16th Street/Olive Avenue Widening Project

MERCED COUNTY, CALIFORNIA
DISTRICT 10 – MER – 59, KP 24.6/26.7 (PM 15.3/16.6)
0E5900

Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment

Prepared by the
U.S. Department of Transportation
Federal Highway Administration
and the
State of California Department of Transportation

October 2005

General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) and the Federal Highway Administration have prepared this Initial Study/Environmental Assessment, which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Merced 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, the 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 district office, 1976 E. Charter Way, Stockton, California 95201 and/or the Merced County Library, 2100 O Street, Merced, California 95340.
- We welcome your comments. If you have any comments regarding the proposed project, please attend the public hearing and/or send your written comments to Caltrans by the deadline.
- Submit comments via postal mail to: Lance Brangham, Environmental Branch Chief, Department of Transportation, Environmental Planning, 2015 E. Shields Avenue, Fresno, CA 93726 or via email to lance_brangham@dot.ca.gov.
- Submit comments by the deadline: _____, 2005.

What happens after this?

After comments are received from the public and reviewing agencies, Caltrans and the Federal Highway Administration may: (1) give environmental approval to the proposed project, (2) undertake 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.

For individuals with sensory disabilities, this document can be made available in Braille, large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Lance Brangham, Environmental Planning, 2015 E. Shields, Fresno, CA 93726; 559-243-8161 Voice, or use the California Relay Service TTY number, 1-800-735-2929.

SCH Number: [number]
10-MER-59-KP 24.6/26.7
(PM 15.3/16.6)
10-0E5900

State Route 59 from 16th Street in the City of Merced to just north of Black Rascal Creek, kilometer post 24.6 to 26.7 (post mile 15.3 to 16.6)

INITIAL STUDY
With Proposed Mitigated Negative Declaration
/ENVIRONMENTAL ASSESSMENT

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

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and

THE STATE OF CALIFORNIA
Department of Transportation

_____
Date of Approval

_____
Lance H. Brangham
Branch Chief
San Joaquin Valley Analysis Branch
California Department of Transportation

_____
Date of Approval

_____
Gene K. Fong
Division Administrator
Federal Highway Administration

State of California
Department of Transportation

SCH Number: [enter number]
10-MER-59-KP 24.6/26.7
(PM 15.3/16.6)

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to widen 2.1 kilometers (1.3 miles) of State Route 59 from a two-lane highway to a four-lane highway within the City of Merced.

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 have no effect on farmland, timber, educational facilities, any publicly owned park or recreational area, or any property eligible for the National Register of Historic Places.
- The proposed project would have no significant effect on water quality, air quality, or vegetation.
- The proposed project would not cause a change in the growth rate or current land use.
- The proposed project would not increase erosion, change the topography, or make the facility more prone to seismic damage.
- The proposed project would not cause a significant impact to businesses, industry, the economy, or employment.

The proposed project would have no significant adverse effect on biological resources, visual resources, noise, or minority and low-income populations, nor expose the public to hazardous waste because the following mitigation measures would reduce potential effects to insignificance:

- Compensation for impacts to wetlands and waters of the U.S. would include construction monitoring, Best Management Practices, and replacement of wetlands.
- Compensation for special-status species habitat, pre-construction surveys, a pre-construction educational meeting, avoidance and minimization, and construction contract special provisions.
- Compensation for removal of screening vegetation and replacement planting for eucalyptus removal.
- Construction of noise barriers to reduce noise to acceptable levels.
- Provision of relocation assistance for relocated individuals.
- All hazardous waste materials would be properly disposed of at a Class 1 landfill.

_____ _____

Lance H. Brangham, Branch Chief
San Joaquin Valley Analysis Branch
California Department of Transportation

Date

Summary

The California Department of Transportation (Caltrans) and the Federal Highway Administration propose to widen State Route 59 from a two-lane to a four-lane highway in the City of Merced. Alternatives under consideration include one build alternative and a no-build alternative.

The purpose of the project is to improve safety, increase capacity, and correct design features. The existing two-lane highway has become congested with traffic and has an above average accident rate when compared to similar state highways. Additionally, this segment does not have standard sight distance at the intersection with the Burlington Northern Railroad and the shoulder width is non-standard.

Build Alternative

State Route 59 would be widened from the existing two-lane highway to a four-lane highway. A continuous left-turn lane would also be built. Widening would begin just east of Bear Creek and end just beyond Black Rascal Creek. The total length of the project is 2.1 kilometers (1.3 miles). Adding signals to the intersections, constructing wider shoulders, improving the sight distance and widening the highway would improve the safety and operation, as well as increase capacity within this segment.

No-Build Alternative

The No-Build Alternative would leave the existing roadway as it is. Without improvements (additional lanes and signals), the higher-than-average traffic accidents would continue and congestion would continue to worsen. The No-Build Alternative has the least environmental impacts, but does not address 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:

- Relocation

Residents of nine single-family residences would be relocated, as well as residents of a two-building apartment complex (a nine-unit apartment building and a three-unit apartment building on the same property). Relocation assistance would be provided for all displaced persons.

- Increased Noise

Construction of new highway lanes would increase the noise level for residences along State Route 59 within the project area. Sound barriers were found to be reasonable and feasible for receptors within the Riviera Holiday Mobile Estates.

- Environmental Justice

The proposed project would not cause disproportionately high and adverse effects on any minority or low-income population. The proposed project would affect Hispanic and low-income populations by displacing residents of an apartment complex located within a minority and low-income area. However, Hispanics and low-income populations make up the highest percentage of the population living within the project area. Additional impacts, such as increasing noise levels, are uniformly dispersed throughout the project area. Beneficial effects of the project, including improving safety, increasing capacity, and adding bus stops and bike lanes would benefit the entire community within the project area.

Permits/agreements would be required for this proposed project, including:

- Section 404 Letter of Permission or Nationwide Permit from the U.S. Army Corp of Engineers for impacts to the jurisdictional wetlands and waters of the United States.
- Section 401 Water Quality Certification Permit from the California Regional Water Quality Control Board.
- Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game.

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

Table S.1 Summary of Major Potential Impacts From Alternatives

Potential Impact		Build Alternative	No-Build Alternative
Visual Resources		Removal of screening vegetation, eucalyptus, oak, alder, sycamore, and olive	None
Relocation	**Business displacements**	No businesses would be displaced, one would be affected.	None
	Housing displacements	Two apartment buildings, one consisting of nine apartments and the other, three apartments. 9 single-family residences.	None
	Utility service relocation	Utility poles and underground gas, sewer, water, and communications lines	None
Environmental Justice		Residents within a minority cluster would need to be relocated and would be provided with relocation assistance	None
Hazardous Waste/Materials		Treated wood, soil, and paint require disposal in a Class 1 landfill	None
Noise		Forty total receptors, 12 meet criteria for soundwall	Noise levels would remain between 58.6 to 66.5 dBA
Wetlands and other Waters of the United States		0.32 hectare (0.80 acre) of temporary impacts and 0.04 hectare (0.10 acre) of permanent impacts to Bear Creek; up to 0.18 hectare (0.44 acre) of jurisdictional wetlands	None
Threatened and Endangered Species		None expected with standard avoidance measures implemented at construction.	None

Table of Contents

Cover Sheet i
Proposed Mitigated Negative Declaration iii
Summary v
Table of Contents ix
List of Figures xi
List of Tables xi
List of Abbreviated Terms xii
Chapter 1 Proposed Project 1
1.1 Introduction 1
1.2 Purpose and Need 1
1.2.1 Purpose 1
1.2.2 Need 1
1.3 Alternatives 8
1.3.1 Build Alternative 8
1.3.2 No-Build Alternative 10
1.3.3 Comparison of Alternatives 10
1.3.4 Transportation System Management 12
1.3.5 Decision Making Process 12
1.3.6 Alternatives Considered but Eliminated from Further Discussion 13
1.4 Permits and Approvals Needed 13
Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures 15
2.1 Human Environment 16
2.1.1 Land Use 16
2.1.2 Community Impacts 17
2.1.3 Utilities 27
2.1.4 Traffic and Transportation / Pedestrian and Bicycle Facilities 28
2.1.5 Visual/Aesthetics 32
2.1.6 Cultural Resources 33
2.2 Physical Environment 35
2.2.1 Water Quality and Storm Water Runoff 35
2.2.2 Hazardous Waste Materials 38
2.2.3 Air Quality 40
2.2.4 Noise 43
2.2.5 Hydrology and Floodplain 48
2.3 Biological Environment 49
2.3.1 Wetlands and Waters of the United States 49
2.3.2 Plant Species 52
2.3.3 Animal Species 54
2.3.4 Threatened and Endangered Species 55
Chapter 3 Comments and Coordination 61
Chapter 4 List of Preparers 65
Appendix A California Environmental Quality Act Checklist 67
Appendix B Title VI Policy Statement 79
Appendix C Summary of Relocation Benefits 81
Appendix D Minimization and/or Mitigation Summary 87

Appendix E State Historic Preservation Officer Concurrence Letter 89
Appendix F Build Alternative Cross Sections 91
Appendix G National Oceanic and Atmospheric Administration 93
Appendix H Noise Receptor Map 95

List of Figures

Figure 1-1 Project Vicinity Map 2
Figure 1-2 Project Location Map 3
Figure 1-3 Level of Service for Two-Lane Highways 7
Figure 2-1 Levels of Service for Multi-Lane Highways 31

List of Tables

Table S.1 Summary of Major Potential Impacts From Alternatives vii
Table 1.1 State Route 59 Accident Rates 5
Table 1.2 Existing and Forecasted Traffic Within the Project Limits 6
Table 1.3 Comparison of Build Alternative to the No-Build Alternative 11
Table 1.4 Permits and Approvals Needed 13
Table 2.1 Proposed Developments Near the Project Area 16
Table 2.2 Summary of Residential and Non-Residential Displacements 19
Table 2.3 Summary of Relocation Resources Available 20
Table 2.4 U.S. 2000 Census: Racial and Ethnic Profile 23
Table 2.5 Poverty Profile 25
Table 2.6 Air Quality Emissions Standards 42
Table 2.7 Noise Abatement Criteria Thresholds 44
Table 2.8 Typical Noise Levels 45
Table 2.9 Noise Levels for the Olive Avenue/16th Street Widening 47
Table 2.10 Wetland and Other Waters Impacts 51
Table 2.11 Construction Windows 59

List of Abbreviated Terms

Caltrans	California Department of Transportation
dBA	a-weighted decibels
KP	kilometer post
PM	post mile
USC	United States Code

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) and the Federal Highway Administration propose to widen State Route 59 (Snelling Highway) from a two-lane to a four-lane highway in the City of Merced. State Route 59 would be widened from east of Bear Creek to north of Black Rascal Creek. The total length of the project is 2.1 kilometers (1.3 miles). The existing two-lane highway has become congested with traffic, has an above average accident rate when compared to similar state highways, and has non-standard design features. Figures 1-1 and 1-2 show the project vicinity and location maps.

The environmental analysis and preliminary design for this project was funded in the 2000 Statewide Transportation Improvement Program. It was also included in the cost-constrained Merced County Association of Governments' 2004 Regional Transportation Plan and the 2004 cost-constrained Merced County Regional Transportation Improvement Program. Construction is anticipated to be completed in 2012.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to:

- Improve the safety and operation of State Route 59
- Relieve traffic congestion
- Bring State Route 59 up to current design standards.

1.2.2 Need

State Route 59 is an important route for transporting people and agricultural products in Merced County, especially in and around the City of Merced. This segment of State Route 59 has a higher-than-average accident rate when compared to similar roads in the state. The proposed project area also has become congested with traffic, exceeding the highway's current capacity. Additionally, this segment does not have standard sight distance at the intersection of the Burlington Northern Railroad and the shoulder width is non-standard.

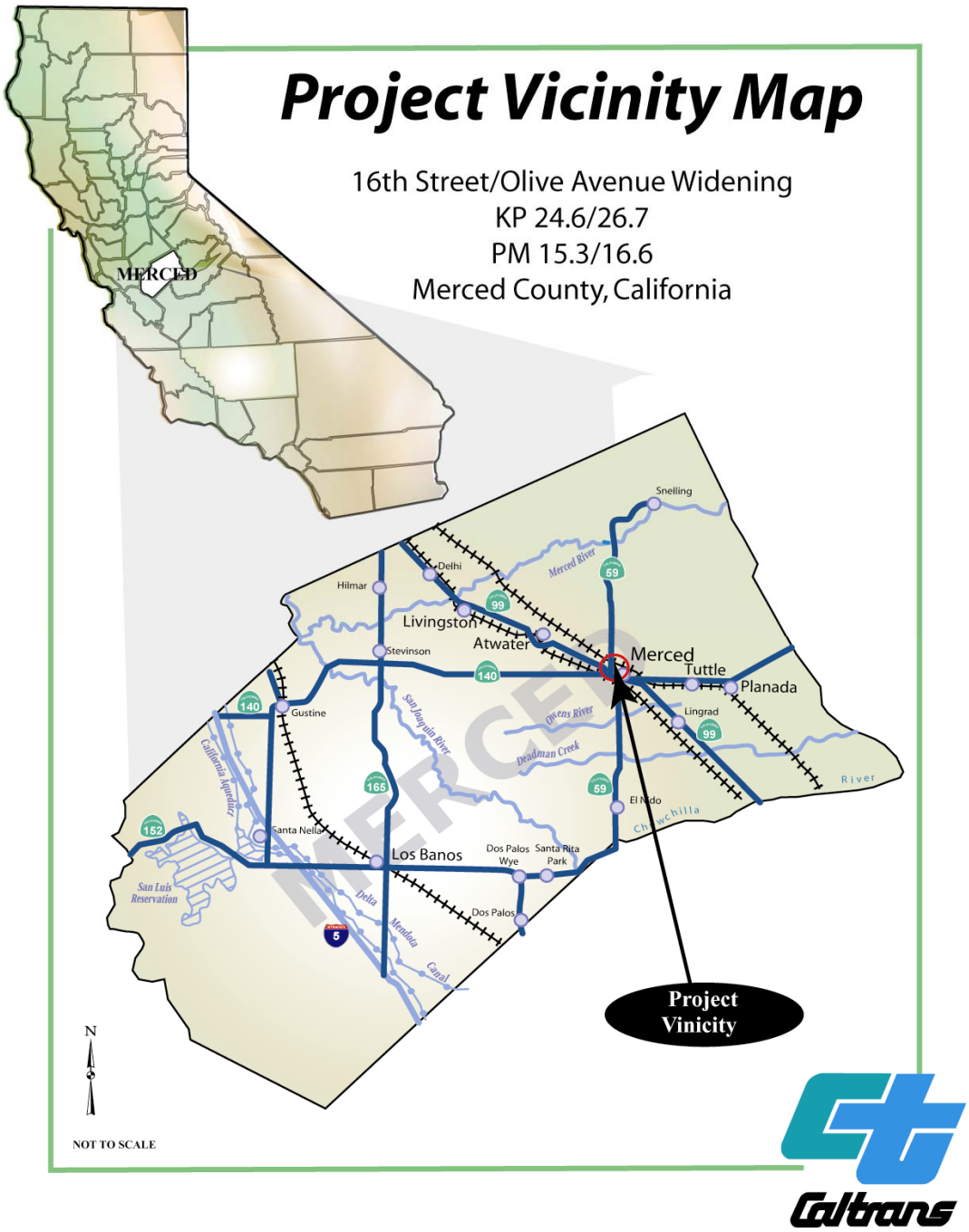
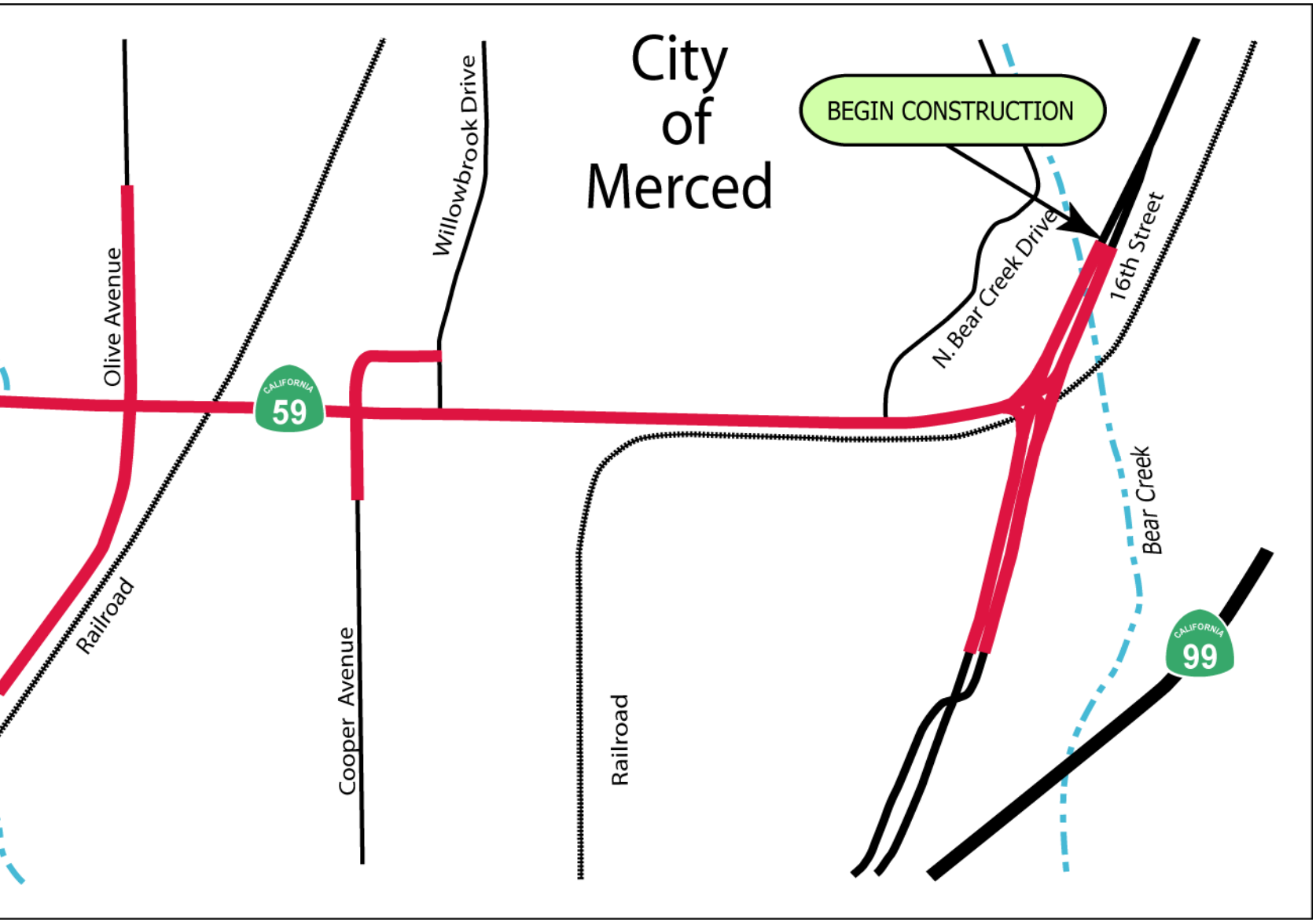


