

State Route 12 Operational Improvements Project

On State Route 12 in San Joaquin County from
Potato Slough Bridge to Flag City
10-SJ-12-PM 5.0/10.2

and Intelligent Transportation Systems on State Route 12 in Solano, Sacramento,
and San Joaquin Counties and on Interstate 5 in San Joaquin County
04-SOL-12-PM 26.0/26.14, 03-SAC-12-PM 0.5/5.84,
10-SJ-12-PM 0.1/11.15, 10-SJ-5-PM 33.35/43.20

EA 10-0A8400

Initial Study with Proposed Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation

May 2009



General Information about This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project located in San Joaquin, Solano, and Sacramento Counties, California. The document describes why the project is being proposed, what alternatives we have considered, how the existing environment could be affected, the potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read the document. Additional copies of it as well as of the technical studies we relied on when preparing it are available for review at the Caltrans district office at 1976 E. Dr. Martin Luther King Jr. Blvd. (Charter Way), Stockton, CA 95205. Copies will also be available at the Tower Park Village Club House 3 Softwind Road, Lodi, CA 95242.
- We want to know what you think. If you have any concerns regarding the proposed project, send your written comments to Caltrans by the deadline.
- Submit comments via U.S. mail to Caltrans at the following address:

Gail Miller, Branch Chief
Central Sierra Environmental Analysis Branch
California Department of Transportation
2015 E. Shields Ave., Suite 100
Fresno, CA 93726

- Submit comments via email to: gail_miller@dot.ca.gov.
- Submit comments by the deadline: **June 11, 2009**

What happens next?

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

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please contact Caltrans District 10 Public Affairs Office at (209) 948-7977, or use the California Relay Service TTY number, (800) 735-2929.

SCH# _____
10-SJ-12-PM 5.0/10.2
EA #10-0A8400

Add operational improvements on State Route 12 from Potato Slough Bridge to Flag City at the intersection of Interstate 5 and State Route 12 (10-SJ-12-5.0/10.2), and Intelligent Transportation Systems on State Route 12 in Solano, Sacramento, and San Joaquin counties, and in spot locations on Interstate 5 in San Joaquin County.

INITIAL STUDY
with Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

4/30/09
Date of Approval


CHRISTINE COX-KOVACEVICH
Office Chief, Central Region
Environmental North

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation is proposing a series of operational improvements at key intersections on State Route 12 from Potato Slough Bridge at the Tower Park Marina to Flag City at the intersection of Interstate 5 and State Route 12 in San Joaquin County. The proposed project also includes an intelligent transportation system that informs travelers of road conditions at several locations on State Route 12 starting in Rio Vista in Solano County and ending at points along Interstate 5 in San Joaquin County. Proposed improvements would add efficiency to the current traffic flow conditions and improve travel safety and mobility.

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 land use, growth, housing, sensitive noise receptors, utilities/emergency services, traffic and transportation/pedestrian and bicycle facilities, parks and recreation, as well as coastal, cultural, socio-economic, mineral, geological, or paleontological resources.

In addition, the project would have no significant effect on air quality, water quality, and visual resources.

The proposed project would have no significant adverse effect on threatened and endangered species, special status species, or their habitats because the of the following mitigation measures:

- The purchase of off-site mitigation credits for the giant garter snake
- Compensation for the loss of wetlands would be through the purchase of credits at the Consumes River Preserve
- The inclusion of construction specifications and provisions for environmentally sensitive areas, erosion control and water quality, and migratory birds in the bid package

Date

CHRISTINE COX-KOVACEVICH
Office Chief, Central Region
Environmental North

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List of Abbreviated Terms

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
FHWA	Federal Highway Administration
NEPA	National Environmental Policy Act
PM	Post mile

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to construct operational improvements at key intersections along approximately five miles of State Route 12 between Potato Slough Bridge at the Tower Park Marina and Flag City at the intersection of Interstate 5. In addition, Caltrans proposes installing an intelligent transportation system (advanced traveler information) at several locations along State Route 12 and Interstate 5 within Solano, Sacramento, and San Joaquin counties. Figures 1-1 and 1-2 show the project vicinity and locations of proposed improvements.

State Route 12 is a two-lane, rural, intermittently divided highway and a principal arterial. State Route 12 connects State Route 80 to Interstate 5, and connects the towns of Fairfield, Rio Vista and Lodi. A combination of increasing commuter and recreational traffic between the Bay Area and San Joaquin Valley and commercial truck traffic from the Delta Blue Grass facility and other agriculture-related businesses has created limited left-turn opportunities for travelers entering and exiting State Route 12 traffic. Without dedicated or adequately sized turn lanes and /or acceleration/deceleration lanes at these intersections for vehicles entering and exiting State Route 12, substantial delays and the potential for severe accidents are increasing.

The project is included in the 2008 State Transportation Improvement Program. Construction, is scheduled to start in spring 2011, and would be completed in summer 2012. The current cost estimate for the proposed project (construction and right-of-way) is approximately \$20.5 million.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to improve the operation of this portion of State Route 12, optimizing traffic flow and interruptions, improving travel safety, efficiency and mobility.

1.2.2 Need

Within the project limits, State Route 12 is a two-lane, rural east-west highway. Caltrans Traffic Operations division has identified the following deficiencies:

- Glasscock/Tower Parkway - Glasscock Road and Tower Parkway intersect with State Route 12, providing connection between the 200 mobile homes in Tower Park Village Mobile Home Park and the Tower Park Marina. A local market and bait shop is located on the northeast corner of the Glasscock Road intersection. On the north side of Potato Slough Bridge there are both a commercial storage facility and a rural residence. Currently this intersection lacks turn lanes, and State Route 12 at this location does not have acceleration or deceleration lanes. Left-turn lane traffic from Tower Parkway and Glasscock Road is experiencing significant delays and motorists do not have adequate gaps in traffic to accelerate onto the road causing obstruction to through traffic.
- Correia Road/State Route 12 - The Correia Road intersection with State Route 12 provides connection for trucks entering and exiting the Delta Blue Grass facility, a commercial sod farm. This intersection does not have a left-turn lane. This location has trucks turning into and out of the Delta Blue Grass facility, which causes slow downs and backups in the eastbound direction of State Route 12. Motorists have been observed passing on the shoulder illegally.
- Guard Road/State Route 12 - The left-turn lane at the Guard Road intersection does not meet current Department of Transportation design standards for length, which causes slow downs and backups in the westbound direction.
- Although the traffic accident history (October 1, 2003 to September 30, 2006) for the intersections proposed for improvement is better than statewide average accident rates, these improvements will help prevent future accidents
- The westbound lane drop on State Route 12 from the intersection of the southbound Interstate 5 off-ramp is currently too short to allow traffic to merge in to the westbound lane. Typically, the merge occurs from the furthest-left lane into the right-most lane. The preferred option would be to reverse the merge from right lane to furthest-left lane.

- Busses currently use the westbound shoulder on State Route 12 east of Glasscock Road as a stopping area for picking up and dropping off students.
- Currently on State Route 12 and Interstate 5 there is no system in place to alert motorists to incidents on the highway, such as traffic accidents, draw bridge operations, fog and other weather conditions. The purpose of the project is to improve the operation of this portion of State Route 12, optimizing traffic flow and improving travel safety, efficiency and mobility.

1.3 Alternatives

The alternatives for this project were developed by an interdisciplinary project development team consisting of Caltrans staff from the departments of design, traffic operations, environmental analysis, and right-of-way, as well as representatives from the project stakeholders, including San Joaquin County, and the San Joaquin Council of Governments

Two alternatives are proposed for this project: build and no-build.

1.3.1 Build Alternative

- **State Route 12-Glasscock Road Intersection:** Realign Tower Parkway under Potato Slough Bridge to connect with Glasscock Road. The Tower Parkway-State Route 12 intersection will be restricted to right-in/right-out movements in the eastbound and westbound directions. Right-turn and acceleration lanes will be added in the eastbound and westbound directions. A bus turnaround will be provided in the vicinity of Glasscock Road and Tower Parkway.
- **State Route 12- Correia Road Intersection:** Add standard left-turn lanes in the westbound direction. Add standard right turn lanes in the eastbound direction. Add an acceleration lane in the eastbound direction.
- **State Route 12-Guard Road Intersection:** Extend existing left turn lanes at Guard Road to meet current Caltrans standards, add acceleration lanes on State Route 12 for westbound and eastbound right-turning vehicles from Guard Road, and add deceleration lanes in the eastbound and westbound directions for vehicles turning right onto Guard Road.

- **Southbound Interstate 5-Merge with Westbound State Route 12:** Extend merge lane from southbound Interstate 5 onto westbound State Route 12, add 700 additional feet to the existing westbound merge lane on State Route 12, and re-stripe the road to direct merging traffic to the number two lane.
- **State Route 12-Intelligent Transportation Systems:** Install intelligent transportation system elements within the existing right-of-way in Solano, Sacramento, and San Joaquin counties.
- **Interstate 5-Intelligent Transportation Systems:** Install intelligent transportation system elements in San Joaquin County from approximately 1 mile north and 1 mile south of the State Route 12 and Interstate 5 interchange. These elements are intended to collect and relay real-time traffic and weather condition data to the traveling public via warning and guide signs. The intelligent transportation system elements consist of changeable message signs, highway advisory radio, extinguishable message signs, closed circuit television cameras, and traffic monitoring stations.
- **Drainage improvements:** Upgrade current drainage features at several locations along State Route 12 between Potato Slough Bridge and Interstate 5.

1.3.2 No-Build Alternative

The no-build alternative would leave the existing roadway in its current condition. The existing traffic-flow interruptions from cross-traffic and merging traffic would continue.

Alternatives Considered but Withdrawn From Further Discussion

Two variations on the build alternative were considered and withdrawn. The first variation would have reconfigured the Tower Parkway/Glasscock Road connector road to the west of the current proposed alignment. A second variation—the Johnson alternative—would have reconfigured the Glasscock Road/Tower Parkway connector road to the south of the current proposed alignment. Both variations were withdrawn during design, because of projected costs and the greater potential to impact the environment.

1.4 Permits and Approvals Needed

Table 1.1 Permits/Approvals Required

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 consultation for threatened and endangered species	Formal consultation for impacts to giant garter snake was initiated on December 1, 2008. Anticipating Biological Opinion from USFWS by 8/2009.
United States Army Corps of Engineers	Clean Water Act Section 404 permit for filling or dredging waters of the United States	The Section 404 permit application will be submitted after project approval.
California Department of Fish and Game—a Responsible Agency under the California Environmental Quality Act (CEQA)	Department of Fish and Game Code Section 1602 Streambed Alteration Agreement	The streambed alteration agreement application will be submitted after project approval.
Regional Water Quality Control Board	Clean Water Act Section 401 water discharge permit	The Section 401 permit application will be submitted after project approval.

