I-80 Eastbound Cordelia Truck Scales Relocation Project

Draft Environmental Impact Report/ Environmental Assessment

State Clearinghouse #2008052067

Solano County, California
Interstate 80, from approximately 0.2 mile east of Suisun Creek
to Chadbourne Road on State Route 12
04-SOL-80-13.8/15.7; 04-SOL-SR 12-L1.8/L2.0
EA 0A5350

Prepared by the
State of California Department of Transportation

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

Caltrans

January 2009

General Information about This Document

What's in this document:

The California Department of Transportation (the Department), as assigned by the Federal Highway Administration (FHWA), has prepared this draft environmental impact report/environmental assessment (EIR/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Solano County, California. The document describes why the project is being proposed; alternatives for the project; the existing environment that could be affected by the project; the potential impacts from each of the alternatives; and any proposed avoidance, minimization, and compensation measures.

What you should do:

- Please read this EIR/EA. Additional copies of this document as well as the technical studies are available for review at the following locations:

    - Caltrans District 04, 111 Grand Avenue, Oakland, CA;
    - Solano County Library;
    - Solano Transportation Authority;
    - City of Fairfield;
    - Solano County Public Works Department; and
    - On-line at www.sta.dst.ca.us.

- Attend a public hearing.
- We welcome your comments. If you have any comments regarding the proposed project, please attend the public hearing or send your written comments to Caltrans by the deadline, or both. Submit comments via U.S. mail to Caltrans at the following address:

    Melanie Brent, Environmental Analysis Office Chief
    California Department of Transportation, District 04,
    P.O. Box 23660, MS-8B
    Oakland, CA 94623-0660

- Submit comments via email to: melanie_brent@dot.ca.gov.
- Submit comments by the deadline: March 18, 2009.

What happens next:

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

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disc. To obtain a copy in one of these alternate formats, please write to California Department of Transportation, Attn: Melanie Brent, Environmental Analysis Office Chief, California Department of Transportation, District 04, 111 Grand Avenue, P. O. Box 23660, Oakland, CA 94623-0660; call (510) 286-5231 (voice); or use the California Relay Service at (800) 735-2929 (TTY), (800) 735-2929 (voice), or 711.

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EA 0A5350

January 2009

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

State of California
Department of Transportation

1-29-09
Date of Approval

Bijan Sartipi
District Director
California Department of Transportation, District 4

Summary

Overview of Project Area

The Cordelia Truck Scales facility is located within the Interstate 80 (I-80)/Interstate 680 (I-680)/State Route 12 (SR 12) interchange in Solano County, in the vicinity of Fairfield and Suisun City. The project area encompasses the existing facility, the site of the new facility, and all associated on- and off-ramps and utility relocations. The project area extends along I-80 from the Scandia Family Center (at post mile 13.8) east to the SR 12 East (SR 12E) interchange with I-80 and continues east along SR 12E to Chadbourne Road, a distance of 2.1 miles (see Figure 1-1) in Chapter 1.

The land surrounding the project area is relatively flat (the average elevation is approximately 10 feet) and includes two waterways (Suisun and Dan Wilson Creeks). The land uses in the area consist primarily of agricultural and commercial uses.

Related Projects

Several related transportation projects are being planned or recently were completed in the general project area. These projects (and their Caltrans EA project numbers where appropriate) are listed below in the order of anticipated completion.

- **Interstate 80 High-Occupancy Vehicle Lane Project:** Eastbound and westbound high-occupancy vehicle (HOV) lanes will be constructed along an approximately 8.5-mile-long segment of I-80 from the Red Top Road interchange in Solano County to 0.5 mile east of the Air Base Parkway interchange in Fairfield. The project (EA-04-0A5304) will increase the overall carrying capacity of I-80 in the project area and will facilitate the already high demand for ridesharing on I-80. Construction of this project began in June 2008, and completion is anticipated in late 2009.
- **North Connector Project:** The North Connector Project would construct a parallel route to the north of I-80 between Abernathy Road at I-80 on the east to SR 12 at Red Top Road on the west. This project would provide increased east/west capacity and provide an alternative to I-80 for local traffic. Construction of the first phase of the North Connector Project is expected to begin in summer 2009, with completion anticipated in December 2010.
- **Transit Improvements:** To support increased transit ridership and expanded bus routes in the county, the *I-80/I-680/I-780 Transit Corridor Study* identifies numerous potential locations for park-and-ride lots in these major corridors, three of which could be located in the project area: Red Top Road at I-80, a surface lot at Abernathy Road between I-80 and SR 12 or an expanded parking structure at the Fairfield Multimodal Transportation Center, and Gold Hill Road at I-680. These potential lots are expected to be constructed between 2010 and 2015.
- **I-80/I-680/SR 12 Interchange Project:** The I-80/I-680/SR 12 Interchange Project (EA-04-0A5300) would include numerous improvements to the I-80/I-680/SR 12 interchange to address existing and future traffic operations and congestion, including the relocation of the westbound Cordelia Truck Scales. The improvements are intended to add freeway capacity, reduce cut-through traffic on local roads, improve local access to and from the freeway,

accommodate current and future truck volumes, improve safety, and increase the use of HOV lanes and ridesharing. The environmental document for the project is currently underway and is expected to be completed in early 2010.

- **Jameson Canyon (SR 12) Widening from I-80 to SR 29:** This project would provide a continuous 4 lane expressway between I-80 and SR 29. The project currently in the final design phase and construction is planned to begin in 2011, with completion in 2013.
- **I-80 Improvements through Fairfield:** Several projects are programmed between SR 12 East and Air Base Parkway. They include construction of an eastbound auxiliary lane between Abernathy Road and Auto Mall Parkway, removal of existing hook ramps at Auto Mall Parkway, construction of an eastbound auxiliary lane between Beck Avenue and Travis Boulevard, construction of an eastbound auxiliary lane from Travis Boulevard to Air Base Parkway, construction of a westbound auxiliary lane from Waterman Boulevard/Air Base Parkway to Travis Boulevard, and construction of a westbound auxiliary lane from West Texas Street to Abernathy Road. These improvements are in the early planning phases. No construction date has been determined.

Purpose and Need

Purpose

The purpose of the project is to:

- Accommodate anticipated growth in truck traffic in the corridor by 2040.
- Improve the reliability of the truck weight and safety inspection.
- Improve mainline safety by reducing truck/auto weaving and queuing.
- Provide traffic congestion relief along this segment of I-80.

Need

The existing Cordelia Truck Scales are located within the I-80/I-680/SR12 interchange, a point at which two major interstate freeways and one state highway converge. Since the facility was constructed in 1958, the San Francisco Bay Area (Bay Area) and Northern California region have experienced rapid population growth, resulting in substantial increases in truck and regional traffic passing through the interchange area, as well as substantial changes in the land uses immediately surrounding the interchange.

The truck scales substantially contribute to the congestion and safety concerns on I-80 because of the large number of trucks exiting and entering I-80 and the close proximity of the scales to both the Suisun Valley Road and I-680 and SR 12E interchanges. Congestion leads to closure of the truck scales when queuing trucks begin to back up onto the mainline freeway. The project will address these related deficiencies.

- **Inadequate Enforcement:** Currently closures to the truck scales occur approximately 15 times a week, when the queue gets too long and extends into traffic, creating a safety hazard and compromising enforcement of weight and safety requirements.

- **Truck-Related Congestion:** Trucks slowing to enter and accelerating to exit the facilities, as well as those queuing to enter, exacerbate the congestion problem, particularly during peak commute hours.
- **Unreliable Freight Transport:** Travel times for truck trips are unpredictable due to queues and congestion. This unpredictability is further increased by the likelihood of breakdowns resulting from uninspected trucks which have bypassed the scales during periodic closures.
- **Traffic Safety:** High vehicle and truck volumes, short merge and diverge maneuvers, short distances between interchanges, and trucks queuing on the entrance ramp all contribute to safety concerns in the area.

Proposed Project

The proposed Project is to construct a larger, more efficient truck scale facility on eastbound I-80 approximately 2,500 feet to the east of the current facility in a large oval configuration. Associated on- and off-ramps would be constructed, and, upon completion of the project, the existing facility would be demolished.

The new facility would be a Class B Commercial Vehicle Enforcement Facility (CVEF) (with Class B being defined as an independent command facility of the CHP located along a major highway route), which would have the capacity to inspect all eastbound I-80 trucks passing the facility 24 hours per day, seven days a week. The facility would contain up to four sets of scales to accommodate two lines of empty and loaded trucks. The new facility would contain seven inspection bays, parking for semi-truck trailer combinations and automobiles, and a roadway along the outer edge of the oval to allow weighed trucks to be driven around into the inspection bay or to be reweighed. An operations building would be constructed to facilitate the vehicle inspection and weighing process. Utilities would be provided from the west.

The off-ramp to the new truck scale facility would use the existing off-ramp location and geometry, which consists of a single lane exit. The new off-ramp would widen to a two-lane facility through the existing truck scale site and would widen to four lanes immediately west of Suisun Creek. The new off-ramp would cross over Suisun Creek on a new bridge before entering the new truck scale facility. Truck traffic would be sorted along the approach roadway into the appropriate lane by means of weigh-in-motion scales and signal bridges.

Trucks leaving the facility would use a new two-lane eastbound roadway that splits approximately 1,300 feet east of the facility, with one lane merging onto eastbound I-80 and the other lane connecting to the eastbound I-80–to–eastbound SR 12E connector.

The eastbound I-80 connector to eastbound SR 12E would be reconstructed as a two-lane ramp crossing over (braided with) the truck scale on-ramp to eastbound I-80. The connector overpass and associated retaining wall would be constructed to an ultimate three-lane width although the exit from I-80 proposed with this project would consist of a two-lane connection (one dedicated SR 12E lane and a shared through-exit lane). The new dedicated lane on I-80 would begin approximately 2,500 feet west of the exit point to the connector. The two-lane connector would continue east, becoming SR 12E, with the truck scale on-ramp joining as an auxiliary lane that would end at the SR 12E/Chadbourne Road interchange off-ramp.

Once construction of the new truck scales had been completed, and the new facility was operational, the existing facility would be removed.

As part of the proposed project, several utilities would need to be relocated. Relocating the utilities would occur during the construction phase of the proposed project. Impacts associated with high-voltage power line relocations are addressed in this EIR/EA pursuant to California Public Utilities Commission General Order (GO) 131 D filing requirements. The precise field location of high-risk utilities would be identified during final design in accordance with Caltrans procedures.

Other Alternatives Considered

Other alternatives were eliminated as part of the 2005 *Cordelia Truck Scales Relocation Study: Summary Report and Recommendations* (Solano Transportation Authority 2005a). This study determined that the Cordelia location was the preferred location based on enforcement and financial feasibility standards. This document considers only the proposed project and the no-project alternative.

No Project Alternative

Under the no-project alternative, operations of the existing truck scales would continue, and no improvements or expansions of truck scale facilities would be constructed. Congestion would worsen over time as truck and auto traffic increases.

Joint California Environmental Quality Act/National Environmental Policy Act Documentation

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

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for NEPA. One of the most commonly seen joint document types is an environmental impact report/environmental assessment (EIR/EA).

Following the receipt of public comments on the draft EIR/EA and the circulation of the final EIR/EA, Caltrans will be required to take actions regarding the environmental document. Caltrans will determine whether to certify the EIR/EA and issue findings and a statement of overriding considerations under CEQA and to issue a finding of no significant impact (FONSI) or require an environmental impact statement (EIS) under NEPA.

Project Impacts

Project impacts would occur in the following resource areas: Land Use, Farmlands, Utilities, Traffic and Transportation, Visual Resources, Cultural Resources, Hydrology, Water Quality, Paleontology, Hazardous Waste, Air Quality, Noise, Energy, and Biology. Implementation of environmental commitments and mitigation measures would ensure that all these project effects are not adverse (under NEPA) or less than significant (under CEQA). Project effects under NEPA are discussed fully in Chapter 2. Chapter 3 addresses impacts under CEQA.

Coordination with Public and Other Agencies

Notice of Preparation and Scoping

A notice of preparation of (NOP) for the proposed project was published on May 16, 2008. It was filed with the State Clearinghouse and sent to the appropriate elected officials, agencies, and interested parties.

A scoping meeting was held on June 5, 2008, from 6:30 to 8:30 p.m. at the Solano County Administration Building, at 675 Texas Street in Fairfield.

A number of means were utilized to inform the public of the scoping process and the public open house scoping meeting. A public notice was distributed to the project mailing list, which included property owners, elected officials, city staff, special interest organizations, and neighborhood groups. The Department mailed a letter to agency representatives and elected officials. Samples of these notification materials are included in Appendix G of this report.

Information pertaining to the scoping process and the public open house scoping meeting also appeared on the Solano Transportation Authority website at http://www.solanolinks.com.

Necessary Permits and Approvals

Table S-1 shows the permits and approvals that would be required.

Table S-1. Permits and Approvals

Agency	Permit, Approval, or Consultation
U.S. Fish and Wildlife Service (USFWS)	Consultation under Section 7 of the federal Endangered Species Act
National Marine Fisheries Service (NMFS)	Consultation under Section 7 of the federal Endangered Species Act
U.S. Army Corps of Engineers	Section 404 nationwide permit for placement of fill
California Department of Fish and Game (DFG)	Section 1602 streambed alteration agreement for waters of the state; potential consultation under Section 2081 of the California Endangered Species Act (CESA); CEQA trustee agency
San Francisco Bay Regional Water Quality Control Board	Nonpoint Section 402, National Pollutant Discharge Elimination System permit (General Construction Permit), 401 Water Quality Certification
Bay Area Air Quality Management District (BAAQMD)	Permit for air emission generating equipment
California Public Utilities Commission	GO-131 D filing requirements for high-voltage electrical lines

Unresolved Issues

Section 15123(b) of the State CEQA Guidelines requires an EIR to identify areas of controversy known to the lead agency, including issues raised by agencies and the public. During preparation of the environmental document, no known issues of controversy were raised, and no issues remain unresolved.

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List of Acronyms

μ/m^3	micrograms per cubic meter
AADT	annual average daily traffic
AB	Assembly Bill
ABAG	Association of Bay Area Government
AC	asphalt concrete
ACCM	asbestos-containing construction material
ACHP	Advisory Council on Historic Preservation
ADL	aerially deposited lead
AIRS	Aerometric Information Retrieval System
APE	area of potential effect
APN	Assessor's Parcel Number
ARB	California Air Resources Board
ASTs	aboveground storage tanks
BAAQMD	Bay Area Air Quality Management District
basin plan	Water Quality Control Plan for the San Francisco Bay Basin
Bay Area	San Francisco Bay Area
BG	block group
BMPs	best management practices
BO	biological opinion
BOD	biochemical oxygen demand
BTUs	British thermal units
CAAQS	California's ambient air quality standards
CAFE	Corporate Average Fuel Economy
Cal/OSHA	California Division of Occupational Safety and Health
Cal-IPC	California Invasive Plants Council
CAT	Climate Action Team
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFFP	California Department of Forestry and Fire Protection
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CIA	community impact assessment
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide

CRHR	California Register of Historical Resources
CRLF	California red-legged frog
CSA	Critical Source Area
CT	census tract
CVEF	Commercial Vehicle Enforcement Facility
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
Department, the	California Department of Transportation
DFG	California Department of Fish and Game
DOC	California Department of Conservation
DPM	diesel particulate matter
Draft Traffic Operations Report	Draft Traffic Operations Report, Interstate 80 Eastbound Cordelia Truck Scales Relocation Project
DTSC	California Department of Toxic Substances Control
DWR	Department of Water Resources
E85	ethanol
EDR	Environmental Data Resource
EFH	Essential Fish Habitat
EIR/EA	environmental impact report/environmental assessment
EIS	environmental impact study
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCA	Energy Policy and Conservation Act
ERNS	Emergency Response Notification System
ESA	Endangered Species Act
ESA fencing	Environmentally Sensitive Area fencing
ESAs	environmentally sensitive areas
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FINDS	Facility Index System
FIRM	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FONSI	Finding of no significant impact
FPPA	Farmland Protection Policy Act
FR	Federal Register
GHG	greenhouse gas
GO	General Order
gpm	gallons per minute
GSRD	gross solids removal device
HAPs	hazardous air pollutants
HCP	habitat conservation plan
HOV	High-occupancy vehicle
I-680	Interstate 680

I-80	Interstate 80
IPCC	Intergovernmental Panel on Climate Change
ISA	initial site assessment
ITS	Intelligent Transportation Systems
kg	kilograms
kV	kilovolt
LCP	lead-containing paint
L_{eq}	equivalent sound level
LOS	level of service
LOTBs	Log of Test Borings
LPG	liquefied petroleum gas
LQG	large quantity generator
LUST	leaking underground storage tank
M85	methanol
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
map ID Nos.	map identification numbers
MBTA	Migratory Bird Treaty Act
MCE	Maximum Credible Earthquake
MEI	maximally exposed individual
MEP	maximum extent practicable
MLD	most likely descendent
MOE	measures of effectiveness
mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organization
MSATs	mobile source air toxics
MTBE	methyl tertiary butyl ether
MTC	Metropolitan Transportation Commission
NAAQS	national ambient air quality standards
NAC	noise abatement criteria
NAHC	Native American Heritage Commission
NBA	North Bay Aqueduct
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966, as amended
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOP	notice of preparation
NO_x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
O_3	ozone
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Act

PG&E	Pacific Gas and Electric Co.
PM	post mile
PM10	particulate matter 10 microns or less in diameter
PM2.5	particulate matter 2.5 microns or less in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 2002
ppd	pounds per day
ppm	parts per million
PRC	Public Resources Code
Programmatic Agreement	Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as It Pertains to the Administration of the Federal-Aid Highway Program in California
project	I-80 Eastbound Cordelia Truck Scales Relocation Project
PS&E	plans, specifications, and estimates
psi	pounds per square inch
PUC	California Public Utilities Commission
RAP	Relocation Assistance Program
RCP	reinforced concrete pipe
RCRA	Resource Conservation and Recovery Act of 1976
ROG	reactive organic gases
RSP	rock slope protection
RTIP	regional transportation improvement program
RTP	regional transportation plan
SAA	streambed alteration agreement
San Francisco Bay RWQCB	San Francisco Bay Regional Water Quality Control Board
SCWA	Solano County Water Agency
SFBAAB	San Francisco Bay Area Air Basin
SFPD	Suisun Fire Protection District
SGP	Strategic Growth Plan
SID	Solano Irrigation District
SIP	state implementation plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
SQG	Small Quantity Generator
SR	State Route
SR 12	State Route 12
SR 12E	State Route 12 East
SRA	shaded riverine aquatic
STA	Solano Transportation Authority
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TASAS	Traffic Accident Surveillance and Analysis System
TCM	traffic control measures
TDS	total dissolved solids
the County	Solano County

TIP	transportation improvement program
TMDLs	total maximum daily loads
TMP	transportation management plan
tpy	tons per year
Traffic Noise Analysis Protocol	Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects
Transportation 2030 Plan	Transportation 2030 Plan for the San Francisco Bay Area
TRIS	Toxics Release Inventory System
TSCA	Toxic Substances Control Act
TSS	total suspended solids
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USTs	underground storage tanks
VELB	valley elderberry longhorn beetle
VHD	vehicle hours of delay
VHT	vehicle hours of travel
VIA	visual impact assessment
VMT	vehicle miles traveled
WDRs	waste discharge requirements
western pond turtle	northwestern pond turtle
Williamson Act	California Land Conservation Act of 1965
WQF	water quality flow
XPI	Extended Phase I report

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (the Department) proposes to rebuild the eastbound Cordelia Truck Scales at a new location on Interstate 80 (I-80) in Solano County, California. The I-80 Eastbound Cordelia Truck Scales Relocation Project (project) would consist of the construction of a larger truck scale facility with more capacity, a longer off-ramp, and braided highway on-ramps that provide access to I-80 and State Route (SR) 12 East (SR 12E). The truck scale facility is less than 0.1 mile long, but the length of the project area with the ramps and utilities is approximately two miles.

The existing truck scales were constructed in 1958. They lack sufficient capacity to accommodate the current volume of truck traffic, and trucks entering and exiting the existing facility contribute to congestion and weaving, reducing the operating efficiency of I-80. Truck traffic on this stretch of I-80 is anticipated to increase dramatically over the next 30 years. As a result, the new truck scales facility would be designed with increased capacity to accommodate future truck traffic and to improve the enforcement of weight and safety requirements. The new off-ramp and braided on-ramps would address the issues related to weaving trucks and would improve safety along this stretch of I-80.

Due to the importance of I-80 and the Cordelia Truck Scales Facilities in freight movement, the project has been included by the California Transportation Commission (CTC) in the Proposition 1B Trade Corridors Improvement Fund (TCIF) program for infrastructure improvements along corridors that have a high volume of freight movement. The project is included in the Metropolitan Transportation Commission (MTC) 2005 Regional Transportation Plan (RTP) and the 2009 Transportation Improvement Program (TIP). It was previously recommended as a mid-term project (ranked 10 out of 50 projects) in the *I-80/I-680/I-780 MIS and Corridor Study* (July 14, 2004). It was also included in the *Cordelia Truck Scales Relocation Study: Summary Report and Recommendations* (Solano Transportation Authority 2005a) that was prepared by the Solano Transportation Authority (STA), in coordination with the Department and the California Highway Patrol (CHP). This study identified the need to construct replacement scales and evaluated several alternative locations. It was concluded from this study that the best location was within the existing I-80/Interstate 680 (I-680)/SR 12 interchange complex.