Figure 1-1 Project Vicinity Map


Olive Avenue
Railroad
CALIFORNIA
59
Cooper Avenue
Willowbrook Drive
Railroad
City
of
Merced
BEGIN CONSTRUCTION
N. Bear Creek Drive
16th Street
Bear Creek
CALIFORNIA
99

❖

1.2.2.1 Safety and Operations

Accident data for the project area was studied for the most recent three-year period, January 1, 2001 to December 31, 2003. Table 1.1 compares the accident rates on State Route 59 within the project area, kilometer post 24.6 to 26.7 (post mile 15.3 to 16.6), to the statewide average for similar highways. Accident rates were also studied at the intersection of State Route 59 and Olive/Santa Fe Avenue. Table 1.1 also compares the accident rates at the intersection of State Route 59 and Olive/Santa Fe Avenue to the statewide average for similar highway intersections.

Table 1.1 State Route 59 Accident Rates

Accident Rates in Project Area			
Comparison	**FATAL**	**FATAL + INJURY**	***TOTAL**
Actual	0.062	3.500	7.060
Statewide Average	0.016	1.190	2.820
Accident Rates at Olive/Santa Fe Avenue			
Comparison	**FATAL**	**FATAL + INJURY**	***TOTAL**
Actual	0.000	1.270	2.610
Statewide Average	0.002	0.190	0.430

TASAS Table B District 6 (expressed in accidents per million vehicle miles traveled)
* Total includes other factors. Total column will not equal the sum of the Fatal and Fatal + Injury columns.

State Route 59 within the project area and at the intersection of Olive/Santa Fe Avenue exhibits accident rates higher than the statewide average for similar highways and highway intersections as shown in Table 1.1. According to traffic studies prepared by Caltrans staff, the majority of accidents occurred at the intersections of State Route 59 and 16th Street and Olive/Santa Fe Avenue. If no improvements were made, the accident rates would continue to be higher than the statewide average.

During the three-year traffic study period, there were a total of 113 accidents within the project area. One hundred and three of the accidents involved multiple vehicles. The types (and number) of accidents that occurred were: rear end (68), broadside (21), hit object (10), sideswipe (6), other and not stated (5), and head on (3). The primary causes (and number) of these accidents were from speeding (57), failure to yield (18), other violations (17), influence of alcohol (6), other than driver (6), unknown (4), improper turn (3), improper driving (1), and following too close (1).

1.2.2.2 Congestion

Within the project limits, State Route 59 has become congested from an increasing regional population and local development in the northern part of the city of Merced.

Congestion is measured as Level of Service, which is an indicator of driving conditions on a roadway or at an intersection and is defined in categories ranging from “A” to “F” (Figure 1-3). A Level of Service of “A” indicates free-flowing traffic with no hindrance to driving speed caused by traffic conditions. A Level of Service of “F” indicates substantial congestion with slow-moving, stop-and-go traffic. The existing and forecasted traffic data is displayed in Table 1.2.

Table 1.2 Existing and Forecasted Traffic Within the Project Limits

	Existing Facility	**2010 without Improvements**	**2020 without Improvements**
Level of Service	D	F	F
Number of Vehicles (Average Daily Traffic Count)	15,300	24,400	31,925
Peak Hour Number of Vehicles	1,685	2,685	3,500
% Trucks	8%	8%	8%

As shown in Table 1.2, the existing facility is currently at a Level of Service D. If the proposed improvements are not constructed, congestion on State Route 59 would continue to worsen to a Level of Service F. Congestion would remain at this level until improvements are made to increase the capacity of this segment of State Route 59.

LEVELS OF SERVICE

for Two-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		55+	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. **No delays**
B		50	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. **No delays**
C		45	Stable traffic flow, but less freedom to select speed, change lanes or pass. **Minimal delays**
D		40	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. **Minimal delays**
E		35	Unstable traffic flow. Speeds change quickly and maneuverability is low. **Significant delays**
F			Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. **Considerable delays**

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1

Figure 1-3 Level of Service for Two-Lane Highways

1.2.2.3 Non-Standard Design Features

State Route 59 has the following non-standard design features:

- Difference in elevation between State Route 59 and the railroad track
- Shoulder widths that range between 0.0 meters (0.0 feet) and 1.2 meters (4 feet)

Currently, the railroad is at a higher elevation than State Route 59, causing the highway to rise and fall as it crosses the railroad tracks. This design feature prevents the driver from seeing oncoming traffic at great distances. Since the highway elevation does not match the railroad grade, vehicles cannot see oncoming traffic from greater distances preventing head-on collisions. Non-standard shoulder widths do not provide room for vehicle maneuverability in the event of an accident or hazardous driving condition.

1.3 Alternatives

Caltrans traffic studies identified the need to increase safety for motorists and reduce traffic congestion within the projects limits. Once problems were identified, 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, accident data, 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.

In 2000, the project development team developed alternatives in relation to railroad constraints to the west and residential development to the east. These alternatives varied by length and two were subsequently eliminated based on project need. The project development team included a design option to realign Willowbrook Avenue based on improved residential circulation, improved operations on State Route 59, and disruptions to industrial truck traffic. The Willowbrook Avenue realignment provides improved access to future planned multi-family developments by utilizing planned local street extensions.

1.3.1 Build Alternative

State Route 59 would be widened from the existing two-lane highway to a four-lane highway. A continuous left-turn lane would also be built. Widening begins east of Bear Creek and ends just beyond Black Rascal Creek. See Appendix F for cross-

sections of the Build Alternative. The following features would be incorporated into the build alternative:

- Widening shoulder widths to the standard 2.4 meters (8 feet)
- Raising roadway elevation at the intersection of State Route 59 and the Burlington Northern Railroad
- Constructing a curb and gutter drainage system with a basin for storm water runoff
- Shifting State Route 59 west of its current alignment, from where the Union Pacific Railroad veers west through to the end of the northern project limit
- Signalizing the intersections of State Route 59 and 16th Street, Cooper Avenue, and the entrance for the Riviera Holiday Mobile Estates
- Constructing two left-turn lanes at Olive/Santa Fe Avenue as it intersects State Route 59
- Realigning Willowbrook Avenue to form a four-way intersection with Cooper Avenue
- Constructing two soundwalls on the east side of State Route 59 between kilometer post 15.47 and 15.59 (post mile 9.61 and 9.69)
- Designating both directions of travel on State Route 59 as a Class 3 bike route via additional bike-lane striping
- Constructing bus stop turnouts on both the east and west side of State Route 59 at Willowbrook Avenue
- Widening and lengthening the Black Rascal Canal Bridge (Number 39-68) to accommodate five lanes and redirecting Black Rascal Creek to flow under this bridge, which would have rock-slope protection
- Removing the South Fork Black Rascal Creek Bridge (Number 39-67) and replacing it with a large pipe culvert
- Filling the area adjacent to and under the removed bridge with imported borrow (dirt from another area)
- Widening the Bear Creek bridges (Number 39-09)
- Removing the Branch Black Rascal Bridge (Number 39-66) and replacing it with a pipe culvert
- Constructing a 3 meter (9.84 foot) sidewalk on the east side of State Route 59 from 16th Street to Olive/Santa Fe Avenue and on the west side of State Route 59 from existing Willowbrook Avenue to Olive/Santa Fe Avenue. Sidewalks would border all of the Willowbrook Avenue realignment

To widen the project area to four lanes as proposed, right-of-way would need to be acquired. The project would acquire 8 meters (26.2 feet) of right-of-way on the east side of State Route 59 where the Union Pacific Railroad runs parallel to the highway as well as 8 meters (26.2 feet) of right-of-way on the west side where the railroad moves away from the highway. The total right-of-way acquisition for this alternative would be 2.64 hectares (6.53 acres). The surrounding terrain is flat, so cuts and fills would be minimal. The current estimated cost of this alternative is $24 million (2005 dollars).

Construction of the Build Alternative would require relocation of Pacific Gas and Electric Company, South Bell Communications, and Comcast cable television utility poles. The following underground utilities would also be affected: Pacific Gas and Electric Company gas lines, South Bell Communications, the Merced Water Company water lines, the Merced Irrigation District irrigation lines, and the City of Merced storm drains and sewer lines.

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 the existing roadway as it is. Additional lanes would not be provided and non-standard roadway features would continue to be present. The No-Build Alternative has the least environmental impacts, but does not address the purpose and need of the project, which is to improve safety and increase capacity. Without improvements (additional lanes and signals), the higher-than-average traffic accidents would continue and congestion would continue to worsen.

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 1.3 compares the alternatives using the evaluation criteria.

The Build Alternative would improve safety, relieve traffic congestion, and provide bus turnouts and a bicycle lane, but would result in increased noise, relocation of residents, and impacts to wetlands. The No-Build Alternative would not relieve traffic congestion, improve safety, or provide bus turnouts and a bicycle lane. Noise levels would remain as existing, wetlands would not be affected, and residents would not be relocated. Air quality may decline as a result of the increased congestion.

Table 1.3 Comparison of Build Alternative to the No-Build Alternative

Potential Impact		Build Alternative	No-Build Alternative
Safety		Safety would be improved by adding traffic signals, widening the shoulders, and improving highway sight distance.	Accidents rates would continue to be higher than the statewide average.
Transportation Modes		The widened shoulders would be designated to accommodate bicycle travel; bus stop turnouts would be provided for both directions of travel.	A bike lane would continue to exist only in the northern part of the project. There would continue to be no bus stop turnouts within the project area.
Congestion		Congestion would be reduced by providing four lanes with a continuous left-turn lane and widening intersections.	Increased congestion would cause considerable traffic delays.
Visual Resources		Removal of screening vegetation, eucalyptus, oak, alder, sycamore, and olive	None
Relocation	**Business displacements**	No businesses would be displaced, one would be affected.	None
	Housing displacements	Nine single-family residences; 12 apartment units	None
	Utility service relocation	Utility poles and underground gas, sewer, water, and communications lines	None
Environmental Justice		Residents within a minority area would be relocated and would be provided with relocation assistance.	None
Hazardous Waste/Materials		Treated wood, soil, and paint require disposal in a Class 1 landfill.	None
Air Quality		Level of Service may reduce overall idling time at intersections. The reduction in idling time may reduce idle emissions of PM_{10} and $PM_{2.5}$ and thus improve the air quality.	Emissions may increase with increased idling time due to congestion and air quality may decline.
Noise		Forty total receptors, 12 meet criteria for soundwall	Noise levels would remain between 58.6 to 66.5 dBA.
Wetlands and other Waters of the United States		0.32 hectare (0.80 acre) of temporary impacts and 0.04 hectare (0.10 acre) of permanent impacts to Bear Creek; up to 0.18 hectare (0.44 acre) of jurisdictional wetlands	None
Threatened and Endangered Species		None with avoidance measures for salmon implemented at construction	None

1.3.4 Transportation System Management

Transportation System Management strategies consist of actions that increase the efficiency of existing roadways; they are actions that increase the number of vehicle trips a road can carry without increasing the number of through lanes. Examples of Transportation System Management strategies include: ramp metering, auxiliary lanes, turn lanes, reversible lanes, and traffic signal coordination. Transportation System Management also encourages automobile, public and private transit, ridesharing programs, and bicycle and pedestrian improvements as elements of a unified urban transportation system. Alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and transit.

This project has included some of these actions in the Build Alternative rather than identifying them as separate alternatives. Although these actions are not separate alternatives (the actions would not address all aspects of the purpose and need), they have been added to the Build Alternative to assist in reducing congestion. These actions are:

- A continuous left-turn lane along State Route 59
- Two left-turn lanes at Olive/Santa Fe Avenue as it intersects State Route 59
- Traffic signal coordination
- Bike lane improvements
- Transit improvements – bus turnouts

1.3.5 Decision Making Process

After the public circulation period, all comments will be considered. Caltrans and the Federal Highway Administration, with input from the City of Merced, Merced County, and the Merced County Association of Governments, 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 Federal Highway Administration determines the action does not cause a significant impact to the environment, it will issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

1.3.6 Alternatives Considered but Eliminated from Further Discussion

Two alternatives similar to the Build Alternative were discussed but have been eliminated from further consideration. Alternative 2 included the same features as the Build Alternative, but extended the northern project limits to Belcher Avenue, kilometer post 28.3 (post mile 17.6). Alternative 3 also included the same features as the Build Alternative, but extended the northern project limits to Bellevue Avenue, kilometer post 30.6 (post mile 19.0). These alternatives are no longer being considered because currently State Route 59 within those extended project limits is operating at a Level of Service B. Without any improvements, State Route 59 from Olive Avenue to Bellevue would remain above a Level of Service D through 2027.

1.4 Permits and Approvals Needed

The following permits, reviews, and approvals would be required for project construction and they would be requested during the final design phase:

Table 1.4 Permits and Approvals Needed

Agency	Permit/Approval
United States Army Corps of Engineers	Section 404 Nationwide Permit 14 for filling or dredging waters of the United States
Regional Water Quality Control Board	Section 401 Certification for a Water Discharge Permit
California Department of Fish and Game	1602 Streambed Alteration Agreement

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

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 and potential impacts from each of the alternatives.

As part of the scoping and environmental analysis conducted for the project, the following environmental resources and issues were considered, but no potential for adverse impacts was identified. Consequently, there is no further discussion regarding these issues in this document.