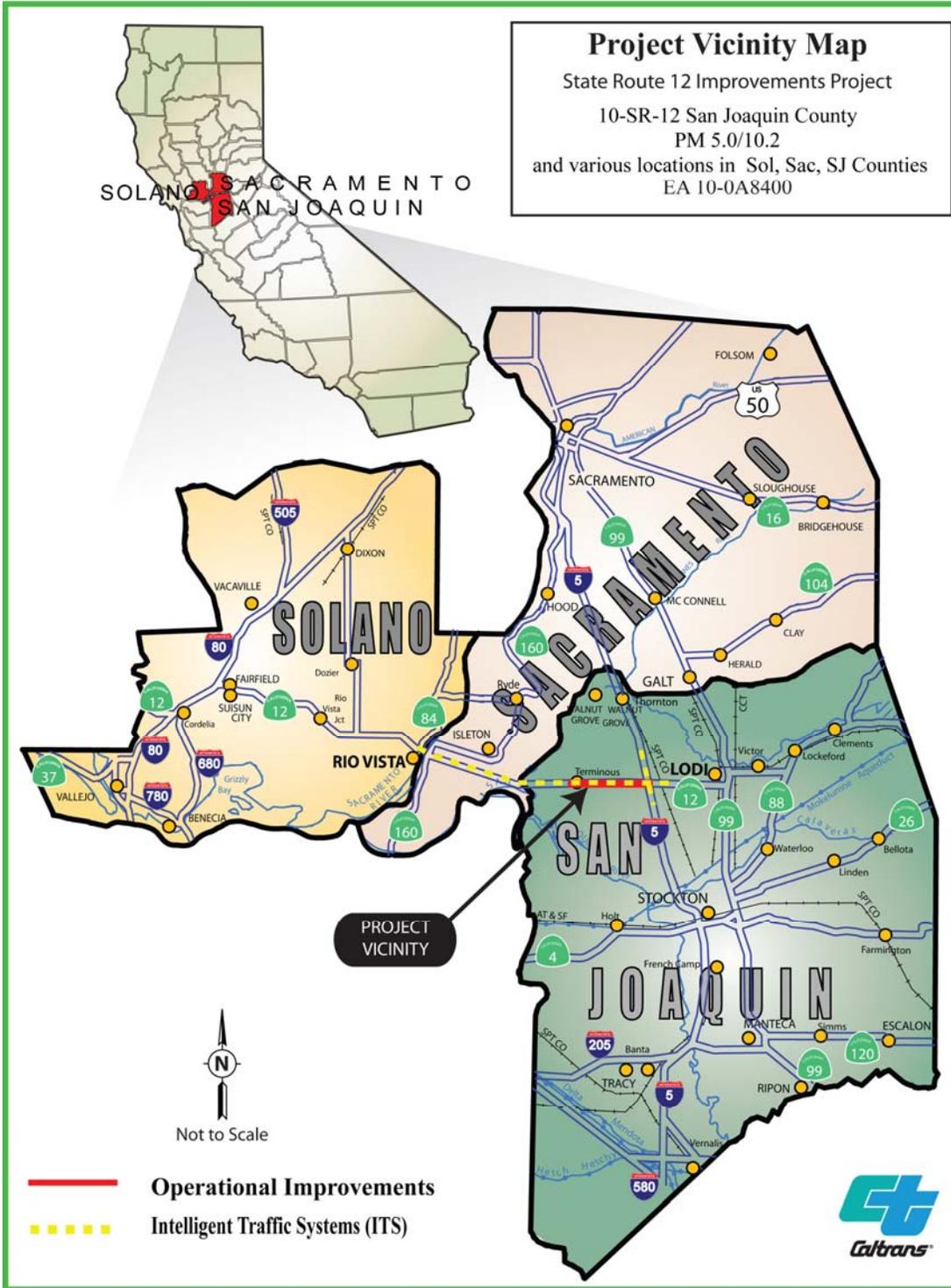


Figure 1-1 Project Vicinity Map

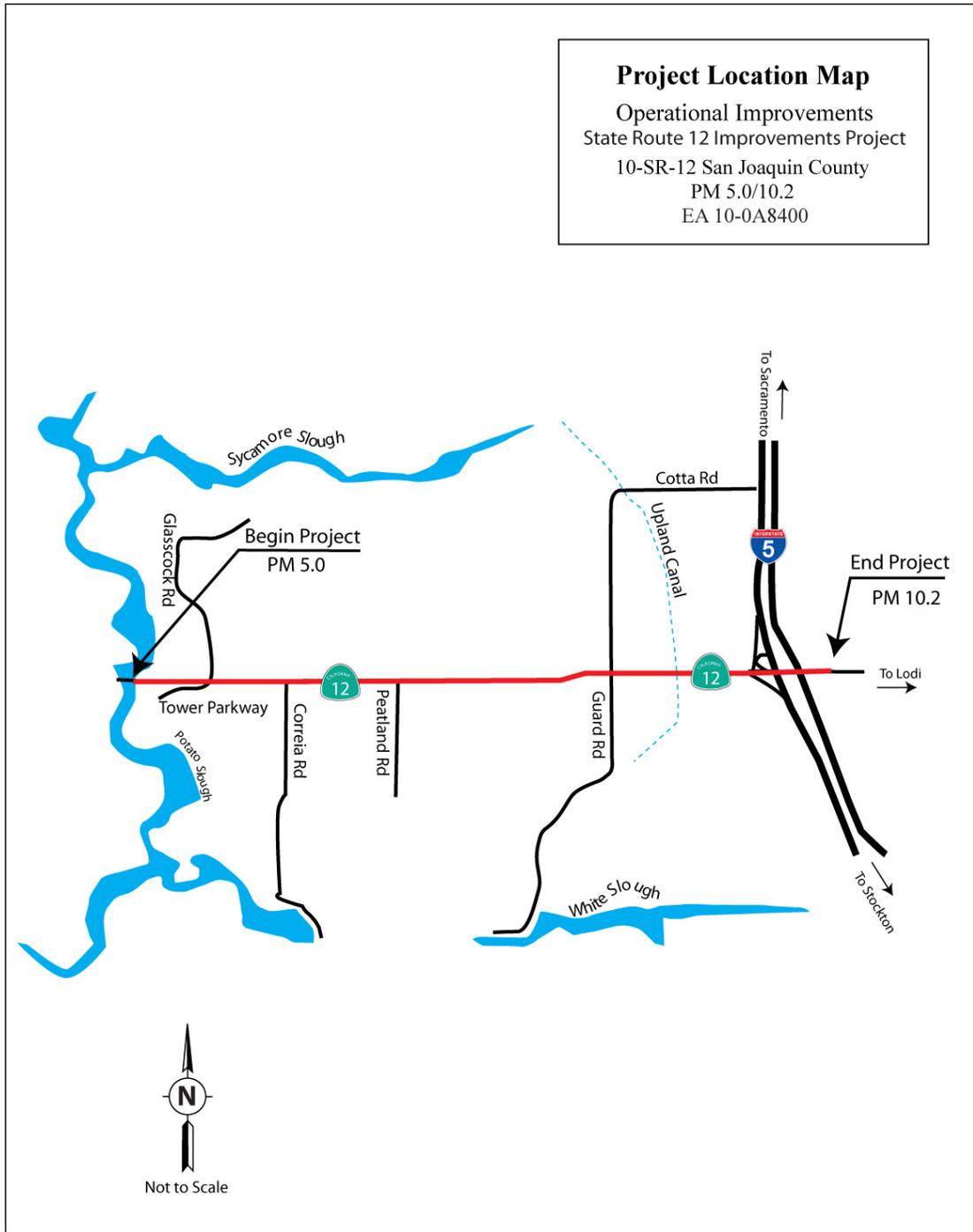


Figure 1-2 Project Location Map

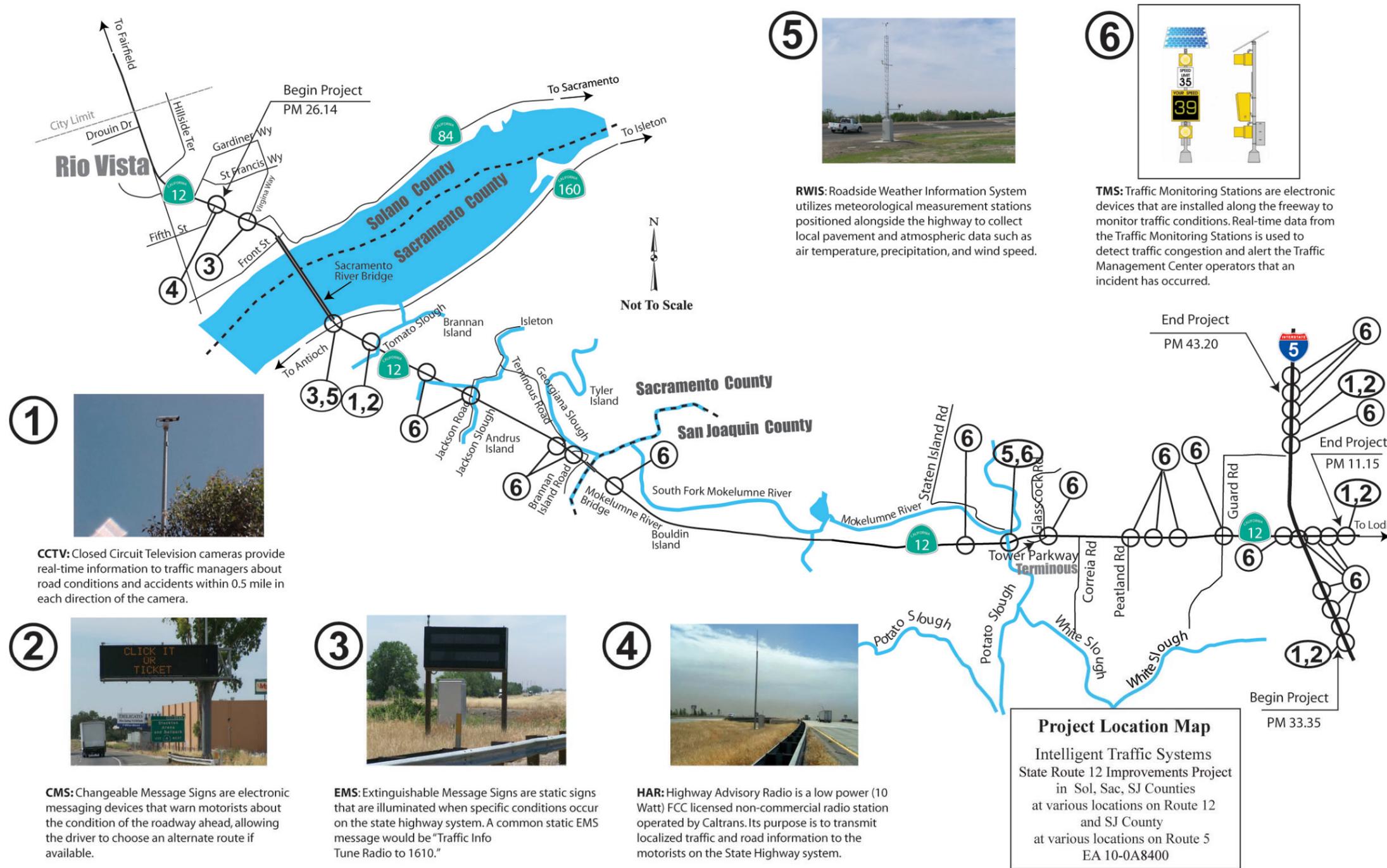


Figure 1-3 Intelligent Traffic Systems Location Map

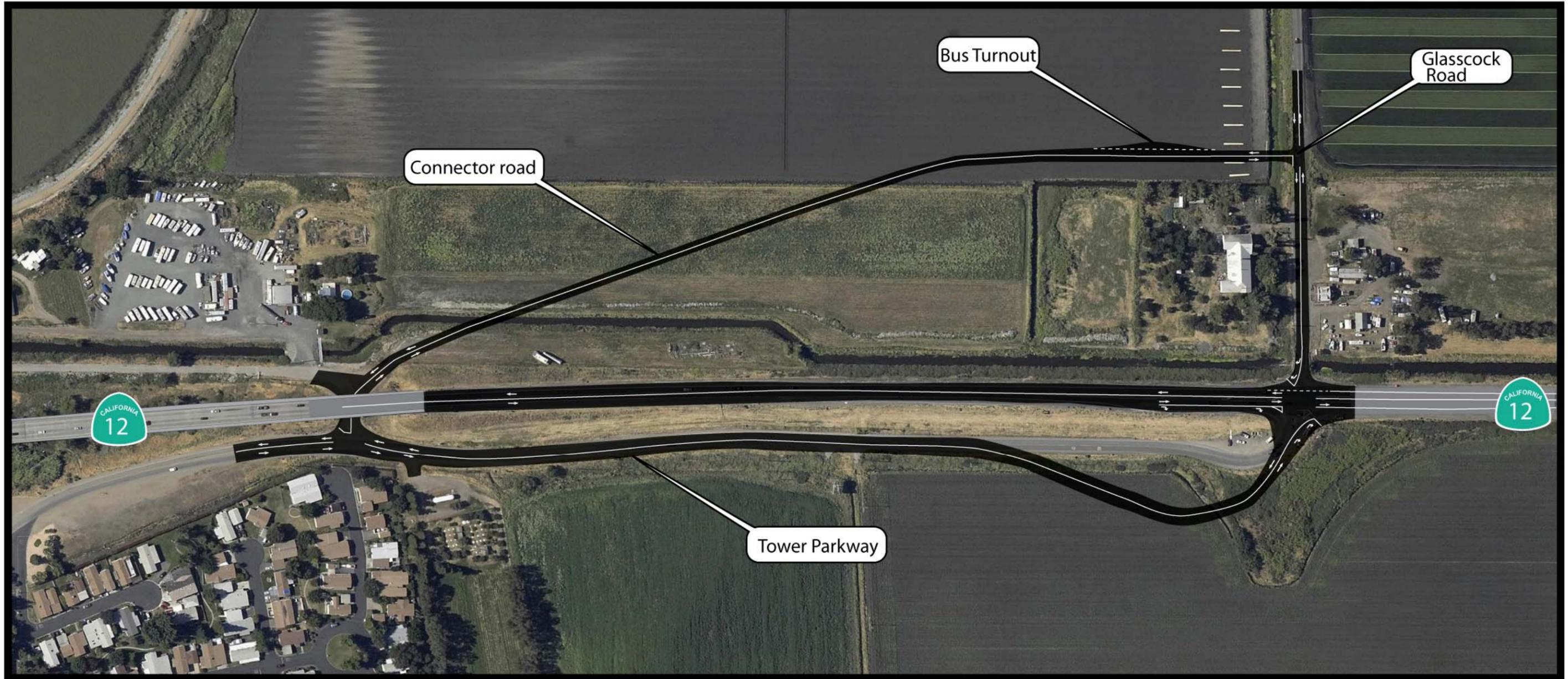


Figure 1-4 Proposed Access Road Map

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, potential impacts from each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

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

Growth—the project design does not increase road capacity, nor would it induce new growth in the project area.

Community Impacts—the adjacent community of Terminous (population approximately 500) would benefit from the construction of the proposed project because it will make it easier for residents to cross State Route 12 on local roads. No homes or businesses would be relocated.

Timberlands— no timberland occurs within the project area.

Utilities/Emergency Services— no disruptions in utilities or emergency services would result from the proposed project. For information about temporary effects, see Section 2.4, “Construction Impacts.”

Traffic and Transportation/Pedestrian and Bicycle Facilities—there are no sidewalks or bike lanes in the project area.

Cultural Resources—the historic property survey report completed in December 2008 determined that no unique archaeological resources would be affected by the proposed project. Additionally, no National Register-eligible historic properties will be affected by the project.

Geology/Soils/Seismic/Topography—a geotechnical design report dated May 9, 2008 reports that no known earthquake faults lie in the project area. The proposed project would not result in substantial soil erosion or loss of topsoil.

Paleontology—a paleontology identification report was completed for the project in October 2007. The geology of the project area is categorized as having no paleontological sensitivity, according to the California State University, Fresno Department of Geology Paleontological Sensitivity Mapping Project Database (Gerald H. White memorandum, October 2, 2007).

Hazardous Waste or Materials—a hazardous waste site assessment for the project, dated November 7, 2008, determined that no hazardous waste sites would be impacted by the project

Noise and Vibration—Caltrans completed a noise study report for the project in December 2008. Based on the scope of work, this would not be classified as a type 1 project. For information about temporary effects, see Section 2.4, “Construction Impacts.”