1.2 Purpose and Need

The project area is located south of I-80 between the I-80/Suisun Valley Road interchange and the I-80/SR 12E interchange within Solano County. The project includes the relocation and reconstruction of the eastbound Cordelia Truck Scales and associated on- and off-ramps.

1.2.1 Purpose of the Project

The purpose of the project is to accommodate anticipated growth in truck traffic in the corridor by 2040. The project will improve the reliability of the truck weight and safety inspection and enforcement system and thereby protect the structural integrity of California roads. The project will also improve mainline safety by reducing truck/auto weaving and queuing and will provide traffic congestion relief along this segment of I-80.

- **Accommodate anticipated growth in truck traffic:** The new scales facility will be sized to accommodate anticipated truck traffic growth to at least 2040, ensuring that all trucks are weighed and inspected according to CHP requirements. The new facility is designed to process 1,000 trucks per hour, compared to 400 per hour with the current facility.
- **Improve the reliability of the truck weight and safety inspection and enforcement system**: The new scales will improve reliability by processing trucks with more redundancy and fewer unplanned closures of the facility. The project also will improve overall system reliability by reducing congestion and improving safety in an unreliable section of the regional highway corridor.
- **Improve mainline safety:** By providing adequately-sized off- and on-ramps to serve truck merge and diverge movements, and adequately sized scales to serve the projected 2040 truck volume, the proposed project would reduce collisions and improve highway safety in the area.
- **Provide traffic congestion relief:** The scales are intended to reduce truck-related traffic congestion upstream and downstream of the facility, by providing adequate truck storage on the higher-capacity scales facility, standard-length off-ramp and on-ramps, and braided on-ramps to I-80 and SR 12 East. The facility capacity and ramp lengths and design are being designed to serve 2040 traffic and truck volumes.

1.2.2 Need for the Project

Overview of Project Need

The Cordelia Truck Scales are located within the I-80/I-680/SR 12 interchange, a point at which two major interstate freeways and one state highway converge. When the facility was constructed in 1958, the interchange and truck scales were located in a relatively rural setting immediately surrounded by agricultural lands, with mountains to the north and the vast Suisun Marsh to the south.

Since 1958, the San Francisco Bay Area (Bay Area) and northern California region have experienced rapid population growth. The Bay Area's population has increased by more than 86% during this time, and Solano County's population has more than tripled. This tremendous growth has resulted in substantial increases in truck and regional traffic passing through the interchange area, as well as substantial changes in the land uses immediately surrounding the interchange.

The truck scales significantly contribute to the congestion on I-80 because of the large number of trucks exiting and entering I-80 and the close proximity of the scales to the Suisun Valley Road,

I-680, and SR 12E interchanges. The location of the truck scales is ideal for monitoring and enforcing truck weight and safety requirements because it provides one location that can monitor truck traffic on I-80, I-680, and SR 12. However, because of the high volume of trucks within the corridor, it is frequently necessary for the CHP to close the scales when queuing trucks begin to back up onto the mainline freeway. The large volume of trucks exiting and entering the highway creates a severe weaving problem, which is made worse by the size, limited maneuverability, and lower speeds of large trucks.

The specific deficiencies to be addressed by the project are described below.

Deficiencies to be Addressed by the Project

Inadequate Enforcement

The Cordelia Truck Scales are currently in an optimum location for truck inspections and weight enforcement, capturing virtually all freeway truck traffic traveling on I-80, I-680, and SR 12. These inspections are an important function of a truck scales facility. Because the existing facility has inadequate inspection capacity and a substandard-length off-ramp, the queue of waiting trucks periodically extends back onto the I-80 mainline, causing a traffic safety hazard. When the queue gets too long, the CHP, which controls operations at the facility, temporarily closes the scales. Although the closures are necessary for traffic safety, allowing trucks to bypass the scales altogether compromises the enforcement of weight and safety requirements. These closures typically occur about 15 times per week, according to the CHP.

The current facility cannot reliably serve *existing* truck volumes, and it will be even less able to serve the projected volume of trucks in the future, to the year 2040. The volume of trucks traveling on the regional freeway and highway system has increased dramatically as the economy in northern California has grown. Within the project area, trucks constitute about 5% of the total daily traffic volume. The total daily truck volume in 2003 passing through the interchange area was 11,800. Truck traffic is forecast to increase by 70% by 2025 and by 115% by 2040 (Solano Transportation Authority 2005a). This increase result in more than 25,300 trucks passing through the interchange area each weekday. Table 1-1 shows the existing and forecast peak hour truck volumes.

Table 1-1. Existing and Forecast Peak Hour Truck Volumes

Location	Existing Peak-Hour Truck Volumes	Year 2025 Peak-Hour Truck Volumes	Year 2025 Peak-Hour Truck Volumes with 15% Reduction Assumed for Increased PrePass Use	Year 2040 Peak-Hour Truck Volumes	Year 2040 Peak-Hour Truck Volumes with 15% Reduction Assumed for Increased PrePass Use
Westbound I-80 at scales	524	890	757	1,127	958
Eastbound I-80 at scales	552	940	799	1,187	1,009
Westbound I-80 at Travis Boulevard	401	680	578	863	734
Eastbound I-80 at Travis Boulevard	417	710	604	897	763

Source: Solano Transportation Authority 2005a.

The STA, the Department, and the CHP have recognized the need to reconstruct the scales to accommodate the current and projected volume of truck traffic. New scales within the interchange area are planned to process 1,000 trucks per hour, which—in combination with the forecasted use of the PrePass system—would accommodate the estimated increase in truck traffic to the year 2040.

Truck-Related Congestion

Although the truck scales are currently in an optimum location to capture virtually all freeway truck traffic traveling on I-80, I-680, and SR 12, they also are located on the most congested freeway segment in Solano County. Trucks slowing to enter the short (approximately 500 feet) off-ramp to the scales, and accelerating to enter I-80 on the short on-ramp from the scales, exacerbate the congestion problem, as do trucks queuing onto the mainline from the short off-ramp to the facility. The *I-80/I-680/I-780 MIS and Corridor Study* states,

> The Cordelia Truck Scales generate significant congestion in Segment 1 [the I-80/I-680/SR 12 Interchange complex] during peak hours. The scales also constrain the widening of I-80 in Segment 1 in their current location, and need to be relocated prior to additional improvements being pursued in this section. The recommendation of the STA Board of Directors is to relocate/reconstruct the scales in a location east of Suisun Creek within Segment 1.

Currently, congestion develops during the commute peak hours as a result of trucks weaving with traffic streams to and from the I-680 connector ramps, the local Suisun Valley/Green Valley ramps, and the SR 12E and SR 12W connector ramps. This congestion will worsen significantly by 2035. The a.m. peak hour congestion in the westbound direction extends from the I-80/I-680 junction to West Texas Street, a distance of nearly 4.5 miles. Heavy westbound on-ramp volumes from the SR 12E and Air Base Parkway interchanges also contribute to the congestion during the a.m. peak period. During the p.m. peak period, heavy eastbound on-ramp volumes from SR 12W, I-680, Suisun Valley Road and the truck scales combine to create congestion on eastbound I-80 in the I-80/I-680/SR 12 interchange.

While the current combination of general vehicle traffic volumes and truck volumes create congestion, the I-80 mainline traffic volume is projected to increase by about 2% per year, to 270,000 daily vehicles, in 2035. Along with the truck traffic increase described above, the traffic increases will severely worsen current congestion and safety conditions if the scales are not expanded to accommodate the higher truck volumes and moved to a location that provides for maximum weaving lengths and for braiding critical traffic streams. Table 1-2 shows the projected 2035 eastbound p.m. weave volumes at the truck scales.

Table 1-2. Eastbound P.M. Weave Volumes, 2035

Location	Total Volume (Weaving Volume Plus Through Volume to Points Farther East)	To Suisun Valley Road	To Truck Scales	To SR 12E
From I-680	3,935	495	95	810
From I-80 west of SR 12W	9,580	340	320	1,765
From Suisun Valley Road	1,985	Not applicable	Not applicable	435
From SR 12W	2,420	5	70	555

Source: Solano-Napa Travel Demand Model, November 2006 (Solano Transportation Authority 2006).

Unreliable Freight Transport

Currently, travel times for truck trips through the corridor are unpredictable due to the queues that develop within the scales facility and congestion that is partially caused by trucks maneuvering into and out of the scales facility, described above. This unpredictability will increase as vehicle and truck volumes grow, also as described above. Further unpredictability results from the increased likelihood of breakdowns due to un-inspected trucks that have been allowed to bypass the scales when they are periodically closed due to queues backing up onto the mainline.

Traffic Safety

The combination of high vehicle and truck volumes, truck diverge and merge maneuvers on substandard-length ramps, and substandard distances between adjacent interchanges (all described above) contribute to safety concerns in the project area. The large volume of trucks exiting and entering the highway creates a severe weaving problem, which is compounded by the size, limited maneuverability, and lower speed of large trucks. Additionally, truck traffic sometimes backs up on the off-ramp to the scales, slowing approaching truck traffic further (the scales are closed when the queues reach the mainline).

Recent accident rates demonstrate that accidents occur more frequently along I-80 near the scales than on similar freeway facilities statewide. Accident data for three years, 2004–2006, from the Department's Traffic Accident Surveillance and Analysis System (TASAS) for I-80 in the vicinity of the Cordelia Truck Scales are shown in Table 1-3. Locations where the actual accident rate on I-80 exceeds the statewide average for similar facilities are shaded in the table. The total accident rates for most segments of I-80 between Red Top Road and Air Base Parkway exceed the average rates for similar facilities. Rates for fatal accidents or fatal plus injury accidents, or both, exceed the statewide average on *each* I-80 segment. The highest total accident rate is on I-80 between the I-80/I-680 connector structure and the Suisun Valley Road overcrossing; this segment is located just west of the eastbound off-ramp to the eastbound scales.

1.3 Project Description

The project area is located within Solano County, south of I-80 between the I-80 Suisun Valley Road interchange and the I-80/SR 12E interchange (Figure 1-1). It encompasses approximately 2 miles along eastbound I-80 (post mile [PM] 13.8 to PM 15.7) and SR 12 (PM L1.8 to PM L2.0). Portions of the project area not currently part of the highway are used primarily for agriculture. The project consists of constructing a new expanded truck scale facility to accommodate truck traffic in the eastbound direction, constructing associated on- and off-ramps, and removing the existing eastbound truck scales.

The existing eastbound truck scales were constructed in 1958. The facility consists of four inspection bays and limited parking.

Table 1-3. Accident History, January 1, 2004, to December 31, 2006

Location	Post Mile	Number of Accidents			Actual Accident Rate (accidents per million vehicle miles)			Average Accident Rate (accidents per million vehicle miles)		
		Total	Fatal	Fatal plus Injury	Total	Fatal	Fatal plus Injury	Total	Fatal	Fatal plus Injury
I-80—westerly project limit to Red Top Road undercrossing	10.89 to 11.39	86	0	19	1.29	0.000	0.29	0.82	0.004	0.26
I-80—Red Top Road undercrossing to SR 12W/ I-80 connector structure	11.39 to 11.98	83	0	19	1.05	0.000	0.24	0.83	0.004	0.24
I-80—SR 12W/I-80 undercrossing to Green Valley Road overcrossing	11.98 to 12.74	157	1	36	1.20	0.008	0.27	0.94	0.005	0.30
I-80—Green Valley Road overcrossing to I-680/I-80 connector structure	12.74 to 13.09	117	1	24	1.63	0.014	0.33	1.05	0.005	0.33
I-80—I-680/I-80 connector structure to Suisun Valley Road overcrossing	13.09 to 13.49	158	0	34	1.81	0.000	0.39	1.10	0.006	0.35
I-80—Suisun Valley Road overcrossing to SR 12E/I-80 connector structure	13.49 to 15.81	598	1	137	1.10	0.002	0.25	1.04	0.006	0.34
I-80—SR 12E/I-80 connector structure to Abernathy Road overcrossing	15.81 to 16.17	61	1	18	0.83	0.014	0.24	1.05	0.005	0.33
I-80—Abernathy Road overcrossing to West Texas Street undercrossing	16.17 to 17.20	200	2	63	0.95	0.010	0.30	1.05	0.005	0.33
SR 12E—SR 12E/I-80 connector to Chadbourne Road undercrossing	1.85–2.22	7	0	3	0.48	0.000	0.21	0.76	0.008	0.28
SR 12E—Chadbourne Road undercrossing to Beck Avenue	2.22–3.20	64	2	31	1.54	0.048	0.75	1.13	0.011	0.44
SR 12E—Beck Avenue to Pennsylvania Avenue	3.20–4.07	108	1	50	2.49	0.023	1.15	1.82	0.022	0.84
SR 12E—Pennsylvania Avenue to Civic Center Boulevard	4.07–4.74	55	0	25	1.51	0.000	0.68	1.27	0.012	0.50

Source: Caltrans TASAS data, 2004–2006.
Note: Shading denotes locations that exceed the statewide average accident rate.

1.4 Alternatives

1.4.1 Project Alternatives

Based on extensive planning conducted by the Department, the CHP, and the STA, which is documented in the *Cordelia Truck Scales Relocation Study: Summary Report and Recommendations* (Solano Transportation Authority 2005a), one build alternative for the project is being considered in this environmental impact report/environmental assessment (EIR/EA).

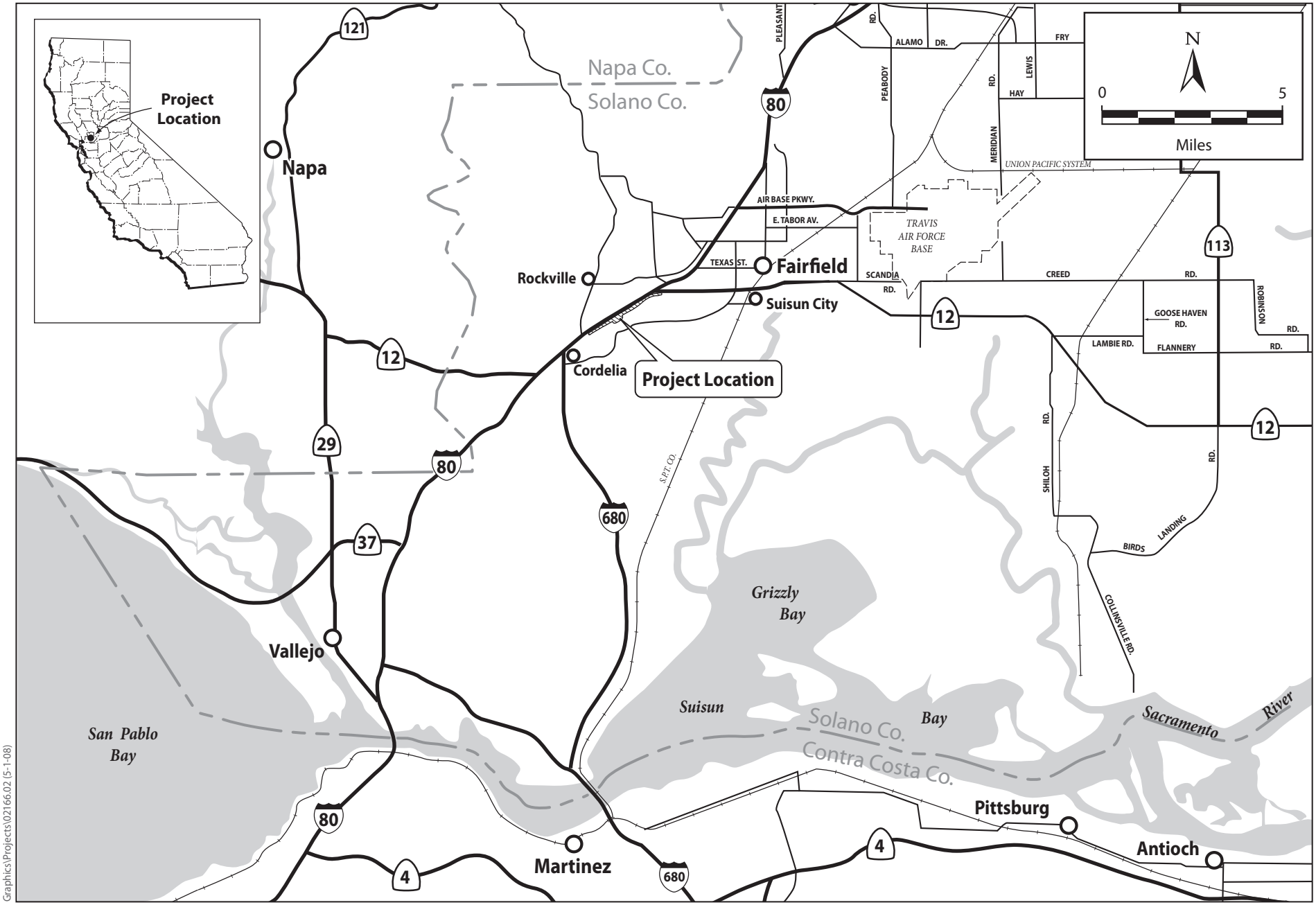

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Figure 1-1
Project Location

The California Environmental Quality Act (CEQA) also requires that a no-project alternative be considered in the EIR. The alternatives are described below.

1.4.2 Build Alternative

The build alternative (the proposed project) would consist of the construction of a new eastbound truck scale facility; the construction of associated ramps, including one bridge and one overcrossing; and the removal of the existing eastbound truck scale facility and associated ramps (Figure 1-2).

Truck Scales

The Eastbound Cordelia Truck Scales facility would be reconstructed approximately 2,500 feet to the east of its present location. The new facility would be a Class B Commercial Vehicle Enforcement Facility (CVEF) (*Class B* being defined as an independent command facility of the CHP located along a major highway route), which would have the capacity to inspect all eastbound I-80 trucks passing the facility, 24 hours per day, seven days a week. The facility would contain up to four sets of scales to accommodate two lines of empty and loaded trucks. The new facility would contain seven inspection bays, parking for automobiles and semi-truck trailer combinations, and a roadway along the outer edge of an oval to allow weighed trucks to be driven around into the inspection bays or to be reweighed. A single-story operations building would be constructed to facilitate the vehicle inspection and weighing process.

The facility will be designed to be compliant with the Americans with Disabilities Act guidelines. All parts of the building will be accessible to the physically disabled in compliance with the requirements of Chapter 11 of the California Building Code. The only exceptions are the inspection pits, which will not be accessible. In addition, accessible parking for the disabled will be provided.

Associated Ramps

Associated ramps would include an off-ramp providing access to the truck scale facility from eastbound I-80 and on-ramps providing access to eastbound I-80 and SR 12E.

The off-ramp to the new truck scale facility would use the existing off-ramp location and geometry, which consists of a single-lane exit. The new off-ramp would widen to a two-lane facility through the existing truck scale site and would widen to four lanes immediately west of Suisun Creek. The new off-ramp would cross over Suisun Creek on a new bridge before entering the new truck scale facility. Truck traffic would be sorted along the approach roadway into the appropriate lane by means of weigh-in-motion scales and signal bridges.

Trucks leaving the facility would use a new two-lane eastbound roadway that splits approximately 1,300 feet east of the facility, with one lane merging onto eastbound I-80 and the other lane connecting to the eastbound I-80–to–eastbound SR 12E connector.

Eastbound I-80–to–SR 12E Connector

The eastbound I-80–to–eastbound SR 12E connector would be reconstructed as a two-lane ramp crossing over (braided with) the truck scale on-ramp to eastbound I-80. The eastbound I-80–to–

eastbound SR 12E connector would consist of a two-lane connection (one dedicated SR 12E lane and a shared through-exit lane) and would be supported by a two-column central support and retaining walls on both approaches as it crosses over the truck scale on-ramp. The new dedicated lane on I-80 would begin approximately 2,500 feet west of the exit point to the connector. The two-lane connector would continue east, becoming SR 12E, with the truck scale on-ramp joining as an auxiliary lane that would end at the SR 12E/Chadbourne Road interchange off-ramp.

Bridge over Suisun Creek

A four-lane, precast, single-span bridge would be constructed to carry truck traffic on the off-ramp over Suisun Creek. Abutments for the bridge would be located above the ordinary high water mark (OHWM) of the creek.

Utilities

Relocation

As part of the proposed project, several utilities would need to be relocated as identified below. Relocating the utilities would occur during the construction phase of the proposed project. A pole on the 12-kilovolt (kV) line crossing I-80 adjacent to Suisun Creek would be relocated to accommodate the proposed truck scale off-ramp. From this point, the line to the southeast, consisting of seven poles, would be relocated within an easement around the south side of the proposed truck scale inspection and parking facility to the existing warehouses south of the proposed facility. Two parallel 115-kV lines cross I-80 immediately west of the I-80/SR 12E interchange. The two towers (one on each line) on the south side of I-80 would be relocated within the existing tower line easement. A pole on the 12-kV line crossing I-80 immediately west of the I-80/SR 12E interchange near Hale Ranch Road would be relocated to accommodate the proposed eastbound I-80–to–eastbound SR 12E connector. Impacts associated with the various utility relocations are addressed in this EIR/EA pursuant to California Public Utilities Commission (PUC) General Order (GO)-131 D filing requirements. The precise field location of high-risk utilities will be identified during final design in accordance with the Department's procedures.

Service to Site

Water, sewer, communication, and electrical services for the truck scales would be provided by underground utilities. The underground lines would connect to existing utilities to the west (in the vicinity of the Scandia amusement park) and would follow the road shoulder, remaining entirely within the existing Department right-of-way. It is expected that excavation for these utilities would be approximately eight to 10 feet deep and would parallel existing underground utilities. The utilities, attached to the I-80 bridges, would cross both Suisun and Dan Wilson Creeks.