- **Farmland:** No farmland exists within the project area.
- **Wild and Scenic Rivers:** No Wild and Scenic Rivers exist within the project area (Natural Environmental Study, September 2004).
- **Growth:** This project is not anticipated to encourage unplanned growth (Growth Inducement Checklist, March 2005).
- **Parks and Recreation Facilities:** No park or recreation facilities are located near the project.
- **Emergency Service:** This project would not affect emergency services.
- **Natural Communities:** No natural communities exist within the project area. Two highly disturbed riparian areas are described under Wetlands and Waters of the United States (Section 2.3.2)
- **Invasive Species:** There are no species in the project area that are on the California Department of Food and Agriculture's Noxious Weed List. Construction would not likely lead to further spread of invasive species (Natural Environmental Study, September 2004).
- **Paleontology:** This project would not affect paleontological resources (Initial Paleontology Study, April 20, 2005).

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 Merced County's 2004 Regional Transportation Plan and the Merced Vision 2015 General Plan. The project area is urban and includes zoning for industrial, high medium-density residential, open space, and a mobile home park.

The proposed project lies in the northern portion of the City of Merced. The urban uses in the project area consist of single-family residential, commercial buildings, apartments, and a mobile home park. Large residential developments are being constructed outside and northeast of the project area. The developments nearest the project area are The Cottages at El Redondo and Silver Creek Unit No. 4A (Table 2.1).

Table 2.1 Proposed Developments Near the Project Area

Name and Location	Jurisdiction	Proposed Uses	Status
The Cottages at El Redondo East of State Route 59 and northeast of Olive Avenue	City of Merced	Subdivide 5.6 hectares (13.94 acres) into 138 lots for high medium-density residential housing	Public improvements under construction, building permits have not been submitted
Silver Creek Unit No. 4A East of State Route 59 and northeast of Olive Avenue	City of Merced	Subdivide 0.4 hectare (2.5 acres) into 14 lots for medium-density residential housing	Under Construction

Impacts

The proposed project would not require nor encourage a change in the land use. The Merced Vision 2015 General Plan designated the area adjacent to the proposed project as urban. The proposed project would require small slivers of additional right-of-way, which would not create a conflict with current urban uses.

Consistency with State, Regional, and Local Plans

Merced County Regional Transportation Plan

The proposed project is included in the Merced County Regional Transportation Plan, as part of its Recommended Regional Improvement Project Priorities list. The plan was adopted on August 19, 2004 by the Merced County Association of Governments.

Merced Vision 2015 General Plan

The proposed project is in concurrence with the Merced Vision 2015 General Plan because State Route 59 has been identified to serve Merced's new growth areas north of the city.

2.1.2 Community Impacts

2.1.2.1 Community Character and Cohesion

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

The project area begins east of the Bear Creek Bridges on 16th Street and extends north just beyond Black Rascal Creek. Within the project area, single-family homes, as well as apartment complexes, border most of State Route 59 on the east. One religious facility, the Calvary Temple Church is among the residences. No parks, recreation centers, or community halls have been identified within the project area. To the west of State Route 59 within the project area, the land use is industrial and is

occupied by several businesses (including lumber, plumbing, and irrigation) that serve the city of Merced and are not specific to the community surrounding them.

Demographic data from the 2000 United States Census indicate an average resident age of 41 years for the project area. The average family size in the project area consists of three family members. Most of the residents in the project area were identified as renter occupants, averaging 154.5 people when compared to owner occupants, which averaged 27.1 people.

Impacts

The proposed project would have a beneficial impact on the character of the communities within the project area. Widening State Route 59 to four lanes would increase public access to other parts of the city by adding bicycle lanes to the shoulders and constructing turnouts for the City of Merced's bus transit system in both directions of travel. The addition of a bicycle lane, wider shoulders, bus stop turnouts, curbs and sidewalks would improve safety for both pedestrian and vehicle travel. The curbs, sidewalks, and bus stop turnouts would be designed to meet the American Disabilities Act standards.

Widening the highway would not divide any neighborhoods or isolate neighborhoods from community facilities, such as the Calvary Temple Church. The quality of life within the project area is expected to increase because of proposed safety improvements, such as the addition of signals and standard shoulder widths. The addition of two lanes on State Route 59 through the project area would improve the flow of traffic to other parts of Merced, therefore creating better access for the residents in the project area.

No community activities would be disrupted and residents would not be isolated from, but rather have better access to other community members and activities. Further, the average age of residents in the project area is approximately 41 and the majority of the residents are renter occupants, statistics typically associated with lower levels of cohesion.

2.1.2.2 Relocations

Regulatory Setting

The Caltrans Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations Part 24. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a

transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole (see Appendix C for a summary of the Relocation Assistance Program).

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 United States Code 2000d, et seq.). See Appendix B for a copy of Caltrans' Title VI policy statement.

Affected Environment

Single-family residences, an apartment building, and the Riviera Holiday Mobile Estates are located on State Route 59 near the southern end of the project. The Calvary Temple, a commercial building, an apartment building, and more residences are located further north, but south of Willowbrook. The G.P. Norton Company, 84 Lumber Company, residences, and an apartment building are located at the intersection of State Route 59 and Cooper Avenue. Horizon Irrigation is located at the northwest corner of State Route 59 and Santa Fe Avenue.

Impacts

The Build Alternative would displace nine single-family residences, a nine-unit apartment building, and a three-unit apartment building (Table 2.2). The average estimated number of residents that would be displaced is 64, which is based on an average of 3.06 residents per home or unit. A tire service shop business located on 16th Street near Bear Creek would be affected by the project, but would not require relocation. No employees would be displaced.

Table 2.2 Summary of Residential and Non-Residential Displacements

Alternative	Single-Family Homes	Apartment Units	Residential Displacements (Residents)[1]	Non-Residential Displacements (# of Employees)
Build	9	12	64	0

[1] Estimate of residents is based on average of 3.06 residents per unit (2000 Census): Source: U.S. Census Bureau. Residential displacees were not interviewed or contacted

Table 2.3 shows the potential relocation resources for displaced residents. Potential relocation resources (Table 2.3) for displaced residents were calculated by multiplying vacancy rates (in parentheses) times the Total Housing Stock in Merced.

Table 2.3 Summary of Relocation Resources Available

Relocation Resource	For Rent	For Sale	Total Units*
Single-Family Homes	717 (5.75%)	150 (1.2%)	12,465
Multiple-Family Units	1,595 (21.5%)	None	7,418

*Total Housing Stock for Merced is taken from the 2000 Census. Discussions with city planners suggest that the number is approximately 75% higher than reflected in the 2000 Census.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans would provide relocation advisory assistance to any person, business, farm, or non-profit organization displaced as a result of acquisition of real property for public use. Relocation resources would be available to all displaced individuals, free of discrimination. All displaced individuals would be contacted by a Relocation Agent, who would ensure that eligible individuals receive their full relocation benefits and that all activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended.

At the time of the first written offer to purchase, owner occupants would be given a detailed explanation of the Caltrans Relocation Program and Services. Tenant occupants of properties to be acquired would be contacted soon after the first written offer to purchase and would also be given a detailed explanation of the Caltrans Relocation Program and Services.

2.1.2.3 Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* signed by President Clinton on February 11, 1994. This order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2005, this amount was $19,350 for a family of four.

Poverty data for specific communities was not available from the Department of Health and Human Services; therefore, poverty data disclosed in this document reflects information obtained from the 2000 United States Census Bureau.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI policy statement (see Appendix B).

Affected Environment

Minority and low-income populations have been identified using 2000 Census data. Ethnicity information for the project area was available by individual Blocks (12 Blocks were identified in the project area). For low-income populations, poverty figures were available by Block Groups (5 Block Groups were identified within the project area). The following Census Tracts, Block Groups, and Blocks would be affected by this project:

- Census Tract 10.02, Block Group 1: Blocks 1022 and 1026 (no residents in this block)
- Census Tract 10.03, Block Group 1: Block 1003 (no residents in this block)
- Census Tract 10.03, Block Group 2: Block 2005
- Census Tract 10.05, Block Group 1: Blocks 1004, 1007, 1009, 1010, 1011, 1012, 1013, 1014, 1017, 1018, 1019 (no residents in this block), and 1027 (no residents in this block)
- Census Tract 13.01, Block Group 3: Blocks 3030 (no residents in this block) and 3031 (no residents in this block)

In the 2000 Census, seven categories of race/ethnicity were recognized within Merced County, the City of Merced, the project area, and throughout the individual blocks as shown in Table 2.4. The race categories add up to the total population. For the overall project area, the Hispanic population was slightly above 42 percent, Whites were just under 38 percent and Blacks, Asians, American Indians, Native Hawaiians, and other races were all under 10 percent. Poverty in the overall project area was slightly under 25 percent, as shown in Table 2.5.

Caltrans identified three minority clusters (Census Blocks 1004, 1007, and 1017). Block 1004 includes the apartment complex that would be relocated and a few homes and has the highest percentage of Hispanics at 58 percent (Table 2.4). Block 1007, which includes more homes and Block 1017, which includes the Riviera Holiday Mobile Estates, have Hispanic populations slightly under 50 percent (Table 2.4). While the percentage of Hispanics in these Census Blocks is somewhat higher than the project area as a whole, it is worth noting that Hispanics comprise the largest

single racial group in the project area, however all racial groups within the project area would experience equal project benefits and impacts.

Table 2.4 U.S. 2000 Census: Racial and Ethnic Profile

	Merced County	Merced City	Project Area	Block 1004	Block 1007	Block 1009	Block 1010	Block 1011	Block 1012	Block 1013	Block 1014	Block 1017	Block 1018	Block 1022	Block 2005
Hispanic	95,466	26,425	888	40	496	19	13	22	28	28	12	72	0	69	89
% of Total	45%	41.4%	42.4%	58%	47%	36%	25%	42%	43%	43%	18%	48%	0%	32%	36%
White	85,585	24,121	781	27	328	32	38	23	30	32	47	33	1	124	66
% of Total	74.4%	64.4%	66.4%	93%	58.4%	94.1%	97.4%	74.2%	81%	86.5%	88.7%	42.3%	50%	86.1%	41.8%
Black	7,594	3,864	205	2	157	1	0	1	0	4	3	12	0	1	24
% of Total	6.6%	10.3%	17.4%	6.9%	27.9%	2.9%	0%	3.2%	0%	10.8%	5.7%	15.4%	0%	0.7%	15.2%
American Indian	1,115	368	13	0	2	1	1	5	0	0	0	0	0	1	3
% of Total	1%	1%	1.1%	0%	0.4%	2.9%	2.6%	16.1%	0%	0%	0%	0%	0%	0.7%	1.9%
Asian	14,041	7,182	101	0	20	0	0	2	4	0	1	3	1	10	60
% of Total	12.2%	19.2%	8.6%	0%	3.6%	0%	0%	6.5%	10.8%	0%	1.9%	38%	50%	6.9%	38%
Native Hawaiian	281	77	6	0	5	0	0	0	0	0	0	0	0	0	1
% of Total	0.2%	0.2%	0.5%	0%	0.9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.6%
Other and Two or More Races	6,472	1,856	70	0	50	0	0	0	3	1	2	2	0	8	4
% of Total	5.6%	5%	6.0%	0%	8.9%	0%	0%	0%	8.1%	2.7%	3.8%	2.6%	0%	5.6%	2.5%
Total Population	210,554	63,893	2064	69	1,058	53	52	53	65	65	65	150	2	213	247

Source: 2000 U.S. Census
Please note: Percent figures for total population and population may add up to more than 100% because individuals may report more than one racial background. An individual may be Black or white and still be Hispanic. The racial percentages should add up to or near 100 percent without the Hispanic ethnicity.

Data from the 2000 Census was used to determine the percentage of families, within the project limits, living with incomes above and below the poverty level (Table 2.5). Table 2.5 illustrates that a higher percentage of families within the study area have incomes above the poverty level.

Table 2.5 Poverty Profile

Poverty Breakdown	Project Area
% of Families Living in Poverty	24.4%
% of Families Living above Poverty	75.6%

Source: U.S. Census Bureau, Census 2000

Impacts

Caltrans identified beneficial and adverse impacts of the project. The beneficial effects resulting from this project would affect the entire population within the project area. Those beneficial effects are:

- Improving safety and operation
- Increasing capacity would relieve traffic congestion and reduce idling time for vehicles, which would improve air quality in the project area (see Section 2.2.3)
- Adding two bus stops (none currently exist within the project area)
- Providing designated bike lanes that would be incorporated into the shoulders of the highway
- Improving sight distance at the railroad crossing
- Constructing a sidewalk on both sides of State Route 59 and for the Willowbrook Avenue realignment would provide for safe pedestrian travel

Adverse effects from this project include:

- Noise
- Residential Relocations

Impacts from increasing noise levels would occur throughout the entire project area and would not disproportionately affect minority and low-income populations. Noise levels are discussed in detail in Section 2.2.4.

Constructing the project would result in the acquisition of 12 apartments and nine residences and the partial acquisition of one small business. Sufficient housing resources exist to relocate all displacees. Currently, no Section 8 families live within

the project limits and no special relocation problems are anticipated. Right-of-way would be acquired in a linear strip along the existing right-of-way in an effort to accommodate the future roadway requirements. Caltrans investigated avoiding residences to be acquired by realigning the roadway to the west. Acquisition of residential properties cannot be avoided. Realignment to avoid acquiring residences and apartment complexes is partially constrained by a railroad right-of-way and existing residential development.

The proposed realignment of Willowbrook Avenue occurs in Census Block 1004 (a minority and low-income population), where 12 apartment units (36 residents) and one residence with approximately 3 people would be displaced and relocated. Displacing and relocating persons within a minority and low-income population would be an adverse effect, however the effect would not be disproportionately high for the following reasons:

- Mitigation measures such as relocation assistance would be provided to all displaced persons, thereby lessening the severity of the impact to the minority and low-income populations within the project area.
- Beneficial effects such as improved safety, increased capacity, and alternative methods of transit are being proposed to benefit the overall population within the project area, as well as the public as a whole.
- Displacements occur throughout the project area. In addition to the apartment complex, nine residences would be acquired which are scattered throughout the project area.

Apartment complexes are not typically associated with prolonged periods of residency and since the minority data was evaluated using the United States 2000 Census, current populations or residents may not represent the population from five years ago due to tenant turnover. Eight out of 12 units of the apartment complex are currently being occupied by individual families (as opposed to extended families). Four are unoccupied. Six of the 12 units are currently occupied by Hispanic families and the other two units are occupied by white families. To validate the 2000 Census data, 2003 California Department of Finance estimates for Merced County and racial demographics of schools near the project area were analyzed. In addition, a Caltrans environmental planner met with the management of the potentially acquired apartment building (May 2005) to determine the current ethnicity of the tenants. This updated data indicated the same demographics as the 2000 Census.

Caltrans evaluated an alternative intersection configuration that would realign Cooper Avenue to form a four-way intersection with Willowbrook Avenue and State Route 59, as opposed to realigning Willowbrook Avenue and affecting the apartment complex. A Cooper Avenue realignment would result in damages to an industrial complex, requiring removal of a storage building, equipment, and parking lots, and affect all truck traffic servicing the businesses and using Cooper Avenue. Cooper Avenue would have to be realigned further to meet turning standards for the trucks. Retail businesses currently using Cooper Avenue could see a decline in their customer base as their business traffic is rerouted to a less direct access from State Route 59. The cost estimate for the Cooper Avenue realignment was $6,101,900 as opposed to $3,315,600 for the Willowbrook Avenue realignment, due to the considerable cost difference the Cooper Avenue realignment was not considered practicable.

Based on the above discussion, the proposed project would not cause disproportionately high and adverse effects on any minority or low-income populations as discussed in Executive Order 12898 regarding environmental justice.

Avoidance, Minimization, and/or Mitigation Measures

Project measures include noise abatement for the increasing noise levels that would occur throughout the project area. Two noise barriers are proposed for the locations in front of the mobile home park. Other locations within the project area did not meet the criteria for noise abatement.

As part of Caltrans' mitigation, a Relocation Assistance Program would be provided to any displaced persons as a result of this project. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 United States Code 2000d, et seq.). Comparable housing would be made available for all displaced persons.

2.1.3 Utilities

Affected Environment

Utility poles and aerial service lines within the project area are operated by Pacific Gas and Electric Company, Comcast cable television, and South Bell

Communications. Pacific Gas and Electric Company and South Bell Communications also have underground utilities, which include high-pressure gas lines and fiber optic telephone lines. Additional underground utilities include the Merced Water Company water lines, the Merced Irrigation District irrigation lines, and the City of Merced storm drains and sewer lines.

Impacts

Construction of the Build Alternative would require relocation of approximately 43 utility poles. The following underground utilities would also be affected: Pacific Gas and Electric Company gas lines, South Bell Communications, the Merced Water Company water lines, the Merced Irrigation District irrigation lines, and the City of Merced storm drains and sewer lines.