Plants—No special-status plant species or habitat for special-status plant species were identified within the project area (Natural environment study, November, 2008).

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

Affected Environment

According to the San Joaquin County General Plan, the land use designations within the project impact area are agricultural, commercial recreation, and crossroads commercial. Current land uses along State Route 12 consist of agriculture, a few scattered single-family residences, and several commercial operations. Located southwest of the intersection of Glasscock Road and Tower Parkway are the Tower Park Village Mobile Home Park and the Tower Park Marina. Tower Park Village has 200 mobile homes. On the northeast corner of Glasscock Road and State Route 12 is a local market and bait shop. On the north side of the Potato Slough Bridge there are both a commercial storage facility and a rural residence.

There are no future land use proposals being processed by the county within the project area.

Environmental Consequences

Land would be acquired for the realignment of Tower Parkway under the Potato Slough Bridge to connect with Glasscock Road, and for intersection improvements at Guard Road and Correia Road. In addition, new right-of-way would be needed to accommodate the drainage improvements at several locations along State Route 12 between Potato Slough and Interstate 5. Additional right-of-way is also necessary for the extension of the westbound merge lane near the State Route 12 and southbound Interstate 5 off-ramp intersection. No new right-of-way is required for the intelligent transportation system elements. All work will take place within the existing right-of-way.

No impacts to land use would result from the construction of the proposed project because it is consistent with local planning for the area and would not cause inconsistent land uses. The project also improves roadway conditions that support the current and future land use activities within the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures required.

2.1.2 Farmlands

2.1.3 Regulatory Setting

The National Environmental Policy Act and the Farmland Protection Policy Act (United States Code 4201-4209; and its regulations, 7 Code of Federal Regulations Ch. VI Part 658) require federal agencies, such as the Federal Highway Administration, and Caltrans as assigned, to coordinate with the Natural Resources Conservation Service if their activities may irreversibly convert farmland (directly or indirectly) to non-agricultural use. For purposes of the Farmland Protection Policy Act, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

The California Environmental Quality Act requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space

preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to deter the early conversion of agricultural and open space lands to other uses.

Affected Environment

Land use in the area consists of agricultural, rural residential, recreational, commercial and light industrial. The principal setting is rural with most residences spread far apart on large agricultural parcels. The average farm size in San Joaquin County is 209 acres and 62 percent of the total land area of the county is devoted to agriculture.

The project area contains prime farmland. The largest farm operations in the project area such as Delta Blue Grass Co. and A-G Sod Farms Inc. produce sod or turf for lawns. Other farmlands in the project area produce potatoes, asparagus, grain corn, grapes and other commodities.

Environmental Consequences

Farmlands:

Five parcels zoned as agricultural would be affected by the proposed project. Two of these parcels contain contracts under the Williamson Act. The parcels affected by the project are summarized in Table 2.1.

The proposed project would require the acquisition of linear slivers of property from five parcels zoned as agricultural. The total amount of new state right-of-way to be acquired for the project would be 7.8 acres. In order to evaluate the impact of the proposed project on farmland, Caltrans completed a Farmland Conversion Impact Rating form (AD 1006) in conjunction with the Stockton Office of the United States Natural Resources Conservation Service on April 10, 2009. A copy of the form is provided in appendix D. Out of a total of 260 possible points the project scored 154 points. Small amounts of four Williamson Act parcels would be acquired for the project; however, no Williamson Act contracts would be cancelled.

Table 2.1 Agricultural Parcels Affected by the Project

Parcel No	Total Acres	Acres for R/W	Williamson	Zoning
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		Acquisition	Act/Contract Number	
02503008	23.40	3.2	No	AG-40
02503001	258.90	3.2	No	AG-40
05503003	403.68	1.0	Yes/ 740128	AG-40
02510002	41.86	0.2	Yes /700023	AG-40
05507024	4.65	0.2	No	AG-40
Total Acres		7.8		

Avoidance, Minimization, and/or Mitigation Measures

There would not be a substantial impact to farmland. No avoidance, minimization, or mitigation would be required.

2.1.4 Visual/Aesthetics

Regulatory Setting

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 visual impact assessment was prepared in May 2008. The project area was determined to have moderate to low visual quality. Viewers through this area generally have moderate expectations regarding scenic quality on this route. Roadside views along State Route 12 within the project area are readily available due to the flatness of the area and lack of obstructions, built or otherwise.

Environmental Consequences

Minor changes to visual resources would occur within the proposed project limits. The only visual changes associated with this project would be minimal and due to the construction of the new alignment of Tower Parkway to Glasscock Road and associated minor fill slopes (Figure 2.1). These impacts to visual resources would be minimized through the proposed erosion control measures. Implementing the proposed minimization efforts would prevent the viewing experience for the highway user and those with views of the highway from being diminished by the project.

Avoidance, Minimization, and/or Mitigation Measures

Potential visual impacts would be minimized by incorporating the following construction methods: 1) Erosion control to be applied to any new or disturbed slopes 2) Slopes to be no steeper than 2:1.



Figure 2-1 Existing and Proposed View to West from Glasscock Road

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Regulatory Setting

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

To comply, the following must be analyzed:

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

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

Affected Environment

The proposed project stretches across the Delta region of Solano, Sacramento, and San Joaquin counties. Roadway elevations at the west end of the project (Solano county) range between 25 to 30 feet above mean sea level. Roadway elevations in the middle of the project area (Sacramento county) range from 10 to 15 feet below sea level. Roadway elevations in the eastern portion of the project (San Joaquin county) range between 10 feet below mean sea level to 7 feet above mean sea level.

There are five watercourses within the project area including: the Mokelumne River, Potato Slough, White Slough, Sycamore Slough, and Upland Canal. Water from the surrounding landscape is constantly pumped into the Mokelumne River to prevent flooding, since most of the land in the project area is below sea level. Pumping and an extensive levee system maintain the groundwater level at least 3 feet below ground surface for agricultural purposes. In the project area, the depth to groundwater varies from approximately 3 to 7 feet.

The Solano County portion of the project falls within Zone X, defined by the Federal Emergency Management Agency (FEMA) as outside the 500-year floodplain. The Sacramento County portion of the project falls within Zone AE, defined by FEMA as having a base flood elevation of 7 feet and within the 100-year floodplain. The majority of the San Joaquin County portion of the project (from Potato Slough Bridge to Interstate 5) falls within Zones A1 and A2, with base flood elevations of 8 feet and within the 100-year floodplain. A small portion at the east end of the project area (at

Interstate 5 and its on- and off-ramps) falls within Zone B, defined as between the limits of the 100-year and the 500-year floodplains.

Environmental Consequences

The project area would traverse floodplains (Zones AE, A1, A2) within Sacramento and San Joaquin Counties. The location hydraulic study (December 2008) concluded that the proposed action would not constitute a substantial floodplain encroachment as defined in 23 CFR 650.105. The report further concluded that there would be no risks associated with the implementation of the proposed project and there would be no impacts on the natural and beneficial floodplain values.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation measures required.

2.2.2 Water Quality and Storm Water Runoff

Regulatory Setting

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

Along with Section 401 of the Clean Water Act, Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the National Pollutant Discharge Elimination System program to the State Water Resources Control Board and nine Regional Water Quality Control Boards. The State Water Resources Control Board and Regional Water Quality Control Boards also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The State Water Resources Control Board has developed and issued a statewide National Pollutant Discharge Elimination System permit to regulate storm water discharges from all Caltrans activities on its highways and facilities. Caltrans construction projects are regulated under the statewide permit, and projects performed by other entities on Caltrans right-of-way (encroachments) are regulated by the State

Water Resources Control Board's Statewide General Construction Permit. All construction projects that will create 1 acre or more of soil disturbance require a Storm Water Pollution Prevention Plan to be prepared and implemented during construction. Projects with soil disturbance of less than 1 acre, and are not otherwise subject to the requirements of the National Pollutant Discharge Elimination System program, require a Water Pollution Control Program.

Affected Environment

Caltrans prepared a Water Quality Assessment Report for this project in February 2008. The assessment identified the existing conditions and potential impacts to surface and/or groundwater from the proposed project.

Surface Water

The project sits in the Sacramento-San Joaquin Delta, one of California's most valuable estuary systems. The delta is a maze of tributaries, sloughs, and islands. Within the project vicinity, State Route 12 intersects five water bodies: the Mokelumne River, Potato Slough, White Slough, Sycamore Slough, and Upland Canal. Water bodies within the project limits are Potato Slough, and the Upland Canal. Water from the surrounding landscape is constantly pumped into the Mokelumne River to prevent flooding, since the majority of land in the project area is below sea level. Also, the Mokelumne River is the only water body in the project vicinity that has been identified in the Section 303(d) (Clean Water Act) List as being impaired. The source of impairment is primarily mining/resource extraction resulting in elevated metal levels and acid mine drainage.

The project proposes to remove and replace culverts at five locations on irrigation ditches/canals between Potato Slough and Interstate 5: at Glasscock Road, Correia Road, Peatland Road, Guard Road and a north/south trending canal between Correia and Peatland Roads. The project also proposes to build four new culverts along the proposed access road between Tower Parkway and Glasscock Road.

Groundwater

The project lies within the jurisdiction of the District 5—Central Valley Regional Water Quality Control Board and the Central District of the California Department of Water Resources. Pumping is required in much of the project area to maintain a groundwater level at least 3 feet below ground surface for agricultural purposes. In the project area, the depth to groundwater varies from approximately 3 to 7 feet.

Environmental Consequences

According to the Water Quality Assessment Report, no groundwater impacts are expected from construction or implementation of the project. Potential long-term impacts from minor increases in impervious surface resulting from tapering of shoulders around the Potato Slough Bridge and intersection realignments are expected to be less than significant. Potential short-term surface water quality impacts would include increases in sediments, murkiness, total dissolved solids, and toxicity due to chemical substances originating from construction activities

Avoidance, Minimization, and/or Mitigation Measures

The design and construction of the proposed project must meet the requirements in the National Pollutant Discharge Elimination System, Caltrans Storm Water Management Plan, the Caltrans Project Planning and Design Guide, and Best Management Practices.

In the construction phase, the contractor has the responsibility, as stated in Caltrans' Standard Specification Section 7-1.01G, to take the necessary steps to eliminate potential impacts during construction. These steps include, but are not limited to:

- Soil stabilization.
- Wind erosion control.
- Tracking control.
- Non-storm water control.
- Waste management and material pollution control.
- Preparation and use of a Storm Water Pollution Prevention Plan during construction that meets the satisfaction of the resident engineer.
- A Notification of Construction would be submitted to the Regional Water Quality Control Board at least 30 days before the start of construction.
- A Notice of Construction Completion would be submitted to the Regional Water Quality Control Board upon completion of construction.

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 concentration 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 six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), lead (Pb), and sulfur dioxide (SO₂).

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

Regional level conformity is concerned with how well the region is meeting the standards set for carbon monoxide, nitrogen dioxide, ozone, and particulate matter. California is in attainment for the other criteria pollutants. 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 at least 20. Based on the projects included in the Regional Transportation Plan, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the San Joaquin Council of Governments and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation Plan is in conformity with the State Implementation Plan for achieving the goals of 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 Plan, then the proposed project is deemed to meet regional conformity requirements for purposes of the project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is in “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate

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

Affected Environment

The project is within the jurisdiction of the San Joaquin Valley Air Pollution Control District that administers air quality regulations developed at the federal, state and local levels for the project area. The U.S. Environmental Protection Agency has classified the San Joaquin Valley Air Basin as an attainment area for carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead, and non-attainment for ozone and particulate matter (PM_{2.5} and PM₁₀). A summary of federal and state ambient air quality standards for pollutants and their attainment status within the project area is summarized in Table 2.2.

Table 2.2 State and Federal Air Quality Conformity

Standard	Carbon monoxide	Particulate matter (PM ₁₀)	Particulate matter (PM _{2.5})	Ozone (O ₃) 1-hour	Ozone (O ₃) 8-hour
Federal	Attainment/Maintenance	Serious	Non-Attainment	Serious	Serious
State	Attainment	Non-Attainment	Non-Attainment	Non-Attainment	Non-Attainment

Source of data – California ARB Area Designations – US EPA Region IX and Federal Register

Environmental Consequences

Caltrans prepared an air quality study for this project in December 2008. The assessment identified the potential impacts to air quality from construction and implementation of the proposed project.

Regional Air Quality Conformity

The proposed project is listed in the San Joaquin Council of Government's 2007 Regional Transportation Plan and Federal Transportation Improvement Program and was determined to conform to the State Implementation Plan for achieving the goals of the Clean Air Act. The project would not interfere with timely implementation of transportation control measures identified in the applicable State Implementation Plan and regional conformity analysis.

The project is fully funded and is in the San Joaquin Council of Governments' 2007 Regional Transportation Plan (Page 150, Table 6-1), which was found to conform by San Joaquin Council of Governments on May 24, 2007. The Federal Highway Administration and Federal Transit Administration adopted the air quality conformity finding on June 29, 2007. The project is also included in San Joaquin Council of Governments' financially constrained 2008 Regional Transportation Improvement Program (page 13, PPNO 7350). The San Joaquin Council of Governments' 2008 Regional Transportation Improvement Program was found to conform by the Federal Highway Administration and Federal Transit Administration on October 23, 2007. The design concept and scope of the proposed project is consistent with the project description in the 2007 Regional Transportation Plan, the 2008 Regional Transportation Improvement Program, and the assumptions in the San Joaquin Council of Governments' regional emissions analysis.

Project Level Conformity

The project is located in a non-attainment area for state particulate matter (PM_{2.5} and PM₁₀) standards. A qualitative PM_{2.5} and PM₁₀ analysis was conducted and the results showed that the project improvements would not result in any violation of federal or state standards. Based on the study, the Department of Transportation determined that because the annual average daily traffic is fewer than 140,000 vehicles per day, this project is not a "Project of Air Quality Concern," and no further analysis was required. The U.S. Environmental Protection Agency concurred with this finding on September 18, 2008.