Removal of Existing Truck Scales

The existing eastbound facility would be removed after the new facility becomes operational.

Construction Activities

Construction activities would include grading and paving, excavation for bridge foundations and utilities, pile driving, and power pole/tower replacement. Construction equipment would access

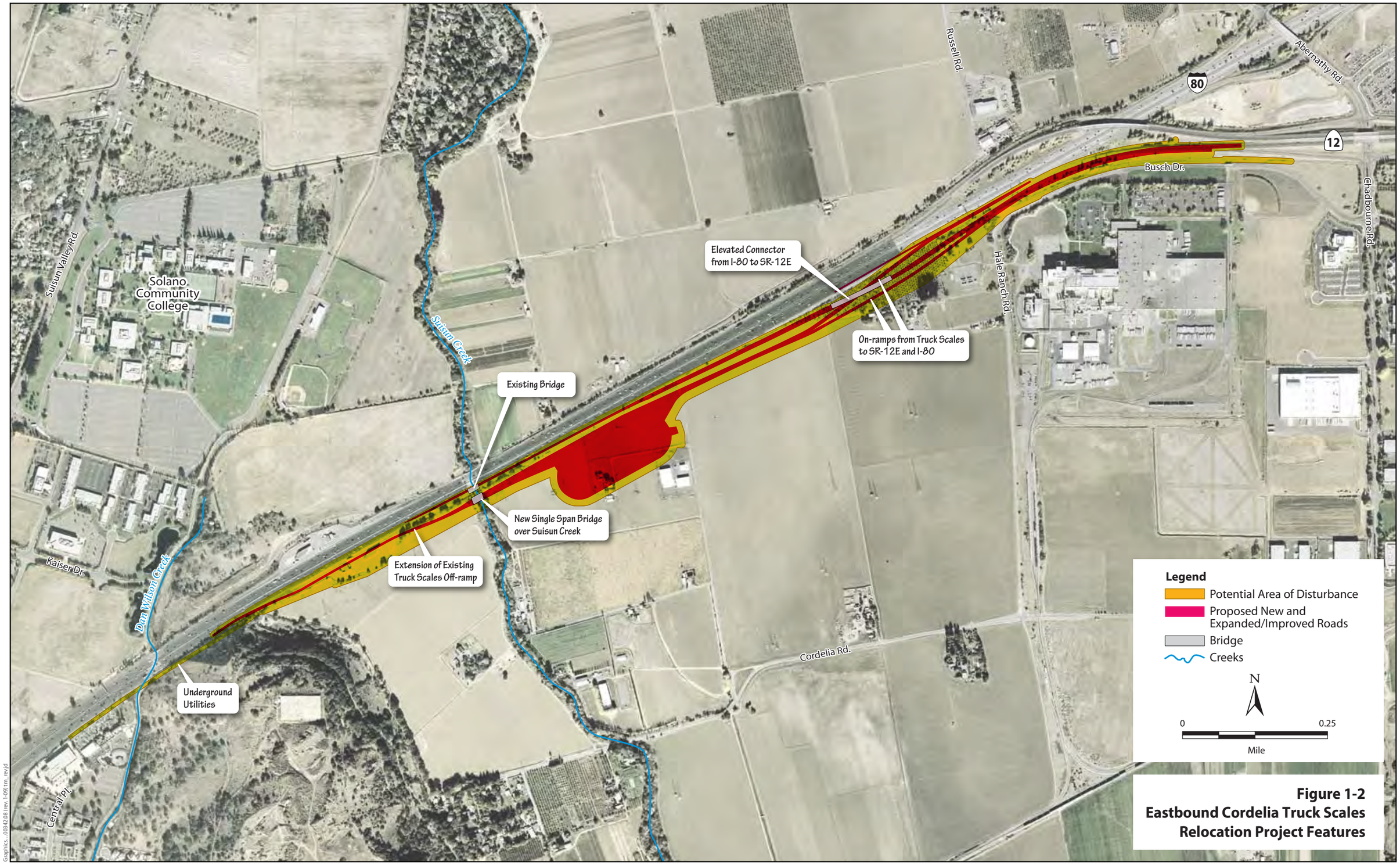

Figure 1-2
Eastbound Cordelia Truck Scales Relocation Project Features

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the project area from the road shoulder on the south side of I-80 or Hale Ranch Road. Staging areas would be located within 20 feet of the new ramp alignments.

Excavation associated with project construction would include grading for the new on- and off-ramp alignments and the new facility location, excavation for the installation of underground utilities and power poles/towers, excavation for retaining wall footings, and excavation for pile caps. Grading is not expected to exceed five feet of cut as part of the project construction. Underground utilities would be located within the Department's right-of-way and the new truck scale facility footprint. Excavation for utilities would extend to a maximum depth of 10 feet.

The clear span bridge over Suisun Creek would be precast and lowered into place. The abutments would be supported by piles that would extend approximately 70 feet below the abutment. The two central columns for the eastbound I-80–to–eastbound SR 12E connector would be supported by pile caps that extend 13 to 15 feet below the ground surface and by piles that extend 70 feet below the bottom of the pile caps.

Construction equipment would not cross Suisun Creek. Access would be from the north, and all creek crossings would occur from I-80.

The new truck scales facility would be constructed on fill. Excavation for building foundations and underground utilities is not expected to extend beyond the fill.

1.4.3 No-Build (No Action) Alternative

Under the no-build alternative, the existing truck scales would remain in operation, and no expanded facility would be constructed. The facility would retain the two dynamic and one static scale and four inspection bays, and the capacity of the existing truck scales would not be enhanced. Truck traffic exceeding the capacity of the facility would continue to result in scale closures. A single lane off-ramp would remain, continuing to contribute to congestion in the area as trucks queued as a result of the limited capacity of the facility and the increasing number of trucks exiting the highway. The single on-ramp with a 705-foot acceleration lane would not be extended or improved and trucks would continue to enter the highway at slow speeds and contribute to safety concerns associated with trucks weaving into highway traffic.

1.4.4 Alternatives Considered but Eliminated from Further Discussion

In February 2005 the STA, in coordination with the Department and the CHP, completed the *Cordelia Truck Scales Relocation Study: Summary Report and Recommendations* (Solano Transportation Authority 2005a). This study identified the need to construct replacement scales and evaluated several alternative locations along the I-80, I-505, SR 12, and SR 113 corridors. The study was conducted as a four-tier technical analysis. Tier 1 initially screened 24 sites for physical size, impact of freeway operations, and environmental fatal flaws. Eleven of the 24 sites were evaluated further in Tier 2, which screened for specific geometric requirements, traffic operations, additional environmental impacts, and right-of-way requirements. Three options were

subjected to a detailed technical analysis in Tier 3. The three potential options analyzed are listed below.

- Option 1: relocating and expanding the scales within the I-80/I-680/SR 12 interchange.
- Option 2: building new scales on I-80 between Fairfield and Vacaville and on SR 12 between I-80 and SR 113.
- Option 3: building new scales on I-80 between Vacaville and Dixon, on SR 12 between I-80 and SR 114, and on I-505 between Vacaville and Winters.

The Tier 3 detailed technical analysis of these three options considered the following five criteria:

- Capital cost.
- Thirty-five–year operations and maintenance.
- Right-of-way requirements.
- Environmental considerations.
- Traffic operations.

The initial conclusion from the Tier 3 analysis was that Option 3 provided the best relocation option because it provided the lowest capital investment and the best flexibility in implementation and had the least impact on traffic operations. Additionally, the sites were in relatively rural areas, consistent with similar facilities in the state.

The Tier 4 analysis was initiated by the release of the draft *Cordelia Truck Scales Relocation Study: Summary Report and Recommendations* for public review and comment. This document addressed all three options. In addition to public comments, STA received input from the Department and CHP staff. CHP staff expressed opposition to moving the truck scale facility outside the I-80/I-680/SR 12 Interchange because of concerns about increased operating costs for multiple facilities, as well as concerns regarding capturing all truck traffic.

As a result of public input, Options 1 and 3 were revised, and Option 2 was eliminated. Option 1 was revised to reflect a modified design, developed through a cooperative effort of the STA, the CHP, and the Department, for the scale facilities within the I-80/I-680/SR 12 interchange. The revised design significantly reduced capital costs and increased the peak hour truck throughput when compared with the original proposed design. The revisions to Option 3 consisted of moving the proposed locations for facilities on I-80 and SR 12.

Based upon the findings of the four-tiered analysis conducted for the *Cordelia Truck Scales Relocation Study: Summary Report and Recommendations*, the STA board of directors recommended to the State of California that the truck scales be relocated as identified in the revised Option 1. Option 1 allowed for a comparable capital investment to Revised Option 3 and was better accepted by the public. Additionally, Option 1 allowed for more reliable enforcement, as fewer alternate routes enabling trucks to avoid the scales would need to be patrolled.

1.5 Funding and Programming

The proposed project is fully funded for $99.6 million, with $49.8 million coming from Transportation Corridor Improvement Funds (TCIF) and $49.8 million coming from Toll Bridge Funds. The proposed action is included in the MTC's 2005 Regional Transportation Program (RTP) and the 2007 Transportation Improvement Program (TIP). The proposed project is also included in STA's I/80/I-680/I-780 Major Investment and Corridor Study (STA 2004) and STA's Cordelia Truck Scales Relocation Study (STA 2005a).

1.6 Permits and Approvals Needed

Table 1-4, below, lists the permits and other approvals that would likely be necessary for the various project elements.

Table 1-4. Required Permits and Approvals

Agency	Permit, Approval, or Consultation	Status
U.S. Fish and Wildlife Service (USFWS)	Consultation under Section 7 of the federal Endangered Species Act (ESA)	Pending
National Marine Fisheries Service (NMFS)	Consultation under Section 7 or the federal Endangered Species Act	Pending
U.S. Army Corps of Engineers	Section 404 nationwide permit for placement of fill	Pending
California Department of Fish and Game (DFG)	Section 1602 streambed alteration agreement for waters of the state; potential consultation under Section 2081 of the California Endangered Species Act (CESA); CEQA trustee agency	Pending
San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB)	Non-point Section 402, National Pollutant Discharge Elimination System (NPDES) permit (General Construction Permit), 401 Water Quality Certification	Pending
Bay Area Air Quality Management District (BAAQMD)	Permit for air emission generating equipment	Pending
California Public Utilities Commission	GO-131 D filing requirements for high-voltage electrical lines	Pending

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

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered but no adverse impacts were identified: wild and scenic rivers, coastal zone, parks and recreation areas, and timberlands. Consequently, there is no further discussion regarding these issues in this document.

All other environmental issues are addressed in this chapter.

Measures identified in this chapter represent environmental commitments included as part of the project.

2.1 Human Environment

2.1.1 Land Use

The information below is summarized from the community impact assessment (CIA) prepared for the proposed project (CirclePoint 2008a). This section describes the existing land uses in the study area. This includes a discussion of existing land uses and applicable *Solano County General Plan* (Solano County 2001) goals and policies that relate to land use in the project area.

Existing and Future Land Use

The project area lands south of I-80 are used primarily for agricultural purposes. There are two residences and associated outbuildings located within the project footprint. Surrounding land uses are also mainly agricultural in nature and include several residences located along Cordelia Road to the south of the project footprint. Suisun Creek crosses the project footprint and runs under I-80 in this area. The north/south-running creek has a narrow riparian corridor associated with it. To the west of the project footprint, land uses include commercial and retail uses situated around the I-80/Suisun Valley Road interchange. Land uses to the east include warehousing and industrial/manufacturing uses near the SR 12/Chadbourne Road interchange.

Within the immediate project area, the agricultural land uses have remained stable and have not changed in the last several decades. Because of Solano County's (the County's) general plan land use designation and zoning restricting use to agricultural activities, this is expected to continue into the foreseeable future. In the current *Draft General Plan Update for Solano County* Land Use Diagram, the project area is still designated for agricultural uses (Solano County 2008).

Development trends in surrounding areas are also relatively stable. Land uses to the west surrounding the I-80/Suisun Valley Road interchange have changed over the last decade as infill development of retail and commercial uses has occurred on vacant parcels. There remain several vacant parcels in this area that most likely will be developed with retail/commercial uses. The industrial, manufacturing, and warehousing uses to the east also have remained relatively stable, with some infill development occurring. However, the limits of the development in this area are well-defined and are not anticipated to expand because the project area is bound by lands zoned for agricultural use and the Suisun Marsh to the south and west. Land uses to the northwest are changing as a formerly agricultural parcel is being developed with residential and mixed-use development (the Fairfield Corporate Commons project). This development is located within Fairfield and is a continuation of development that has occurred along the north side of I-80 along Business Center Drive within the city of Fairfield. This development trend is not anticipated to continue eastward beyond Suisun Creek. Suisun Creek marks the border between Fairfield and Solano County.

Consistency with State, Regional, and Local Plans and Programs

All cities and counties in California are required to adopt a "comprehensive, long-term general plan for [their] physical development" (Government Code, Section 65300). The general plan acts

as a policy blueprint for the location of land uses, open space, agricultural land, and transportation facilities; for the conservation of natural resources; and for the avoidance of physical hazards. A general plan is implemented by the city's or county's zoning ordinance (which establishes specific development standards and regulations), subdivision ordinance (which establishes the rules for subdividing land), and other adopted plans and regulations. Each city and each county has a unique general plan and unique implementing ordinances.

The proposed project is generally consistent with the goals and objectives included in the Land Use Element of the *Solano County General Plan*. A primary goal of the general plan (Goal 5) is to "[p]rovide and maintain a safe, economical and efficient circulation and transportation system to ensure adequate multi-modal movement of people and goods within, to and from, the County while incurring the least social, economic, and environmental harm to existing or planned activities and land uses." The project would improve transportation and reduce congestion, which directly serves and is consistent with this goal.

Another land use goal applicable to the project is a goal within the *Solano County General Plan* Development Strategy, which provides for "orderly growth which assures a harmonious relationship of land uses, both rural and urban, and maintains the distinctive character of each community in Solano County." Although the project would affect and remove agricultural land and remove two existing residences, it would not otherwise affect the continued agricultural use of the surrounding area, and the project itself would not divide or otherwise have an adverse effect on communities or neighborhoods in Solano County.

The proposed project is included in the Metropolitan Transportation Commission's (MTC's) *Transportation 2030 Plan* and 2007 *Transportation Improvement Plan* (identified as reference number 22701), and is therefore consistent with both of these plans.

The Solano County Water Agency has initiated preparation of the Solano Multi-Species Habitat Conservation Plan. The Draft Plan is anticipated to be available for public review in the Spring of 2009 and with adoption of the Habitat Conservation Plan sometime in the Winter of 2009.

Affected Environment

Several small parcels of undeveloped land, as well as portions of several larger agricultural parcels, are located within the project area. The project area also includes two existing residences and several associated buildings (e.g., barns and sheds). It does not appear that access to any parcels in the project area would be severed by the project.

Environmental Consequences

Impact LU-1: Minor Land Acquisition of Five Parcels and Full Acquisition of Eight

Several small parcels of undeveloped land would be acquired and used for the project, as well as portions of several larger agricultural parcels. The project would require the demolition of two existing residences and several associated buildings (e.g., barns and sheds). One residence, located on parcel 5 (Assessor's Parcel Number [APN] 0027-272-080), would be displaced to accommodate the new truck scales facility. The other residence, located on parcel 9 (APN 0027-

252-080), would be displaced to accommodate the braided on-ramps to I-80 and eastbound SR 12.

All parcels for which only a portion of the parcel would be affected by the project (listed as partial acquisitions in Table 2.1-1 below) are currently in agricultural use and appear to be able to remain in agricultural production, with the exception of parcel 9 (APN 0027-252-080). The majority of this parcel that is currently in agricultural production would be affected by the project for the truck scales on-ramps to I-80 and eastbound SR 12 and the eastbound I-80–to–eastbound SR 12 connector. The remaining portion of this parcel contains an electrical substation, which would not be affected by the project.

Direct land use impacts are summarized in Table 2.1-1.

Table 2.1-1. Property Acquisition and Displacement for the Project

Parcel Number[a]	APN	Existing Use	Partial or Full Acquisition	Displacement	Area to be Acquired in Square Feet (Acres)
1	0027-260-120	Agricultural	Partial	No	142,305 (3.3)
2	0027-272-070	Undeveloped	Full	No	10,584 (0.2)
3	0027-272-130	Undeveloped	Full	No	48,381 (1.1)
4	0027-272-120	Undeveloped	Full	No	16,749 (0.4)
5	0027-272-080	Agricultural/ Fairwind Farms	Partial	Yes (one residence and associated buildings)	417,002 (9.6)
6	0027-272-140	Agricultural (conservation easement)	Full	No	439,492 (10.1)
7	0027-272-180	Agricultural	Partial	No	272,045 (6.2)
8	0027-272-160	Agricultural	Partial	No	22,619 (0.5)
9	0027-252-080	Agricultural/residence/ substation	Partial	Yes (one residence and associated buildings)	446,374 (10.2)
10	0027-252-090	Undeveloped	Full	No	4,849 (0.1)
11	0027-252-100	Undeveloped	Full	No	3,454 (0.1)
12	0027-252-110	Undeveloped	Full	No	3,316 (0.1)
13	0028-200-560	Undeveloped	Full	No	5,396 (0.1)

[a] Parcel numbers are presented as in Figure 2.1-1.

Avoidance, Minimization, and/or Mitigation Measures

Measures for farmlands (Section 2.1.3, below) and relocations (Section 2.1.4) would address the acquisition of agricultural land and the relocation of residential units.

Effects of the No-Project Alternative

Under the No-Project Alternative, no new effects associated with land use would occur.

2.1.2 Growth

Regulatory Setting

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

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

Affected Environment

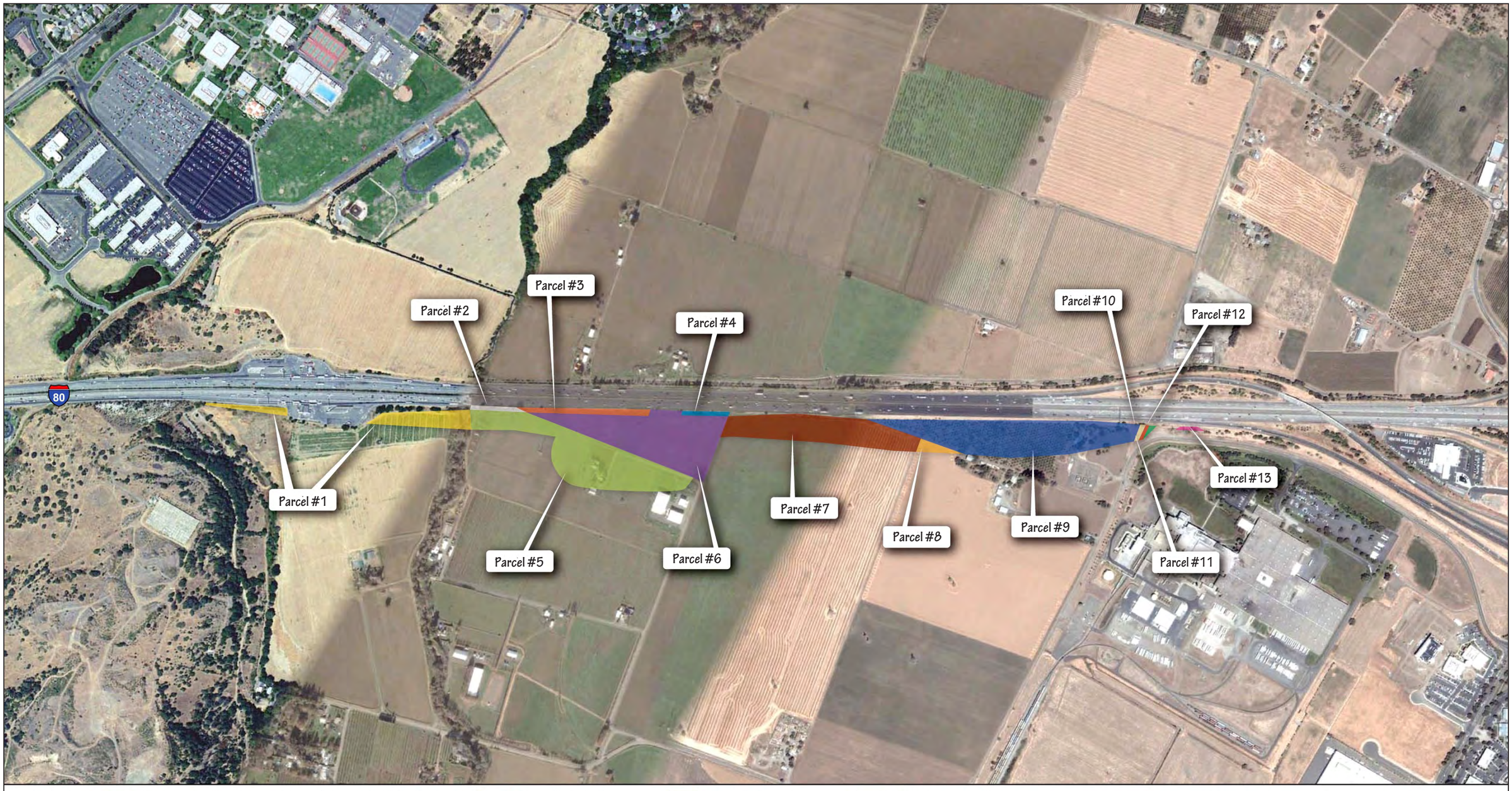
This discussion is based primarily on the CIA prepared for this project (CirclePoint 2008a).