Avoidance, Minimization, and/or Mitigation Measures

Although utility poles and service lines would be relocated, minimal service interruption may occur as services are transferred or relocated.

2.1.4 Traffic and Transportation / Pedestrian and Bicycle Facilities

Regulatory Setting

The Federal Highway Administration directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans and the Federal Highway Administration are committed to carrying out the 1990 Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

Affected Environment

The intersection of State Route 59 and 16th Street currently operates using stop signs. Bear Creek Road, Willowbrook Avenue, and Cooper Avenue all access the two-lane highway as T-intersections rather than four-way intersections. For vehicles driving on State Route 59, there are no stop signs or traffic signals at these intersections.

Olive/Santa Fe Avenue intersects State Route 59 towards the northern end of the project.

Although the City of Merced's bus system uses State Route 59, there are currently no designated bus turnouts within the project area. A bike path enters the project area from the east at the southeast corner of Olive Avenue and State Route 59. The bike path continues across Olive Avenue, along State Route 59, until it reaches Black Rascal Creek where it veers eastward. The rest of the project area does not have bike lanes because the shoulder widths are non-standard and therefore the highway would not accommodate a bike lane.

Impacts

The proposed project would have the following beneficial impacts to traffic and transportation:

- To improve the operation of State Route 59 within the project area, traffic signals are proposed for the 16th Street and State Route 59 intersection, the entrance to the Riviera Holiday Mobile Estates, and the proposed four-way intersection of Willowbrook and Cooper avenues.
- Willowbrook Avenue would be realigned to intersect State Route 59 directly across from Cooper Avenue, creating a four-way intersection. The new intersection at Willowbrook and Cooper avenues would provide improved operation of the highway because it would be signalized and would eliminate the two T-intersections.
- Since the project area is developed, a left-turn lane has been proposed for the length of the project, which would allow for improved access to both residences and businesses.
- Dual left-turn lanes at the intersection of Olive Avenue and State Route 59 would further improve the flow of traffic within the project area.
- To provide for alternative methods of transportation, the proposed widened shoulders would be designated as a bike lane to accommodate bicycle traffic throughout the project area.
- Two bus turnouts would also be provided on both the east and west side of the highway, which would make it easier to use the bus system.
- Implementation of the Build Alternative would relieve traffic congestion and improve safety within the proposed project limits by satisfying the Level of Service D criteria for 12 years after being constructed (Figure 2-1). To satisfy the standard 20-year Level of Service D criteria, the project would need to be a six-

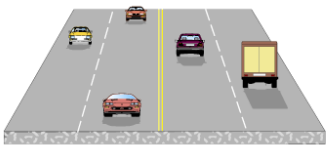
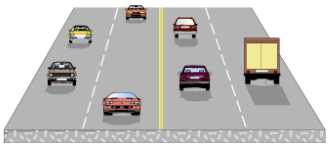
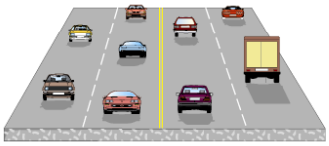
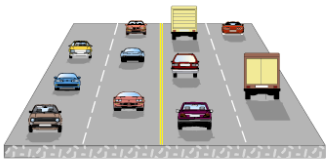
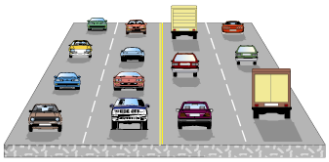
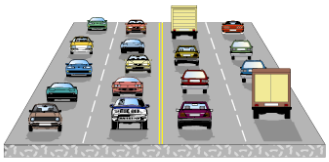
lane facility instead of a four-lane facility. Widening to six lanes would result in significant environmental effects to established neighborhoods, such as the acquisition and relocation of businesses, mobile homes, single-family homes, and apartments. Additionally, the Merced County Association of Governments is conducting preliminary design and environmental studies for relocating State Route 59 to bypass the City of Merced. The proposed bypass facility is anticipated to reduce travel demand on State Route 59 within the project area.

Avoidance, Minimization, and/or Mitigation Measures

This project would be constructed in phases. During construction, a Traffic Management Plan would be developed to accommodate local traffic patterns and reduce delays and congestion. Standard Caltrans construction practices include: information updates on roadway conditions; portable changeable message signs; lane and road closures; advance warning signs; alternate routes; reverse and alternative traffic control; and a traffic contingency plan for unforeseen circumstances and emergencies. Caltrans would meet with local public officials to review the plan, as well as publicize plan details. Construction may be scheduled to avoid areas that need access during seasonal periods, such as harvest season. Typically, Caltrans would provide access to property owners.

LEVELS OF SERVICE

for Multi-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		60	Highest level of service. Traffic flows freely with little or no restrictions on maneuverability. **No delays**
B		60	Traffic flows freely, but drivers have slightly less freedom to maneuver. **No delays**
C		60	Density becomes noticeable with ability to maneuver limited by other vehicles. **Minimal delays**
D		57	Speed and ability to maneuver is severely restricted by increasing density of vehicles. **Minimal delays**
E		55	Unstable traffic flow. Speeds vary greatly and are unpredictable. **Minimal delays**
F		<55	Traffic flow is unstable, with brief periods of movement followed by forced stops. **Significant delays**

Source: 2000 HCM, Exhibit 21-3, Speed-Flow Curves with LOS Criteria for Multi-Lane Highways

Figure 2-1 Levels of Service for Multi-Lane Highways

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 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

A Scenic Resource Evaluation was completed on May 5, 2005. Land uses adjacent to State Route 59 within the project area are a mixture of rural undeveloped land, single- and multi-family residences, industrial businesses, a church, and a mobile home park. Large trees and shrubs screen some of the properties. Large trees are within the right-of-way at various locations, including Bear Creek, Black Rascal Creek, and an area north of Black Rascal Canal.

Impacts

The proposed project would remove trees and shrubs that provide vegetative screens for the church, businesses, and residences. The trees and shrubs function as a visual barrier to and from the road.

Numerous eucalyptus trees within the state right-of-way are considered visual resources. These trees would potentially be removed to accommodate the widening of the existing roadway. The highway widening would also affect the trees lining 16th Street near the vacant Firestone Tire building and some olive trees between 16th Street and North Bear Creek Drive. Within the riparian area next to Bear Creek Bridge, a large oak tree and a large alder tree would be affected. Between the two Bear Creek bridges, a large sycamore could potentially be affected. Additional trees and plants that would be removed include oleanders, black locust, and willow.

Avoidance, Minimization, and/or Mitigation Measures

Property owners who experience a removal of screening vegetation from their properties would be compensated at the time of right-of-way purchase. Removal of any sizable eucalyptus, alder, sycamore, or native oaks from Caltrans' right-of-way would be replaced with similar trees. The trees lining 16th Street, the oleanders, black locust, and willow would need to be replanted.

2.1.6 Cultural Resources

Regulatory Setting

"Cultural resources" as used in this document refers to historic and archaeological resources eligible for or listed in the National, State, or local register of historic places. The primary federal laws dealing with historic and archaeological resources include:

The National Historic Preservation Act, as amended, sets national policy and procedures regarding "historic properties"—that is, districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of National Historic Preservation Act requires federal agencies to consider the effects of their undertakings on such properties, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800).

The Native American Graves Protection and Repatriation Act addresses the rights of lineal descendants, Indian tribes, and Native Hawaiian organizations to Native American human remains and certain cultural items with which they are affiliated, and directs federal agencies and federally assisted museums to identify and repatriate the cultural affiliation of Native American human remains and related cultural items in holdings or collections under their possession or control.

Cultural resources may also be protected by Section 4(f) of the U.S. Department of Transportation Act.

Under California law, cultural resources are protected by the California Environmental Quality Act, as well as Public Resources Code Section 5024.1, which established the California Register of Historic Places. Section 5024.5 requires state agencies to provide notice to, and to confer with the State Historic Preservation Officer before altering, transferring, relocating, or demolishing state-owned historic resources.

Affected Environment

Architectural History

Buildings in the project area are primarily single-family residences and apartment complexes. There are also two churches, industrial and business properties, four bridges, and a canal.

Nineteen properties requiring consideration were identified. All other properties in the project area did not require evaluation. Three of the identified properties were bridges previously determined ineligible for the National Register, and requiring no further evaluation. The remaining properties, consisting of 10 buildings, one bridge, State Route 59 (the old Snelling Road), railroad tracks, Black Rascal Canal, and a group of irrigation features were evaluated for eligibility for inclusion in the National Register of Historic Places. The evaluation was done in accordance with the National Historic Preservation Act, the Federal Highway Administration, and the State Historic Preservation Office guidelines. None of the properties evaluated were deemed eligible for inclusion in the National Register of Historic Places.

Archaeology

A surface survey did not locate any archaeological material. Where surface visibility was limited, alternate methods of investigation were used to determine the presence of cultural resources. Data gathered from the Merced County Historical Society, archived material and personal communications from Merced Junior College, archives at the State Library, Caltrans bridge data, and the history of the Merced Irrigation District shows the study area is not likely to contain archaeological resources. Additional field studies also indicated that stable soils below the surface that may be associated with archaeological resources were not present within the project area.

Impacts

There are no impacts to eligible properties or archaeological resources. The State Historic Preservation Officer concurred with Caltrans' finding of No Historic Properties Affected on April 18, 2005. The letter can be found in Appendix E.

Avoidance, Minimization, and/or Mitigation Measures

If artifacts were discovered during excavation, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that disturbances and activities shall cease. The County Coroner must be notified of the find immediately so that he/she may ascertain the origin. Pursuant to Public Resources Code Section 5097.98 if the remains were thought to be Native American, then the coroner would notify the Native American Heritage Commission, who would then notify the Most Likely Descendent. The Most Likely Descendent may inspect the remains with the approval of the landowner or the landowner's authorized representative. The Most Likely Descendent must complete this inspection within 24 hours after notification by the Native American Heritage Commission. The Most Likely Descendent may recommend scientific removal and nondestructive analysis.

2.2 Physical Environment

2.2.1 Water Quality and Storm Water Runoff

Regulatory Setting

The primary federal law regulating water quality is the Clean Water Act. Section 401 of the act requires a water quality certification from the State Board or Regional Board when a project: 1) requires a federal license or permit (a Section 404 permit is the most common federal permit for Caltrans projects), and 2) will result in a discharge to "waters of the United States." Waters are defined as anything that might be considered waterways either on a commercial or recreational scale.

Section 402 of the act establishes the National Pollutant Discharge Elimination System permit system for the discharge of any pollutant (except dredge or fill material) into waters of the United States. To ensure compliance with Clean Water Act Section 402, the State Water Resources Control Board has issued a National Pollutant Discharge Elimination System Statewide Storm Water Permit to regulate storm water discharges from Caltrans facilities. The permit regulates storm water discharges from the Caltrans right-of-way both during and after construction, as well as from existing facilities and operations.

In addition, the State Water Resources Control Board has issued a construction general permit for most construction activities covering greater than 0.40 hectare (1 acre), that are part of a Common Plan of Development exceeding 2.02 hectares (5 acres) or that have the potential to significantly impair water quality. Some construction activities may require an individual construction permit. All Caltrans projects that are subject to the construction general permit require a Storm Water

Pollution Prevention Plan, while all other projects require a Water Pollution Control Program. Subject to Caltrans' review and approval, the contractor prepares both the Storm Water Pollution Prevention Plan and the Water Pollution Control Program. These identify construction activities that may cause pollutants in storm water and measures to control these pollutants. Since neither the Water Pollution Control Program nor the Storm Water Pollution Prevention Plan are prepared at this time, the following discussion focuses on anticipated pollution controls.

In some areas, Regional Water Quality Control Boards have issued permits that supersede parts of the general permit. Also, some Regional Water Quality Control Boards have issued Water Discharge Requirements in addition to the general permit. An example is the requirement in some areas to notify the Regional Water Quality Control Board that soils containing aerially deposited lead will be reused.

Additional laws regulating water quality include the Porter-Cologne Water Quality Act , Safe Drinking Water Act, and Pollution Prevention Act. State water quality laws are codified in the California Water Code.

Affected Environment

The project site lies within the North Valley Floor Hydrologic Area of the San Joaquin River watershed. The principal streams in this area are the San Joaquin River and its larger tributaries, the Upper Merced River, Lower Merced River, Chowchilla River, and the Bear and Owens creeks. Bear Creek and Black Rascal Creek are the only water bodies within the project limits. A Water Quality Report was completed on February 16, 2005.

Impacts

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

- Increases in sediments, turbidity, 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 and 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

2.2.2 Hazardous Waste Materials

Regulatory Setting

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

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The Resource Conservation and Recovery Act provides for "cradle to grave" regulation of hazardous wastes. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, is to clean up contaminated sites so that public health and welfare are not compromised. 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 primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

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

Affected Environment

An Initial Site Assessment was completed on June 27, 2002. Field surveys and record searches were used to identify potential hazardous waste concerns within the project area. The project area consists of single-family residential homes, community housing, a trailer park, and several businesses.

Five potential concerns requiring further study were identified in the project area. They are lead-based paint, treated wood, asbestos-containing materials, aerially deposited lead, and potential soil impacts adjacent to the railroad.

Impacts

Due to the fact that residential structures and bridges within the project area are of the age when lead-based paint was used, it is recommended that all paints within the project area be treated as containing lead during any future maintenance, renovation, and demolition activities. For the three bridges, 12 square meters (39.4 square feet) of peeling and flaking paint was present.

The Black Rascal Canal Bridge railings are made of treated wood that contain the chemical pentachlorophenol in amounts that exceed the threshold to be classified as a hazardous material. The wood samples collected from the bridge rail were also analyzed for arsenic, copper, and zinc. Based on the analysis, these chemicals also exceeded their threshold for being toxic and should be classified as a hazardous material.

Bridge samples were collected and analyzed for asbestos-containing materials. Based on the results of the analysis, asbestos was not detected in the bridge samples.

It is recommended that if excavations are 0.61 meter (2 feet) or more in depth, the soil may be reused onsite as clean fill material or disposed of as a non-hazardous waste with regards to aerially deposited lead. If the excavations are less than 0.61 meter (2 feet) in depth, the soil could contain lead concentrations in an amount that exceeds the threshold to be classified as a hazardous waste. Additional sampling for waste classification of stockpiled soil is recommended before re-use or disposal if the excavations are 0.61 meter (2 feet) or less.

Soil samples that were collected adjacent to the railroad right-of-way were analyzed for Total Petroleum Hydrocarbons from gasoline and metals other than lead. The results of the analysis determined that the Total Petroleum Hydrocarbons and metals were not present in amounts that would classify the soil as hazardous waste.

Avoidance, Minimization, and/or Mitigation Measures

The residential structures that would be acquired should be surveyed for lead-based paint and asbestos-containing materials prior to demolition. If Caltrans requires partial or full acquisition of parcels, property, or structures known to have or, through further investigation, found to have hazardous waste on or within the parcel boundaries, property, or structures, then these wastes should be removed and disposed of in an appropriate Class 1 land fill.

Before planned demolition work, any flaking and peeling paint on the bridges should be removed and disposed of properly. The intact lead-painted materials that are removed and demolished do not require disposal as a hazardous waste; however, the painted waste materials should be characterized before disposal. The bridge rails that are made of treated wood should be handled as a hazardous waste and disposed of accordingly.

For excavations less than 0.61 meter (2 feet) in depth, the soil may be re-used onsite only if it meets the standards of the Department of Toxic Substance Control. For soil that has been stockpiled, a sample analysis should be done to classify the soil as a hazardous waste or as soil suitable for re-use onsite.

2.2.3 Air Quality

Regulatory Setting

The Clean Air Act, as amended in 1990, is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. Standards have been established for carbon monoxide, nitrogen dioxide, ozone, and particulate matter that is 10 microns in diameter or smaller.

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

Regional level conformity is concerned with how well the region is meeting the standards set for the pollutants listed above. At the regional level, Regional Transportation Plans are developed that include all of the transportation projects

planned for a region over a period of years, usually 20. Based on the projects included in the Regional Transportation Plans, an air quality model is run to determine whether or not the implementation of those projects would result in a violation of the Clean Air Act. If no violations would occur, then the regional planning organization, such as the Merced County Association of Governments for Merced County, and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation Plan is in conformity with the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the Regional Transportation Plans, then the proposed project is deemed to be in conformity at the regional level.