The project area is located in a maintenance/attainment area for the federal carbon monoxide standard and an attainment area for the state standard. A screening hot spot analysis was conducted in areas affected by the proposed project area in December 2008. The ambient carbon monoxide levels monitored at the Stockton-Hazelton Street station, the closest station with monitored carbon monoxide data, showed no violations in the last three years. The analysis concluded that the proposed project

would not result in any local carbon monoxide emissions above regulatory level. None of the projected carbon monoxide concentrations, with or without the project changes, would exceed the state or federal standards.

The project is located in a non-attainment area for the federal ozone standard, but is ranked *serious* for the state ozone standard. Currently, there is no hot spot procedure for ozone, which is considered to be a regional pollutant.

Most of the impacts to air quality would be short-term construction impacts, and therefore, would not result in adverse or long-term conditions. Compliance with San Joaquin Valley Unified Air Pollution Control District Rules and Regulations during construction would reduce construction related air quality impacts from fugitive dust emissions and construction equipment emissions to less than significant.

Avoidance, Minimization, and/or Mitigation Measures

The anticipated impacts to air quality would occur during construction and would be short-term in duration and, therefore, would not result in adverse or long-term conditions. The construction contractor would be responsible for implementing measures that would reduce any air quality impacts resulting from construction activities. Implementation of the following measures would reduce any air quality impacts resulting from construction activities:

The construction contractor would comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 of Caltrans' Standard Specifications (1999). Section 7, "Legal Relations and Responsibility," addresses the contractor's responsibility on many items of concern, such as air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 10 is directed at controlling dust. If the project requires removal of 2,500 cubic yards of soil in any three day period, or disturbs more than five acres, a dust control plan will be required for this project.

2.3 Biological Environment

2.3.1 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 United States Code 1344) is the 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 United States Army Corps of Engineers with oversight by the Environmental Protection Agency.

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

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game and the regional water quality control boards. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river,

stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines that the project may substantially and adversely affect fish or wildlife resources, a lake or streambed alteration agreement would be required. The California Department of Fish and Game's jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the United States Army Corps of Engineers may or may not be included in the area covered by a streambed alteration agreement obtained from the Department of Fish and Game.

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

Affected Environment

During the spring of 2008, Caltrans biologists delineated potentially jurisdictional wetlands and other waters of the United States within the project's biological study area and anticipated impact area. Caltrans prepared a preliminary wetland delineation report for the United States Army Corps of Engineers for verification of potential jurisdictional wetlands and other waters of the United States within the project area along State Route 12 located within San Joaquin County. The report identified a series of irrigation ditches, the Upland Canal, Coldani Marsh, one ponded area, and eight wetlands that are potentially jurisdictional under the United States Army Corps of Engineers' rules. The report concluded that there are a total of 12.06 acres of potentially jurisdictional waterways with approximately 11.82 associated with the irrigation ditches, and 0.24 acres associated with the Upland Canal. There are a total of 25.17 acres of potentially jurisdictional wetlands; 4.04 acres are within the Coldani Marsh, 3.99 acres within the ponded area, and a total of 17.14 acres associated with the eight potential wetlands (See Figure 2-2). All of the waterways within the project area are derived from other waters of the United States; namely the Mokelumne River. The delineation report was submitted on October 30, 2008 and will be verified prior to submitting the individual permit application. No wetlands or other waters of the United States were identified within the project area located on Interstate 5.

aquatic resources if any waterways within the project area are determined to be jurisdictional:

- Preserve, enhance, and/or restore aquatic resources
- Compensation for the loss of wetlands would be through the purchase of credits at the Consumnes River Preserve at a ratio of 1:1

2.3.2 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The United States Fish and Wildlife Service, the National Oceanic and Atmospheric Fisheries Service, and the California Department of Fish and Game are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife and plant species 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 2.3.3. All other special-status animal species are discussed here, including California Department of Fish and Game fully protected species and species of special concern, and the U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Fisheries Service candidate species. Federal laws and regulations pertaining to wildlife include the following:

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

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1601 – 1603 of the Fish and Game Code
- Sections 4150 and 4152 of the Fish and Game Code

Affected Environment

Caltrans conducted a database search of special-status species from the California Department of Fish and Game’s California Natural Diversity Database, California Native Plant Society, and the United States Fish and Wildlife Service federal species list in 2008. The search yielded a list of 49 sensitive species that potentially occur within the study vicinity (see Appendix E for species list). In September 2008, Caltrans contacted the California Department of Fish and Game to discuss potential impacts to a variety of species including burrowing owls, northern harriers, and long-eared owls.

Field studies were subsequently conducted to evaluate the presence, or absence, of all special-status animal species that could be potentially found within the project impact area. Surveys conducted within the biological study area determined that 6 of the 49 special status species have the potential to occur in the project area and may potentially be affected by the proposed project. The six special status species that may be affected by the project are summarized in Table 2.3.

Table 2.3 List of Special-Status Species that may be Affected by the Project

Scientific Name	Common Name	Listing
<i>Elanus leucurus</i>	White-tailed kite	FP
<i>Asio otus</i>	Long-eared owl	SC
<i>Agelaius tricolor</i>	Tricolored blackbird	SC
<i>Athene cunicularia</i>	Western burrowing owl	SC
<i>Circus cyaneus</i>	Northern harrier	SC
<i>Actinemys marmorata</i>	Western pond turtle	SC

FP=California Department of Fish and Game Fully Protected, SC=California Department of Fish and Game Species of Concern

White-tailed Kite

The white-tailed kite is listed as fully protected under the California Department of Fish and Game and is protected by the Migratory Bird Treaty Act. This medium-sized hawk is often found adjacent to agricultural lands, grasslands, marshes, and savannas as well as other open land or sparsely wooded areas. Raptor surveys were conducted in the spring of 2008. White-tailed kites were observed within the project area on

several days during these surveys. The project area contains potentially suitable foraging habitat and several trees, which may be suitable for nesting kites.

Long-Eared Owls

The long-eared owl is a California Department of Fish and Game Species of Special Concern and is protected by the Migratory Bird Treaty Act. These owls require riparian habitat, but will also use live oak thickets or other dense stands of trees.

No long-eared owls were observed within the project area during the hawk surveys conducted in the spring of 2008. There are a few areas within the project area that contain potentially suitable habitat for this species, including areas with dense willows and cottonwoods.

Tricolored Blackbird

The tricolored blackbird is a California Department of Fish and Game Species of Special Concern and is protected by the Migratory Bird Treaty Act. The tricolored blackbird is mostly a resident of California, common locally throughout the Central Valley and in coastal districts from Sonoma County south.

Focused surveys for tricolored blackbirds were not conducted and none were observed on-site during other surveys within the project area. There are no California Natural Diversity Database occurrences of tricolored blackbirds within 5 miles of the project area. There were several red-winged blackbirds observed on-site within the project area in wetland vegetation. Tricolored blackbirds are known to intermix with red-wing blackbirds. Therefore, there is habitat within the project area that may potentially be suitable for the tricolored blackbird.

Northern Harrier

The northern harrier is a California Department of Fish and Game Species of Special Concern and is protected by the Migratory Bird Treaty Act. This hawk can occur in a variety of habitats, including meadows, grasslands, open rangelands, desert sinks, and fresh and saltwater emergent wetlands. Harriers are seldom found in wooded areas.

Northern harriers were observed on-site during the Swainson's hawk surveys conducted in the spring of 2008. The project area contains potentially suitable nesting habitat for northern harriers including emergent wetland vegetation and a fallow field. In addition, there is adjacent foraging habitat within the immediate vicinity of the nesting habitat.

Western Burrowing Owl

The western burrowing owl is a California Department of Fish and Game Species of Special Concern and is protected by the Migratory Bird Treaty Act. It is a year-round resident of open, dry grassland, desert habitats, and of open shrub stages of pinyon-juniper and ponderosa pine habitats.

Protocol surveys for the western burrowing owl were not conducted, and no owls were observed during any other surveys. However, there is potential for the western burrowing owl to occur within the project area. There is potentially suitable habitat within the project impact area, and according to a California Department of Fish and Game biologist, there are healthy populations of this species in the slopes and levees found within the delta.

Western Pond Turtle

The western pond turtle is a California Department of Fish and Game Species of Special Concern. The western pond turtle occurs within suitable habitats west of the Sierra Nevada. The northwestern pond turtle typically occurs north of the San Francisco Bay Delta Estuary, and south of the San Francisco Bay.

Focused surveys were not conducted for the western pond turtle, but there are several California Natural Diversity Database occurrences within the study area. The closest occurrence is from 1996 in the Coldani Marsh, located on the south side of State Route 12, just west of Interstate 5 on the east side of the project area. Caltrans biologists also observed a possible sighting within an irrigation ditch on the west side of the biological study area near Glasscock Road.

Environmental Consequences

No impacts to white-tailed kites, northern harriers, tricolored blackbirds, long-eared owls, western burrowing owls, or western pond turtles are anticipated with the implementation of the proposed avoidance and minimization measures.

Avoidance, Minimization, and/or Mitigation Measures

Migratory Birds:

The following measures would be implemented to avoid impacts to migratory birds including the white-tailed kite, northern harriers, tricolored blackbirds, and long-eared owls. A special provision for migratory birds will be included in the bid package to ensure that no potential nesting migratory birds are affected during construction.

Provisions will include:

- Conduct preconstruction surveys no fewer than 14 days and no more than 30 days before the project starts.
- If an active nest is found, designate the nest tree an “environmentally sensitive area” and establish a no-work window around the tree until it has been determined by a qualified biologist that the young have fledged. A qualified biologist would monitor the active nest during construction activities to ensure that no interference with breeding activities occurs.
- Restrict removal of any trees within the project impact area to the non-nesting season.

Western Burrowing Owl

In addition to the migratory bird measures identified above, the following avoidance and minimization measures would prevent or reduce effects to the western burrowing owl:

- Conduct preconstruction surveys for western burrowing owl burrows within and adjacent to the project impact area before beginning ground disturbing activities.
- No disturbance should occur within 160 feet of occupied burrows during the non-breeding season (September 1 through January 31) or within 250 feet during the breeding season (February 1 through August 31) unless a qualified biologist approved by the California Department of Fish and Game verifies that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- Restore habitat temporarily affected by project activities to its original condition.
- If western burrowing owls are observed prior to construction, mitigation guidelines would include on-site passive relocation and installation of exclusionary devices.
- Exclude owls from burrows in the immediate impact area and within a 160-foot buffer zone by installing one-way doors in burrow entrances. One-way doors will be left in place for 48 hours to ensure that owls have left the burrows before excavation. The project area will then be monitored daily for the next week to

confirm owl use of alternative burrows before excavating burrows in the project impact area.

- Use hand tools to excavate burrows whenever possible and refill them once excavated to avoid reoccupation.
- Provide one alternative natural or artificial burrow for each burrow that will be excavated in the project impact area.
- Maintain a minimum of 6.5 acres of foraging habitat adjacent or connected to the relocated area for each pair of western burrowing owls relocated.

Western Pond Turtle

The following avoidance and minimization measures would be implemented:

- Confine clearing for construction activities to the minimal area necessary.
- Conduct preconstruction surveys to determine presence of western pond turtle within the project impact area no fewer than 14 days and no more than 30 days before the beginning of any ground-disturbing activities.
- If a western pond turtle is observed, the California Department of Fish and Game would be consulted for guidance as to whether relocation of the pond turtle outside of the project impact area is necessary.
- If a western pond turtle is observed during construction, the resident engineer should notify a Caltrans district biologist immediately.

2.3.3 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United States Code, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, and Caltrans as assigned, are required to consult with the United States Fish and Wildlife Service and the National Oceanic and Atmospheric Administration Fisheries Service to ensure that they are not undertaking, funding,

permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take statement. Section 3 of the Federal Endangered Species Act defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or any attempt at such conduct.”

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

Affected Environment

Caltrans conducted a database search of special-status species from the California Department of Fish and Game’s California Natural Diversity Database, California Native Plant Society, and the United States Fish and Wildlife Service federal species list in 2008. The search yielded a list of 49 sensitive species that potentially occur within the study vicinity (see Appendix E for species list).

Surveys conducted by Caltrans within the biological study area further determined that 6 of the 49 threatened and endangered species have the potential to occur in the project area and may potentially be affected by the proposed project. These species—Swainson hawk, California black rail, greater sandhill crane, giant garter snake, delta smelt, Central Valley steelhead are discussed below.

Table 2.4 List of Threatened and Endangered Species in Project Area.

Scientific Name	Common Name	Listing
<i>Buteo swainsoni</i>	Swainson's hawk	ST
<i>Laterallus jamaicensis coturniculus</i>	California black rail	ST, FP
<i>Grus Canadensis tabida</i>	Greater sandhill crane	ST, FP
<i>Thamnophis gigas</i>	Giant garter snake	FT, ST
<i>Hypomesus transpacificus</i>	Delta smelt	FT, ST
<i>Oncorhynchus mykiss</i>	Central Valley steelhead	FT

FT=Federally Threatened, ST=State Threatened, FP=Fully Protected, SSC=State Species of Concern

Swainson's Hawk

The Swainson's hawk is listed by the State of California as threatened and is protected by the California Endangered Species Act and by the Migratory Bird Treaty Act. The Swainson's hawk is a summer migrant in the Central Valley. It breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. These hawks forage in adjacent grasslands, suitable grain or alfalfa fields, or in livestock pastures.