The Cordelia Truck Scales facility is located within the I-80/I-680/SR 12 interchange in Solano County, in the vicinity of Fairfield and Suisun City. The project area encompasses the existing facility, the site of the new facility, and all associated on- and off-ramps and utility relocations. The project area extends along I-80 from the Scandia Family Center (at PM 13.8) east to the SR 12E/I-80 interchange and continues east along SR 12E to Chadbourne Road, a distance of 2.1 miles (see Figure 1-2).

The project area lands south of I-80 are used primarily for agricultural purposes. There are two residences and associated outbuildings located within the project footprint. Surrounding land uses are also mainly agricultural in nature and include several residences located along Cordelia Road to the south of the project footprint. Suisun Creek crosses the project footprint and runs under I-80 in this area. The north/south-running creek has a narrow riparian corridor associated with it. To the west of the project footprint, land uses include commercial and retail uses situated around the I-80/Suisun Valley Road interchange. Land uses to the east include warehousing and industrial/manufacturing uses near the SR 12/Chadbourne Road interchange.

Environmental Consequences

Caltrans Environmental Handbook Volume 4: Community Impact Assessment states that "growth inducement is defined as the relationship between the proposed transportation Project and growth within the Project area." The Department has developed a checklist for determining whether a project is considered to be growth-inducing. The questions from this checklist are presented below (Table 2.1-2). A "yes" response to any of the questions would indicate the potential for growth inducement to occur as a result of the project. No "yes" answers were provided. Therefore, there is no potential for growth inducement impacts due to the project.



Legend

- Parcel 1: 142,035 sf
- Parcel 2: 10,584 sf
- Parcel 3: 48,381 sf
- Parcel 4: 16,749 sf
- Parcel 5: 417,002 sf
- Parcel 6: 439,492 sf
- Parcel 7: 272,045 sf
- Parcel 8: 22,619 sf
- Parcel 9: 446,374 sf
- Parcel 10: 4,849 sf
- Parcel 11: 3,454 sf
- Parcel 12: 3,316 sf
- Parcel 13: 5,398 sf

Source: Google Earth, 2008; CirclePoint, 2008

NOT TO SCALE

Sources: CirclePoint 2008, Google Earth 2008.

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Figure 2.1-1
Property to be Acquired for the Project

Avoidance, Minimization, and/or Mitigation Measures

There is no need for avoidance, minimization, and/or mitigation measures because the project would not be growth-inducing.

Effects of the No-Project Alternative

Under the No-Project Alternative, no new effects associated with growth would occur.

Table 2.1-2. Growth-Inducement Checklist

Question	Answer
1. Will the project attract more residential development or new population into the community or planning area?	No. The project does not include any residential development.
2. Will the project encourage the develop of more acreage of employment generating land uses in the area (such as commercial, industrial or office)?	No. The project only involves the construction of a new truck scales facility.
3. Will the project lead to the increase of roadway, intersection, sewer, water supply, or drainage capacity?	No. The project would replace an existing truck scale facility.
4. Will the project encourage the rezoning or reclassification of lands in the community general plan from agriculture, open space or low density residential to a more intensive land use?	No. The project would result in direct conversion of agricultural lands to nonagricultural uses for the truck scales facility but would not result either directly or indirectly in the rezoning of surrounding lands.
5. Is the project not in conformance with the growth related policies, goals or objectives of the local general plan or the area growth management plan?	No. The project would replace an existing truck scales facility that is already located in the project area.
6. Will the project lead to the intensification of development densities or accelerate the schedule for development or will it facilitate actions by private interests to redevelop properties within four miles of a limited access highway interchange?	No. The project would replace an existing truck scales facility and would not provide improved access or other features that would lead to the intensification of surrounding properties.
7. Will the project measurably and significantly decrease home to work commuter travel times to and from or within the project area (more than 10%overall reduction or five minutes or more in commute time savings)?	No. The project would improve traffic flow on I-80 by increasing the capacity of the existing truck scales facility and providing longer off- and on-ramps for improved truck weaving; however, this improvement in traffic flow would not be at the levels to induce additional travel demand.
8. Is the project directly related to the generation of cumulative effects as defined by the CEQA guidelines?	No. The project is not directly related to cumulative growth in Solano County and surrounding communities. Future growth envisioned in the county and surrounding communities would not be altered substantially by relocating and expanding the existing truck scales facility.

2.1.3 Farmlands

Regulatory Setting

NEPA and the Farmland Protection Policy Act (FPPA) (7 U.S. Code [USC] 4201–4209); and its regulations, 7 CFR Part 658) require federal agencies, such as the Federal Highway Administration (FHWA), to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

CEQA requires the review of projects that would convert California Land Conservation Act of 1965 (Williamson Act) contract land to nonagricultural 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

The following discussion is based on the CIA for this project, prepared by CirclePoint (CirclePoint 2008a).

As stated in *Caltrans Environmental Handbook Volume 4: Community Impact Assessment*, "The intent of the California Department of Transportation is to avoid, whenever practical, locating public improvements within agricultural preserves or acquiring high quality agricultural land for transportation improvements." This section presents a discussion of the agricultural resources and nature of agriculture in the project area, including a description of farmland preservation policies.

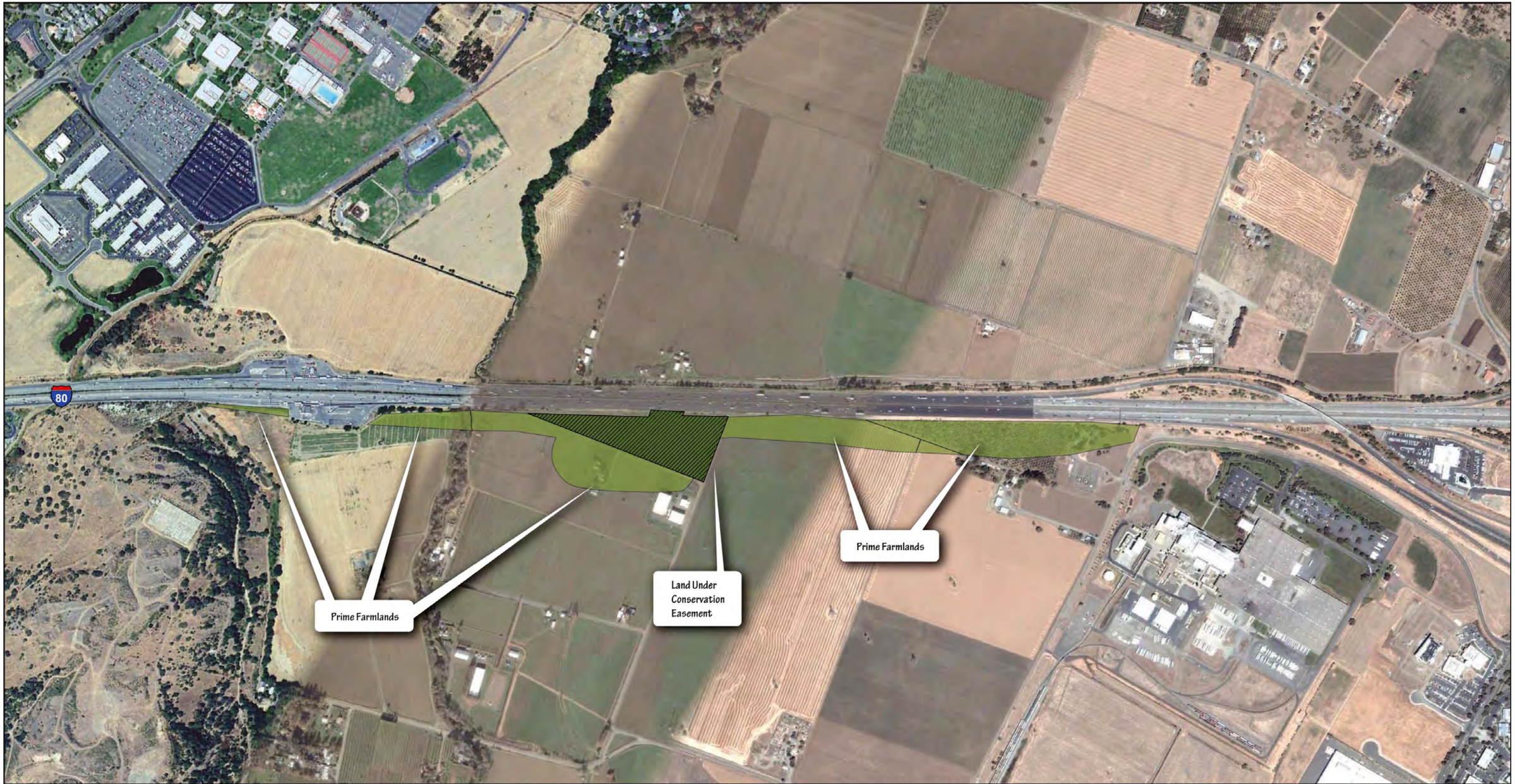
The California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) classifies farmland according to four types. *Prime Farmland* is considered land with the best physical and chemical features able to sustain long-term production of crops. *Farmland of Statewide Importance* is land that is similar to Prime Farmland but has minor faults, such as slopes or limited ability to store soil moisture. *Unique Farmland* has lesser-quality soils, used for the production of the state's leading crops and may be irrigated or include non-irrigated orchards or vineyards. Together, these three farmland classifications constitute *Important Farmland*. The fourth classification is *Grazing Land*, which contains existing vegetation suitable for livestock but is not considered "important" farmland.

The lands within the project area are designated for "Intensive Agriculture," according to the *Solano County General Plan* Land Use Map dated March 29, 2006. Lands designated by the County for Intensive Agriculture are those lands in the county that also are considered Prime Farmlands under the FMMP. Figure 2.1-2 depicts the lands within the project area that are considered Prime Farmlands.

As of 2006, Solano County had a total of 360,562 acres of land under cultivation (Solano County 2006). Of this total, 139,536 acres were designated as Prime Farmland, 7,164 acres were designated as Farmland of Statewide Importance, 11,036 acres were designated as Unique Farmland, and 202,826 acres were used for grazing purposes (California Department of Conservation 2006a). Between 1992 and 2006, 1,838 acres of Prime Farmland were converted to nonagricultural uses in Solano County (California Department of Conservation 2006b).

Williamson Act

In 2007, there were 265,629 acres of land held under Williamson Act contracts in Solano County. The project footprint does not include any properties that are currently under a Williamson Act contract.



NOT TO SCALE

Legend

- Prime Farmland
- Land Under Conservation Easement

Sources: CirclePoint 2008, Google Earth 2008.

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Figure 2.1-2
Agricultural Land within the Project Area

Conservation Easements

Conservation easements are legal agreements between property owners and government agencies or nonprofit organizations that permanently limit land development. Easements can restrict land to a prior use or preserve land for the purposes of creating and maintaining open space.

Within the project area, approximately 43 acres are within an agricultural conservation easement held by the Solano Land Trust. The agricultural conservation easement held by the Solano Land Trust covers APNs 0027-272-070, 0027-272-080, 0027-272-120, 0027-272-130, and 0027-272-140. Of these, 10.1 acres (APN 0027-27-2401) are located south of I-80 within the project footprint. Figure 2.1-2 depicts the lands in the project area under agricultural conservation easement.

Environmental Consequences

Impact FA-1: Direct Conversion of Important Farmlands

Policy 1 of the *Solano County General Plan* Land Use Element seeks to "[p]reserve and maintain essential agricultural lands including intensive agricultural areas comprised of high quality soils and irrigated lands and extensive agricultural areas with unique or significant dryland farming or grazing activities."

The project would result in the direct conversion of agricultural lands to nonagricultural uses. The direct impact of the project on agricultural lands would be the conversion of approximately 39.9 acres to nonagricultural uses (Table 2.1-1). Of this total, approximately 10.1 acres (APN 0027-272-140) are under agricultural conservation easement held by the County. This conversion of agricultural lands to nonagricultural uses would be an adverse effect.

AD-1006 Farmland Conversion Impact Rating

The AD-1006 form, which was completed in conjunction with the National Resource Conservation Service (NRCS), helps to determine the impact the proposed project may have on farmlands within the project area. Specific criteria are looked at by both the NRCS and the federal agency involved. The NRCS must complete the land evaluation portion of the form, whereas the federal agency must complete the site assessment portion. Each criterion has a set number of points it may be awarded. Once those points are added up, they are compared to the "significance score" of 160 points created by the U.S. Department of Agriculture. If the total site assessment is less than 160 points, a minimal level of consideration of protection would be given, but no further alternative analysis would be needed.[1] The completed form may be found in Appendix A. The total site assessment rating for this project is 97, or 63 points below the significance score.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or minimization measures are feasible under NEPA. Additional measures are discussed in Chapter 3 under CEQA.

[1] Caltrans Environmental Handbook Volume 4, Community Impact Assessment, Appendix C.

Effects of the No-Project Alternative

Under the No-Project Alternative, the proposed new truck scales would not be constructed. Therefore, no new effects associated with farmland would occur.

2.1.4 Community Impacts

Community Character and Cohesion

Regulatory Setting

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

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

Affected Environment

The following discussion is based on the CIA prepared for the project (CirclePoint 2008a). The community socioeconomic characteristics analyzed in the CIA include population, housing and households, employment, and income. The data presented are primarily from the 2000 census and Association of Bay Area Governments' (ABAG's) *Projections 2007*, the basis for regional planning activities by the Department. Other data sources include the *Solano County General Plan*. The data are summarized below.

The project area is located in the nine-county Bay Area region, the 12th-largest metropolitan area in the United States. The population of the Bay Area region increased 13% between 1990 and 2000. The population of Solano County has grown the fastest of the nine counties, with an increase of 68% between 1980 and 2000. This trend is expected to continue well into the 21st century.

Solano County has the second-highest average household size in the region, with an estimated 2.9 persons per household in 2000. Solano County is expected to experience a 50% increase in the number of households between 2000 and 2035.

The smallest geographic unit for which the U.S. Census Bureau publishes both demographic and socioeconomic data is the block group (BG). BGs are generally the size of several city blocks and are therefore useful in representing the characteristics of a "community." The project area is located primarily within census tract (CT) 2523.05, BG 1.

The BG consists of 193 housing units with an average household size of 2.52 persons. More than 75% of the residential units are owner-occupied. The population of the BG is predominantly white (nearly 80%). The median annual household income is $56,111, and 9% of the population is in poverty.

Environmental Consequences

The project would not alter the location or density of population substantially because it would replace the existing truck scales facility already located within the project area. For similar reasons, the project would not disrupt or divide an established community, and the location of the new truck scales facility would be in an area of predominantly agricultural uses and undeveloped land. No recreational or educational uses or facilities would be affected by the project.

Although the project would displace two residences, the area is not considered a low-income community.

Finally, the project would change the aesthetic of the immediate project area, and a separate visual impact assessment (VIA) has been prepared to evaluate that issue. (See Section 2.1.7.)

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation is necessary for the reasons cited above.

Relocations

Regulatory Setting

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

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 USC 2000d, et seq.). Please see Appendix C for a copy of the Department's Title VI Policy Statement.

Affected Environment

Two residences are located within the project area. One residence is located at 2525 Cordelia Road and is associated with an agricultural business, Fairwind Farms. The second residence is located at 4015 Hale Ranch Road. Figure 2.1-3 depicts the location of these two residences.

Environmental Consequences

Impact REL-1: Displacement of Two Residences

The project would displace two residences within the project area. Fairwind Farms, the agricultural business associated with one of the residences, would not be affected by the project.

According to the Solano County Housing Element, the overall housing vacancy rate in unincorporated Solano County was six percent (2000 Census) which indicates that adequate replacement housing is available for those residents displaced by the project.

Avoidance, Minimization, and/or Mitigation Measures

The Department will provide relocation advisory assistance to any person, business, farm, or nonprofit organization displaced as a result of the Department's acquisition of real property for public use. The Department will assist residential displacees in obtaining comparable decent, safe, and sanitary replacement housing by providing current and continuing information on sales prices and rental rates of available housing.

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

The Department will carry out the relocation plan to help eligible displaced individuals move with as little inconvenience as possible. Appraisals to determine fair market value will be conducted for each displaced property after the record of decision is signed.

Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), signed by then-President Bill Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low-income populations are defined based on the U.S. Department of Health and Human Services poverty guidelines. For 2008, this was $21,200 for a family of four.

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

Affected Environment

As described above under Community Character (Section 2.1.4) the population of the immediate project area is predominately white (nearly 80%) and has a relatively low poverty rate (9%). As a result, the demographic makeup of the project area does not meet the criteria necessary for consideration of a minority or low-income population that would be protected under the provisions of EO 12898.

Sources: CirclePoint 2008, Google Earth 2008.

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Figure 2.1-3
Displaced Residences

Environmental Consequences

There would be no environmental justice impacts.

Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, the project would not cause disproportionately high and adverse impacts on any minority or low-income populations as per EO 12898 regarding environmental justice.

Effects of the No-Project Alternative

Under the No-Project Alternative, no new effects associated with community impacts would occur.

2.1.5 Utilities/Emergency Services

Public utilities in the project area are regulated by various entities, including (depending on the utility) the Federal Energy Regulatory Commission (FERC), the PUC, and local ordinances.

Affected Environment

The information below is summarized from the CIA prepared for the proposed project (CirclePoint 2008a). This section describes the existing utilities and public services in the study area.

Water Service

Water service within the project area is provided by the Solano County Water Agency (SCWA). The county has four main sources of water: the Solano Project, the North Bay Aqueduct (NBA), groundwater reservoirs, and Sacramento River entitlements. The SCWA stores and distributes water to 29 urban and agricultural water suppliers in northern California, the Bay Area, the San Joaquin Valley, the Central Coast, and Southern California.

The project area also is located within the service area of the Solano Irrigation District (SID). The SID delivers recycled water from the SCWA treatment plant to a small number of agricultural customers within Solano County for crop irrigation. The SID also provides water to the city of Fairfield for street landscaping and commercial property landscape irrigation.

The most significant utility infrastructure in the project area is a State Department of Water Resources (DWR) water pipeline, known as the NBA. The NBA pipeline runs underground from Barker Slough in the Sacramento River Delta to Cordelia Forebay, just outside Vallejo. The pipeline varies in diameter, ranging from 72 inches at Barker Slough to 54 inches at Cordelia Forebay. A portion of the NBA runs just north of and parallel to I-80 between Abernathy Road and Suisun Creek.

Wastewater Service

The project area is located in unincorporated Solano County and outside the boundaries of the wastewater service providers for the city of Fairfield. The project area contains no wastewater infrastructure. Wastewater needs in these locations are met by septic systems installed by individual landowners.

Electricity and Natural Gas

Solano County is provided with electric and natural gas service by Pacific Gas and Electric Co. (PG&E). PG&E's service area covers most of central and northern California, and the company maintains 123,054 circuit miles of electrical distribution lines, 18,610 circuit miles of interconnected transmission lines, 40,123 miles of natural gas distribution pipelines, and 6,136 miles of natural gas transportation pipelines. PG&E currently maintains natural gas pipelines and electrical transmission lines throughout Solano County, including lines adjacent to the I-80 corridor.

Schools

There is one elementary school and one high school located near the project area. Nelda Mundy Elementary School is located at 570 Vintage Valley Drive, north of I-80 and the project area. Angelo Rodriguez High School is located at 5000 Red Top Road, just west of I-680. In addition, three colleges are located in the project vicinity. Solano Community College is located just north of the project area, at 4000 Suisun Valley Road; the University of Phoenix is located at 5253 Business Center Drive; and Chapman University is located at 4820 Business Center Drive.

Police and Fire

The CHP has jurisdiction over I-80, I-680, and SR 12 for matters involving both traffic and emergency services. The local CHP office is located at 3050 Travis Boulevard in Fairfield. The project area is under the jurisdiction of the Solano County sheriff. The Solano County Sheriff's Office is located at 530 Union Avenue in Fairfield.

The project area is served by the Suisun Fire Protection District (SFPD). SFPD headquarters are located at 445 Jackson Street in Fairfield, and the district serves 1,136 properties within a 136-square-mile area. The SFPD currently employs one fire chief, two fire captains, and 45 volunteer firefighters.

Parks and Recreation Facilities

There are no parks or recreational facilities located within or adjacent to the project area.

Environmental Consequences

Some adjustment to overhead power lines would be necessary. To facilitate the realignment of the overhead power line, it would be necessary to remove some utility poles and towers and relocate them. It is expected that five new utility poles would be located along the south and west sides of the proposed truck scales facility, and that two poles would need to be removed in that area. In the vicinity of the I-80/SR 12E interchange, one pole and two towers would be removed and relocated. During construction, it is expected there will be brief (one- to two-hour) power shutdowns at the Truck Scale facility itself in order to make necessary connections. Distribution and transmission of PG&E electrical facilities will undergo service interruptions for short periods of time during construction as well.

Once construction had been completed, and operation of the project had begun, on a local and community level, roadway improvements would improve access and circulation in the vicinity of the project area by relieving congestion and improving safety. Public services in the study area, including police, fire, and emergency services and hospitals, largely would be unaffected by operation of the project because existing access routes to and through the study area would be

maintained and enhanced by the project. The project would not adversely affect police, fire, and emergency vehicle response times to neighborhoods within the study area, and the roadway improvements and changes would not affect public or school bus routes.