Conformity at the project level is also required. As above, the pollutants of concern are carbon monoxide, nitrous dioxide, ozone, and particulate matter that is 10 microns in diameter or smaller. If a region is meeting the standard for a given pollutant, then the region is said to be in “attainment” for that pollutant. If the region is not meeting the standard, then it is designated a “non-attainment” area for that pollutant. Areas that were previously designated as non-attainment areas but have recently met the standard are called “maintenance” areas. If a project is located in a non-attainment or maintenance area for a given pollutant, then additional air quality analysis and reduction measures for that pollutant are required. This is most frequently done for carbon monoxide and particulate matter that is 10 microns in diameter or smaller.

Affected Environment

The proposed project lies in the San Joaquin Valley Air Basin. The mountain ranges bordering the air basin influence wind direction and speed. They channel winds through the valley, affecting both the climate and dispersion of air pollutants, and they contribute to an atmospheric inversion layer in the valley. Inversions occur when the upper air becomes warmer than the air beneath it and traps pollutants near the earth’s surface before they disperse upward. Inversions occur throughout the year in the San Joaquin Valley, although they are more prevalent and of greater magnitude in late summer and fall. An Air Quality Analysis was completed on April 28, 2005.

For federal standards, Merced County is considered in attainment with respect to carbon monoxide and nitrogen dioxide, and in non-attainment with respect to ozone, $PM_{10,}$ and $PM_{2.5}$. For state standards, Merced County is considered in attainment with respect to carbon monoxide and sulfur dioxide and in non-attainment with respect to ozone and particulate matter, and unclassified with respect to hydrogen sulfide.

Table 2.6 shows the air quality classifications for particulate matter, ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and hydrogen sulfide by federal and state standards.

Table 2.6 Air Quality Emissions Standards

Criteria Pollutant	Federal Standard	Federal Attainment Status	State Standard	State Attainment Status
Ozone	0.12 ppm (1-hour average)	Non-attainment/ Severe	0.09 ppm (1-hour average)	Non-attainment
Carbon Monoxide	35 ppm (1-hour average) 9 ppm (8-hour average)	Attainment/ Maintenance	20 ppm (1-hour average) 9 ppm (8-hour average)	Attainment
Particulate $Matter_{2.5}$	15 micrograms/m^3 (annual arithmetic mean) 150 micrograms/m^3 (24 hour average)	Non-Attainment	No Standard	No Standard
Particulate $Matter_{10}$	150 g/m^3 (annual arithmetic mean)	Non-Attainment/ Serious	50 g/m^3 (annual arithmetic mean)	Non-Attainment
Nitrogen Oxide	.053 ppm (1-hour annual average)	Attainment	0.25 ppm (1-hour annual average)	Attainment
Sulfur Dioxide	0.14 ppm (24 hours)	Attainment	0.25 ppm (1 hour)	Attainment
Hydrogen Sulfide	No federal standard	N/A	0.03 ppm (1 hour)	Unclassified

ppm = parts per million
micrograms/m^3 = micrograms per cubic meter
g/m^3 = grams per cubic meter

Impacts

Regional Analysis

The cost-constrained 2004 Regional Transportation Plan for Merced County was found to conform by the Merced County Association of Governments on August 19, 2004, and the Federal Highway Administration and Federal Transit Administration adopted the air quality conformity finding on September 22, 2004. The project is also included in the Merced County Association of Governments' cost-constrained Federal Transportation Improvement Program, which was found to conform by the Federal Highway Administration and Federal Transit Administration on September 22, 2004.

The project is expected to improve the Level of Service and reduce the overall idling time at intersections. The reduction in idling time would reduce idle emissions of PM_{10} and thus improve the air quality in the project area. In addition, this project would not create or worsen an existing violation of the PM_{10} National Ambient Air Quality Standard.

During construction, the proposed project would generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation measures are required for the long-term operational air quality effects. To minimize construction-related impacts to air quality, the contractor would be required to comply with all local air quality ordinances. Dust would be controlled by standard construction practices, such as spraying disturbed areas with water and limiting work on windy days. The project would also be subject to the San Joaquin Valley Unified Air Pollution Control District regulations to control dust emissions from human activities. Rule 8020 (Control of Fine Particulate Matter from Construction, Demolition, Excavation, and Extraction Activities) would apply to the project. Rule provisions require that:

- Disturbed areas not actively used for seven days would be stabilized to limit visible dust emissions.
- Ground-disturbing activities be undertaken with appropriate dust control measures during disturbance.
- Visual dust emission from onsite, unpaved roads and offsite, unpaved access roads would be effectively limited.
- Accumulated mud or dirt would be removed from paved public roads, including shoulders next to construction.

2.2.4 Noise

Regulatory Setting

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare of the public and to foster a healthy environment.

For highway transportation projects with Federal Highway Administration involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria that are used to determine when a noise impact would occur. The noise abatement criteria differ depending on the type of land use under analysis. For example, the noise abatement criterion for residences (67 decibels) is lower than for commercial areas (72 decibels). Table 2.7 lists the noise abatement criteria.

In accordance with the Caltrans *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, October 1998*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12-decibel or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 decibel of the noise abatement criteria.

If it is determined that the project would have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project. Table 2.8 shows typical noise levels.

Table 2.7 Noise Abatement Criteria Thresholds

Activity Category	Noise Abatement Criteria Hourly A-Weighted Noise Level, dBA $L_{eq}(h)$	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

dBA = A-weighted decibels, which are adjusted to approximate the way humans perceive sound

Table 2.8 Typical Noise Levels

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

The Caltrans *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5-decibel reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978, and the cost per benefited residence.

Affected Environment

Caltrans completed a noise investigation for this project, which included identifying noise-sensitive receptors, such as residences, businesses, and a church. Land uses within the project area are mostly industrial and residential, including apartments and a mobile-home park. The distances from the State Route 59 edge of the roadway to the receptors (homes and businesses) range from 18.6 meters (61.0 feet) to 66.6 meters (218.5 feet).

Impacts

Forty individual receptors were identified as being affected by the proposed project (see Appendix H, Noise Receptor Map). Future noise levels were predicted at these locations to determine if the project would have traffic noise impacts.

Of the 40 receptors, only 12 meet the noise abatement criteria by approaching or exceeding 67 decibel (criteria for residential uses) (Table 2.9).

Receptors 2 to 13 are all located within the Riviera Holiday Mobile Estates and require noise abatement in the form of sound barriers to achieve a 5-decibel decrease in noise. The future noise level with the proposed project at these receptors is predicted to increase, causing an adverse impact. To achieve a 5-decibel reduction for these receptors, a 1.8-meter (6-foot) high sound wall would be needed.

The remaining receptors (1, and 14 to 40) also experienced an increase in noise level from the proposed project. However, it was determined that these receptors did not meet the noise abatement criteria as the noise at these receptors remained below the 67 decibels.

Avoidance, Minimization, and/or Abatement Measures

Based on the studies completed to date, Caltrans and the Federal Highway Administration intend to incorporate noise abatement in the form of two barriers. The barriers would be placed in front of the Riviera Holiday Mobile Estates so as not to block the entrance. Each barrier would be 96.87 meters (317.81 feet) long with an average height of 1.8 meters (6 feet). Calculations based on preliminary design data indicate that the barriers would reduce noise levels from 5 to 13 decibels. If, during final design, conditions have substantially changed, noise abatement may not be necessary. The final decision regarding noise abatement would be made upon completion of the project design and public involvement.

Table 2.9 Noise Levels for the Olive Avenue/16th Street Widening

Receptor	Address	Existing Noise Level	Future Modeled Noise Level (Leq (h)) (No Build)	Predicted Noise Level (Leq(h), 20 years) w/o Barrier (Build Condition)	Feasible and Reasonable	Predicted Noise Level with Abatement		
						1.8 m (6 ft)	2.4 m (8 ft)	3.0 m (10 ft)
1	2434 Hwy 59	54.8	58.6	59.7	No/No	*	*	*
2	Mobile Home 1	61.3	62.6	66.2	Yes/Yes	55.7	54.5	53
3	Mobile Home 2	61.3	62.6	64.5	Yes/Yes	56.9	55.7	54.1
4	Mobile Home 3	61.5	63.1	65.9	Yes/Yes	56.8	55.5	53.8
5	Mobile Home 4	63.2	64.5	65.9	Yes/Yes	56.7	55.4	53.7
6	Mobile Home 5	63.2	65.7	65.8	Yes/Yes	56.9	55.6	53.9
7	Mobile Home 6	64.0	64.6	66.1	Yes/Yes	56.9	55.8	53.9
8	Mobile Home 7	63.9	63.0	66.1	Yes/Yes	57.1	55.6	54.2
9	Mobile Home 8	63.8	64.5	66.1	Yes/Yes	58.8	55.8	56.4
10	Mobile Home 9	63.8	60.5	66.9	Yes/Yes	57.1	57.7	59.6
11	Mobile Home 10	66.0	66.3	70.2	Yes/Yes	58.8	60.1	55.9
12	Mobile Home 11	61.6	66.5	70.2	Yes/Yes	60.5	57.3	53.5
13	Mobile Home 12	61.1	64.5	65.6	Yes/Yes	58.5	55.2	52.9
14	2610 Hwy 59	61.1	61.1	64.4	No/No	*	*	*
15	2620 Hwy 59	61.1	62.5	64.4	No/No	*	*	*
16	2636 Hwy 59	61.0	62.8	64.4	No/No	*	*	*
17	2646 Hwy 59	60.3	62.7	64.4	No/No	*	*	*
18	2652 Hwy 59	60.7	62.8	64.4	No/No	*	*	*
19	2668 Hwy 59	63.3	63.3	64.4	No/No	*	*	*
20	2678 Hwy 59	64.4	63.7	64.4	No/No	*	*	*
21	2680 Hwy 59	57.6	62.7	64.4	No/No	*	*	*
22	2686 Hwy 59	66.0	64.1	64.4	No/No	*	*	*
23	2696 Hwy 59	62.4	62.5	64.4	No/No	*	*	*
24	2708 Hwy 59	65.7	64.9	64.4	No/No	*	*	*
25	2740 Hwy 59	63.1	66.2	64.4	No/No	*	*	*
26	2750 Hwy 59	63.0	64.0	64.4	No/No	*	*	*
27	2790Hwy 59	62.0	62.1	61.6	No/No	*	*	*
28	2794 Hwy 59	58.1	60.7	61.6	No/No	*	*	*
29	2800 Hwy 59	61.6	61.1	61.6	No/No	*	*	*
30	2808 Hwy 59	65.7	62.7	61.6	No/No	*	*	*
31	2824 Hwy 59	60.8	60.1	61.6	No/No	*	*	*
32	2872 Hwy 59	63.9	62.7	61.6	No/No	*	*	*
33	2896 Hwy 59	64.9	63.5	61.6	No/No	*	*	*
34	2901 Hwy 59	65.4	64.1	65.3	No/No	*	*	*
35	2940 Hwy 59	64.8	63.8	65.3	No/No	*	*	*
36	2940 Hwy 59	61.6	63.0	65.3	No/No	*	*	*
37	2940 Hwy 59	62.2	62.9	65.3	No/No	*	*	*
38	2940 Hwy 59	62.0	62.8	65.3	No/No	*	*	*
39	2940 Hwy 59	62.6	62.9	65.3	No/No	*	*	*
40	3065 Hwy 59	57.8	58.6	62.0	No/No	*	*	*

* Values for these receptors were not calculated because they did not meet the noise abatement criteria.
m = meters; ft = feet

2.2.5 Hydrology and Floodplain

Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 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 100-year 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 100-year floodplain.”

Affected Environment

A Location Hydraulic Study was completed on December 10, 2002 using Flood Insurance Rate Maps. 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 100-year base floodplain crosses the proposed project between kilometer post 24.6 and 26.7 (post mile 15.3 and 16.6) and is designated as “Zone AO, Zone AE, and Zone AH”. Zones AO, AE, and AH are defined as areas inundated by 100-year shallow flooding where depths are between 0.30 meters (1 foot) and 0.91 meters (3 feet).

Impacts

The proposed project does not create a longitudinal encroachment within the 100-year floodplain because the highway, including bridges, would be constructed to allow through water flow. Further, the project would not have a substantial encroachment on the base floodplain. There would be no substantial effects on natural or beneficial floodplain values.

Avoidance, Minimization, and/or Mitigation Measures

Routine construction procedures to minimize floodplain impacts and restore or preserve floodplain values would be incorporated into the final design. These procedures include, but are not limited to, raising the bridge elevation at Black Rascal Creek by 1.5 meters (5 feet) to stay above the 100-year floodplain level, constructing a curb-and-gutter drainage network, and creating discharge basins to collect runoff.

2.3 Biological Environment

As expected in an urban area, no natural communities exist within most of the project area because paved areas, residences, commercial facilities, an active railroad, and parking lots encompass most of the area. The few places that are unpaved consist of the State Route 59 shoulders, disked areas, dirt parking lots/pullout areas, and recently imported fill dirt. The Caltrans right-of-way and adjacent areas within the northern portion of the project area support some vegetation typical of disturbed areas, including annual, non-native ripgut brome (*Bromus diandrus*), prickly lettuce (*Lactuca serriola*), and foxtail barley (*Hordeum murinum*).

2.3.1 Wetlands and Waters of the United States

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 primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into “waters of the United States,” including wetlands. “Waters of the United States” include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation’s waters would be significantly degraded. The Section 404 permit program is run by the

U.S. Army Corps of Engineers 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, 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. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify 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. California Department of Fish and Game 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 U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California 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. Please see Water Quality and Storm Water Runoff, Section 2.2.1, for additional details.

Affected Environment

Bear Creek flows under 16th Street and is maintained for the controlled release of irrigation water. Peak flows for Bear Creek occur from as early as March and as late as October when irrigation demand is greatest (see Table 2.11). From approximately November through February, irrigation water stops flowing and the creek mostly carries precipitation from the Sierra Nevada foothills. Black Rascal Creek flows under State Route 59 in the northern portion of the project area. Black Rascal Creek

carries irrigation water as well, but flows are typically less. Black Rascal Creek splits into two channels as it approaches and flows under State Route 59's two bridges.

Bear Creek and Black Rascal Creek qualify as Waters of the U.S. under the jurisdiction of the U.S. Army Corp of Engineers. Black Rascal Creek also contains jurisdictional wetlands in shallower areas. The term "jurisdictional wetlands" refers to areas that are saturated by surface or ground water at a frequency and duration sufficient to support vegetation adapted for saturated soil conditions.

Two riparian areas are in the project area. Riparian refers to vegetation that grows along the banks of a stream, river, or lake. One riparian area around Bear Creek contains intermittent patches of vegetation, mainly comprised of blackberry vines (*Rubus* sp.) and a sparse mixture of non-native and native trees. Native trees include the Fremont cottonwood (*Populus fremontii*) and the valley oak (*Quercus lobata*). The riparian habitat along the creek has been greatly degraded and has lost virtually all of its original integrity.

The other riparian area around Black Rascal Creek maintains a greater riparian diversity than Bear Creek in a thin riparian belt, mainly comprised of large eucalyptus trees (*Eucalyptus* sp.) and blackberry vines. Flow velocity is slow enough to reduce scouring (erosion caused by moving water) and to allow for intermittent patches of wetland vegetation to take hold in shallower areas including bulrush (*Scirpus* sp.), juncus (*Juncus* sp.), and cattails (*Typha* sp.).

Impacts

Approximately 0.32 hectare (0.80 acre) of Bear Creek may be temporarily affected from the construction of new bridge columns for the Bear Creek bridges (see Table 2.10). Construction equipment would need access to the creek channel during construction activities. However, permanent impacts are expected to total less than 0.04 hectare (0.10 acre), resulting from the placement of new bridge columns within the Bear Creek channel.

Table 2.10 Wetland and Other Waters Impacts

	Permanent Impacts*	Temporary Impacts*	Jurisdictional Agency
Bear Creek (Waters of the US)	0.04 hectare (0.10 acre)	0.32 hectare (0.80 acres)	U. S. Army Corp of Engineers
Black Rascal Creek (Wetlands)	0.18 hectare (0.44 acre)	None	U. S. Army Corp of Engineers

Within Black Rascal Creek, construction activities could permanently affect up to 0.18 hectare (0.44 acre) of jurisdictional wetlands. Less than 0.04 hectare (0.10 acre) of Waters of the U.S. would be permanently removed.