Surveys results found suitable habitat for this species within the biologically study area. The area contains several suitable nest trees, including several willow and cottonwoods. Adjacent farmland provides suitable foraging habitat for potential raptors nesting in this area. During the spring 2008 surveys, Caltrans found one pair of Swainson's hawks nesting in a willow just west of Interstate 5. There are also several documented occurrences of known nest trees near the study area. In addition, three red-tailed hawk nests were observed along the State Route 12 alignment during the Swainson's hawk surveys.

California Black Rail

The California black rail is state listed as threatened and is a California Department Fish and Game fully protected species. This small bird species is known to occur within the Sacramento-San Joaquin Delta. It is commonly found in tidal emergent wetland dominated by pickleweed or in brackish marshes containing bulrush and pickleweed. Black rails are also found in freshwater wetlands that support bulrush, cattails and saltgrass.

The project impact area contains potentially suitable habitat for this species including bulrush and cattails. The closest documented occurrence is from 1982 in the White Slough Wildlife Area, located 1 mile south of the eastern end of the project area.

Greater Sandhill Crane

The greater sandhill crane is state listed as threatened and identified by the California Department Fish and Game as a fully protected species. This species was not observed on-site during any surveys conducted in 2008. Staten Island is located 0.5 mile to the northwest of the project area and is a known wintering site for the greater sandhill crane. The project impact area contains open fields and wetlands where this species may potentially forage.

Delta Smelt and Central Valley Steelhead

In September 2008, Caltrans consulted with the California Department of Fish and Game and determined that it was unlikely that delta smelt would be in irrigation ditches within the project study area. The ditches are not natural waterways and do not contain habitat to support this species. No delta smelt critical habitat would be affected by the project.

In July 2008, Caltrans initiated informal consultation with the National Marine Fisheries Service regarding potential issues with anadromous fish species (fish that migrate between fresh and salt water, such as salmon), including Central Valley steelhead. No waterways suitable for this species would be affected by this project. Potato Slough is critical habitat for Central Valley steelhead but this water body will be completely avoided by the project. In September 2008, the National Marine Fisheries Service provided Caltrans with a list of best management practices for erosion control and water quality to minimize any indirect effects to listed species or their habitat.

Giant Garter Snake

The giant garter snake protection status is state and federally threatened, and the species is protected by the California Endangered Species Act and the Federal Endangered Species Act. Protocol level surveys were not conducted for this species, however habitat assessments were conducted at all locations potentially suitable for the giant garter snake. Potential habitat for giant garter snake is present in the project impact area within irrigation ditches and wetland areas.

Environmental Consequences

Swainson's Hawk, California Black Rail, Greater Sandhill Crane

No impacts to Swainson's hawks, California black rails, and greater sandhill cranes or their habitats are anticipated with the implementation of the proposed avoidance and minimization measures.

Delta Smelt and Central Valley Steelhead

No habitat suitable for delta smelt or Central Valley steelhead would be impacted directly by the project. Potential indirect effects to any critical habitat downstream would be avoided by incorporating best management practices for erosion control and water quality in construction plans.

Giant Garter Snake

The State Route 12 Improvements project would result in the permanent loss of 1.33 acres of potential habitat and temporary impacts to 0.52 acres of potentially suitable giant garter snake habitat including wetlands and other waters of the United States. After informal consultation with the U.S. Fish and Wildlife Service, a biological assessment was written to address impacts to the giant garter snake, and to document that the proposed project would have the potential to adversely affect the federally listed giant garter snake. The biological assessment was submitted to the U.S. Fish and Wildlife Service in December 2008.

Avoidance, Minimization, and/or Mitigation Measures

Swainson's Hawk and California Black Rail

The following measures would be implemented to avoid and minimize effects to the Swainson's hawk and California black rail during construction:

- Conduct preconstruction surveys no fewer than 14 days and no more than 30 days before the project starts.
- If an active nest is found, designate the nest tree an "environmentally sensitive area" and establish a no-work window around the tree until it has been determined by a qualified biologist that the young have fledged. A qualified biologist would monitor the active nest during construction activities to ensure they do not interfere with breeding activities.
- Include a special provision for migratory birds in the bid package.

- Restrict the removal of any trees within the project impact area to the non-nesting season.

Greater Sandhill Crane

The following measures would be implemented to avoid and minimize effects to the greater sandhill crane during construction.

- Conduct preconstruction surveys no fewer than 14 days and no more than 30 days before the project starts.
- Include a special provision for migratory birds in the bid package.

Delta Smelt and Central Valley Steelhead

To avoid any potential indirect effects to any critical habitat downstream of the construction area, the following conservation measures and best management practices for erosion control and water quality would be incorporated.

- All disturbed soil at each site would undergo erosion control treatment immediately after construction ends. Treatment includes temporary seeding and sterile straw mulch. Any disturbed soils on a gradient of over 30 percent would have erosion control measures installed. Permanent vegetation and potential tree replanting should take place in small openings in the erosion control area with native species when possible.
- Construction by-products and pollutants such as petroleum products, chemicals, or other deleterious materials would not be allowed to discharge into streams or waters. A plan and the necessary equipment for the emergency clean up of any spills of fuel or other material would be available on site when construction equipment is in use.
- Equipment would be refueled and serviced at designated construction staging areas away from streams and waters. All construction material and fill would be stored and contained in a designated area that is located away from channel areas to prevent transport of material into adjacent streams. Where feasible, these activities would occur 100 feet from waterways and canals.
- Construction vehicles and equipment would be properly maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease.

- Building material storage areas containing hazardous or potentially toxic materials such as herbicides and petroleum products would have an impermeable membrane between the ground and the hazardous material and would be bermed to prevent the discharge of pollutants to ground water and runoff water.

Giant Garter Snake

The following measures developed by the United States Fish and Wildlife Service would be implemented to avoid and minimize effects to the giant garter snake during construction. Standard construction best management practices would be implemented throughout construction to avoid and minimize adverse effects to water quality within the project impact area.

The following measures should be applied to all irrigation ditches within the project impact area.

- Conduct in-water and bank-side construction activities between May 1 and October 1, as necessary to ensure that construction occurs during the active period of the giant garter snake. Any work occurring after October 1 would be restricted to road surface work with water quality controls in place.
- Keep any dewatered habitat dry, with no puddle water, for at least 15 consecutive days between April 15 and September 30 before workers excavate or fill dewatered habitat. Efforts would be made to ensure that the dewatered habitat does not continue to support giant garter snake prey (e.g., fish, tadpoles, and aquatic insects), which could detain or attract snakes into the area. This measure would encourage giant garter snakes to leave the site.
- Carry out a worker environmental awareness program approved by the United States Fish and Wildlife Service that all construction personnel participate in. A qualified biologist would inform all construction personnel about the life history of the giant garter snake, and what to do if a giant garter snake is encountered during construction activities as well as explaining the state and federal laws pertaining to the giant garter snake.
- A qualified biologist would conduct a pre-construction survey for the giant garter snake, no more than 24 hours prior to the start of construction activities (site preparation and grading). If construction activities stop for a period of two or more weeks, a new giant garter snake survey would be completed no more than 24 hours prior to the reinitiating of construction activities.

- Clearing would be confined to the minimal area necessary within 200 feet of aquatic habitat to facilitate construction activities.
- If a live giant garter snake is encountered during construction activities, the projects' biological monitor and the United States Fish and Wildlife Service would be immediately notified. The biological monitor would do the following:
 - Stop construction activity in the vicinity of the giant garter snake. Monitor the giant garter snake and allow the giant garter snake to leave on its own. The monitor would remain in the area for the remainder of the workday to make sure the giant garter snake is not harmed or that it leaves the site and does not return. Escape routes for giant garter snake would be determined in advance of construction. If the giant garter snake does not leave on its own within one working day, further consultation with United States Fish and Wildlife Service would be conducted.
 - Only personnel with a United States Fish and Wildlife Service recovery permit pursuant to Section 10(a)(1)(A) of Federal Endangered Species Act would have the authority to capture and/or relocate giant garter snake encountered in the project impact area.
- Upon locating dead, injured, or sick giant garter snake(s), Caltrans would notify the United States Fish and Wildlife Service Division of Law Enforcement or the Sacramento Fish and Wildlife Office within one working day. Written notification to both offices would be made within three (3) calendar days and would include the date, time, and location of the finding of a specimen and any other pertinent information.
- No plastic, monofilament, jute, or similar erosion control matting that could entangle the giant garter snake will be placed. Possible substitutions include coconut coir matting, tactified hydro-seeding compounds, or other material approved by the United States Fish and Wildlife Service.
- Standard construction best management practices would be implemented throughout construction to avoid and minimize adverse effects to water quality within the project impact area.

Giant Garter Snake Habitat

Mitigation measures proposed for impacts to giant garter snake habitat include:

- Compensate for loss of habitat through purchase of credits from a U.S. Fish and Wildlife Service-approved mitigation bank, preservation of habitat, or enhancement or restoration of habitat.
A possible location to mitigate is at the Sutter Basin Giant Garter Snake Conservation Bank; however the project site is just east of the service area for this bank. Caltrans would have to obtain permission from U.S. Fish and Wildlife Service to mitigate outside of the service area.
- Caltrans is also considering purchasing existing farmland to restore freshwater emergent vegetation that is suitable habitat for the giant garter snake.
- Comply with a 3:1 ratio for mitigating permanent impacts to habitat.
- Temporary impacts to giant garter snake habitat will be limited to one season. Giant garter snake habitat temporarily impacted will be restored to pre-construction conditions.

Total proposed compensation for the loss of giant garter snake habitat is 3.99 acres Table 2.5 shows the proposed mitigation ratios for the impacts to potential giant garter snake habitat.

Table 2.5 Mitigation Ratio for Replacement of Giant Garter Snake Habitat

Habitat	Acres	Proposed Ratio	Proposed Mitigation Acres
Permanent Impacts	1.33	3:1	3.99
Total acres			3.99

2.4 Construction Impacts

Affected Environment

Potential temporary construction-related impacts to visual resources, water quality, air quality, and the biological environment have been discussed within sections for each topic. The following discussions address potential construction-related environmental consequences to issues of hazardous waste, noise and vibration, utilities and emergency services, and cultural resources.

Hazardous Waste

The project area is made up of primarily older farms that have the potential to contain leaking underground storage tanks and contaminated soil, a result of servicing equipment at the same location of the property over time. Aerially deposited lead can be found in soil next to older highways and along more heavily traveled highways from the past use of leaded gasoline.

Utilities/Emergency Services

Several utilities occur within the existing and proposed project right-of-way, including underground gas lines, aboveground power and telephone lines, and underground fiberoptic communication cables. Emergency services and school buses utilize State Route 12.

Environmental Consequences

Hazardous Waste

Caltrans conducted a review of aerially deposited lead for the affected segments of State Route 12. The resulting data is contained in Caltrans consultant report “*State Route 12 in San Joaquin County between the Mokelumne River Bridge (#29-43) and Interstate 5 10-SJ-12-KP 0.2-16.3 (PM0.1010.1) EA 10-0A8400*,” which also contains the results of statistical analysis conducted to provide predictions for soil handling restrictions during earthwork operations for the project. Caltrans determined that although the aerially deposited lead levels are not substantial, the proposed project has the potential to pose a temporary hazardous waste problem during construction due to the disturbance of aerially deposited lead extant in the top 3 feet of soil within the project area.

Noise and Vibration

During construction, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise.

Utilities/Emergency Services

Construction and acquisition of right-of-way for the proposed project may require that various utilities be relocated within the project right-of-way. No disruption of utilities is anticipated. Emergency services and transit services that occur within the project area would not be affected during construction.

Cultural Resources

No known cultural resources will be affected by this project.

Avoidance, Minimization, and/or Mitigation Measures

Hazardous Waste

For purposes of providing adequate measures for public and worker health and safety, a Non-Standard Special Provision will be provided for inclusion in the project contract. The Non-Standard Special Provision is required as an element of the health and safety plan since lead is present in the soil in detectable amounts well below regulatory action thresholds. The contractor shall prepare a project specific Lead Compliance Plan to prevent or minimize worker exposure to lead while handling material containing lead.

Noise and Vibration

Temporary construction noise impacts would be minimized by implementing Caltrans Standard Specifications Section 7-1.01I.

- Provide all equipment with sound control devices that are no less effective than those provided on the original equipment. No equipment would be operated with unmuffled exhaust.
- As directed by Caltrans, the contractor would implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Utilities/Emergency Services:

During construction, a Traffic Management Plan would be developed to accommodate local traffic patterns and emergency services.

Cultural Resources

If new archaeological material is found during construction, then the contractor will follow the minimization and mitigation efforts described for “Archaeological Resources” in Caltrans Standard Specification 14-2.02, including:

- Stop all work within a 60-foot radius of the discovery

- Protect the discovery area. All earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist could assess the nature and significance of the find.
- The Department investigates. Do not take archaeological resources from the job site. Do not resume work within the discovery area until authorized.

2.5 Cumulative Impacts

Regulatory Setting

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

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, and disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

Section 15130 of the California Environmental Quality Act Guidelines describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under the California Environmental Quality Act, can be found in Section 15355 of the California Environmental Quality Act Guidelines. A definition of cumulative impacts, under the National Environmental Policy Act, can be found in 40 Code of Federal Regulations, Section 1508.7 of the Council on Environmental Quality regulations.

Affected Environment

Most land in the project area consists of agricultural land. This type of land use activity can degrade the environment through the alteration of hydrology, air, and water contamination from pesticides, herbicides, erosion, and sedimentation.

Transportation projects planned in the area include the Bouldin Island Project that proposes shoulder widening along State Route 12 (post miles 0.0 to 5.1), west of the State Route 12 Improvements Project.