Impact UT-1: Impacts on Police, Fire, and Emergency Service Providers during Construction

Potential short-term impacts on police, fire, and emergency service providers may result from construction-related impacts. Potential impacts may include increased emergency response times within the project area caused by congestion during project construction, and temporary lane closures. Lane closures are expected to be short-term and occur in off-peak hours. No ramps would be closed, and no local roads would be affected. The effect is expected to be minimal. In addition, as part of its standard procedure, the Department prepares a Transportation Management Plan (TMP). Before initiating construction, this TMP will be provided to all emergency service providers in the area. The TMP will serve to notify all emergency service providers in the project area of the project construction schedule, and the time and location of lane closures for K-rail placement. The TMP will identify anticipated dates and hours of construction, as well as any anticipated limits on access. Notice will be provided at least 1 week before construction begins. To the extent possible, emergency vehicles will be allowed through roadway segments temporarily closed for construction purposes. Therefore, this would be not be considered an adverse effect.

Effects of the No-Project Alternative

Under the No-Project Alternative, no new effects associated with utilities or emergency services would occur. As traffic congestion increases in the study area (shown in Tables 2.1-8 and 2.1-1), access in the area for emergency response vehicles would become more limited.

2.1.6 Traffic and Transportation

This section addresses the potential transportation-related impacts of the proposed project under existing conditions, as well as under construction-year (2015) and design-year (2035) conditions.

The information presented here has been summarized from technical reports prepared for the proposed project and the Interstate 80/Interstate 680/State Route 12 Interchange Project. These reports, listed below, are available for review at the Department's District 4 office and are hereby incorporated by reference:

- I-80/I-680/SR 12 Interchange PR/ED: AM Peak Hour VISSIM Model Calibration/Validation Technical Memorandum (October 8, 2003) (Fehr & Peers 2003a);
- I-80/I-680/SR 12 Interchange PR/ED: PM Peak Hour VISSIM Model Calibration/Validation Technical Memorandum (October 8, 2003) (Fehr & Peers 2003b);
- I-80/I-680/SR 12 Interchange PR/ED: VISSIM Model Calibration/Validation for the Project Expansion Area Technical Memorandum (February 14, 2005) (Fehr & Peers 2005a);

- I-80/I-680/SR 12 Interchange PR/ED: Existing Weekday (Tuesday through Thursday) Traffic Operating Conditions for the Expanded Project Area—Technical Memorandum (February 2005) (Fehr & Peers 2005b);
- Cordelia Truck Scales Relocation Study: Summary Report and Recommendations, prepared by the STA (February 16, 2005) (Solano Transportation Authority 2005a);
- I-80/I-680/SR 12 Interchange PR/ED: Design Year 2035 Demand Forecasts at Project Gateways Technical Memorandum (July 14, 2006) (Fehr & Peers 2006);
- I-80/I-680/SR 12 Interchange PR/ED: Updated Validation of the VISSIM Traffic Operations Model to 2007—2008 Conditions Technical Memorandum (August 4, 2008) (Fehr & Peers 2008a); and
- Draft Traffic Operations Report, Interstate 80 Eastbound Cordelia Truck Scales Relocation Project (July 2008) (Fehr & Peers 2008b) (referred to below as the Draft Traffic Operations Report).

The *Solano Comprehensive Transportation Plan* (Solano Transportation Authority 2005b) calls for maintenance of level of service (LOS) E on roadways of regional significance, including freeways. LOS E represents at-capacity operation. When traffic volumes exceed capacity, stop-and-go conditions result, and operations are designated as LOS F.

For freeway mainline segments, weave segments, and ramp merge and diverge areas, the LOS is related to the vehicle density in vehicle miles per hour (mph) per lane and is calculated for the a.m. and p.m. commute peak hours. For intersection operations, the LOS is related to the average control delay per vehicle, during the a.m. and p.m. commute peak hours. Tables 2.1-3 and 2.1-4 provide the LOS thresholds for freeway and intersection analysis, respectively.

Table 2.1-3. Freeway Mainline, Weaving, and Ramp Junction Level of Service Criteria

Level of Service[a]	Maximum Density (passenger cars per mile per lane)	
	Basic Freeway Sections	Freeway Weaving Segments and Ramp Junctions
A	11	10
B	18	20
C	26	28
D	35	35
E	45	>35
F	45	Demand exceeds capacity

Source: Transportation Research Board 2000.

[a] Freeway mainline LOS based on a 65 mph free-flow speed.

Table 2.1-4. Intersection Level of Service Definitions for Highway Capacity Manual Methodology

Level of Service	Description of Traffic Conditions	Average Control Delay Per Vehicle (seconds)
Signalized (Signal-Controlled) Intersections		
A	Insignificant delays: No approach phase is fully used, and no vehicle waits longer than one red indication	≤10
B	Minimal delays: An occasional approach phase is fully used, and drivers begin to feel restricted	>10–20
C	Acceptable delays: Major approach phase may become fully used, and most drivers feel somewhat restricted.	>20–35
D	Tolerable delays: Drivers may wait through more than one red indication; queues may develop but dissipate rapidly, without excessive delays	>35–55
E	Significant delays: Volumes are approaching capacity, vehicles may wait through several signal cycles, and long vehicle queues form upstream	>55–80
F	Excessive delays: Conditions are at capacity, with extremely long delays; queues may block upstream intersections	>80
Unsignalized Intersections		
A	No delay for stop-controlled approaches	≤10
B	Operations with minor delay	>10–15
C	Operations with moderate delays	>15–25
D	Operations with some delays	>25–35
E	Operations with high delays and long queues	>35–50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers	>50

Source: Transportation Research Board 2000.

Other "measures of effectiveness" (MOEs) used in the traffic analysis include vehicle hours of travel (VHT), defined as the total number of vehicle hours traveled per hour within the study area; vehicle hours of delay (VHD), defined as the number of vehicle hours of delay per hour resulting from congestion within the study area; vehicle miles traveled (VMT), defined as the total number of vehicle miles traveled during the peak hours in the study area; and the average travel times for trips within the study area.

Affected Environment

The study area for the traffic operations analysis includes components of the regional freeway system and ramp terminal intersections in the eastbound direction on I-80 from Red Top Road to Air Base Parkway; on I-680 northbound between Gold Hill Road and I-80; and on SR 12E from I-80 to Civic Center Drive. I-80 is a major east-west freeway extending from San Francisco to the East Coast of the United States, and it serves as a major connection between the Bay Area and Sacramento regions. It is also a major truck route of statewide and national significance. The study area on I-80 extends east to Air Base Parkway because congestion that develops in this area affects traffic flow upstream in the area of the eastbound I-80 Cordelia Truck Scales. The existing eastbound I-80 Cordelia Truck Scales are located between Suisun Valley Road and SR 12E. SR 12E extends eastward from I-80 into the California Central Valley and foothills. SR 12E is included in the study area because p.m. peak-hour congestion in the eastbound direction affects the eastbound I-80 corridor. I-680 connects I-80 to the Benicia-Martinez Bridge and Contra Costa County to the south of the study area.

The existing conditions analysis presented below represents fall 2004 conditions.[2] At that time, westbound I-80 had four mixed-flow lanes plus a fifth auxiliary lane between the SR 12E connector and the I-680 southbound connector. Eastbound I-80 had four mixed-flow lanes because the fifth auxiliary lane between the I-680 northbound connector and SR 12E connector had not been completed when the September 2004 data collection was conducted. SR 12E provided two lanes in each direction, an interchange at Chadbourne Road, and at-grade intersections at Beck Avenue and Pennsylvania Avenue. I-680 provided two lanes in each direction within the study area.

Data Collection

Traffic counts for the a.m. and p.m. peak periods were conducted in the study area in September 2004. The peak hours in the project study area are generally 7:30–8:30 a.m. and 4:30–5:30 p.m. Truck counts at the I-80 eastbound Cordelia Truck Scales indicated an a.m. peak hour volume of 344 trucks and a p.m. peak hour volume of 216 trucks. The Draft Traffic Operations Report includes graphics showing the traffic volumes throughout the study area.

Operations Analysis

The existing (Fall 2004) operating conditions for the freeway sections and ramp terminal intersections within the project study area were analyzed using 13 model runs of the validated and calibrated peak period VISSIM traffic operations model. The modeling methodology is described in the *Draft Traffic Operations Report*. The text below summarizes the analysis results.

Mainline and Ramp Operations

The system-wide measures of effectiveness for existing conditions are summarized in Table 2.1-5, and mainline segment and ramp junction results are summarized in Table 2.1-6. Detailed calculations are contained in *I-80/I-680/SR 12 Interchange PR/ED: Existing Weekday (Tuesday through Thursday) Traffic Operating Conditions for the Expanded Project Area—Technical Memorandum* (Fehr & Peers 2005b).

Table 2.1-5. Existing (Fall 2004) Measures of Effectiveness

MOE	A.M. Peak Hour	P.M. Peak Hour
VMT (per hour)	50,690	75,120
VHT (per hour)	860	1,835
VHD (per hour)	60	665

Note: The study area extends on I-80 **eastbound** from west of Red Top Road to east of Air Base Parkway/Waterman Boulevard and on northbound I-680 south of Gold Hill Road to I-80. The study area also includes eastbound SR 12 east of I-80 and all ramps.

[2] Note that although this report contains fall 2004 baseline data, Fehr & Peers has conducted a revalidation of the VISSIM traffic analysis model to ensure that the model accurately reflects current (2008) conditions. This effort was undertaken at the request of Caltrans Highway Operations, to ensure that the forecasts produced with the model remain reliable. This work is described in *I-80 / I-680 / SR 12 Interchange PR/ED: Updated Validation of the VISSIM Traffic Operations Model to 2007—2008 Conditions Technical Memorandum* (Fehr & Peers 2008a). The work did not include a complete reassessment of existing conditions throughout the study area, which is why the fall 2004 data remain the baseline presented in this environmental document.

Table 2.1-6. Existing (Fall 2004) Mainline and Ramps Analysis

Segment	A.M. Peak Hour		P.M. Peak Hour	
	Density[a]	LOS	Density[a]	LOS
Mainline and Weave Sections				
I-680				
Northbound I-680, between Gold Hill Road and Central Way	12	B	16	B
I-80				
Eastbound I-80, west of Red Top Road	13	B	19	C
Eastbound I-80, between Red Top Road and the SR 12W connector	14	B	30	D
Eastbound I-80, between the SR 12W connector and Lopes Road (weave)[b]	17	B	**56**	**F**
Eastbound I-80, between the northbound I-680 Connector and Pittman Road (weave)[b]	21	C	**84**	**F**
Eastbound I-80, between Pittman Road and the truck scales (weave)[b]	19	B	**57**	**F**
Eastbound I-80, between the truck scales and the SR 12E connector	22	C	30	D
Eastbound I-80, between SR 12E and Abernathy Road	18	B	25	C
Eastbound I-80, between Abernathy Road and Auto Mall Parkway (weave)[b]	16	B	24	C
Eastbound I-80, between Beck Avenue and Travis Boulevard (weave)[b]	16	B	**40**	**F**
Eastbound I-80, between Travis Boulevard and Air Base Parkway/Waterman Boulevard	18	C	43	E
Eastbound I-80, east of Air Base Parkway/Waterman Boulevard	17	B	27	D
On-Ramp Merge Sections				
I-680				
Northbound I-680, at Gold Hill Road	16	B	16	B
I-80				
Eastbound I-80, at Red Top Road	11	B	19	B
Eastbound I-80, at the truck scales	17	B	57	E[c]
Eastbound I-80, at AutoMall Parkway	12	B	32	D
Eastbound I-80, at Travis Boulevard	14	B	55	E[c]
Eastbound I-80, at Air Base Parkway/Waterman Boulevard	13	B	26	C
SR 12				
Eastbound SR 12E, at Chadbourne Road	12	B	18	B
Off-Ramp Diverge Sections				
I-680				
Northbound I-680, at Gold Hill Road	13	B	23	C
Northbound I-680, at Central Way	15	B	**43**	**F**
I-80				
Eastbound I-80, at Red Top Road	12	B	18	B
Eastbound I-80, at the eastbound SR 12E Connector	16	B	23	C
Eastbound I-80, at Abernathy Road	13	B	21	C
Eastbound I-80, at Air Base Parkway/Waterman Boulevard	13	B	23	C
SR 12				
Eastbound SR 12E, at Chadbourne Road	12	B	16	B

Notes: **Bold font** indicates unacceptable operations.

[a] Density is expressed in vehicles per hour per lane and is based on the average of 13 model runs.

[b] LOS thresholds for weaving sections are different from those for mainline sections. Refer to Table 1 in the *Draft Traffic Operations Report* for thresholds.

[c] This ramp operates at capacity and is by definition LOS E, per discussions with Department staff.

The primary results of the eastbound I-80 a.m. peak hour analysis are listed below.

- All freeway mainline, on-ramp merge sections, and off-ramp diverge sections operate at acceptable LOS C conditions or better.
- All study locations operate at LOS D conditions or better.

The primary results of the eastbound I-80 p.m. peak hour analysis are listed below.

- Four of the 11 freeway mainline segments (37%) operate at unacceptable LOS F conditions.
- Two of the six on-ramp merge sections (33%) operate at LOS E conditions.
- All the off-ramp diverge sections operate at acceptable LOS C conditions or better.
- Sixteen of the 22 study locations (73%) operate at acceptable LOS D conditions or better.

Ramp Terminal Intersections Operations

The ramp terminal intersection analysis results are summarized in Table 2.1-7; the detailed calculations are contained in I-80/I-680/SR 12 Interchange PR/ED: Existing Weekday (Tuesday through Thursday) Traffic Operating Conditions for the Expanded Project Area—Technical Memorandum (Fehr & Peers 2005b). Table 2.1-7 shows that 10 of the 11 (91%) study intersections operate at acceptable LOS C or better conditions during the a.m. peak hour. The all-way stop-controlled intersection of I-80 eastbound ramps/Red Top Road operates at LOS F in the a.m. peak hour as a result of a combination of heavy traffic volumes and all-way stop-controlled operations. During the p.m. peak hour, 11 of the 11 (100%) of the study intersections operate at acceptable LOS D conditions or better.

Table 2.1-7. Existing (Fall 2004) Intersection Analysis

Intersection		Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			Delay	LOS	Delay	LOS
1	I-80 eastbound ramps/Red Top Road	All-way stop	**>50**	**F**	5	A
2	I-80 eastbound ramps/Pittman Road	Signal	10	A	9	A
3	SR 12E eastbound ramps/Chadbourne Road	Side-street stop	1	A	8	A
4	I-80 eastbound ramps/Abernathy Road	All-way stop	4	A	25	D
5	I-80 eastbound ramps/Magellan Road	All-way stop	11	B	21	C
6	I-80 eastbound off-ramp/West Texas Street	Signal	3	A	4	A
7	I-80 eastbound on-ramp—Beck Avenue/West Texas Street	Signal	17	B	42	D
8	SR 12E/Beck Avenue	Signal	26	C	35	D
9	SR 12E/Pennsylvania Avenue	Signal	21	C	28	C
10	I-80 eastbound ramps/Travis Boulevard	Signal	2	A	9	A
11	I-80 eastbound ramps/Air Base Parkway	Signal	14	B	17	B

Notes: **Bold font** indicates unacceptable operations.

The signalized and all-way stop intersection LOS is based on the weighted average control delay of all movements measured in seconds per vehicle. Peak hour traffic volumes, lane configurations, and signal timing plans are used as inputs in the LOS calculations. At side-street stop-controlled intersections, the LOS rating is based on the control delay for each minor movement.

Accident History

Accident data for three years (2004–2006) from the Department's TASAS were evaluated for the I-80 and SR 12E segments in the study area. Table 1-3 summarizes the TASAS data and highlights locations where the actual accident rate exceeds the statewide average for the westbound and eastbound directions.

As indicated in Table 1-3, the total accident rates for most segments of I-80 between Red Top Road and Air Base Parkway exceed the average rate for similar facilities. Fatal or fatal-plus-injury accident rates, or both, exceed the statewide average on each I-80 segment. The total accident rate also exceeds the statewide average for similar facilities for three of the four segments of SR 12E. The fatal-plus-injury accident rate exceeds the statewide average on the same three segments of SR 12E.

Environmental Consequences

This section describes the impacts of the project on traffic operations in the construction year (2015) and the design year (2035).

Methodology

The detailed methodology used to develop the travel demand forecasts is described in *I-80/I-680/SR 12 Interchange PR/ED: Design Year 2035 Demand Forecasts at Project Gateways Technical Memorandum* (Fehr & Peers 2006). The methodology used to develop the construction year (2015) travel demand forecasts is described in the *Draft Traffic Operations Report*. In summary, 2035 passenger car travel demand forecasts were developed using the STA Travel Demand Model and VISUM modeling software, while heavy vehicle forecasts were developed using *peak truck hour* growth projections provided in *Cordelia Truck Scales Relocation Study: Summary Report and Recommendations*, applying the growth factor to the existing commute peak hour truck counts. The construction year (2015) travel demand and truck forecasts were developed for the project by interpolating between existing and design year (2035) volumes.

Construction Year (2015) Traffic Operations Analysis

Impact TRA-1: Improved Network-Wide Freeway Operations during the Construction Year (2015)

Table 2.1-8 presents the key network-wide MOEs in 2015 with the project and without the project, as well as the change in each MOE with the project. These MOEs are the most informative measure of what a motorist traveling eastbound on I-80 would expect on a trip through the project area. As shown in the table, the project would improve operations in 2015, relative to conditions without the project, for all MOEs in both the a.m. and p.m. peak hours.

Table 2.1-8. Year 2015 with Project—Eastbound Measures of Effectiveness[a]

MOE	A.M. Peak Hour		P.M. Peak Hour	
	Without Project	With Project[b]	Without Project	With Project[b]
VMT (per hour)	116,055	116,095 (0%)	176,960	176,490 (0%)
VHT (per hour)	2,020	1,925 (-5%)	4,945	4,810 (-3%)
VHD (per hour)	115	75 (-35%)	2,145	2,050 (-4%)
Study locations operating at LOS E or F[c]	1	1 (0%)	16	16 (0%)
Network-wide average travel times (minutes:seconds)	7:31	7:10 (-5%)	27:56	22:10 (-26%)

[a] The study area extends on I-80 eastbound from west of Red Top Road to east of Air Base Parkway/Waterman and on northbound I-680 south of Gold Hill Road to I-80. The study area also includes eastbound SR 12 east of I-80 and all ramps.
[b] Percent change from no-project conditions is presented in parentheses.
[c] Total of 38 study locations under no-project conditions and 37 study locations under with-project conditions.

In the a.m. peak hour in 2015, eastbound I-80 traffic volumes are projected to increase by more than 15% over existing conditions in the vicinity of the truck scales facility with or without the proposed project. Nevertheless, eastbound I-80 would continue to be the off-peak direction during the a.m. peak hour. The analysis shows that all network-wide MOEs would improve or remain the same with the project.

In 2015, eastbound I-80 p.m. peak hour traffic volumes are projected to increase by more than 40% over existing conditions in the vicinity of the truck scales facility with or without the proposed project. The eastbound travel direction is the peak direction during the p.m. peak hour, and severe congestion would occur without the project. Although the project would improve eastbound p.m. operations in nearly all respects, its benefits would be limited by the fact that at-grade signalized intersections would remain at Pennsylvania Avenue and Beck Avenue on SR 12E, causing vehicle queues to extend back from SR 12E onto eastbound I-80. This would constrain the amount of traffic that could enter the project area from northbound I-680, eastbound SR 12W, and eastbound I-80 both with and without the project, causing significant congestion. Nevertheless, as shown in Table 2.1-8, the proposed project would improve freeway operations overall, resulting in a decrease in system-wide delay.

This would be a beneficial effect.

Impact TRA-2: Improved Conditions or No Change at Most Freeway System Analysis Locations in 2015

Conditions would be improved or would not change at all freeway system analysis locations except one in 2015: on eastbound I-80 at the eastbound SR 12E connector in the p.m. peak hour.

Table 2.1-9 presents the freeway mainline, off-ramp, and on-ramp operations results.

