Study

Location Hydraulic Study

Historical Property Survey Report

- Historic Study Report
- Historic Resource Evaluation Report
- Historic Architectural Survey Report
- Archaeological Survey Report

Initial Site Assessment

Visual Impact Assessment

Paleontological Identification Report

Community Impact Assessment

Preliminary Geotechnical Report

Geotechnical Design Report

Economic Impact Report