Environmental Consequences

Overall, the results from the analysis conducted for this project show that the incremental effects of the proposed project, combined with the present, past, and probable future projects, are not cumulatively considerable for this project.

Previous sections of this document have discussed how the proposed project would have minimal or no effect on environmental resources. Caltrans' analysis of the proposed project determined that construction and implementation of the project would have no effect on land use, growth, housing, sensitive noise receptors, utilities/emergency services, traffic and transportation/pedestrian and bicycle facilities, recreation, cultural resources, mineral resources, geological resources, energy, hydrology/floodplain, hazardous waste, climate change, farmland, timberland, plant species, invasive species, or paleontological resources.

In addition, the project would have less than significant effect on air quality, water quality, and visual resources.

Studies suggest that biological resources could experience cumulative impacts from ongoing agricultural land use that can degrade habitat and species diversity through alteration of hydrology, contamination from pesticides and herbicides, erosion, sedimentation and changes in water quality. Transportation project-related impacts to habitat and species would be minimized to less than significant through avoidance, minimization and mitigation efforts built into project design and carried out during construction.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is necessary.

2.6 Climate Change under the California Environmental Quality Act

Regulatory Setting

While climate change has been a concern since at least 1988 as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years. Greenhouse gases related to human activity include carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the U.S. Environmental Protection Agency (EPA). The waiver was denied by EPA in December 2007. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. However, on January 26, 2009, it was announced that EPA will reconsider their decision regarding the denial of California's waiver.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this executive order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020, and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32, the Global Warming Solutions Act of 2006. Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06, signed on October 17, 2006, further directs state agencies to begin implementing Assembly Bill 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change. However, California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency (EPA) to regulate greenhouse gases as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.*, U.S. Supreme Court No. 05-1120. 549 U.S. [2007]. Argued November 29, 2006—Decided April 2, 2007). The court ruled that greenhouse gases do fit within the Clean Air Act's definition of a pollutant, and that the Environmental Protection Agency does have the authority to regulate greenhouse gases. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

Affected Environment

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

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emissions reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans (December 2006). Transportation's contribution to greenhouse gas emissions is dependent on three factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel.

One of the main strategies in Caltrans' Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. Intelligent

transportation systems are one means that Caltrans is using to improve the efficiency of the system.

Project Analysis

The proposed project is an operational improvements project. The construction and implementation of this project will not affect capacity. The features of this project are designed to make the traffic flow in the project area smoother; some reduction in greenhouse gases may occur as a result. The intelligent transportation system is designed to warn drivers of delays on the system in a timely enough fashion for them to take an appropriate alternate route and reduce or avoid encountering stop-and-go traffic. Similarly, the safety improvements are anticipated to lower the occurrence of accidents within the project area, which may also reduce incidence of stop-and-go traffic and reduce greenhouse gas emissions.

CEQA Conclusion

Based on the above, Caltrans does anticipate a reduction in greenhouse gas emissions with the project. However, it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding the project's direct impact and its contribution on the cumulative scale to climate change. Nonetheless, Caltrans is taking further measures to help reduce energy consumption and greenhouse gas emissions. These measures are outlined in the following section.

AB 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as the Air Resources Board works to implement AB 1493 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including \$107 billion in transportation funding during the next decade. As shown on the figure below, the strategic growth plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas emissions. The strategic growth plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined yield the promised

reduction in congestion. The strategic growth plan relies on a complete systems approach to meet the targets in AB32 that includes a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements. The project addressed herein would support such strategies through improving traffic operations along Route 12.

As part of the *Climate Action Program at Caltrans* (December 2006), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks. However it is important to note that the control of the fuel economy standards is held by the United States Environmental Protection Agency and ARB. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California Davis. The table provided below summarizes Caltrans' and statewide efforts that Caltrans is implementing in order to reduce GHG emissions. For more detailed information about each strategy, please see *Climate Action Program at Caltrans* (December 2006); it is available at <http://www.dot.ca.gov/docs/ClimateReport.pdf>."

Table 2.6 Caltrans Statewide Efforts to Reduce Greenhouse Gas Emissions

Strategy	Program	Partnership	Method/Process	Estimated CO ₂ Savings Million Metric Tons (MMT)	
				2010	2020
Smart Land Use	Inter-governmental relations (IGR)	Lead: Caltrans Partner: Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Lead: Caltrans Partner: Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint	Lead: Regional Agencies	Regional plans and application	0.975	7.8

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

Strategy	Program	Partnership	Method/Process	Estimated CO ₂ Savings Million Metric Tons (MMT)	
				2010	2020
	Planning	Partner: Caltrans	process		
Operational Improvements and Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Lead: Caltrans Partner: Regions	State ITS; Congestion Management Plan	.007	2.17
Mainstream Energy and GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Env. Analysis	Interdepartmental effort	Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational and Information Program	Office of Policy Analysis & Research	Partner: Interdepartmental, CalEPA, CARB, CEC	Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening and Fuel Diversification	Division of Equipment	Department of General Services	Fleet Replacement B20 B100	0.0045	0.0065 0.45 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team	Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries	2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	3.6
Goods Movement	Office of Goods Movement	CalEPA, CARB, BT&H, MPOs	Goods Movement Action Plan	Not Estimated	Not Estimated
Total				2.72	18.67

BT&H = Business, Transportation and Housing Agency. CalEPA = California Environmental Protection Agency. CARB = California Air Resources Board. CEC = California Energy Commission. IGR = Inter-governmental relations. ITS = Intelligent Transportation System. MMT = million metric tons MPOs = Metropolitan Planning Organizations.

Caltrans continues to be actively involved on the Governor's Climate Action Team as the Air Resources Board works to implement Assembly Bills 1493 and 32. As part of the Climate Action Program at Caltrans (December 2006), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: encouraging job/housing proximity, developing transit-oriented communities, and supporting the construction of high-density housing along transit

corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars and light and heavy-duty trucks. However, it is important to note that control of fuel economy standards is held by the United States Environmental Protection Agency and the Air Resources Board. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California at Davis.

To the extent that it is applicable or feasible for the project, the following measures can also help to reduce the greenhouse gas emissions and potential climate change impacts from projects:

- Use of reclaimed water—currently 30 percent of the electricity used in California is used for the treatment and delivery of water. Use of reclaimed water helps conserve this energy, which reduces greenhouse gas emissions from electricity production.
- Landscaping—reduces surface warming and through photosynthesis decreases carbon dioxide.
- Portland cement—use of lighter color surfaces such as Portland cement helps to reduce the albedo effect (measure of how much light a surface reflects) and cool the surface; in addition, Caltrans has been a leader in the effort to add fly ash to Portland cement mixes. Adding fly ash reduces the greenhouse gas emissions associated with cement production—it also can make the pavement stronger.
- Lighting—Use of energy efficient lighting, such as LED traffic signals
- Idling restrictions—for trucks and equipment

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, interagency coordination meetings, phone calls and written correspondence. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

Public Information Meeting

A public information meeting was held on June 19, 2008 between 3:00 p.m. and 6:00 p.m. at the Tower Park Village Club House at 3 Softwind Road in Lodi. The purpose of the meeting was to present information on the proposed project and to seek the public's comments. Sixty-six people attended the meeting. Public Meeting Notices were submitted to local newspapers—the *Stockton Record* and *Lodi News-Sentinel* for publication on May 19, 2008. Letters announcing the meeting were mailed to elected officials on May 23, 2008. Letters announcing the meeting to local landowners and interested parties were mailed on June 3, 2008. Twenty-five public notices were hand-delivered to the Tower Park Village Homeowner's Association for distribution to the Association's board and for posting on bulletin boards.

Native American

Caltrans met with representatives from the North Valley Yokuts on February 6 and June 5, 2008 and the Ione Band of Miwok Indians on August 5, 2008, to explain the project and potential impacts to Native American cultural resources

California Department of Fish and Game

The California Department of Fish and Game is responsible for all state-listed plant and animal species that may occur within the project area under the California Endangered Species Act (Fish and Game Code §Sections 2050-2116). The California Department of Fish and Game also acts as a trustee agency under the California Environmental Quality Act. In addition, the California Department of Fish and Game is responsible for determining impacts to lake or streambeds and issuance of Streambed Alteration Agreements (Fish and Game Code §Section 1600).

June 17, 2008: Caltrans spoke to Dan Gifford, a California Department of Fish and Game biologist, to discuss potential issues on the State Route 12 improvements project. Potential issues included Swainson's hawk, giant garter snake, delta smelt, and the greater sandhill crane. Mr. Gifford suggested that Caltrans speak to Brad Burkholder since he was the current biologist for the project area.

September 16, 2008: Caltrans spoke with Brad Burkholder of the California Department of Fish and Game to discuss biological issues within the project area. Mr. Burkholder stated that it was unlikely that delta smelt would be in the irrigation ditches within the project study area. He stated that these ditches are not natural waterways and do not contain habitat to support this species. Other potential issues could include impacts to burrowing owl, Northern harriers and long-eared owls.

EPA, U.S. Fish and Wildlife, U.S. Army Corps of Engineers

September 2008: Caltrans requested an official species list from U.S. Fish and Wildlife Service.

December 15, 2008: Caltrans submitted the biological assessment for the State Route 12 Improvement project, initiating formal consultation with the U.S. Fish and Wildlife Service.

February 6, 2009: Caltrans received response letter from the U.S. Fish and Wildlife Service with comments. U.S. Fish and Wildlife Service requested a new biological assessment incorporating additional information.

March 5, 2009: Caltrans Senior Biologist Zachary Parker along with Jennifer Taylor and Christine Cox meet with Peter Cross, Susan Jones and Ken Sanchez of the U.S. Fish and Wildlife Service to discuss impacts to the State Route 12 Improvement project. Caltrans was given authorization from Ken Sanchez to compensate for giant garter snake impacts at a Sacramento Valley bank.

January 15, 2009: Caltrans met with Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers to discuss biological and wetlands mitigation.

March 12, 2009: Caltrans met with the U.S. Army Corps of Engineers to conduct a delineation verification site visit.

September 3, 2008: Caltrans consulted with the Environmental Protection Agency concerning the status of the project as a project of air quality of concern. The Environmental Protection Agency concurred that the project was not of air quality concern.

National Marine Fisheries Service

June 18, 2008: Caltrans spoke with Doug Hampton of the National Marine Fisheries Service regarding the State Route 12 Improvements Project and potential issues with anadromous fish species. Potential issues may include steelhead and green sturgeon. Mr. Hampton suggested that Caltrans submit a formal letter requesting technical assistance and the National Marine Fisheries Service will respond with species to be affected and mitigation measures if needed.

July 29, 2008: Caltrans sent a formal letter to the National Marine Fisheries Service requesting technical assistance.

September 10, 2008: Caltrans sent an e-mail to Doug Hampton to verify that the National Marine Fisheries Service received the July 29 letter.

September 12, 2008: Caltrans received an e-mail from Doug Hampton verifying that the National Marine Fisheries Service did receive the July 29 letter and that a response was in review and would be mailed out soon.

September 15, 2008: Caltrans received a letter from Doug Hampton of the National Marine Fisheries Service with conservation measures and best management practices for erosion control and water quality to minimize any indirect effects to listed species or their habitat.

Chapter 4 List of Preparers

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

Jeanne Binning, Senior Environmental Planner. Ph.D., Anthropology, University of California, Riverside; B.A., Anthropology, California State University, Northridge; 37 years cultural resources management experience. Contribution: Principal Investigator, Prehistoric Archaeology.

Abdulrahim Chafi, Transportation Engineer. Ph.D., Environmental Engineering, California Coast University, Santa Ana; B.S., M.S., Chemistry and M.S. Civil/Environmental Engineering, California State University, Fresno; 12 years environmental technical studies experience. Contribution: Noise and Air Quality Reports.

Phil Chick, Environmental Planner. B.A., Anthropology, California State University, Fresno; 9 years environmental impact assessment experience. Contribution: Mapping.

Ken Doran, Engineering Geologist. M.S., Geology, California State University, Fresno; 7 years experience in environmental impact assessment. Contribution: Prepared Hazardous Waste Assessment.

Robyn Fong, Landscape Associate. B.S., Landscape Architecture, California Polytechnic University, San Luis Obispo; 10 years experience in Landscape Architecture. Contribution: Prepared Visual Impact Assessment (V.I.A.).

Dena S. Gonzalez, Environmental Planner Natural Sciences. B.S., Biology, California State University Fresno; 7 years experience in biological impacts assessment, working for State agencies such as Department of Fish and Game and an environmental consulting firm. Contribution: Prepared several technical studies including Natural Environmental Study, Biological Assessment, and Wetland Delineation Report.

Sarah E. Johnston, Associate Environmental Planner. M.A., Public Administration, California State University, Fresno; B.A., Anthropology, California State University, Sacramento; 25 years land use and environmental planning experience. Contribution: Prepared Initial Study and coordinated the environmental process for the project.

Sheila Kirton, Transportation/Hydraulics Engineer. B.S., Civil Engineering, University of Arizona, Tucson; 13 years engineering experience. Contribution: Prepared Location Hydraulic Study.

Gail Miller, Senior Environmental Planner. B.A., Public Administration, California State University, Fresno; 17 years land use and environmental planning experience. Contribution: Document preparation oversight and approval.

Zachary Parker, Senior Environmental Planner. B.S., Environmental Biology, California State University, Humboldt; 9 years wildlife biology and environmental planning experience. Contribution: Reviewed Natural Environment Study, Biological Assessment, Wetland Delineation Report, and conducted agency coordination.

Richard C. Stewart, Engineering Geologist, B.S., Geology, California State University, Fresno; 6 years experience paleontological impact assessment. Contribution: Prepared Paleontological Identification Report.