Table 2.1-9. Year 2015 with Project—Mainline and Ramps Analysis

Segment	A.M. Peak Hour[a]				P.M. Peak Hour[a]			
	No Project		With Project		No Project		With Project	
	Density	LOS	Density	LOS	Density	LOS	Density	LOS
Mainline and Weave Sections								
I-680								
Northbound I-680, between Gold Hill Road and Central Way	21	C	20	B	**135**	**F**	**115**	**F**
I-80								
Eastbound I-80, west of Red Top Road	17	B	17	B	25	C	25	C
Eastbound I-80, between Red Top Road and the SR 12W connector	17	B	14	B	23	C	23	C
Eastbound I-80, between SR 12W and Green Valley Road/ I-680 southbound (weave) [b]	17	B	17	B	28	C	28	C
Eastbound I-80, between Pittman Road and the truck scales (weave) [b]	20	B	18	B	**110**	**F**	**96**	**F**
Eastbound I-80, between the truck scales and Abernathy Road (weave) [b, c]	N/A[c]		19	B	N/A[c]		22	C
Eastbound I-80, between Abernathy Road and West Texas Street (weave) [b]	18	B	16	B	23	C	21	C
Eastbound I-80, between Beck Avenue and Travis Boulevard (weave)[b]	17	B	15	B	23	C	21	C
Eastbound I-80, between Travis Boulevard and Air Base Parkway/Waterman Boulevard	16	B	14	B	26	C	24	C
Eastbound I-80, east of Air Base Parkway/Waterman Boulevard	19	C	18	C	29	D	28	D
SR 12								
Eastbound SR 12E, between the truck scales and Chadbourne Road (weave)[b, c]	N/A[c]		10	A	N/A[c]		**159**	**F**
Eastbound SR 12E, between Webster Street and Civic Center Boulevard (weave)[b]	11	B	11	B	18	B	18	B
On-Ramp Merge Sections								
I-680								
Northbound I-680, at Gold Hill Road	19	B	19	B	**127**	**F**	**105**	**F**
I-80								
Eastbound I-80, at Red Top Road	9	A	9	A	18	B	18	B
Eastbound I-80, at Green Valley Road	11	B	11	B	**40**	**F**	**40**	**F**
Eastbound I-80, at the connector from northbound I-680	18	B	18	B	**114**	**F**	**100**	**F**
Eastbound I-80, at the truck scales[d]	22	C	N/A[d]		**92**	**F**	N/A[d]	
Eastbound I-80, at Travis Boulevard	9	A	10	A	18	B	18	B
Eastbound I-80, at Air Base Parkway/Waterman Boulevard	12	B	13	B	22	C	22	C

Segment	A.M. Peak Hour[a]				P.M. Peak Hour[a]			
	No Project		With Project		No Project		With Project	
	Density	LOS	Density	LOS	Density	LOS	Density	LOS
SR 12								
Eastbound SR 12E, at Chadbourne Road	13	B	12	B	**143**	**F**	**143**	**F**
Eastbound SR 12E, at Civic Center Boulevard	14	B	14	B	24	C	24	C
Off-Ramp Diverge Sections								
I-680								
Northbound I-680, at Gold Hill Road	20	B	20	B	**124**	**F**	**98**	**F**
Northbound I-680, at Central Way	21	C	21	C	**138**	**F**	**124**	**F**
Northbound I-680, at Suisun Valley Road	17	B	17	B	**144**	**F**	**126**	**F**
I-80								
Eastbound I-80, at Red Top Road	14	B	14	B	20	B	20	B
Eastbound I-80, at the connector to eastbound SR 12E	23	C	11	B	**89**	**F**	**136**	**F**
Eastbound I-80, at Abernathy Road[e]	12	B	N/A[e]		25	C	N/A[e]	
Eastbound I-80, at Air Base Parkway/Waterman Boulevard	13	B	12	B	19	B	19	B
SR 12								
Eastbound SR 12E, at Chadbourne Road[e]	16	B	N/A[e]		**131**	**F**	N/A[e]	
Eastbound SR 12E, at Webster Street	16	B	15	B	21	C	21	C

Notes: **Bold font** indicates unacceptable operations. Dark shading indicates an impact for CEQA considerations.

[a] Density is expressed in vehicles per hour per lane. Speed is expressed in mph and is the speed within the influence area.

[b] LOS thresholds for weaving sections are different from mainline sections.

[c] This analysis segment only applies to the with-project case. The corresponding no-project segments appear as standard merges in the on-ramp merge section and as standard diverges in the off-ramp diverge section.

[d] This analysis location is not a standard merge in the with-project case and so does not appear in the on-ramp merge section. Instead, for the with-project case, it is included within the applicable weave section.

[e] This analysis location is not a standard diverge in the with-project case and so does not appear in the off-ramp diverge section. Instead, for the with-project case, it is included within the applicable weave section.

The analysis shows that during the a.m. peak hour, both with and without the project, all freeway mainline segments, on-ramp merge sections, and off-ramp diverge sections are projected to continue to operate at acceptable LOS E conditions or better.

During the p.m. peak hour, 12 analysis locations are projected to operate at LOS F without the project, and 11 locations are projected to operate at LOS F with it.[3] Although most individual analysis locations either would improve or have no change with the project, one analysis location would worsen with the project. Eastbound I-80 at the connector to eastbound SR 12E would be somewhat more congested with the project because there is only a single mainline lane plus a long deceleration lane serving the off-ramp, whereas without the proposed project, there is a full mainline lane plus a shared mainline lane—in effect two full mainline lanes feeding the off-ramp. This analysis location is denoted with shading in Table 2.1-9. The vehicle density at this location is projected to be well over capacity without the proposed project and is projected to

[3] Note that certain analysis segments cannot be directly compared between the cases because the project design changes the lane geometry in the segment; these locations are noted in Table 2.1-10.

increase with it. Note that the ramp diverge analysis considers only the outside lanes associated with the diverge. Because this location is projected to operate at LOS F with or without the project, this is not considered an adverse effect. The Interstate 80/Interstate 680/State Route 12 Interchange Project is being designed to address congestion as a result of high travel demand growth through the project area.

Impact TRA-3: Ramp Terminal Intersections Operating at LOS F in the A.M. and P.M. Peak Hours in 2015

In 2015, one ramp terminal intersection would operate at LOS F in the a.m. peak hour, and four ramp terminal intersections would operate at LOS F in the P.M. peak hour, both with and without the project.

Table 2.1-10 presents the ramp terminal intersection operations results. The intersections that are projected to operate at LOS F, with or without the project, are:

- Pittman Road/I-80 eastbound ramps (p.m. peak hour only),
- I-80 eastbound on-ramp/Beck Avenue/West Texas Street (p.m. peak hour only),
- Beck Avenue/SR 12 (a.m. and p.m. peak hours), and
- Pennsylvania Avenue/SR 12 (p.m. peak hour only)

Table 2.1-10. Year 2015 with Project—Intersection Analysis

Intersection[a]		A.M. Peak Hour				P.M. Peak Hour			
		No Project		With Project		No Project		With Project	
		Delay	LOS	Density	LOS	Density	LOS	Density	LOS
1	Red Top Road/I-80 eastbound ramps	22	C	20	B	13	B	12	B
2	Jameson Canyon Road (SR 12)/ Red Top Road	28	C	28	C	14	D	49	D
3	Green Valley/Lopes Road/ I-80 eastbound ramps	15	B	16	B	11	B	12	B
4	Pittman Road/ I-80 eastbound ramps	16	B	16	B	**>80**	**F**	**>80**	**F**
5	Chadbourne Road/SR 12 eastbound ramps	5	A	4	A	35	C	39	D
6	Abernathy Road/ I-80 eastbound ramps	7	A	7	A	34	C	61	E
7	West Texas Street/I-80 eastbound off-ramp	5	A	5	A	10	A	11	B
8	I-80 eastbound on-ramp/Beck Avenue/West Texas Street	18	B	18	B	**>80**	**F**	**>80**	**F**
9	Beck Avenue/SR 12	**>80**	**F**	**>80**	**F**	**>80**	**F**	**>80**	**F**
10	Pennsylvania Avenue/SR 12	48	D	49	D	**>80**	**F**	**>80**	**F**
11	I-80 eastbound ramps/Travis Boulevard	2	A	2	A	6	A	6	A
12	I-80 eastbound ramps/Air Base Parkway	11	B	11	B	14	B	14	B

Notes: **Bold font** indicates unacceptable operations. Dark shading indicates an impact for CEQA considerations.

[a] All intersections are signalized. Signalized intersection LOS is based on the weighted average control delay of all movements measured in seconds per vehicle. Peak hour traffic volumes, lane configurations, and signal timing plans are used as inputs in the LOS calculations.

These LOS F conditions result from the highly congested conditions in the corridor that are projected to occur with or without the project. At the first two intersections, capacity improvements are being planned as part of the Interstate 80/Interstate 680/State Route 12 Interchange Project, currently in the environmental clearance phase. The second two intersections are planned to be replaced by grade-separated interchanges, as part of the same interchange project. This is not an adverse effect.

Impact TRA-4: Temporary Disruption of Traffic Patterns and Emergency Services during Construction

Construction activities associated with the proposed project would result in disruptions of traffic patterns and emergency services during the construction period. Temporary construction impacts would be substantial but are anticipated to be minimized because the construction work would occur south of the existing freeway and because phasing is planned. Temporary construction impacts are anticipated to be the greatest at the eastbound SR 12E connector from eastbound I-80. As part of the Department's standard procedures, the following measures to reduce construction-related traffic impacts would be implemented:

- The contractor will be required to prepare and implement a TMP that will identify the locations of temporary detours and signage to facilitate local traffic patterns and through-traffic requirements.
- The project special provisions of the highway contract will require that emergency service providers (i.e., law enforcement, fire protection, and ambulance services) be given adequate advance notice of any street closures during the construction phases of the proposed project.
- The TMP will address short-term disruptions in existing circulation patterns during construction; for example, the TMP will identify the locations of temporary detours or temporary roads to facilitate local traffic circulation and through-traffic requirements.
- The project special provisions of the highway contract will require a parking plan to accommodate construction equipment and construction workers. For each construction phase, the parking plan will identify sites for construction parking.

With implementation of these measures, there would be no adverse effect related to temporary disruption of traffic patterns and emergency services during construction.

Design Year (2035) Traffic Operations Analysis

Impact TRA-5: Improved Network-wide Freeway Operations during the Design Year (2035)

Table 2.1-11 presents the key network-wide MOEs during the design year (2035) with and without the proposed project, as well as the change in each MOE with the project. The network-wide MOEs shown in Table 2.1-11 are the most informative measure of what a motorist traveling eastbound on I-80 would expect on a trip through the project area. As shown in the table, the proposed project would improve operations in 2035, relative to the no-project scenario, for all MOEs in both the a.m. and p.m. peak hours.

Table 2.1-11. Year 2035 with Project—Eastbound Measures of Effectiveness

MOE	A.M. Peak Hour		P.M. Peak Hour	
	No Project	With Project[a]	No Project	With Project[a]
VMT (per hour)	153,660	152,570 (0%)	160,445	172,395 (+7%)
VHT (per hour)	2,820	2,660 (-6%)	6,585	6,455 (-2%)
VHD (per hour)	280	225 (-20%)	4,045	3,745 (-7%)
Study locations operating at LOS E or F[b]	10	9 (-10%)	24	22 (-8%)
Network-wide average travel times (minutes:seconds)	8:03	7.27 (-10%)	36:42	34.12 (-6%)

Notes: The study area extends on I-80 **eastbound** from west of Red Top Road to east of Air Base Parkway/Waterman Boulevard and on northbound I-680 south of Gold Hill Road to I-80. The study area also includes eastbound SR 12E of I-80 and all ramps.

[a] Percent change from no-project conditions is presented in parentheses.

[b] Total of 38 study locations under no-project conditions and 37 study locations under with-project conditions.

In the a.m. peak hour in 2035, eastbound I-80 traffic volumes are projected to increase by more than 50% over existing conditions in the vicinity of the truck scales facility with or without the proposed project. Nevertheless, eastbound I-80 would continue to be the off-peak direction during the a.m. peak hour. The analysis shows that all network-wide MOEs improve or remain the same with the project.

In the p.m. peak hour in 2035, eastbound I-80 traffic volumes are projected to increase by more than 80% over existing conditions in the vicinity of the truck scales with or without the proposed project. The eastbound travel direction is the peak direction during the p.m. peak hour, and severe congestion would occur without the project. Although the project would improve eastbound p.m. operations in nearly all respects, its benefits would be limited by the fact that at-grade signalized intersections would remain at Pennsylvania Avenue and Beck Avenue on SR 12E, causing vehicle queues to extend back from SR 12E onto eastbound I-80. This would constrain the amount of traffic that could enter the project study area from northbound I-680, eastbound SR 12W, and eastbound I-80 both with and without the project. Nevertheless, as shown in Table 2.1-11, the project would improve freeway operations overall, resulting in a decrease in system-wide delay. Overall, this would be a beneficial effect.

Impact TRA-6: Improved Conditions or No Change at Most Freeway System Analysis Locations in 2035

Conditions would improve or would not change at all freeway system analysis locations in 2035, except one: on eastbound I-80 at the Red Top Road on-ramp in the p.m. peak hour.

Table 2.1-12 presents the freeway mainline, off-ramp, and on-ramp operations results.

Table 2.1-12. Year 2035 with Project—Mainline and Ramps Analysis

Segment	A.M. Peak Hour[a]				P.M. Peak Hour[a]			
	No Project		With Project		No Project		With Project	
	Density	LOS	Density	LOS	Density	LOS	Density	LOS
Mainline and Weave Sections								
I-680								
Northbound I-680, between Gold Hill Road and Central Way	36	E	36	E	**163**	**F**	**148**	**F**
I-80								
Eastbound I-80, west of Red Top Road	31	D	34	D	**79**	**F**	**79**	**F**
Eastbound I-80, between Red Top Road and the SR 12W connector	18	C	18	C	**74**	**F**	**79**	**F**
Eastbound I-80, between SR 12W and Green Valley Road I-680 southbound (weave)[b]	22	C	22	C	**70**	**F**	**67**	**F**
Eastbound I-80, between Pittman Road and the truck scales (weave)[b]	29	D	26	C	**106**	**F**	**103**	**F**
Eastbound I-80, between truck scales and Abernathy Road (weave)[b, c]	N/A[c]		25	C	N/A[c]		24	C
Eastbound I-80, between Abernathy Road and West Texas Street (weave)[b]	25	C	21	C	19	B	19	B
Eastbound I-80, between Beck Avenue and Travis Boulevard (weave)[b]	25	C	21	C	18	B	18	B
Eastbound I-80, between Travis Boulevard and Air Base Parkway/ Waterman Boulevard	23	C	20	C	22	C	22	C
Eastbound I-80, east of Air Base Parkway/Waterman Boulevard	25	C	23	C	25	C	25	C
SR 12								
Eastbound SR 12E, between the truck scales and Chadbourne Road (weave)[b, c]	N/A[c]		13	B	N/A[c]		**157**	**F**
Eastbound SR 12E, between Webster Street and Civic Center Boulevard (weave)[b]	15	B	15	B	15	B	17	B
On-Ramp Merge Sections								
I-680								
Northbound I-680, at Gold Hill Road	**37**	**F**	**36**	**F**	**158**	**F**	**148**	**F**
I-80								
Eastbound I-80, at Red Top Road	12	B	12	B	**83**	**F**	**104**	**F**
Eastbound I-80, at Green Valley Road	14	B	14	B	**82**	**F**	**64**	**F**
Eastbound I-80, at the connector from northbound I-680	26	C	26	C	**126**	**F**	**96**	**F**
Eastbound I-80, at the truck scales[d]	36	E	N/A[d]		**135**	**F**	N/A[d]	
Eastbound I-80, at Travis Boulevard	14	B	13	B	18	B	18	B
Eastbound I-80, at Air Base Parkway/Waterman Boulevard	18	B	17	B	20	B	18	C
SR 12								
Eastbound SR 12E, at Chadbourne Road	20	B	15	B	**157**	**F**	**147**	**F**
Eastbound SR 12E, at Civic Center Boulevard	17	B	17	B	24	C	24	C

Segment	A.M. Peak Hour[a]				P.M. Peak Hour[a]			
	No Project		With Project		No Project		With Project	
	Density	LOS	Density	LOS	Density	LOS	Density	LOS
Off-Ramp Diverge Sections								
I-680								
Northbound I-680, at Gold Hill Road	**38**	**F**	**36**	**F**	**152**	**F**	**143**	**F**
Northbound I-680, at Central Way	**36**	**F**	**36**	**F**	**165**	**F**	**131**	**F**
Northbound I-680, at Suisun Valley Road	27	C	27	C	**166**	**F**	**104**	**F**
I-80								
Eastbound I-80, at Red Top Road	**36**	**F**	**44**	**F**	**88**	**F**	**88**	**F**
Eastbound I-80, at Connector to eastbound SR 12E	33	D	13	B	**119**	**F**	**119**	**F**
Eastbound I-80, at Abernathy Road[e]	18	B	N/A[e]		13	B	N/A[e]	
Eastbound I-80, at Air Base Parkway/Waterman Boulevard	19	B	16	B	18	B	18	B
SR 12								
Eastbound SR 12E, at Chadbourne Road[e]	22	C	N/A[e]		**145**	**F**	N/A[e]	
Eastbound SR 12E, at Webster Street	20	B	20	B	15	B	15	B

Notes: **Bold font** indicates unacceptable operations. Dark shading indicates an impact for CEQA considerations.

[a] Density is expressed in vehicles per hour per lane. Speed is expressed in mph and is the speed within the influence area.

[b] LOS thresholds for weaving sections are different from mainline sections.

[c] This analysis segment only applies to the with-project case. The corresponding no-project segments appear as standard merges in the on-ramp merge section and as standard diverges in the off-ramp diverge section.

[d] This analysis location is not a standard merge in the with-project case and so does not appear in the on-ramp merge section. Instead, for the with-project case, it is included within the applicable weave section.

[e] This analysis location is not a standard diverge in the with-project case and so does not appear in the off-ramp diverge section. Instead, for the with-project case, it is included within the applicable weave section.

The analysis shows that, during the a.m. peak hour, both with and without the proposed project, one merge section and three diverge sections are projected to operate at LOS F; all other mainline, weave, merge, and diverge sections would operate at acceptable LOS E conditions or better.

During the p.m. peak hour, 17 analysis locations are projected to operate at LOS F without the proposed project, and 16 locations are projected to operate at LOS F with it.[4] While most individual analysis locations either would improve or have no change with the project, two analysis locations would worsen with it. Eastbound I-80 at the Red Top Road on-ramp merge section and Eastbound I-80 between Red Top Road and the SR 12W connector are somewhat more congested with the project because of the longer queue backing up from the eastbound I-80–to–eastbound SR 12 connector; this queue affects the outside lanes at the Red Top Road on-ramp merge area and between Red Top Road and the SR 12W connector. These analysis locations are denoted with shading in Table 2.1-12. The vehicle density at these locations are projected to be well over capacity without the project and the vehicle densities are projected to increase slightly to moderately with the project. These effects would be minimal.

Note that the on-ramp merge analysis considers only the outside lanes associated with the merge. These locations are projected to operate at LOS F with or without the project. The Interstate

[4] Note that certain analysis segments cannot be directly compared between the cases because the project design changes the lane geometry in the segment; these locations are noted in Table 2.1-13.

80/Interstate 680/State Route 12 Interchange Project is being designed to address congestion as a result of high travel demand growth through the project area.

Impact TRA-7: Intersections Operating at LOS F in the A. M. and P.M. Peak Hours in 2035

In 2035, four ramp terminal intersections would operate at LOS F in the a.m. peak hour, both with and without the project. In the p.m. peak hour, eight intersections would operate at LOS F without the project, and seven intersections would operate at LOS F with the project.

Table 2.1-13 presents the 2035 ramp terminal intersection operations results. The LOS F conditions indicated in bold would result from the highly congested conditions in the corridor that are projected to occur with or without the project. Capacity improvements are being planned for these locations as part of the Interstate 80/Interstate 680/State Route 12 Interchange Project, currently in the project report phase. In the case of Beck Avenue/SR 12E and Pennsylvania Avenue/SR 12E, grade-separated interchanges are being planned as part of the interchange project. This is not considered an adverse effect.

The intersection of Abernathy Road/I-80 eastbound ramps would improve from LOS F to LOS E with the proposed project. This would be a beneficial effect.

Table 2.1-13. Year 2035 with Project: Intersections Analysis

Intersection[a]		A.M. Peak Hour				P.M. Peak Hour			
		No Project		With Project		No Project		With Project	
		Delay	LOS	Density	LOS	Density	LOS	Density	LOS
1	Red Top Road/I-80 eastbound ramps	**>80**	**F**	**>80**	**F**	**>80**	**F**	**>80**	**F**
2	Jameson Canyon Road (SR 12)/Red Top Road	**>80**	**F**	**>80**	**F**	**>80**	**F**	**>80**	**F**
3	Green Valley/Lopes Road/ eastbound I-80 ramps	52	D	51	D	27	C	42	D
4	Pittman Road/I-80 eastbound ramps	21	C	22	C	**>80**	**F**	**>80**	**F**
5	Chadbourne Road/SR 12 eastbound ramps	5	A	4	A	**>80**	**F**	**>80**	**F**
6	Abernathy Road/I-80 eastbound ramps	9	A	9	A	**>80**	**F**	77	E
7	West Texas Street/I-80 eastbound off-ramp	7	A	7	A	75	E	26	C
8	I-80 eastbound on-ramp/Beck Avenue/West Texas Street	23	C	22	C	**>80**	**F**	**>80**	**F**
9	Beck Avenue/SR 12	**>80**	**F**	**>80**	**F**	**>80**	**F**	**>80**	**F**
10	Pennsylvania Avenue/SR 12	**>80**	**F**	**>80**	**F**	**>80**	**F**	**>80**	**F**
11	I-80 eastbound ramps/Travis Boulevard	3	A	3	A	15	B	17	B
12	I-80 eastbound ramps/Air Base Parkway	15	B	15	B	41	D	38	D

Notes: **Bold font** indicates unacceptable operations. Light shading indicates a beneficial impact.

[a] All intersections are signalized. Signalized intersection LOS is based on the weighted average control delay of all movements measured in seconds per vehicle. Peak hour traffic volumes, lane configurations, and signal timing plans are used as inputs in the LOS calculations.

Impact TRA-8: Reduced Potential for Accidents in the Corridor

The project would lessen the potential for accidents in the corridor by providing standard-length ramps for the I-80 eastbound truck scales and braiding the truck scales' ramps with the I-80 eastbound connector to SR 12 eastbound.