Avoidance, Mitigation, and/or Minimization Measures

Impacts to wetlands and waters of the U.S. would be minimized to the greatest extent practicable. For unavoidable impacts to wetlands, proposed mitigation would consist of the creation of a wetland onsite or the purchase of credits at a wetland mitigation bank.

Permits required for work within Bear and Black Rascal Creeks include:

- 1602 Streambed Alteration Agreement from the California Department of Fish and Game
- 404 Nationwide Permit 14 (linear transportation projects) and 33 (temporary construction, access, and dewatering) from the Army Corp of Engineers
- 401 Certification from the Regional Water Quality Control Board

2.3.2 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. For detailed information regarding these species, please see the Threatened and Endangered Species section (2.3.4) in this document.

This section of the document discusses all of 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 in the California Fish and Game Code, Section 2050, et. seq. Caltrans projects are also subject to the Native Plant Protection Act, found in the California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100-2117.

Affected Environment

Caltrans biologists surveyed the proposed project area for impacts to rare and sensitive plant species after a review of the California Department of Fish & Game California Natural Diversity Database, the U.S. Fish and Wildlife Service special-status species list, and the California Native Plant Society Electronic Inventory.

The majority of the surface acreage of the project area includes paved areas, residences, commercial facilities, an active railroad, and parking lots. The few places that are unpaved consist of the shoulders of State Route 59, disked areas, dirt parking lots/pullout areas, and recently imported fill dirt. The Caltrans right-of-way and adjacent areas within the northern portion of the project area support some vegetation typical of disturbed areas, including annual, non-native ripgut brome (*Bromus diandrus*), prickly lettuce (*Lactuca serriola*), and foxtail barley (*Hordeum murinum*).

Bear Creek contains intermittent patches of vegetation, mainly comprised of blackberry vines (*Rubus* sp.) and a mixture of non-native and native trees. Native trees include the Fremont cottonwood (*Populus fremontii*) and valley oak (*Quercus lobata*). The riparian habitat along the creek has been greatly degraded and has lost virtually all of its original integrity.

Black Rascal Creek maintains a greater riparian diversity than Bear Creek in a thin riparian belt, mainly comprised of large eucalyptus trees (*Eucalyptus* spp.) and blackberry vines. Black Rascal Creek flows slow enough to allow for intermittent patches of wetland vegetation to take hold in shallower areas including bulrush (*Scirpus* sp.), juncus (*Juncus* sp.), and cattails (*Typha* sp.).

Impacts

Several large riparian trees on Bear Creek and Black Rascal Creek would require removal before construction.

Avoidance, Mitigation, and/or Minimization Measures

To compensate for the removal of riparian vegetation, riparian trees and shrubs would be planted in a location and at a ratio determined later as required by the California Department of Fish and Game.

2.3.3 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 Administration Fisheries, 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 2.3.4 below. 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 United States Fish and Wildlife Service or National Oceanographic and Atmospheric Administration Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the National Environmental Policy Act, Migratory Bird Treaty Act, and Fish and Wildlife Coordination Act. State laws and regulations pertaining to wildlife include the California Environmental Quality Act, Sections 1601–1603 of the Fish and Game Code, and Sections 4150 and 4152 of the Fish and Game Code.

Affected Environment

Caltrans biologists investigated potential impacts to wildlife in the proposed project area, after a review of the California Department of Fish & Game California Natural Diversity Database and the U.S. Fish and Wildlife Service special-status species list.

Large trees, primarily eucalyptus, provide potential nesting and roosting habitat for raptors within the project area. The two most common species are the red-tailed hawk (*Buteo jamaicensis*) and the Swainson's hawk (*Buteo swainsoni*). In addition, trees, shrubs, and other structures provide potential nesting habitat for a variety of migratory birds. The undersides of the bridges at Bear Creek and Black Rascal Creek provide nesting habitat for cliff swallows (*Hirundo pyrrhonota*). Additionally, the Bear Creek Bridge expansion joints provide high quality day and night roosting habitat for bats.

Impacts

If trees and other structures with active raptor nests are removed during the nesting season, mortality to young raptors may occur. If trees, shrubs, and structures occupied by migratory birds are removed during the nesting season, mortality to migratory bird young may occur. Widening of the Bear Creek Bridge and the replacement of Black Rascal Creek Bridge may result in the reduction of swallow nesting and bat roosting

habitat. If construction occurs during the nesting season, mortality to swallow young may occur. Construction on these bridges may also result in the permanent removal of the bat roosting habitat and if bats are present during the construction, mortality could occur.

Avoidance, Mitigation, and/or Minimization Measures

Actions taken to mitigate for impacts to raptors and/or migratory birds would follow guidelines provided in Caltrans' Migratory Bird Special Provisions (see Natural Environmental Study). If practicable, trees, shrubs, and other suitable nesting habitat should be removed during the non-breeding season, which is September 2 through February 14 (see Table 2.11).

If construction occurs during the swallow nesting season, February 15 through September 1, existing nests would be removed prior to February 15 and periodic scalping would be required for the duration of the project, or exclusionary devices such as netting would be used to prevent swallows from building new nests. Actions taken to mitigate for impacts to swallows would follow guidelines provided in Caltrans' Swallow Special Provisions (see Natural Environmental Study).

At least six months prior to construction, visual surveys would be performed to determine existing bat usage of the bridge. If bats were detected, exclusionary devices such as netting or foam would be used to deter bats from occupying the bridge prior to and/or during construction. To compensate for lost roosting habitat, replacement habitat would be incorporated into the new bridge design and/or installed offsite.

2.3.4 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: United States Code, Title 16 Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the United States Fish and Wildlife Service and the National Oceanographic and Atmospheric Administration Fisheries to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation

under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of 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 California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Affected Environment

An official species list was obtained from the United States Fish and Wildlife Service in July 2004. Field surveys were conducted from 2001 through 2004 in the study area and indicated that Central Valley fall/late fall-run chinook salmon (*Oncorhynchus tshawytscha*) could potentially occur in the project area during extraordinary high flow.

The Central Valley fall/late fall-run chinook salmon, a species of Pacific salmon (*Oncorhynchus* spp.), is a federal candidate for listing as Threatened. Bear Creek serves as an Essential Fish Habitat for the Central Valley fall/late fall-run chinook salmon. Congress defines Essential Fish Habitat for federally managed fish species as "Those waters and substrate necessary for spawning, breeding, feeding, or growth to maturity." Black Rascal Creek, which is a tributary to Bear Creek, also is included as an Essential Fish habitat.

Since the Central Valley fall/late fall-run chinook salmon is a species of concern, it would not have the protection that is provided by the Federal Endangered Species Act. However, the National Oceanic and Atmospheric Administration Fisheries agrees with the protective measures outlined in the Natural Environmental Study for this species. The National Oceanic and Atmospheric Administration Fisheries concurred with the protective measures on September 8, 2004 (see Appendix G).

Impacts

Construction activities may result in a temporary increase in turbidity (cloudiness) and sedimentation downstream of the construction site. Various contaminants, such as fuel and oils, could be introduced into the system either directly or through surface runoff. Sediment could also enter the river from disturbed upland areas during rain events. Salmon are only rarely seen in Bear Creek, and typically, downstream of the project site. Therefore, it is not expected that chinook salmon would be present during construction, even if construction occurs within the typical migration window of October 1 through June 1. In the rare event that chinook salmon make their way to the project construction site, passage beyond the construction site could potentially be obstructed and contaminants (sediments, fuels) might interfere with fish respiration.

Essential Fish Habitat may be temporarily affected by construction associated with the widening of Bear Creek Bridge and replacement of Black Rascal Creek Bridge, specifically from the addition of pile footings and columns. The bridge foundation may require the use of cofferdams for dewatering, pile driving, and footing construction. A cofferdam is a temporary barrier to exclude water and allow construction in an area that is usually submerged. To construct cofferdams, a trestle may be built with floats positioned so that work may be conducted or a gravel access bed may be constructed.

No suitable spawning habitat occurs within the project area. However, Bear Creek and Black Rascal Creek within the project area could be used by migrating chinook salmon, which could be obstructed by construction activities. Water quality could be reduced during construction and affect the fish both in the project area and downstream. Caltrans submitted a concurrence request letter outlining proposed Essential Fish Habitat conservation measures to the National Oceanic and Atmospheric Administration Fisheries on August 11, 2004. The National Oceanic and Atmospheric Administration Fisheries determined that the project activities would not adversely affect Essential Fish Habitat for Pacific salmon, based on their review of the project description and conservation measures provided.

Avoidance, Mitigation, and/or Minimization Measures

Although it is unlikely that chinook salmon would use Bear Creek and/or Black Rascal Creek during construction, the following reasonable mitigation measures are proposed to reduce the potential effects of the proposed project on chinook salmon to a level of n*ot likely to adversely affect*, assuming the listing status of the chinook salmon is elevated prior to or during construction. These measures would be incorporated into the project design, schedule, and specifications. These measures are also expected to address potential impacts to Essential Fish Habitat.

If practicable, all in-water work would be restricted to the period from June 1 to October 1 (see Table 2.11). This is a period when chinook salmon are not expected to be present in the general area and subject to physical disturbance. If in-water construction activities occur outside this restricted period, a qualified biologist would evaluate the condition of the creek during the in-water construction window to verify that no chinook salmon are present within the project area.

- Fish passage would be maintained at all times. If dewatering is necessary, an upstream diversion dam and flumes would be installed to carry water across the work area. The flumes would be sized to carry all of the anticipated flow. The diversion would be left in place until the construction area is backfilled and compacted. The upstream diversion dam would be constructed of non-erodible materials such as sandbags, water bladders, geo-tubes, or K-rails.
- Stranded aquatic life would be captured and removed from the work area on a daily basis.
- All material excavated from the streambed would be stockpiled where it cannot be washed back into the stream or outside the designated construction limits.
- Sediment control devices, such as silt fences, would be placed around all work areas, staging areas, soil stockpiles, or other disturbed ground and maintained for the duration of construction to prevent erosion of fine-textured sediment into the river. If dewatering is necessary, water would be pumped into adjacent upland areas more than 30 meters (100 feet) from the channel. The contractor would take all reasonable precautions to prevent increases in downstream turbidity.
- Construction equipment would not be refueled within 30 meters (100 feet) of the creek.
- Surface runoff from the bridge would be collected and directed into an adjacent upland zone more than 30 meters (100 feet) from the river to allow the water to drop sediment before re-entering the river.

- The construction contractor would also comply with all requirements specified by the California Department of Fish and Game, National Oceanic and Atmospheric Administration Fisheries, the Regional Water Quality Control Board, and/or the Army Corp of Engineers.

Table 2.11 Construction Windows

	Construction Within Creeks	Tree and Shrub Removal
Time Frame	June 1 to October 1	September 2 to February 14

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings and interagency coordination meetings. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

Early Coordination

Caltrans project managers and various members of the project development team have met quarterly with the Merced County Association of Governments, the City of Merced, and the County of Merced. All three agencies are interested in this project and support its construction.

Coordination with Public Agencies

California Department of Fish and Game

- **20 July 2001:** Mr. Clarence Mayott confirmed that a 1602 permit would be required prior to construction for disturbance to both Bear Creek and Black Rascal Creek.
- **23 March 2004:** Mr. Clarence Mayott indicated during a telephone conversation that he would not require an acoustic bat survey to be performed at the 16th Street Bridge over Bear Creek. Mr. Mayott did, however, say that mitigation for impacts to bat habitat would be required in the 1602 Streambed Alteration Agreement. He left it up to Caltrans to propose a mitigation strategy, but said that he approves of "bat boxes" as replacement habitat, either attached to the bridge's outer surface or incorporated into the bridge interior.
- **27 July 2004:** Mr. Clarence Mayott was consulted via telephone regarding the unoccupied stick nest that occurs approximately 76 meters (250 feet) east of the project area north of Black Rascal Creek. Mr. Mayott requested that preconstruction surveys be completed to determine which species (if any) is using the nest. If raptors (including Swainson's hawks) are observed using the nest, construction may proceed, as long as a qualified monitor is onsite and confirms

that nest abandonment would not occur. Timing of construction to occur during the non-nesting season (September 1 – February 15) would be preferable.

National Oceanic and Atmospheric Administration Fisheries

- **2 June 2004:** Ms. Madelyn Martinez indicated that Bear Creek and Black Rascal Creek occur within an appropriate watershed to serve as Essential Fish Habitat. California Department of Fish and Game data submitted in 2001 also show that Central Valley fall/late fall-run chinook salmon (*Oncorhynchus tshawytscha*) were observed in a downstream portion of Bear Creek during an extraordinary high flow. However, Ms. Martinez agreed that the chance of salmon occurring in Bear Creek during construction is slim, and if Caltrans submits a letter agreeing to implement standard avoidance and minimization measures to reduce impacts to the chinook salmon and Essential Fish Habitat, she would not require further consultation if the listing status for chinook salmon is elevated prior to or during construction. Caltrans mailed a concurrence request letter outlining proposed Essential Fish Habitat conservation measures to Ms. Martinez on August 11, 2004. A letter dated September 8, 2004 from the National Oceanic and Atmospheric Administration Fisheries determined that the project activities would not adversely affect Essential Fish Habitat for Pacific Salmon based on their review of the project description and conservation measures provided.

Army Corp of Engineers

- **24 March 2004:** Ms. Nancy Haley submitted verification of delineated wetland boundaries for Black Rascal Creek. Verification is valid for five years.

State Office of Historic Preservation

- **24 March 2005:** Caltrans sent the completed Historic Property Survey Report to the State Historic Preservation Officer.
- **18 April 2005:** The State Historic Preservation Officer concurred with Caltrans findings stating that the evaluated properties were not eligible for the National Register of Historic Properties.

Coordination with Native American Groups

Native American Heritage Commission

- **5 May 2003:** Caltrans contacted the Native American Heritage Commission requesting a search of sacred lands files and a list of potentially interested Native American groups and individuals. The Native American Heritage Commission responded with a letter indicating the search failed to indicate the presence of

Native American cultural resources in the immediate project area and that Katherine Erolinda Perez, as well as the American Indian Council of Mariposa County, were potentially interested parties who may have knowledge of cultural resources near the undertaking.

Native American Tribes, Groups, and Individuals

- **10 June 2003:** Packets that included letters of introduction, project descriptions, and project area maps were sent to the American Indian Council of Mariposa County and Katherine Erolinda Perez.
- **10 February 2005:** Supplemental letters with updated maps were sent to the American Indian Council of Mariposa County and Katherine Erolinda Perez. No response to the letters was received.
- **18 March 2005:** Phone messages were left for the American Indian Council of Mariposa County and Katherine Erolinda Perez stating that Caltrans wanted their input on the project and that Caltrans wanted to update them on the status of the project. No response was received from Ms. Perez. Chairperson Brochini of the American Indian Council of Mariposa County stated that the council had no comment.
- **21 March 2005:** Another message was left for Ms. Perez restating that Caltrans was interested in her comments and that the Historic Property Survey Report was about to be submitted to the State Historic Preservation Officer. Ms. Perez would receive a copy of the report.
- **23 March 2005:** Ms. Perez contacted Caltrans regarding the report. Her review and comments will be done concurrently with the State Historic Preservation Officer review.

Public Participation

Public Hearing

Caltrans will hold a public hearing in Merced when the draft environmental document is approved for circulation. Letters of invitation to the public hearing will be sent to federal, state, and local officials; property owners in the study area; and businesses located along State Route 59 within the project area. The public hearing will also be announced to the general public by advertisements in local newspapers. Public comments will be requested at that time.

Chapter 4 List of Preparers

The following Caltrans staff contributed in the preparation of this Initial Study:

Christopher Bassar, Transportation Engineering Technician. B.S., Environmental Resource Management, Pennsylvania State University, 5 years experience writing technical studies for air quality, noise impacts, and water quality. Contribution: Noise Impact Report

Abdul Rahim Chafi, Transportation Engineer. Ph.D., Engineering Management, California Coast University; M.S., Chemistry, California State University, Fresno; M.S., Civil Engineering, California State University, Fresno; B.S., Chemistry, California State University, Fresno; 6 years experience in transportation engineering. Contribution: Air Quality Study.

Rajeev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 15 years environmental technical studies experience. Contribution: Water Quality Study.

Brian Gassner, Associate Environmental Planner (Archaeology). B.A., Anthropology, Northern Arizona University; 8 Years archaeological field and laboratory experience in Arizona and California, journeyman-level practitioner of Section 106 compliance. Contribution: Archaeology.