A. Kim Tanksley, Associate Archaeologist. B.A., Anthropology, California State University, Fresno; M.A., Archaeology course work, California State University, Hayward; 13 years experience in California prehistoric archaeology. Contribution: Combined Archaeological Survey Report and Extended Phase I Investigation Report.

Philip Vallejo. Environmental Planner. B.A., History, California State University, Fresno; Certified under Caltrans Professional Qualifications Standards as a principal architectural historian, as defined in attachment 1 of the 2004 programmatic agreement for Section 106; 6 years experience in environmental planning. Contribution: Prepared Historic Resource Evaluation Report

Roger Valverde, Graphic Designer II. Certificate of Multimedia, Mount San Jacinto and California State University, Fresno; 20 years visual design and public participation experience. Contribution: Graphics (maps).

Rajeev L. Dwivedi, Engineering Geologist. Ph.D., Environmental Science, Oklahoma State University; M.S. Civil Engineering, Oklahoma State University; M.S. Geology, Wichita State University; 21 years experience in water quality, geology, and environmental engineering. Contribution: Prepared Water Quality Report.

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.”

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

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

AESTHETICS - Would the project:

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

AGRICULTURE RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

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

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

d) Expose sensitive receptors to substantial pollutant concentration?

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

BIOLOGICAL RESOURCES - Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CULTURAL RESOURCES - Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Archaeological resources are considered “historical resources” and are covered under (a).

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

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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GEOLOGY AND SOILS - Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

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

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

iii) Seismic-related ground failure, including liquefaction?

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

iv) Landslides?

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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HAZARDS AND HAZARDOUS MATERIALS -
Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

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

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

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

c) Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?

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

d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

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

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

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

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

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

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

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

HYDROLOGY AND WATER QUALITY - Would the project:

a) Violate any water quality standards or waste discharge requirements?

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

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

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

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 off-site?

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

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off-site?

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

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

f) Otherwise substantially degrade water quality?

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

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

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

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

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

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

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

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

j) Result in inundation by a seiche, tsunami, or mudflow?

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

LAND USE AND PLANNING - Would the project:

a) Physically divide an established community?

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

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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MINERAL RESOURCES - Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

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

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

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

NOISE - Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

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

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

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

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

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

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

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

POPULATION AND HOUSING - Would the project:

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

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

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

PUBLIC SERVICES -

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

Fire protection?

Police protection?

Schools?

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

Other public facilities?

RECREATION -

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

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

TRANSPORTATION/TRAFFIC - Would the project:

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

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

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

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

e) Result in inadequate emergency access?

f) Result in inadequate parking capacity?

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

UTILITY AND SERVICE SYSTEMS - Would the project:

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

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

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

MANDATORY FINDINGS OF SIGNIFICANCE -

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix B Resources Evaluated Relative to Requirements of Section 4(f)

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

This section of the document discusses parks, recreational facilities, wildlife refuges, and historic properties found within or adjacent to the project area that do not trigger Section 4(f) protection either because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, 4) the project does not permanently use the property and does not hinder the preservation of the property, or 5) the proximity impacts do not result in constructive use.

Archaeological Site (CA-SJO-225): This is a prehistoric archaeological site that is eligible for the National Register of Historic Places for its potential to provide information on the prehistory of California. To protect the information potential of the site, no impacts that disturb the surface or subsurface of the site would be introduced. Caltrans conducted test excavations in June 2008 and determined that the site is located entirely on private land and outside the project's area of potential effect. No ground-disturbing activities would occur on the site as a result of construction or other activities of the project. The proposed project would not trigger Section 4(f) protection for this resource.

The Terminous School House (APN 025-030-07): This is a historic resource that is eligible for the National Register of Historic Places for its embodiment of the distinctive characteristics representative of early 20th century rural schoolroom architecture in the San Joaquin Delta region. Its period of significance dates from 1937 to 1945. The historic property boundaries are limited to the footprint of the building.

To preserve the historic architecture of the building, the project would have to avoid impacts to the superstructure or foundation of the building. The building is located on private property and outside the proposed project's area of potential effect. The proposed project would not introduce significant impacts to the historic character of the building related to the following issues: facilities, accessibility, views, noise,

vegetation, wildlife, air quality, or water quality. The proposed project would not trigger Section 4(f) protection for this resource.

White Slough Wildlife Area: This is a preserve of 880 acres of human-made ditches, canals, freshwater marshes, grassland/upland, and riparian habitat administered by the California Department of Fish and Game. The Department of Fish and Game acquires wildlife areas to protect and enhance habitat for wildlife and to provide for public uses that are compatible with the long-term well-being of wildlife and habitat. Activities open to the public at the White Slough Wildlife Area include hunting, fishing, hiking, and wildlife viewing. The nine ponds within the wildlife area are not contiguous to each other. There are several access points into the wildlife area from State Route 12 and from local roads.

The White Slough Wildlife Area extends to the north and south of State Route 12 within the project area. The proposed project would not extend into the boundaries of the White Slough Wildlife Area and would not affect access via Guard Road or Thornton Road. The proposed project would not introduce significant impacts to the wildlife, habitat, or access of the wildlife area related to the following issues: facilities, accessibility, views, noise, vegetation, air quality, or water quality. The proposed project would not trigger Section 4(f) protection for this resource.

None of the three resources found adjacent to the project area would trigger Section 4(f) protection (Table B-1). Archaeological Site CA-SJO-225 and the Terminous School House are historic properties that are privately owned and would not be affected by the construction or implementation of the project. The White Slough Wildlife Area is outside the project's impact area, and the proximity impacts would not result in constructive use.

Table B-1 Resources Evaluated/Not Requiring Section 4(F) Protection

Resource	Description	4(f) Impact	Justification
Archaeological Site (CA-SJO-225)	Archaeological site	No	1) Project is outside the boundary of the site, 2) Project would not use/hinder preservation of the property
Terminus Historic School House	National Register Eligible historic property	No	1) Project is outside the boundary of the site, 2) Project would not use/hinder preservation of the property
White Slough Wildlife Area	Wildlife area administered by California Department of Fish and Game; owned by Department of Water Resources	No	1) Project is outside fenced boundary of wildlife area 2) the proximity impacts would not result in constructive use

Appendix C 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.

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

WILL KEMPTON
Director

"Caltrans improves mobility across California"

Appendix D Minimization and/or Mitigation Summary

Visuals/Aesthetics

The following proposed design features and construction methods would minimize effects to visual quality within the project area:

Erosion control to be applied to any new or disturbed slopes

Slopes to be no steeper than 2:1

Water Quality

The design and construction of the proposed project must adhere to the requirements in the National Pollutant Discharge Elimination System, Caltrans Storm Water Management Plan, the Caltrans Project Planning and Design Guide, and best management practices.

In the construction phase, the contractor has the responsibility, as stated in Caltrans' Standard Specification Section 7-1.01G, to take the necessary steps to eliminate potential impacts during construction. These steps include, but are not limited to:

- Soil stabilization
- Wind erosion control
- Tracking control
- Non-storm water control
- Waste management and material pollution control
- Preparation and use of a Storm Water Pollution Prevention Plan during construction that meets the satisfaction of the resident engineer.
- A Notification of Construction would be submitted to the Regional Water Quality Control Board at least 30 days before the start of construction.
- A Notice of Construction Completion would be submitted to the Regional Water Quality Control Board upon completion of construction.

Air Quality

The anticipated impacts to air quality would occur during construction and would be short-term in duration and, therefore, would not result in adverse or long-term conditions. The construction contractor would be responsible for implementing measures that would reduce any air quality impacts resulting from construction activities. Implementation of the following measures would reduce any air quality impacts resulting from construction activities:

The construction contractor would comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 of Caltrans' Standard Specifications (1999). Section 7, "Legal Relations and Responsibility," addresses the contractor's responsibility on many items of concern, such as air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience of the public; and damage or injury to any person or property as a result of any construction operation. Section 10 is directed at controlling dust. If the project requires removal of 2,500 cubic yards of soil within any three day period, or disturbs more than five acres, a dust control plan will be required for this project.

- Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions.
- Spread soil binder on any unpaved roads used for construction purposes and on all project construction parking areas.
- Wash trucks off as they leave the right-of-way as necessary to control fugitive dust emissions.
- Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
- Develop a special dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.

- To the extent feasible, establish environmentally sensitive areas for sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited.
- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads carrying construction traffic.
- Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to reduce PM₁₀ and deposition of particulate during transportation.
- Remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.
- To the extent feasible, route and schedule construction traffic to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area.

Biology

Wetlands

The project has been designed to encompass the smallest footprint practicable to minimize temporary, indirect, and permanent impacts to wetlands and other waters of the United States. Wetlands and other waters of the United States temporarily affected by project activities would be restored to original conditions.

- Wetland areas that are adjacent to the project's impact area would be designated as environmentally sensitive areas and fenced to avoid any potential impacts during construction.

Two mitigation options are proposed to address the potential loss of aquatic resources if any waterways within the project area are determined to be jurisdictional:

- Preservation, enhancement, and/or restoration of aquatic resources
- Creation of wetland habitat, on- or off-site

Animal Species

Migratory Birds

The following measures would be implemented to avoid impacts to migratory birds including the white-tailed kite, northern harriers, tricolored blackbirds, and long-eared owls. A special provision for migratory birds will be included in the bid package to ensure that no potential nesting migratory birds are affected during construction.

Provisions will include:

- Preconstruction surveys will be conducted no fewer than 14 days and no more than 30 days before the project starts.
- If an active nest is found, the nest tree will be designated an environmentally sensitive area, with a no-work window around the tree until it has been determined by a qualified biologist that the young have fledged, and will monitor the active nest to ensure that construction activities do not interfere with breeding activities.
- Removal of any trees within the project impact area will be restricted to the non-nesting season.

Western Burrowing Owl

The following avoidance and minimization measures would prevent or reduce effects to the western burrowing owl:

- Preconstruction surveys prior to ground disturbance will be conducted to search for western burrowing owl burrows within and adjacent to the project impact area. No disturbance should occur within 160 feet of occupied burrows during the non-breeding season (September 1 through January 31) or within 250 feet during the breeding season (February 1 through August 31) unless a qualified biologist approved by the California Department of Fish and Game verifies that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. In addition, habitat temporarily affected by project activities would be restored to its original condition.
- If western burrowing owls are observed prior to construction, mitigation guidelines would include on-site passive relocation and installation of exclusionary devices. Owls will be excluded from burrows in the immediate

impact area and within a 160-foot buffer zone by installing one-way doors in burrow entrances. One-way doors will be left in place for 48 hours to ensure that owls have left the burrows before excavation. The project area will then be monitored daily for the next week to confirm owl use of alternative burrows before excavating burrows in the project impact area. Whenever possible hand tools will be used to excavate burrows and burrows will be refilled once excavated to avoid reoccupation. One alternative natural or artificial burrow will be provided for each burrow that will be excavated in the project impact area. A minimum of 6.5 acres of foraging habitat adjacent or connected to the relocated area is required for each pair of western burrowing owls relocated.

Western Pond Turtle

The following avoidance and minimization measures would be implemented:

- Confine clearing to facilitate construction activities to the minimal area necessary.
- Preconstruction surveys to determine presence of western pond turtle within the project impact area will be conducted fewer than 14 days and no more than 30 days before the beginning of any ground-disturbing activities.
- If a western pond turtle is observed, the California Department of Fish and Game would be consulted, if relocation of the pond turtle outside of the project impact area is necessary.
- If a western pond turtle is observed during construction, the resident engineer should notify a Caltrans district biologist immediately.

Threatened and Endangered Species

Swainson's Hawk and California Black Rail

The following measures would be implemented to avoid and minimize effects to the Swainson's hawk and California black rail during construction:

- Preconstruction surveys will be conducted no fewer than 14 days and no more than 30 days before the project starts.

- If an active nest is found, the nest tree will be designated an “Environmentally Sensitive Area,” with a no-work window around the tree until it has been determined by a qualified biologist that the young have fledged.
- A qualified biologist will monitor the active nest during construction activities to ensure that no interference with breeding activities occurs.
- A special provision for migratory birds will also be included in the bid package.
- Removal of any trees within the project impact area will be restricted to the non-nesting season.

Greater Sandhill Crane

The following measures would be implemented to avoid and minimize effects to the greater sandhill crane during construction:

- Preconstruction surveys will be conducted no fewer than 14 days and no more than 30 days before the project starts.
- A special provision for migratory birds will also be included in the bid package.

Delta Smelt and Central Valley Steelhead

To avoid any potential indirect effects to any critical habitat down stream of the construction area the following conservation measures and best management practices for erosion control and water quality would be incorporated.

- All disturbed soil at each site would undergo erosion control treatment immediately after construction ends. Treatment includes temporary seeding and sterile straw mulch. Any disturbed soils on a gradient of over 30 percent would have erosion control measures installed. Permanent vegetation and potential tree replanting should take place in small openings in the erosion control area with native species when possible.
- Construction by-products and pollutants such as petroleum products, chemicals, or other deleterious materials would not be allowed to discharge into streams or waters. A plan and the necessary equipment for the emergency clean up of any spills of fuel or other material would be available on-site when construction equipment is in use.

- Equipment would be refueled and serviced at designated construction staging areas away from streams and waters. All construction material and fill would be stored and contained in a designated area that is located away from channel areas to prevent transport of material into adjacent streams. Where feasible, these activities would occur 100 feet from waterways and canals.
- Construction vehicles and equipment would be properly maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease.
- Building material storage areas containing hazardous or potentially toxic materials such as herbicides and petroleum products would have an impermeable membrane between the ground and the hazardous material and would be bermed to prevent the discharge of pollutants to ground water and runoff water.

Giant Garter Snake

The following measures developed by the United States Fish and Wildlife Service would be implemented to avoid and minimize effects to the giant garter snake during construction. Standard construction best management practices would be implemented throughout construction to avoid and minimize adverse effects to water quality within the project impact area.