The higher-than-average accident rates experienced in the project corridor are partially related to the congestion caused by slow-moving trucks in the outside lanes and to truck queues backing up onto mainline lanes, combined with passenger car and truck weave, merge, and diverge movements in close proximity to the truck ramp diverge and merge areas. The project would provide standard-length ramps that would be braided—i.e., the flows would be separated—with one of the key nearby diverge movements, the I-80 eastbound–to–SR 12 eastbound connector ramp. This would promote smooth traffic flow and reduce the potential for accidents. This would be a beneficial effect.

Impact TRA-9: Improved Mobility for Emergency Service Providers, Transit Vehicles, and Goods Movement Vehicles

As discussed under Impact TRA-1 and Impact TRA-5, the project would improve network-wide measures of effectiveness in the corridor, reducing VHD and the average travel time for trips through the corridor, in the eastbound direction. These improvements would benefit emergency service providers, buses, and goods movement vehicles, by reducing overall travel times. This would be a beneficial effect.

Effects of the No-Project Alternative

As shown in Tables 2.1-8 and 2.1-11, under the No-Project Alternative traffic operations in the project area would continue to worsen and operate at unacceptable LOS.

2.1.7 Visual/Aesthetics

The information below is summarized from the VIA prepared for the proposed project (CirclePoint 2008b). This section describes the existing visual and aesthetic conditions in the study area, including a discussion of applicable *Solano County General Plan* goals and policies that relate to visual and aesthetic conditions in the project area.

Regulatory Setting

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

Likewise, CEQA establishes that it is the policy of the state to take all action necessary to provide Californians "with … enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" [emphasis added] (PRC Section 21001[b]).

Affected Environment

The project is located in Solano County. The project footprint, as shown in Figure 2.1-2, is defined as the area proposed for any ground-disturbing activities, such as construction activities, construction staging areas, and construction access. The project corridor spans approximately 2 miles along eastbound I-80 and SR 12. Portions of the project area not currently part of the highway are used primarily for agriculture.

Background on Visual Analysis

The visual impacts of project alternatives are determined by assessing the visual resource change resulting from the project and predicting viewer response to that change. Visual resource change is the sum of the change in visual character and change in visual quality. The first step in determining visual resource change is to assess the compatibility of the proposed project with the visual character of the existing landscape. The FHWA's method of visual resource analysis is used to determine visual character and visual quality. As part of this process, vividness, intactness, and unity of the viewpoint each were rated on a scale from 1 to 7. These scores were averaged to determine an overall visual quality score.

The second step is to compare the visual quality of the existing resources with projected visual quality after the project is constructed. For this analysis, a simulation of the project was prepared. The visual impact is determined by subtracting the visual quality score of the existing view from the visual quality score of the same view after project construction. Changes in visual character are also discussed.

Landscape Unit

To provide a framework for understanding visual effects of a proposed highway project, the regional landscape can be divided into distinct landscape units. A landscape unit is a portion of the regional landscape and can be thought of as an outdoor room that exhibits a distinct visual character. A landscape unit will often correspond to a place or district that is commonly known among local viewers.

One landscape unit has been identified in the project area. As shown in Figure 2.1-4, the landscape unit consists mainly of flat agricultural fields in Suisun Valley on the south side of I-80 between the hill just west of Suisun Creek and the I-80/SR 12E interchange. This landscape unit includes the existing I-80/SR 12E interchange and the existing truck scales (Figure 2.1-5).

Existing Visual Character

I-80 creates a line of manmade development through flat farmland on the valley floor. Several rural homes and farm buildings are scattered throughout the landscape unit on the agricultural land. The presence of agriculture creates a texture and a brown/green color. Because of its scale relative to other elements in this landscape unit, one building, a Budweiser brewery, dominates the eastern end of the landscape unit. The existing truck scales dominate the western end of the landscape unit. The rural character of this landscape unit is continuous with the exception of the Budweiser brewery and the existing truck scales.

Existing Visual Quality

The rural nature of this landscape unit creates a moderately high level of vividness. Although the majority of this landscape unit appears intact and unified in its agricultural character,

Legend

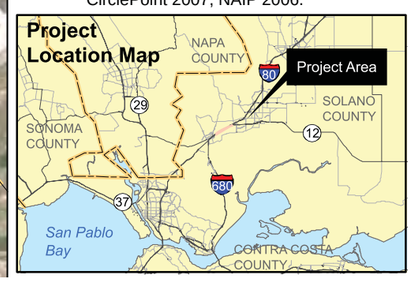
LU Landscape Unit

1 inch equals 3,250 feet

0 1,000 2,000 Meters

0 4,050 8,100 Feet

Source: Nolte 2007, ESRI 2005, CirclePoint 2007, NAIP 2006.



Sources: CirclePoint 2008.

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Figure 2.1-4
Landscape Unit

Legend

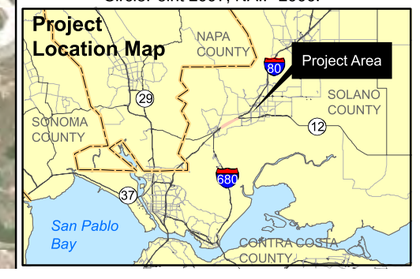
Viewshed

1 inch equals 3,250 feet

0 1,000 2,000 Meters

0 4,050 8,100 Feet

Source: Nolte 2007, ESRI 2005, CirclePoint 2007, NAIP 2006.



Sources: CirclePoint 2008.

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Figure 2.1-5
Project Viewshed

encroachment of industrial uses (e.g., the brewery) in the eastern portion of this landscape unit and the existing truck scales to the west, detract from the overall intactness and unity.

Project Viewshed

A viewshed is composed of broad-range views from a specific viewing location. Viewsheds are generally quite large. The limits of a viewshed are defined as the visual limits of the views located from the proposed project. The viewshed also includes the locations of viewers likely to be affected by visual changes brought about by project features.

The viewshed for this analysis was determined by the height of the landforms and the absence of buildings along I-80. Because the project is on the valley floor, the viewshed stretches far to the south to Suisun Marsh (Figure 2.1-5). Views to the west currently are obstructed by the existing truck scales, although after project implementation the existing truck scales will be removed, and views to the west will be interrupted only by hills. Views to the east end at the I-80/SR 12 interchange and the Budweiser brewery.

Sensitive Viewers

According to the FHWA's *Visual Impact Assessment for Highway Projects* (Federal Highway Administration 1980), viewer response is composed of two elements: viewer sensitivity and viewer exposure. These elements combine to form a method of predicting how the public might react to visual changes brought about by a highway project.

Local and regionally designated roads may reflect viewer sensitivity. The portion of I-80 within the project area is listed as a scenic roadway in *Scenic Roadways Element: A Part of the Solano County General Plan* (Sedway/Cooke 1977). No roadways in the project area are listed as state or city scenic highways, roads, or vistas.

Motorists would be the primary viewer group affected by the project. Motorists include both drivers and passengers traveling on I-80 in the project area. Motorists in approximately 160,000 vehicles drive through the project area during each weekday. These viewers would have moving views of the project from I-80.

Motorist sensitivity to visual change would vary based on whether viewers were passengers or drivers and based on the level of traffic congestion. Drivers traveling at normal speeds usually need to focus their attention on long-range, non-peripheral views.[5] However, passengers would likely have more of a heightened awareness of a wide range of views because they are not concentrating on the task of driving. Motorists traveling at normal speeds would have a much shorter duration of views than motorists driving slowly because of congested traffic (which is common in the project area during peak periods).

Visual Impact Analysis

Because it is not feasible to analyze all of the views in which the proposed project would be seen, it is necessary to select one or more viewpoints that would most clearly represent the visual effects that the project would have. Due to the fact that the project site is confined to one location along the side of the highway, a single viewpoint was selected in this case. The viewpoint was

[5] *Visual Impact Assessment for Highway Projects*, Federal Highway Administration (FHWA), March 1981

selected in consultation with the Department's Landscape Architecture office to represent the most predominant view of the proposed truck scales (that of motorists traveling in the eastbound direction on I-80). The location of this viewpoint is shown in Figure 2.1-6.

As shown in Figure 2.1-7, this view from I-80 eastbound is characterized by the flat brown/green open agricultural fields of Suisun Valley. Agricultural fields make up the majority of the view south of I-80, and some trees and shrubs are seen adjacent to the highway. The foreground of this view also includes the wide, straight, flat, paved surface of I-80 and corresponding highway signs. In the distance, manmade elements, including a large tan building (the Budweiser brewery) and a tall, metal utility tower, are visible encroaching on this natural setting. These encroaching elements detract from the intactness and unity of the view, creating a moderately high intactness and unity. Views of the large expanse of agricultural fields are considered to have a moderately high vividness.

Environmental Consequences

The new truck scales, the size and shape of which are shown in Figure 2.1-7, are visible from the selected viewpoint. Also visible are the new paved surfaces alongside I-80, including the off-ramp to the truck scales, as well as the truck bays, parking, and inspection areas.

The addition of truck scales, a highway-related use, to the side of the highway would not substantially alter the existing character, especially because the existing truck scales would be removed. The project would change the visual quality, however, as shown in the chosen viewpoint.

The new paved surfaces and building will eliminate views of agricultural fields, reducing vividness from moderately high to moderately low. The majority of the new view would be of new project elements. The truck scale elements correspond with the existing highway elements, keeping the unity of the scene moderately high. Although the visual simulation from the selected viewpoint shows a relatively intact scene, the new truck scales would interrupt views of open agricultural fields as seen by motorists along I-80, reducing the intactness from moderately high to moderate.

A comparison of visual quality before and after the project is shown in Table 2.1-14. As shown in Table 2.1-14, development of the truck scales (without mitigation) would change the visual quality in this viewpoint from 5, moderately high, to 4, moderate.

Table 2.1-14. Visual Quality Change in the Selected Viewpoint

Visual Quality Criteria	Vividness	Intactness	Unity	Visual Quality (Average Scores for Vividness, Intactness, and Unity)
Existing conditions	Moderately high (Score: 5)	Moderately high (Score: 5)	Moderately high (Score: 5)	Moderately high (Score: 5)
Future conditions (with and without mitigation)	Moderately low (Score: 3)	Moderate (Score: 4)	Moderately high (Score: 5)	Moderate (Score: 4)

Legend

- VP — Project Viewpoint
- Direction of Viewpoint

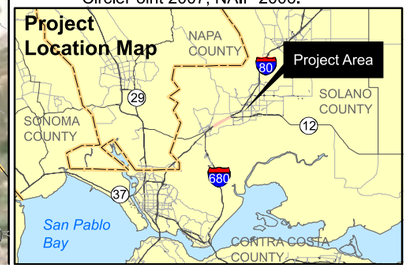
NORTH

1 inch equals 3,250 feet

0 1,000 2,000 Meters

0 3,500 7,000 Feet

Source: Nolte 2007, ESRI 2005, CirclePoint 2007, NAIP 2006.



Source: CirclePoint 2008, Geographica Consulting 2008.

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Figure 2.1-6
Viewpoint Location

Existing view from I-80 eastbound looking east.

Visual simulation of proposed truck scales.

Source: CirclePoint 2008.

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Figure 2.1-7
Visual Simulation

Viewer Response

The viewpoint represents motorists' views along eastbound I-80. Because this change would occur on I-80, potentially more than 100,000 of people per day would be exposed to the change. Daily commuters would have a higher cumulative duration of this view because they would see it on a daily basis. The general view duration of motorists and passengers would vary based on the amount of traffic. Motorists are anticipated to have a moderate level of sensitivity to visual change.

The analysis of visual and aesthetic impacts is based on a qualitative assessment of the change in views at the key viewpoints identified above. The project would have a negative visual impact if it would:

- adversely affect a scenic vista,
- damage or remove scenic resources,
- degrade the existing visual character or visual quality, or
- create a new source of substantial light or glare.

The project footprint is open farmland. There are no rock outcroppings on the site. The two residential structures on the site that would be displaced by the project are not considered historic or scenic resources.[6] The project footprint does contain several trees, but these are not unique in terms of size, shape, or character. These trees are not considered scenic resources. There are no scenic resources on the project footprint.

Impact VIS-1: Degradation of Visual Quality with Adverse Affects to a Scenic Vista

The project would affect a scenic vista by decreasing the visual quality of views of open farmland from I-80. As previously discussed, completion of the project would decrease the existing visual quality, as seen by motorists along I-80, by one point. The project would result in a slightly adverse change to the existing visual quality, with moderate viewer response. This adverse change would be offset, to some degree, by the demolition of the existing scales (see Impact VIS-2). Additionally, architectural and landscaping minimization measures, described below, will increase the visual quality of the proposed truck scales.

Impact VIS-2: Beneficial Effect from Demolition of Existing Facility

In addition to the visual change represented in Figure 2.1-7, the project also would include the demolition of the existing eastbound truck scales. Demolition of the existing facility could create a beneficial visual impact by opening up views of the vegetated hill behind the existing truck scales, thereby increasing the vividness and intactness of views from I-80. However, since the future use of this site has not been determined, the extent of change in visual quality is unknown. For example, were this area to be used for maintenance or storage facilities, these uses would introduce elements that would decrease the vividness and intactness of the landscape. Future uses

[6] For a structure to be considered a scenic resource due to its historic nature, it does not need to qualify as a historic property under CEQA. Older buildings with historic significance to the local community can qualify as scenic resources.

of this site are likely to have a lower intensity of development than the current truck scales and therefore would result in somewhat of a beneficial impact. Since demolition of the existing scales would be likely to increase visual quality in this area, it would offset some degree of the visual impacts from the new truck scale facility.

Impact VIS-3: Alteration of the Existing Visual Character from Project Sound Walls

Sound walls associated with the project's highway on-ramps would not greatly change the existing visual character or substantially alter existing views. Current views from the highway to the south in this location are obstructed by an orchard. With project implementation, views would remain obstructed by the new on-ramp structures and sound walls. Views of the highway from residences in this area would also experience slight changes. These views would change from views of the highway to views of the new ramps and associated sound walls. Since existing views would not substantially change, visual impacts from project sound walls are not considered an adverse effect.

Furthermore, sound wall aesthetics are part of a corridor aesthetics plan that is under development, as discussed under the Avoidance, Minimization, and/or Mitigation Measures section below. Such planned sound wall aesthetics will help increase the visual quality of the I-80 corridor.

Impact VIS-4: Temporary Decrease of Visual Quality during Construction

During construction, the small trees and shrubs adjacent to the freeway would be removed. Crops also would be removed during grading, exposing the soils underneath. Construction equipment would be visible along the highway. Disturbed earth and construction equipment would disrupt and introduce an encroaching element into an otherwise agricultural setting. Although the immediate area is undeveloped, the surrounding area is developed, and construction from the Fairfield Corporate Commons project and the Interstate 80 High-Occupancy Vehicle Lane Project is visible in the immediate vicinity. However, the construction site would be out of character with the farmland surrounding it. The construction process would decrease visual quality by interrupting and decreasing the vividness of views and creating encroaching elements that would reduce the intactness and unity of the view. In addition, the construction site may include lighting, which would create a new source of light and glare.

Although adverse visual impacts would occur during construction, these effects would be temporary and would not contrast with the existing visual character of the area. After construction of the truck scales is completed, the view would be permanently altered as described above for Impacts VIS-1.

Avoidance, Minimization, and/or Mitigation Measures

The Department and the FHWA mandate that a qualitative/aesthetic approach should be taken to address visual quality loss in the project area. This approach fulfills the letter and the spirit of FHWA requirements because it addresses the actual cumulative loss of visual quality that would occur in the project viewshed when the project is implemented. It also constitutes mitigation that can more readily generate public acceptance of the project.

Measures to minimize the visual change resulting from the project will consist of adhering to the following design requirements. The requirements are arranged by project feature and include design options in order of effectiveness. All measures will be designed and implemented with the concurrence of the Department's district landscape architect.

The project sponsors will implement the following measures to improve visual quality at the site of the proposed truck scales.

- As directed by the Department, landscaping shall be used around the perimeter of the site to screen the truck bays, building, and associated facilities from the view of sensitive land uses to the south. Landscape planting shall be used in front of the office portion of the building to provide privacy for building occupants and soften the appearance of the building. The landscaping shall not interfere with the line of sight or other operational aspects of the truck scales facility.
- The architectural design depicted in Figure 2.1-7 incorporates several key elements intended to reduce the visual scale of the proposed building, provide visual interest while not creating a visual distraction for motorists and an overall aesthetic which is compatible with the surrounding visual environment. These elements include:
  - The roof line of the truck bay building incorporates element (e.g. clearstory windows) which reduce the perceived scale and height of the structure.
  - To break up the large wall expanse of the truck bay building, architecture facade treatments such as curved metal canopies should be used as depicted in the simulation.
  - The color palette should be predominately neutral warm tones with colors used in key elements of the building architecture to create visual interest.
  - CHP signage on the building should be sized and placed on the building to both be visible from the freeway and not overly obtrusive in the view. The signage should be coordinated with the architecture of the building.
- The Department and STA are currently (as of October 2008) preparing a corridor aesthetics plan for the I-80 corridor in Solano County. The plan will provide recommendations as to signage, sound wall, retaining wall, structure and landscape aesthetics. These recommendations should be incorporated into the roadway, structures, sound wall and landscape designs for the truck scales project to the extent feasible.

Effects of the No-Project Alternative

Under the No-Project Alternative, the proposed new truck scales would not be constructed. Therefore, no new visual or aesthetic effects would occur.

2.1.8 Cultural Resources

Regulatory Setting

Cultural resources in this document refer to all historical and archaeological resources, regardless of significance. Laws and regulations dealing with cultural resources include those described below.

The National Historic Preservation Act of 1966, as amended (NHPA), sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the impacts of their undertakings on such properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP *(36 CFR 800).* On January 1, 2004, a Section 106 programmatic agreement between the ACHP, FHWA, State Historic Preservation Officer, and the Department went into effect for the Department's projects, both state and local, with FHWA involvement. The *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as It Pertains to the Administration of the Federal-Aid Highway Program in California* (Programmatic Agreement) implements the ACHP's regulations, *36 CFR 800,* streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the Programmatic Agreement have been assigned to the Department as part of the Surface Transportation Project Delivery Pilot Program *(23 CFR 773)* (July 1, 2007).

Historic properties also may be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties.

Historical resources are considered under the CEQA, as well as *PRC 5024.1,* which established the California Register of Historical Resources (CRHR). *PRC 5024* requires state agencies to identify and protect state-owned resources that meet NRHP listing criteria. It further specifically requires the Department to inventory state-owned structures in its rights-of-way.

Affected Environment

Cultural resources studies completed in support of this document included a historic properties survey report (ICF Jones & Stokes 2008a), a historic resources evaluation report (ICF Jones & Stokes 2008b), an archaeological survey report (ICF Jones & Stokes 2008c), and an Extended Phase I report (XPI) (ICF Jones & Stokes 2008d).

The area of potential effect (APE) for archaeology includes the project footprint and a 20-foot radius around it. The APE for architectural resources includes the project footprint, any parcels of which there is a partial take, and any parcels where there are indirect effects.

The archaeological study consisted of a pedestrian survey of the entire project area, as well as a literature search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) and consultation with the Native American Heritage Commission (NAHC) and six individuals listed by the NAHC as individuals with knowledge of or interest in the area.

The records search indicated that two archaeological sites are located within a 0.5-mile radius of the APE, and an additional six are located within a 1-mile radius. Although no previously recorded archaeological sites were located within the APE, and no resources were located within the APE as a result of the 2004 pedestrian survey, an XPI was conducted. Mechanical excavations were conducted and documented in the XPI because the project area was considered

sensitive based on the presence of buried archaeological resources in similar deposits, the proximity of Suisun Creek, and the undeveloped nature of the project area.

The XPI was conducted over seven days in July 2008. A total of 20 trenches were mechanically excavated to between 10 and 15 feet in depth in areas of proposed ground disturbance. A buried "A" Horizon (or prehistoric ground surface) was noted, indicating the potential for buried sites, but no cultural materials were located.

An architectural inventory of the APE was conducted on November 1, 2007; April 23, 2008; and June 4, 2008. The project area includes seven properties containing built-environment resources in addition to an irrigation feature constructed before 1964 that have been formally evaluated for this project (Appendix A in ICF Jones & Stokes 2008b). None of the pre-1964 buildings, structures, or linear resources in the APE appears to meet the criteria for listing in the NRHP, either individually or as a group. Similarly, none of these resources is a historical resource for the purposes of CEQA. The remaining properties within the APE met the criteria presented in the Programmatic Agreement, Attachment 4 (Properties Exempt From Evaluation), and did not require evaluation. These properties include a substation located on APN 0027-252-080 and a complex located on APN 0027-272-050. Overall, there does not appear to be potential for a historic district or a historic landscape in the project area, which might include any of these properties as contributing elements.

There are no historic properties located within the direct or indirect APE. Therefore, there is a finding of "No Historic Properties Affected."

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

If human remains are discovered, further disturbances and activities will cease in any area or nearby area suspected to overlie remains, and the County coroner will be contacted, according to State Health and Safety Code Section 7050.5. Pursuant to *PRC 5097.98,* if the remains are thought to be Native American, the coroner will notify the NAHC, which then will notify the most likely descendent (MLD). At this time, the person who discovered the remains will contact the District Environmental Branch so that the branch may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of *PRC 5097.98* are to be followed as applicable.

Environmental Consequences

Because there are no historic properties in the project area, no historic properties would be affected by the project. However, there is always the possibility that unrecorded or buried archaeological resources or prehistoric- or historic-period human remains may be located within the project area. Construction activities associated with project construction, such as grading and excavation, may disturb these resources. If these resources were to meet the criteria for listing in the NRHP, the disturbance or destruction of the resources would be considered an adverse impact.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are necessary. Stipulation XV.B of the Section 106 Programmatic Agreement addresses "Discoveries without Prior Planning." In the case of the discovery of a previously unidentified property or an unanticipated effect on a known property, it requires Caltrans to stop construction activity in the vicinity; evaluate the find; implement reasonable measures to avoid, minimize, and mitigate further harm to the property; notify appropriate agencies and Native American groups; and carry out appropriate actions.