Geoffrey Gray, Associate Environmental Planner, Natural Sciences. M.A. and B.A., Biology, California State University, Fresno; 5 years experience in biology for Caltrans. Contribution: Natural Environmental Study.

Susan Greenwood, Associate Environmental Planner. B.S., Environmental Sciences, California State University Fresno. Registered Environmental Health Specialist with the State of California; 12 years experience as a Hazardous Waste Specialist with Counties of Fresno and Madera, 4 years experience with Caltrans in the Hazardous Waste Branch. Contribution: Hazardous Waste evaluations and reports.

Edward A. Hibbs, Associate Landscape Architect. B.S., Landscape Architecture, California Polytechnic State University, San Luis Obispo, A.A., Architecture, Rio Hondo College; more that 27 years of experience in landscape

architecture. Contribution: Scenic Resource Evaluation, Erosion Control, and Landscape Architectural recommendations.

Ram Narayan Gupta, Project Manager. M.B.A., Business Administration, University of Nevada-Reno; B.S., Civil Engineering, Indian Institute of Technology; 17 plus years of experience in project management, contract administration, construction management, budgeting, bridge design, and analysis. Contribution: Project Manager.

Martin Nishikawa, P.E. Senior Transportation Engineer. B.S., Civil Engineering, California State University, Fresno; 18 years of civil engineering experience. Contribution: Design Manager.

Sean Pledger, P. E. Project Engineer. B.S., Civil Engineering, California State University, Chico; 13 years of civil engineering experience. Contribution: Project Engineer.

Jane Sellers, Research Writer. B.A., Journalism, California State University, Fresno; more than 15 years writing/editing experience. Contribution: Document Editor.

Ahmad Shokrpoor, Project Engineer. B.S., Civil Engineering, California State University, Fresno; 10 years of civil engineering experience. Contribution: Project Engineer.

Gordon Watkins, Associate Right-of-Way Agent. B.S., Real Estate and Urban Land Economics, California State University, Fresno. Public and county (10 years) experience in real estate and urban land economics; 3 years experience in Right-of-Way for Caltrans. Contribution: Draft Relocation Impact Statement.

Vickie Traxler, Chief, San Joaquin Valley Analysis Branch. M.S., Regional Resource Planning, Colorado State University; B.S., Environmental Science, Grand Valley State College; 9 years experience in resource planning. Contribution: Environmental Unit Supervisor.

Matthew Voss, Associate Environmental Planner. B.S., Biology, California State University, Fresno; 4 years experience in environmental planning. Contribution: Environmental planning coordinator and document preparation.

Appendix A California Environmental Quality Act Checklist

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.”

The California Environmental Quality Act requires that environmental documents determine significant or potentially significant impacts. In many cases, background studies performed in connection with the project indicate no impacts. A mark in the “no impact” column of the checklist reflects this determination. Any needed explanation of that determination is provided at the beginning of 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?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?		X		
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?				X
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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X
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?				X

	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?				X
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)?				X
d) Expose sensitive receptors to substantial pollutant concentration?				X
e) Create objectionable odors affecting a substantial number of people?				X
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?			X	
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?			X	
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?		X		
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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?				X
COMMUNITY RESOURCES - Would the project:				
a) Cause disruption of orderly planned development?				X
b) Be inconsistent with a Coastal Zone Management Plan?				X
c) Affect life-styles, or neighborhood character or stability?			X	
d) Physically divide an established community?				X
e) Affect minority, low-income, elderly, disabled, transit-dependent, or other specific interest group?		X		
f) Affect employment, industry, or commerce, or require the displacement of businesses or farms?			X	
g) Affect property values or the local tax base?				X
h) Affect any community facilities (including medical, educational, scientific, or religious institutions, ceremonial sites or sacred shrines?				X
i) Result in alterations to waterborne, rail, or air traffic?				X
j) Support large commercial or residential development?				X
k) Affect wild or scenic rivers or natural landmarks?				X
l) Result in substantial impacts associated with construction activities (e.g., noise, dust, temporary drainage, traffic detours, and temporary access, etc.)?			X	
CULTURAL RESOURCES - Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X
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:				X
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.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
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?				X
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.				X
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?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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?				X
b) Create a significant hazard to the public or the environment through reasonably forseeable upset and accident conditions involving the release of hazardous materials into the environment?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
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?				X
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?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
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?				X
HYDROLOGY AND WATER QUALITY - Would the project:				
a) Violate any water quality standards or waste discharge requirements?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
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?			X	
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?			X	
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?				X
f) Otherwise substantially degrade water quality?				X
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?				X
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?				X
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?				X
j) Inundation by seiche, tsunami, or mudflow?				X

LAND USE AND PLANNING - Would the project:

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?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
MINERAL RESOURCES - Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
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?				X
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?		X		
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
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?				X
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?				X
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)?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			X	
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			X	
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?				X
Police protection?				X
Schools?				X
Parks?				X
Other public facilities?				X
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?				X
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?				X
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)?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
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?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incomplete uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X
UTILITY AND SERVICE SYSTEMS - Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
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?				X
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?			X	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
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?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

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

Appendix B Title VI Policy Statement

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.

WILL KEMPTON
Director

"Caltrans improves mobility across California"

Appendix C Summary of Relocation Benefits

California Department of Transportation Relocation Assistance Program

RELOCATION ASSISTANCE ADVISORY SERVICES

The California Department of Transportation (Caltrans) will provide relocation advisory assistance to any person, business, farm, or non-profit organization displaced as a result of Caltrans' acquisition of real property for public use. Caltrans will assist residential displacees in obtaining comparable decent, safe, and sanitary replacement housing by providing current and continuing information on sales price and rental rates of available housing. Non-residential displacees will receive information on comparable properties for lease or purchase.

Residential replacement dwellings will be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, displacees will be offered comparable replacement dwellings that are open to all persons regardless of race, color, religion, sex, or national origin, and are consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include supplying information concerning federal and state assisted housing programs, and any other known services being offered by public and private agencies in the area.

RESIDENTIAL RELOCATION PAYMENTS PROGRAM

The Relocation Payment program will assist eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for, or incidental to, purchasing or renting a replacement dwelling, and actual reasonable expenses incurred in moving to a new location within 80 kilometers (50 miles) of the displacee's property. Any actual moving costs in excess of 80 kilometers (50 miles) are the responsibility of the displacee. The Residential Relocation Program can be summarized as follows:

Moving Costs

Any displaced person who was "lawfully" in occupancy of the acquired property regardless of the length of occupancy in the property acquired will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 80

kilometers (50 miles), a moving service authorization, or a fixed payment based on a fixed moving cost schedule that is determined by the number of furnished or unfurnished rooms of the displacement dwelling.

Purchase Supplement

In addition to moving and related expenses payments, fully eligible homeowners may be entitled to payments for increased costs of purchasing replacement housing.

Homeowners who have owned and occupied their property for 180 days prior to the date of the first written offer to purchase the property, may qualify to receive a price differential payment equal to the difference between Caltrans' offer to purchase their property and the price of a comparable replacement dwelling, and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based on the replacement property interest rate. Also, the interest differential must be based on the "lesser of" either the loan on the displacement property or the loan on the replacement property. The maximum combination of these three supplemental payments that the owner-occupants can receive is $22,500. If the calculated total entitlement (without the moving payments) is in excess of $22,500, the displacee may qualify for the Last Resort Housing described below.

Rental Supplement

Tenants who have occupied the property to be acquired by Caltrans for 90 days or more and owner-occupants who have occupied the property 90 to 180 days prior to the date of the first written offer to purchase may qualify to receive a rental differential payment. This payment is made when Caltrans determines that the cost to rent a comparable and "decent, safe, and sanitary" replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the eligible occupant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted below under the "Down Payment" section (see below). The maximum amount of payment to any tenant of 90 days or more and any owner-occupant of 90 to 179 days, in addition to moving expenses, will be $5,250. If the calculated total entitlement for rental supplement exceeds $5,250, the displacee may qualify for the Last Resort Housing Program described below.

The rental supplement of $7,500 or less will be paid in a lump sum, unless the displacee requests that it be paid in installments. The displaced person must rent and

occupy a “decent, safe, and sanitary” replacement dwelling within one year from the date Caltrans takes legal possession of the property, or from the date the displacee vacates Caltrans-acquired property, whichever is later.

Down Payment

Displacees eligible to receive a rental differential payment may elect to apply it to a down payment for the purchase of a comparable replacement dwelling. The down payment and incidental expenses cannot exceed the maximum payment of $5,250, unless the Last Resort Housing Program is indicated. The one-year eligibility period in which to purchase and occupy a “decent, safe, and sanitary” replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 Code of Federal Regulations 24.404) contain the policy and procedure for implementing the Last Resort Housing Program on federal-aid projects. To maintain uniformity in the program, Caltrans has also adopted these federal guidelines on non-federal-aid projects. Except for the amounts of payments and the methods in making them, last resort housing benefits are the same as those benefits for standard relocation as explained above. Last resort housing has been designed primarily to cover situations where available comparable replacement housing is not available, or when their anticipated replacement housing payments, exceed the $2,520 and $22,500 limits of the standard relocation procedures. In certain exceptional situations, last resort housing may also be used for tenants of less than 90 days.

After the first written offer to acquire the property has been made, Caltrans will, within a reasonable length of time, personally contact the displacees to gather important information relating to:

- Preferences in area of relocation.
- Number of people to be displaced and the distribution of adults and children according to age and sex.
- Location of school and employment.
- Special arrangements to accommodate any handicapped member of the family.
- Financial ability to relocate into comparable replacement dwelling, which will house all members of the family decently.

The above explanation is general in nature and is not intended to be a complete explanation of relocation regulations. Any questions concerning relocation should be addressed to Caltrans. Any persons to be displaced will be assigned a relocation advisor, who will work closely with each displacee to see that all payments and

benefits are fully utilized, and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments.

THE BUSINESS AND FARM RELOCATION ASSISTANCE PROGRAM

The Business and Farm Relocation Assistance Program provides aid in locating suitable replacement property for the displacee's farm or business, including, when requested, a current list of properties offered for sale or rent. In addition, certain types of payments are available to businesses, farms, and non-profit organizations. These payments may be summarized as follows:

- Reimbursement for the actual direct loss of tangible personal property incurred as a result of moving or discontinuing the business in an amount not greater than the reasonable cost of relocating the property.
- Reimbursement up to $1,000 of actual reasonable expenses in searching for a new business site.
- Reimbursement up to $10,000 of actual reasonable expenses related to the reestablishment of the business at the new location.
- Reimbursement of the actual reasonable cost of moving inventory, machinery, office equipment, and similar business-related personal property, including dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting personal property.

Payment "in lieu" of moving expense is available to businesses that are expected to suffer a substantial loss of existing patronage as a result of the displacement, or if certain other requirements such as inability to find a suitable relocation site are met. This payment is an amount equal to the average annual net earnings for the last two taxable years prior to relocation. Such payment may not be less than $1,000 and not more than $20,000.

ADDITIONAL INFORMATION

No relocation payment received will be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law (except for any federal law providing low-income housing assistance).

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without being given at least 90 days advance notice, in writing. Occupants of any type of dwelling eligible

for relocation payments will not be required to move unless at least one comparable "decent, safe, and sanitary" replacement residence, open to all persons regardless of race, color, religion, sex, or national origin, is available or has been made available to them by the state.

Any person, business, farm, or non-profit organization, which has been refused a relocation payment by Caltrans, or believes that the payments are inadequate, may appeal for a hearing before a hearing officer or Caltrans' Relocation Assistance Appeals Board. No legal assistance is required; however, the displacee may choose to obtain legal council at their expense. Information about the appeal procedure is available from Caltrans' Relocation Advisors.

The information above is not intended to be a complete statement of all of Caltrans' laws and regulations. At the time of the first written offer to purchase, owner-occupants are given a more detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and also given a more detailed explanation of Caltrans' relocation programs.

IMPORTANT NOTICE

To avoid loss of possible benefits, no individual, family, business, farm, or non-profit organization should commit to purchase or rent a replacement property without first contacting a Department of Transportation relocation advisor at:

State of California
Department of Transportation, District # 6
855 M Street, Suite 200, Fresno CA 93726

Appendix D Minimization and/or Mitigation Summary

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
Biological Resources	Wetland impacts	Wetland replacement and construction monitoring. Use of Best Management Practices during construction.
	Sensitive species habitat	Special-status species habitat compensation, pre-construction surveys, a pre-construction educational meeting, avoidance and minimization, and construction contract special provisions.
Noise	Increase in noise to residences	Construct a noise barrier to reduce noise to acceptable levels.
Community Impacts	Displace residences	Relocation assistance and real property acquisition policies.
Environmental Justice	No disproportionately high and adverse effect would occur to low-income or minority communities.	Relocation assistance and real property acquisition policies.

Summary of Minimization and Monitoring

Area	Impact	Mitigation
Hydrology and Water Quality	Storm water runoff	Implement a Storm Water Pollution Prevention Plan during construction and a Storm Water Management Plan after construction.
Hazardous Waste Materials	Lead-based paint, treated wood, and aerially deposited lead	Classify and properly dispose of all hazardous waste materials at a Class 1 landfill.
Air Quality	PM_{10} and $PM_{2.5}$ emissions during construction	Implement Caltrans Standard Specifications that require the contractor to comply with the San Joaquin Valley Unified Air Pollution Control District's rules, ordinances, and regulations.
Visual Resources	Removal of screening vegetation, eucalyptus, oak, alder, sycamore, and olive	Compensation for removal of screening vegetation and replacement planting for eucalyptus removal.

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 E State Historic Preservation Officer Concurrence Letter

STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

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.parks.ca.gov

COPY

April 18, 2005

In Reply Refer to: FHWA050324D

Brian Gassner
Associate Environmental Planner, Caltrans District 6
2015 East Shields Avenue, Suite A-10
Fresno, CA 93726-5428

Re: Highway 59/16th Street Widening Project, Merced County, California: 10-MER-59: EA 10-0E5900, KP 24.6/26.7 (PM 15.3/16/6).

Dear Mr. Gassner:

Thank you for consulting with me about the subject undertaking in accordance with the Programmatic Agreement (PA) 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.

As per Stipulation VIII of the PA, the California Department of Transportation (Caltrans) has determined the Area of Potential Effects (APE) and has completed identification and evaluation of historic properties within the APE. Caltrans is requesting my concurrence, pursuant to Stipulation VIII.C.5 of the PA, on eligibility of the historic properties identified within the APE for the National Register of Historic Places (NRHP), and on a finding of No Historic Properties Affected. After review of the letter and documentation submitted in support of this undertaking, I have the following comments:

I concur that the following historic properties identified in the APE and evaluated in the Historic Property Survey Report (HPSR) are not eligible for the NRHP:

- Bear Creek Bridge (39-0009L&R)
- State Route 59 (2-Lane Highway)
- 41 Bear Creek Court, 2434-54 N. State Highway 59 (3 Residences, Barn) APN 058-150-02
- 2668 N. State Highway 59 (Residence) APN 058-140-06
- 2678 N. State Highway 59 (Residence) APN 058-140-05
- 2686 N. State Highway 59 (Residence) APN 058-140-03
- 2696 N. State Highway 59 (Residence) APN 058-140-03
- 2808 N. State Highway 59 (Residence) APN 058-110-11
- 2810 Willowbrook Drive (Residence) APN 058-110-11
- 2824 N. State Highway 59 (Residence) APN 058-110-09
- 2922 N. State Highway 59 (Residence) APN 058-110-03
- Burlington Northern Santa Fe Main Line (Railroad Tracks)
- Black Rascal Canal

- Concrete Siphons, Railroad Berm (Irrigation Features) (Railroad Berm demolished for Underground Utility Installation)
- 3380 N. State Highway 59 (Residence) APN 058-020-24 (demolished after recordation)
- 3384 N. State Highway 59 (Residence) APN 058-020-24 (demolished after recordation no site In HPSR)

COPY

I concur that the following properties identified in the APE that had been previously found ineligible for the NRHP, remain ineligible:

- Black Rascal Canal Branch Bridge, Bridge #39-0066 (P-24-000652, HRI # 5340-0010-0000)
- Black Rascal So. Fork Bridge, Bridge #39-0067 (P-24-000653, HRI # 5340-0011-000)
- Black Rascal Canal Bridge, Bridge #39-0068 (P-24-000654, HRI # 5340-0012-0000)

I concur that the finding of No Historic Properties Affected is appropriate as per Stipulation IX.A of the PA, and that the documentation supporting this finding has been submitted to me for review as per Stipulation XVI of the PA.

Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact William Soule at phone 916-654-4614 or email wsoul@ohp.parks.ca.gov.

Sincerely,

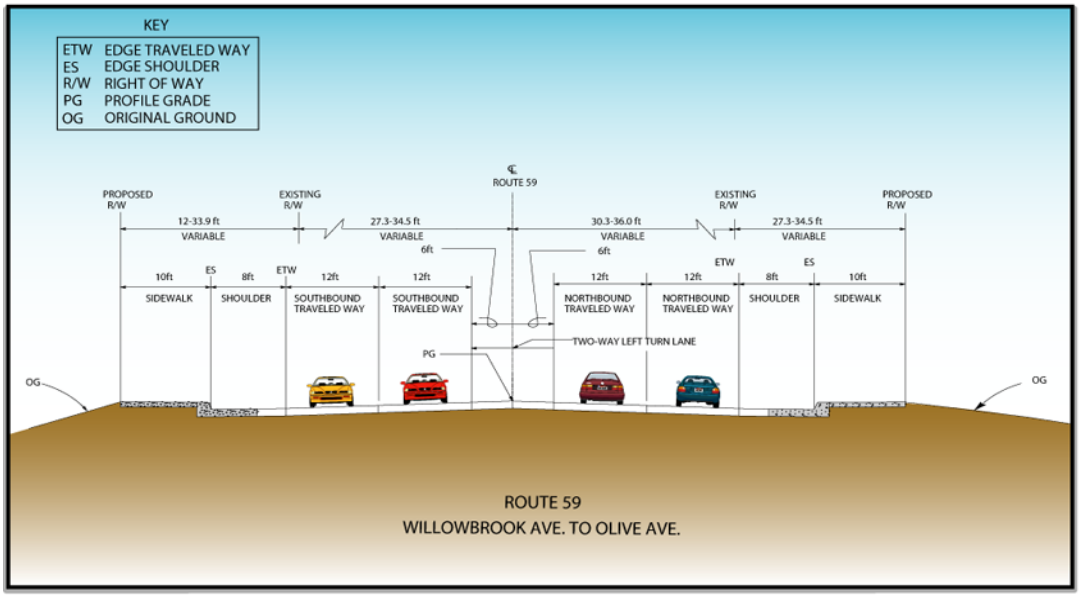
Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

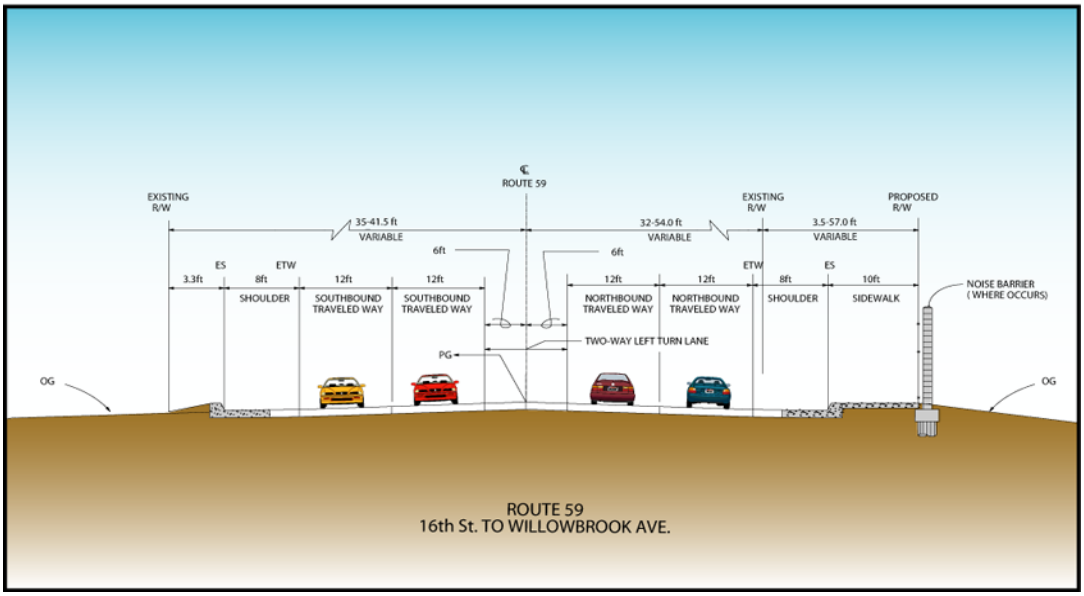
Appendix F Build Alternative Cross Sections

TYPICAL CROSS SECTIONS

State Route 59

Build Alternative

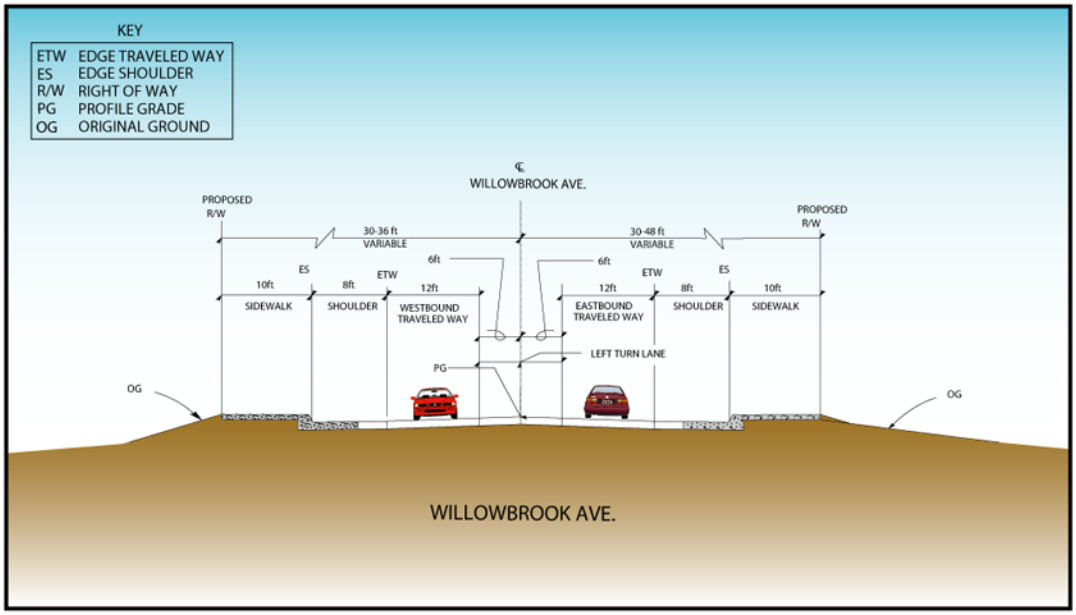


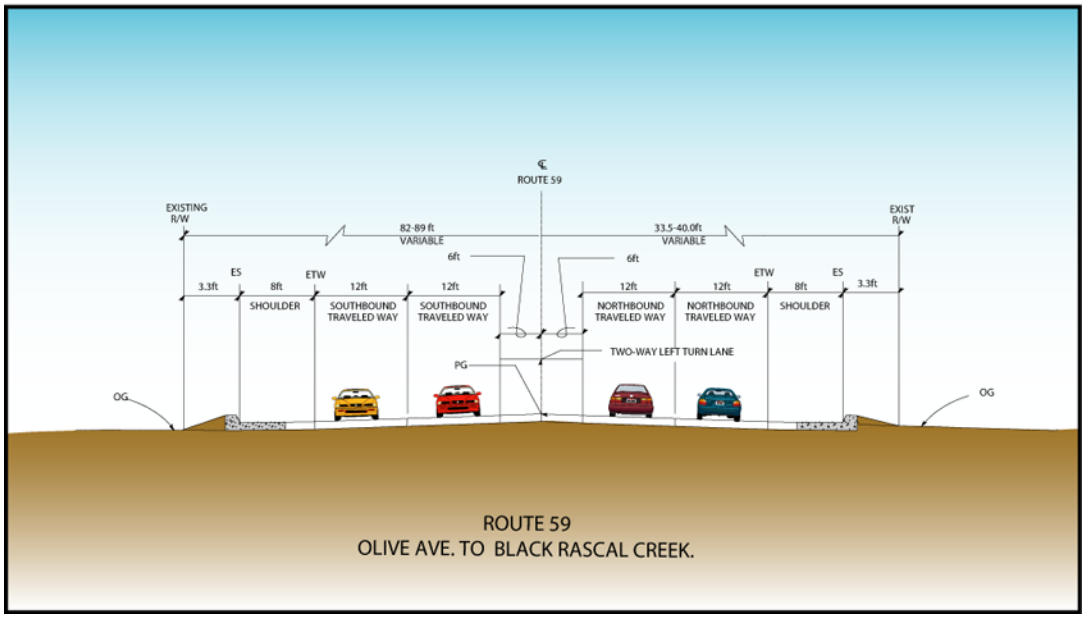


TYPICAL CROSS SECTIONS

State Route 59

Build Alternative





Appendix G National Oceanic and Atmospheric Administration

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

September 8, 2004

In Reply Refer To:
151422SWR00SA99216:JSM

Geoffrey T. Gray
Associate Biologist, Central Region
Department of Transportation (Caltrans)
2015 E. Shields, Suite 100
Fresno, California 93726

Dear Mr Gray:

This letter responds to your request received August 13, 2004 for National Marine Fisheries Service's (NOAA Fisheries) concurrence concerning the proposed State Route 59 widening from 16th Street to 600 meters north of Black Rascal Creek (kilometer post 24.46) and on 16th Street from 100 meters east of Bear Creek to 500 meters west of Bear Creek within Merced city limits, California. Improvements are also planned at the following intersections: Olive Avenue, 16th Street, and Cooper/Willowbrook Street. You have determined that this project is not likely to adversely affect Central Valley fall-/late fall-run Chinook salmon in the event that they are listed in the future, and in addition are seeking concurrence that your proposed conservation measures sufficiently address impacts to Essential Fish Habitat (EFH) for Pacific salmon according to Amendment 14 of the Pacific Salmon Fishery Management Plan pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Because Central Valley fall-/late fall-run Chinook salmon is a species of concern, and is not provided the protection of the Federal Endangered Species Act, it is not possible nor necessary to grant concurrence of not likely to adversely effect as requested in your letter. However, NOAA Fisheries acknowledges that the conservation measures proposed herein, are in fact, protective of Central Valley fall-/late fall-run Chinook salmon. In addition are providing the following comments regarding this projects impacts to EFH.

The proposed project widens the 16th Street Bridge as it currently exists as two structures (a one-lane structure eastbound and a one-lane structure westbound). These two structures would each be widened to two lanes. In addition, 16th Street also crosses Black Rascal Creek to the north and consists of two separate two-lane bridges. Both of these structures would also be removed and replaced with one four-lane bridge. The main flow of Black Rascal Creek will be directed through the overflow channel, eliminating flooding and erosion problems associated with high water in the oxbow channel. All in-water work is planned to be conducted between June 1 and October 1, 2004, and fish passage will be maintained at all times.

Based on our review of the project description and conservation and protective measures provided, NOAA Fisheries finds that the project activities will not adversely effect EFH for Pacific Salmon. We find the project activities incorporated in the project description include

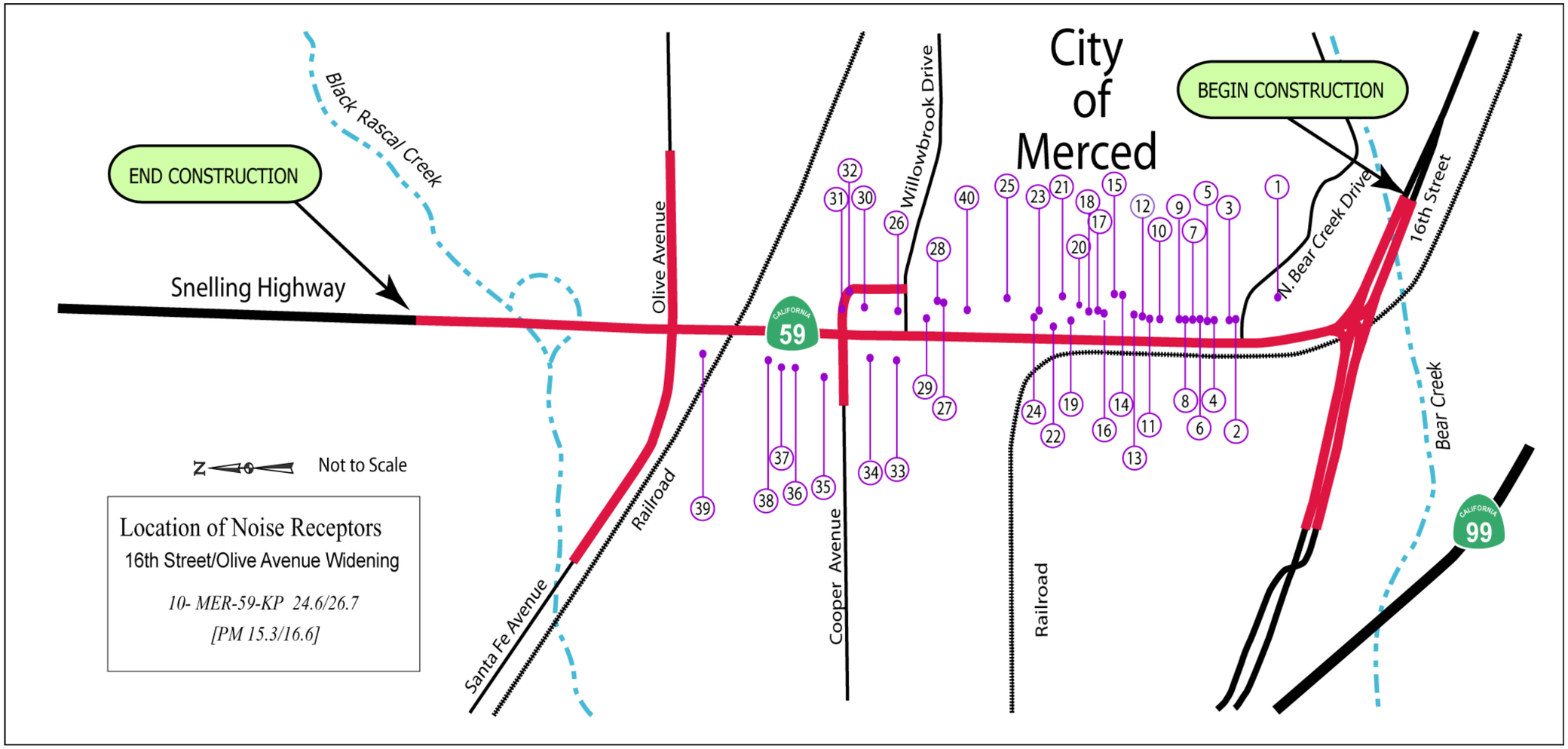
conservation measures that will reduce adverse affects to EFH for Pacific Salmon as described in Amendment 14 of the Pacific Salmon Fishery Management Plan pursuant to the MSA. Therefore, EFH Conservation Recommendations will not be provided. Written response as required under section 305(b)(4)(B) of the Magnuson-Stevens Act and Federal regulations (50 CFR § 600.920) will not be required. Should additional information reveal that the project may affect EFH and/or impact salmonids in a way not previously considered, or should the action be modified in a way that may cause additional effects to EFH, this determination may be reconsidered.

If you have any questions regarding this correspondence or if NOAA Fisheries can provide further assistance on this project, please contact Mr. Jeff McLain in our Sacramento Area Office, 650 Capitol Mall, Suite 8-300, Sacramento, CA 95814. Mr. McLain may be reached by telephone at (916) 930-5648, or by Fax at (916) 930-3629.

Sincerely,

for Rodney R. McInnis
Regional Administrator

cc: NOAA Fisheries-PRD, Long Beach CA


City of Merced
END CONSTRUCTION
BEGIN CONSTRUCTION
Snelling Highway
Black Rascal Creek
Olive Avenue
Willowbrook Drive
N. Bear Creek Drive
16th Street
Bear Creek
Cooper Avenue
Railroad
Santa Fe Avenue
Railroad
CALIFORNIA 59
CALIFORNIA 99
Not to Scale
Location of Noise Receptors
16th Street/Olive Avenue Widening
10- MER-59-KP 24.6/26.7
[PM 15.3/16.6]