The following measures should be applied to all irrigation ditches within the project impact area:

- In-water and bank-side construction activities would take place between May 1 and October 1, as necessary, to ensure that construction occurs during the active period of the giant garter snake. Any work occurring after October 1 would be restricted to road surface work with water quality controls in place.
- Between April 15 and September 30, any dewatered habitat would remain dry, with no puddle water, for at least 15 consecutive days before workers excavate or fill dewatered habitat. Efforts would be made to ensure that the dewatered habitat does not continue to support giant garter snake prey (e.g., fish, tadpoles, and aquatic insects), which could detain or attract snakes into the area. This measure would encourage giant garter snake to leave the site.

- Construction personnel would participate in a worker environmental awareness program approved by the United States Fish and Wildlife Service. A qualified biologist will inform all construction personnel about the life history of giant garter snake ; and what to do if a giant garter snake is encountered during construction activities; as well as explaining the state and federal laws pertaining to giant garter snake.
- A qualified biologist would conduct a pre-construction survey for giant garter snake, no more than 24 hours prior to the start of construction activities (site preparation and grading). If construction activities stop for a period of two or more weeks, a new giant garter snake survey will be completed no more than 24 hours prior to the reinitiating of construction activities.
- Clearing would be confined to the minimal area necessary within 200 feet of aquatic habitat to facilitate construction activities.
- If a live giant garter snake is encountered during construction activities, the projects' biological monitor and the U.S. Fish and Wildlife Service would be immediately notified. The biological monitor would do the following:

Stop construction activity in the vicinity of the giant garter snake. Monitor the giant garter snake and allow the giant garter snake to leave on its own. The monitor would remain in the area for the remainder of the workday to make sure the giant garter snake is not harmed or that it leaves the site and does not return. Escape routes for giant garter snake would be determined in advance of construction. If the giant garter snake does not leave on its own within one working day, further consultation with United States Fish and Wildlife Service would be conducted.

Only personnel with a United States Fish and Wildlife Service recovery permit pursuant to Section 10(a)(1)(A) of Federal Endangered Species Act would have the authority to capture and/or relocate giant garter snake encountered in the project impact area.

Upon locating dead, injured, or sick giant garter snake, Caltrans would notify the United States Fish and Wildlife Service Division of Law Enforcement or the Sacramento Fish and Wildlife Office within one working day. Written notification to both offices would be made within three (3) calendar days and

would include the date, time, and location of the finding of a specimen and any other pertinent information.

No plastic, monofilament, jute, or similar erosion control matting that could entangle giant garter snake will be placed. Possible substitutions include coconut coir matting, tactified hydro-seeding compounds, or other material approved by the U.S. Fish and Wildlife Service.

Mitigation Measures

The loss of giant garter snake habitat would be compensated for through the purchase of credits from a U.S. Fish and Wildlife Service-approved mitigation bank, preservation of habitat, or enhancement or restoration of habitat. Specific mitigation measures proposed for impacts to the giant garter snake include:

- Compensation for loss of habitat through purchase of credits from a U.S. Fish and Wildlife Service-approved mitigation bank, preservation of habitat, or enhancement or restoration of habitat.
- Caltrans has obtained permission from United States Fish and Wildlife Service to mitigate outside of the service area. A possible location to mitigate is at the Sutter Basin Giant Garter Snake Conservation Bank.
- Caltrans is also considering the purchase of existing farmland to restore to freshwater emergent vegetation that would be suitable for the giant garter snake.
- 3:1 ratio for permanent impacts to habitat.
- Compensation for temporary impacts to potential giant garter snake habitat would consist of restoration; disturbed areas would be allowed to return to pre-project condition.

Total proposed compensation for the loss of giant garter snake habitat is 3.99 acres. Table 2.4 shows the proposed mitigation ratios for the impacts to potential giant garter snake habitat.

Table D-1 Mitigation Ratio for Replacement of Giant Garter Snake Habitat

Habitat	Acres	Proposed Ratio	Proposed Mitigation Acres
Permanent Impacts	1.33	3:1	3.99
Total			3.99

Construction Impacts

Hazardous Waste

For purposes of providing adequate measures for public and worker health and safety, a Non-Standard Special Provision will be provided for inclusion in the project contract. The Non-Standard Special Provision is required as an element of the health and safety plan since lead is present in the soil in detectable amounts well below regulatory action thresholds. The contractor shall prepare a project specific Lead Compliance Plan to prevent or minimize worker exposure to lead while handling material containing lead.

Noise and Vibration

Temporary construction noise impacts would be minimized by implementing Caltrans Standard Specifications Section 7-1.01I. “Sound Control Requirements” that states that noise levels generated during construction would comply with applicable local, state, and federal regulations and that all equipment would be fitted with adequate mufflers according to manufactures’ specifications.

- All equipment would have sound control devices that are no less effective than those provided on the original equipment. No equipment would be operated with an unmuffled exhaust.
- As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Utilities/Emergency Services

During construction, a Traffic Management Plan would be developed to accommodate local traffic patterns and emergency services.

Cultural resources

If new archaeological material is found during construction, then the contractor will follow the minimization and mitigation efforts described for “Archaeological Resources” in Caltrans Standard Specification 14-2.02 including:

- Stop all work within a 60-foot radius of the discovery
- Protect the discovery area. All earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist could assess the nature and significance of the find.
- The Department investigates. Do not take archaeological resources from the job site. Do not resume work within the discovery area until authorized.

Appendix E Special-Status Species List

Scientific Name	Common Name	Status	Habitat	Species	Evaluation of Effect
PIPlants					
<i>Castilleja campestris</i> spp <i>succulenta</i>	Succulent owl's clover	FT	Vernal pools, valley and foothill grassland. Moist places, often in acidic soils. 25-750m.	A	No Effect. The project site does not contain acidic soils or vernal pool habitat that is essential for this species.
<i>Oenothera deltoids</i> ssp. <i>howellii</i>	Antioch Dunes evening-primrose	FE, SE		A	
<i>Lasthenia conjugens</i>	Contra Costa goldfields	SE		A	
<i>Erysimum capitatum</i> var. <i>angustatum</i>	Contra Costa wallflower	FE, SE		A	
<i>Cordylanthus mollis</i> ssp. <i>mollis</i>	Soft bird's beak	FE		A	
Invertebrates					
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	FE	Endemic to the grasslands of the northern two-thirds of the central valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	A	No Effect. No suitable habitat or vernal pools are located within the project impact area.
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT	Endemic to the grasslands of the central valley, central and south coast mountains, astatic rain-filled pools. Inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	A	No Effect. No suitable habitat or vernal pools are located within the project impact area.
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT	Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus mexicana</i>). Prefers to lay eggs in elderberry 2-8 inches in diameter; some preference shown for "stressed" elderberries	A	No Effect. No elderberry shrubs are present within the project impact area.
<i>Elaphrus viridis</i>	Delta green ground beetle	FT	Restricted to the margins of vernal pools in the grassland area between Jepson prairie and Travis AFB. Prefers the sandy mud substrate where it slopes gently into the water, with low-growing vegetation, 25-100% cover.	A	No Effect. No suitable habitat or vernal pools present within project impact area. Project is outside of the known distribution of the species.
<i>Lepidurus packardi</i>	Vernal pool tadpole shrimp	FE	Endemic to the grasslands of the central valley, central and south coast mountains, astatic rain-filled pools. Inhabits small,	A	No Effect. No suitable habitat or vernal pools are located within the project impact area.

Appendix E • Special-Status Species List

Scientific Name	Common Name	Status	Habitat	Species	Evaluation of Effect
			clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.		
<i>Apodemia mormo langei</i>	Lange's metalmark butterfly	FE		A	
Fish					
<i>Acipenser medirostris</i>	Green sturgeon	FT	Spawns in the Sacramento River and the Klamath River, at temperatures between 8-14 degrees Celsius.(c) Preferred spawning substrate is large cobble, but can range from clean sand to bedrock	A	No Effect. No waterways suitable for this species would be affected by the project.
<i>Hypomesus transpacificus</i>	Delta smelt	FT , ST	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	A	No Effect. The project impact area is located within designated critical habitat for this species however, no waterways suitable for Delta smelt would be affected by the project.
<i>Hypomesus transpacificus</i>	Delta smelt Critical Habitat	X	Delta smelt are found only from the Suisun Bay upstream through the delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties.	A	No Effect. The current project is within federally designated delta smelt critical habitat. However, no habitat suitable for delta smelt would be affected.
<i>Oncorhynchus mykiss</i>	Central Valley steelhead	FT	Populations in the Sacramento and San Joaquin rivers and their tributaries.	A	No Effect. No waterways suitable for this species would be affected by the project.
<i>Oncorhynchus mykiss</i>	Central Valley steelhead Critical Habitat	X	All river reaches in the Sacramento and San Joaquin Rivers and their tributaries.	A	No Effect. Federally designated critical habitat is located immediately west of the biological study area in Potato Slough. Potato Slough will be completely avoided by the project.
<i>Oncorhynchus tshawytscha</i>	Winter-run chinook salmon, Sacramento River	FE	Sacramento River below Keswick dam. Spawns in the Sacramento River, but not in tributary streams. Requires clean, cold water over gravel beds with water temperatures between 6 and 14 c for spawning.	A	No Effect. No waterways suitable for this species would be affected by the project.
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run chinook salmon	FT	Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27 c is lethal to adults federal listing refers to pops spawning in Sacramento River and tributaries.	A	No Effect. No waterways suitable for this species would be affected by the current project.
<i>Oncorhynchus tshawytscha</i>	Chinook salmon Critical Habitat	X	Spring-run chinook in the Trinity River and the Klamath River upstream of the mouth of the Trinity River and the	A	No Effect. The habitat is located approximately 4.8 miles northwest of the biological study area, in the Georgiana

Appendix E • Special-Status Species List

Scientific Name	Common Name	Status	Habitat	Species	Evaluation of Effect
			Sacramento River. Major limiting factor for juvenile chinook salmon is temperature, which strongly affects growth and survival.		Slough. No impacts to this habitat are anticipated as a result of the current project.
Amphibians					
<i>Ambystoma californiense</i>	California tiger salamander	FT	Need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	A	No Effect. No habitat suitable for this species would be affected by the project.
<i>Rana aurora draytonii</i>	California red-legged frog	FT	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to aestivation habitat.	A	No Effect. No habitat suitable for this species would be affected by the project.
Reptiles					
<i>Thamnophis gigas</i>	Giant garter snake	FT, ST	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	P	May Affect, Likely to Adversely Affect. GGS have been documented within the study area. Potentially suitable habitat is present within the project impact area.
Birds					
<i>Rallus longirostris obsoletus</i>	California clapper rail	FE	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of san Francisco bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	A	No Effect. No habitat suitable for this species would be affected by the project.
<i>Riparia riparia</i>	Bank swallow	ST		A	

Appendix E • Special-Status Species List

Scientific Name	Common Name	Status	Habitat	Species	Evaluation of Effect
Mammals					
<i>Reithrodontomys raviventris</i>	Salt marsh harvest mouse	FE, SE		A	
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE, ST		A	

Absent [A]

Habitat Present [HP]

Present [P]

Critical Habitat [X]

Status:

- No habitat present and no further work needed.

- Habitat is, or may be present. The species may be present.

- Species is present

- Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

-Federal Endangered (FE); Federal Threatened (FT)

-State Endangered (SE); State Threatened (ST).

Appendix F AD 1006 Form

36769

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

FI (To be completed by Federal Agency) Name Of Project: SR 12 Improvements Project 10-0A8400 Proposed Land Use: State Highway Project		Date Of Land Evaluation Request: 10/16/08 Federal Agency Involved: FHWA/Caltrans County And State: San Joaquin County, CA			
PART II (To be completed by NRCS) Date Request Received By NRCS: 4-10-09 Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form). Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Acres Irrigated: 519.021 Average Farm Size: 209	Amount Of Farmland As Defined In FPPA Acres: 574,981 % 104		
Major Crop(s): Corn, asparagus, wheat Name Of Land Evaluation System Used: California - Stone System	Farmable Land In Govt. Jurisdiction Acres: 559,435 % 102 Name Of Local Site Assessment System: None	Date Land Evaluation Returned By NRCS: 4-10-09			
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	7.8				
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site	7.8	0.0	0.0	0.0	0.0
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland	7.8				
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value					
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		70	0	0	0
PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 656.5(b))		Maximum Points			
1. Area In Nonurban Use	15	15			
2. Perimeter In Nonurban Use	10	10			
3. Percent Of Site Being Farmed	20	14			
4. Protection Provided By State And Local Government	20	20			
5. Distance From Urban Builtup Area	15	0			
6. Distance To Urban Support Services	15	0			
7. Size Of Present Farm Unit Compared To Average	10	10			
8. Creation Of Nonfarmable Farmland	15	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	10			
11. Effects Of Conversion On Farm Support Services	25	0			
12. Compatibility With Existing Agricultural Use	10	0			
TOTAL SITE ASSESSMENT POINTS	160	84	0	0	0
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	70	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	84	0	0	0
TOTAL POINTS (Total of above 2 lines)	260	154	0	0	0
Site Selected:	Date Of Selection:	Was A Local Site Assessment Used?			
Reason For Selection:		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			

(See instructions on reverse side)

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Form AD-1006 (10-03)

List of Technical Studies that are Bound Separately

Air Quality Report

Biological Assessment

Noise Study Report

Water Quality Report

Natural Environment Study

Location Hydraulic Study

Historical Property Survey Report

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

Hazardous Waste Reports:

- Initial Site Assessment
- Preliminary Site Investigation (Geophysical Survey)

Scenic Resource Evaluation/Visual Assessment

Initial Paleontology Study