Effects of the No-Project Alternative

Under the No-Project Alternative, the proposed new truck scales would not be constructed. Therefore, no effect on cultural resources would occur.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The FHWA requirements for compliance are outlined in 23 CFR 650 Subpart A. In order to comply, the following must be analyzed.

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

The base floodplain is defined in 23 CFR 650.105 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 following text is based on the location hydraulic study and summary floodplain encroachment report for the proposed project (Mark Thomas & Co. and Nolte Associates 2008a) and the stormwater data report for the proposed project (Mark Thomas & Co. and Nolte Associates 2008b).

Solano County, a central region of California, is characterized by a Mediterranean climate. Summer is dominated by subtropical high pressure cells, with dry sinking air capping a surface marine layer of varying humidity, making rainfall impossible or unlikely but for the odd thunderstorm. During winter, the polar jet stream and associated periodic storms reach into the lower latitudes of the Mediterranean zones, bringing approximately 95% of the total precipitation for the region. Temperatures range from 27°C (80°F) to 43°C (110°F) in summer and from -1°C (30°F) to 10°C (50°F) in winter.

The San Francisco Bay RWQCB lists this region as Area 2 of its domain. The San Francisco Bay RWQCB further notes that its rainy season is from October 15 to April 15. Average rainfall for this area is 16 inches, and average rainfall for the western mountains is 30 inches.

The land gradually slopes to the south toward Suisun Bay. The area is composed of relatively flat grazing plains and rural open space with gently sloping hills adjacent to the I-80/I-680 interchange. The Vaca Mountains lie to the north of Suisun Valley and Fairfield. Along the reach

of the project area, two named creeks convey runoff to Suisun Bay to the south: Suisun Creek and Raines Drain. Historically, agriculture has affected runoff patterns in the areas adjacent to the project. There is extensive urban development in areas to the west and east of the project but not in the immediate project area. The affected drainage areas are on-site areas only, with minimal impacts on the flood plain. The watersheds will not be affected.

Suisun Creek and Raines Drain

The 100-year flow in Suisun Creek passes under the I-80 bridge without flooding the highway. However, at several locations within 2 miles upstream of I-80, 100-year flows escaped from the banks of Suisun Creek, flowing away from the creek. Some of these flood flows encounter the I-80 embankment at Raines Drain. The capacity of the Raines Drain cross culverts is not sufficient to carry the 100-year flood flows across the highway, causing flood flows to overtop the highway at this location, as defined on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM).

Environmental Consequences

The project would not involve construction of housing in the local 100-year floodplain, and the truck scale facility structures would be elevated above the floodplain. The project is not downstream of any dams or large bodies of water (as it is located approximately 8 miles north of Suisun Bay) and would not pose any risk of flooding hazards as a result of dam failure. Although levees line some of the creeks that cross under the highway, the risk of a levee failure significantly affecting people or structures would be low. The project area is located in an area of relatively flat topography that is not near any large bodies of water (Suisun Bay being located approximately 8 miles to the south). The potential for a seiche, tsunami, or mudflow is low.

Impact HYD-1: Impacts on Hydraulic Capacity at Suisun Creek Bridge

The existing highway bridge is 190 feet wide and 73 feet long (in the direction of traffic), while the new Suisun Creek bridge will be significantly longer, at 100 feet long by 63 feet wide (in the direction of traffic). The Suisun Creek side slopes and bottom would not be affected by the new Suisun Creek bridge. In addition, there are no planned modifications to Suisun Creek, and no impacts on the creek are anticipated. Existing FEMA 100-year flow elevation is 5.9 feet beneath the top of the highway elevation, 10.0 feet beneath the top of the new Suisun Creek bridge deck elevation, and 2.9 feet below the lowest point of the deck soffit. There are no planned longitudinal encroachments to the floodplain.

Because the 50-year design flood and the 100-year base flood are both contained within the existing bridge, and the new single-span bridge is higher and wider than the existing bridge, there will be no adverse effects on the hydraulic capacity of Suisun Creek as a result of the project.

Impact HYD-2: Impacts on the Hydraulic Capacity of Raines Drain

The location where Raines Drain crosses the highway is a low point in the highway vertical profile. Originally constructed for irrigation purposes, Raines Drain also serves as a storm drain. The waterway crossing consists of four culverts ranging in size from 42 inches to 66 inches in diameter. One of the 42-inch culverts is blocked at both the upstream and downstream ends per

agreement between the Department and the Solano Irrigation District. Because of poorly defined drainage patterns and low channel capacity, this area is prone to sheet flow flooding from areas to the north and from flood overflows from the upstream reaches of Suisun Creek and Ledgewood Creek. Certain reaches of Suisun Creek and Ledgewood Creek can flood, with overflows flowing away from Suisun Creek toward the Raines Drain crossing. The combined capacity of the three open culverts cannot convey the 50- or 100-year flows under the highway without overtopping. A previous hydraulic study of Raines Drain identifies the flow that reaches the edge of pavement as 300 cfs, and the flow that just begins to overtop the centerline of the highway as 475 cfs. Both of these flow rates are significantly below the 50-year flow rate of 925 cfs. Flood flows in excess of the total culvert capacity cause ponding upstream of the highway, and the FEMA FIRMs indicated that the 100-year high-water elevation crests the highway. Just south of the highway Raines Drain has a bank full capacity of 130 cfs; flows greater than 130 cfs will spread onto the floodplain as shown on the FEMA maps. Presently, one of the 3 existing 42-inch culverts has a control gate in a closed locked condition. Flood flows enter the 66-inch culvert first. At higher runoff rates and elevations, flow will begin to enter the 42-inch culverts. For flows to enter the 42-inch culverts they must first overtop the existing access road and bike lane immediately upstream of the highway.

The project would extend the southern ends of all existing culverts clear of the grading limits of the truck scales and approach ramps. The four existing reinforced concrete pipe (RCP) culverts (1 at 66 inches in diameter and 3 at 42 inches in diameter) would be lengthened approximately 150 feet; the headwalls would be relocated and a portion of Raines Drain would be shortened to match the culvert modifications. The extensions of the three 42-inch culverts and the 66-inch culvert should end at the same new headwall. From the new headwall, a concrete-lined transition will be constructed to match the existing downstream concrete-lined Raines Drain.

The new roadways (the on-ramps and connector) both would have reaches of low elevation that would allow the overtopping flows to cross over them and the freeway. The final roadway design would verify that the Raines Drain overtopping floodplain flows cross the two new roadways with no greater constraint than the existing freeway median. With this design in place, there would be no adverse effect on hydraulic capacity.

Impact HYD-3: Impact on Floodplain

The first flows in Raines Drain and on the Raines Drain floodplain are conveyed in a concrete lined ditch and pass under the freeway via four cross culverts. These existing culverts will be extended to match the width of the new freeway improvement. When the capacity of the existing culverts is exceeded, floodwaters rise on north side of the freeway and eventually overtop the freeway. The existing 100-year floodplain at Raines Drain overtops the mainline. The proposed project would not change the freeway median elevations and therefore would not have an adverse effect north of the highway on the upstream floodplain. The elevation of the new truck scales ramps to not impede flood flows that overtop the freeway; the overtopping flows continue to the existing floodplain south of the freeway. To the south of the highway, the eastbound scales will result in fill placed on the defined floodplain. However, the floodplain in this area is defined as sheet flow with less than 1 foot depth. Fill in this area would not have an adverse effect on the floodplain.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are necessary.

Effects of the No-Project Alternative

Under the No-Project Alternative, no new effects on hydrology or floodplain would occur.

2.2.2 Water Quality and Stormwater Runoff

Regulatory Setting

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

Along with CWA Section 401, CWA Section 402 establishes the NPDES permit for the discharge of any pollutant into waters of the United States. The U.S. Environmental Protection Agency (EPA) has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements (WDRs) under authority of the Porter-Cologne Water Quality Control Act of 2002 (Porter-Cologne Act).

The SWRCB has developed and issued a statewide NPDES permit to regulate stormwater discharges from all the Department's activities on its highways and facilities. The Department's construction projects are regulated under the statewide permit, and projects performed by other entities on the Department's right-of-way (encroachments) are regulated by the SWRCB's statewide general construction permit. All construction projects on more than 1 acre require a stormwater pollution prevention plan (SWPPP) to be prepared and implemented during construction. The Department's activities on less than 1 acre require a water pollution control program.

Affected Environment

The following discussion is based on information taken from the stormwater data report for the proposed project (Mark Thomas & Co. and Nolte Associates 2008b) and the water quality report for the proposed project (Mark Thomas & Co. and Nolte Associates 2008c).

The project area is located within the Suisun Hydrologic Unit; the Fairfield Hydrologic Area; Hydrological Subarea 207.21, Benicia; and Hydrological Subarea 207.23, Suisun Slough. There are two water bodies (Dan Wilson Creek and Suisun Creek) and one drain (Raines Drain) that cross the project area. Although it is a manmade canal, Raines Drain acts to drain runoff from adjacent land and excess flood flows from Suisun Creek and Ledgewood Creek. Raines Drain is concrete-lined within the project limits.

The project footprint is within the Suisun Creek watershed. The receiving water bodies closest to the project footprint are the Suisun Marsh wetlands, which are between approximately 1 and 2 miles downstream; Suisun Bay, which is approximately 12 miles downstream; and the Carquinez

Strait, which is approximately 19 miles downstream. The general topography of the land is gradually sloping to the south toward Suisun Bay.

The *Water Quality Control Plan for the San Francisco Bay Basin* (basin plan) establishes beneficial uses for waterways and water bodies within the region. Existing beneficial uses for Suisun Creek include freshwater supply, areas of special biological significance, cold freshwater habitat, fish migration, water contact recreation (potential), noncontact water recreation (potential), fish spawning, warm freshwater habitat, and wildlife habitat (San Francisco Regional Water Quality Control Board 2007).

Section 303(d) of the 1972 CWA states that territories and authorized tribes are required to develop a list of water quality–limited segments. These waters on the list do not meet water quality standards, even after point sources of pollution have the minimum required levels of pollution control technology. The water bodies to which the project discharges are not listed on the EPA's 303(d) List of Water Quality Limited Segments.

Of the named water bodies within the project vicinity, the San Francisco Bay RWQCB only lists the Suisun Marsh wetlands as impaired. Specifically, metal concentrations such as arsenic, cadmium, chromium, copper, lead, nickel, and zinc from urban runoff and storm sewers exceed the targeted design total maximum daily loads (TMDLs). However, these constituents also have low TMDL priority. Farther downstream, the Suisun Bay and Carquinez Strait also contain several CWA Section 303(d) listed pollutants (organic compounds, PCBs, mercury, selenium, general particulates and dissolved metals, nutrients and salinity).

Constituent testing in the project area has revealed that aerially-deposited lead (ADL) soils are present within the project footprint. That material would be disposed of in accordance with guidance and regulations (see section 2.2.5).

The project is located in the Suisun-Fairfield Valley groundwater basin (basin 2-3). The depth to groundwater ranges from 3 to 20 feet as reported in the as-built Log of Test Borings (LOTBs) from 1950, 1960, and 1970. These depths should be confirmed during the plans, specifications, and estimates (PS&E) phase. Identified existing beneficial uses are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

Environmental Consequences

The Department has performed many studies to monitor and characterize highway stormwater runoff throughout the state. Commonly found pollutants are total suspended solids (TSS), nutrients, pesticides, metals, pathogens, litter, biochemical oxygen demand (BOD), and total dissolved solids (TDS). Some sources of these pollutants are natural erosion, phosphorus from tree leaves, combustion products from fossil fuels, the wearing of brake pads, and droppings of wild and domestic animals within state right-of-way.

Impact WQ-1: Increased Runoff and Paved Area

The project would slightly widen the eastbound I-80 mainline and add several thousand feet of separate roadway leading into and out of a new eastbound truck scale area. The project would increase the amount of stormwater runoff within state right-of-way. The project also would add a

significant paved area on acquired right-of-way for parking and inspection areas in support of the scales. No project drainage improvements would occur within Suisun Creek, as the new bridge would clear-span the creek. At Raines Drain, the existing culverts would be extended, replacing a segment of concrete-lined trapezoidal channel. To manage the stormwater runoff, the on-site drainage facilities would be reconfigured within the proposed right-of-way, as part of the project design. The associated watersheds would be only minimally affected. The minor impacts on the receiving water bodies are the result of capacity changes to hydraulic features of the drainage system and are not considered an adverse effect.

Impact WQ-2: Potential Water Quality, Erosion and Sediment Control Issues during Construction

The project has an estimated total disturbed soil area of 49.5 acres. There are about 28.4 acres of new pavement (on existing unpaved ground) and about 2.5 acres (the existing truck scales facility) that may have pavement replaced with natural ground. These aspects of the project could cause potential erosion and sediment control impacts during construction. Proper erosion and sediment control measures would be effective because of the relatively flat terrain and low grading heights.

Construction of the project would involve the use of construction equipment and associated fuels, solvents, lubricants and other pollutants. These substances may be released into the environment during construction and could result in adverse effects to water quality. Implementation of Measure WQ-2 would avoid these potential adverse effects.

Impact WQ-3: Potential to Require Dewatering during Construction

This area historically has high groundwater levels. Groundwater may be encountered in structure excavations. Early discussion would be initiated regarding the handling and disposal of this water during the design phase. Although handling of groundwater is not anticipated, proper handling, treatment, and discharge would be performed. No adverse effect is expected.

Avoidance, Minimization, and/or Mitigation Measures

Measure WQ-2: Prepare and Implement Stormwater Pollution Prevention Plan and Best Management Practices

According to the Department's NPDES permit and the Construction General Permit (U.S. Environmental Protection Agency 2008c), best management practices (BMPs) will be incorporated into this project to reduce the discharge of pollutants during construction, as well as permanently to the maximum extent practicable (MEP). These BMPs fall into three categories: temporary construction site BMPs, design pollution prevention BMPs, and permanent treatment BMPs.

Construction Site BMPs

Construction site BMPs are applied during construction activities to reduce the pollutants in the stormwater discharges throughout construction. One critical construction activity, dewatering, may be necessary for this project because of the high groundwater. Early discussion will be

initiated regarding the handling and disposal of this water during the design phase. If the water is found to be uncontaminated and acceptable by the RWQCB to be discharged back into the creek, appropriate temporary construction site BMPs will be required to reduce any potential discharge of pollutants to the extent feasible as described in section A.9 of the Construction General Permit. A project-specific WDR permit may be required from the RWQCB, if substantial dewatering is to be done.

No dewatering is anticipated at Suisun Creek, and no construction is anticipated within the stream banks.

Raines Drain is a concrete-line trapezoidal channel upstream and downstream of the existing cross culverts. Construction of the culvert extensions can be staged while one or more of the culverts is kept open to pass runoff, eliminating the need for dewatering.

At this phase of the project, no specific coordination with the Department's Division of Construction has occurred yet for the stormwater management issues.

Permanent Design Pollution Prevention BMPs

Design pollution prevention BMPs are permanent measures to improve stormwater quality by reducing erosion, stabilizing disturbed soil areas, and maximizing vegetated surfaces. Erosion control measures will be provided on all disturbed areas. These BMPs are shown in Table 2.2-1.

Downstream Effects Related to Potentially Increased Flow

The project should have little impact on the velocity of downstream flow in most locations because of the condition of the already significant existing highway facility and the very flat terrain. In the existing condition, much of the pavement runoff is directed to pervious strips or unlined ditches along the outside right-of-way. The project improvements in general will replicate this drainage pattern, using longitudinal ditches and drainage systems to convey site runoff to proper receiving drainage facilities.

There is potential for increased peak flow discharge, but the construction of planned longitudinal ditches will act to attenuate possible increase in peak flow runoff from the paved areas.

Drainage improvements for the highway widening will affect and change the existing ditches or channels along the outside of the highway. These project drainage improvements will not connect directly to unlined ditches, but will connect to velocity reduction systems or stormwater management facilities that discharge to unlined ditches.

There is minimal potential for increased sediment loading. All graded fill slopes (no cut slopes are anticipated) will be constructed with proper erosion control and permanent plantings. All new unlined ditches will be constructed with relatively flat grades and maximum 4:1 side slopes. If erosive velocities are anticipated, ditches will be constructed with lining, and the side slopes may be steepened.

Slope/Surface Protection Systems

Construction of fill slopes are necessary to create the proposed vertical profiles. No cut slopes are anticipated.

To minimize erosion from any of the new slopes, mitigating design features have been considered, including minimizing cut and fill slopes, shaping slopes to reduce concentrated flow, and collecting concentrated flows in stabilized channels. All graded slopes, either cut or fill, would be constructed with proper erosion control and permanent plantings. Except at bridges, no retaining walls are anticipated.

Certain areas of the project will be hardscaped as required for safety (ramp gores), maintenance (pullout areas), and slope stability (under bridges).

Construction of the project will remove moderate amounts of vegetation within the project right-of-way. In many locations, the project would replace existing unpaved areas with pavement or impervious structures. At all areas where new slopes are constructed, proper vegetation would be planted, monitored and maintained to establish permanent cover. Approval of the erosion control plan by the Department's Division of Design, Landscape Architecture will occur during final design.

Concentrated Flow Conveyance Systems

There are a variety of concentrated flow conveyance devices along the length of the project. Along most of the existing reach of the highway, runoff sheet flows off of the pavement, crossing several feet of vegetated strips before entering a swale oriented longitudinally to the right-of-way. The existing concentrated flow conveyance devices include: lined and unlined ditches and swales, drainage inlets and culverts, asphalt concrete (AC) dikes and overside drains, flared end sections, rock slope protection (RSP) pads, flow energy dissipation devices, and other approved drainage design devices. For this project, the planned drainage pattern will replicate as much as possible the existing runoff pattern. The drainage improvements will direct pavement runoff to sheet flow to the outside edge of the new pavement where improved drainage devices will collect and convey the project runoff.

Preservation of Existing Vegetation

One goal of the project and construction activities will be to preserve areas of existing vegetation wherever possible. At all areas where existing vegetation (on land to remain) is affected, or where new slopes are constructed, proper vegetation will be placed, monitored, and maintained to establish permanent cover. For those areas on the outside of the highway, pavement will be minimized in favor of retaining existing vegetative cover.

Bridge construction will occur at Suisun Creek, with additional major storm drain facilities at Raines Drain. The Suisun Creek bridge will span Suisun Creek, and the Raines Drain improvements are planned to be extensions of the existing cross culverts, minimizing impacts on the existing waterways. Environmentally sensitive areas (ESAs) that potentially would be affected, exist within the project area. Measures to reduce effects for ESAs are addressed in other sections of this document (section 2.3, Biological Environment). To the maximum extent practicable, areas outside the active work area will be excluded from construction access.

Table 2.2-1. Proposed Pollution Prevention BMPs by Reach

Reach	Proposed Design Pollution Prevention BMPs: Minimize Downstream Effects; Protect Slopes; Design Concentrated Flow Conveyance Systems; Preserve Vegetation
I-80/Truck Scales	Flat terrain with large area of short fill proposed. Critical area for placement of treatment BMPs. Biostrips and bioswales are anticipated along the perimeter of truck scale grading.
I-80/SR 12E	Very minor impact on the velocity or volume of downstream flow. Existing flat terrain; fill required to construct. Slopes <1:4. Erosion control plan to be prepared by landscape architect. Catch basins and piping or bioswales to biofilters within the right-of-way. Velocity not to exceed vegetative lining and soil scour velocities. Sustainable vegetation to be established.

Permanent Treatment BMPs

Because this project is considered a major reconstruction project, it is not exempt from incorporating treatment BMPs. Treatment BMPs are permanent devices and facilities treating stormwater runoff. The Department's approved treatment BMPs are biofiltration swales, infiltration basins, detention basins, traction sand traps, dry weather flow diversions, media filters, gross solids removal devices (GSRDs), multi-chamber treatment trains, and wet basins. Those most feasible in the Bay Area are biofiltration swales, infiltration basins, detention basins, media filters, multi-chamber treatment trains, and wet basins.

Because of potential high groundwater within the project area, infiltration and detention basins do not seem feasible. Biofiltration swales and biostrips have been investigated as possible alternatives. Both treatment BMPs treat the same types of constituents: TSS, particulate metals, and litter. Both biofiltration swales and strips are viable cost-effective treatment BMPs.

The targeted design constituents for this project are metals. Because of the limited permeability of the soils and potentially high groundwater, infiltration devices and other filters allowing percolation of stormwater back into the ground are no longer a consideration. However, engineered biofiltration strips and swales are proposed. Biofiltration strips and swales are effective at trapping litter, TSS, and particulate metals. Where possible, it is recommended that the existing vegetation be evaluated for use as effective biostrip cover, or the project should establish the proper vegetative cover and/or swale dimensions at each treatment location.

Locations within the project limits (primarily in the area between the toe of fill slopes and the right-of-way) are available to be used for permanent treatment BMPs. Plans developed at a later stage in design will be more specific in their location, size, vegetative characteristics, and performance measures.

Biofiltration Swales/Strips

Much of the area beyond the proposed roadway embankment limits is flat and wide enough to support stable and effective biofiltration. Therefore, biofiltration is considered throughout the project, and separate areas have been identified as potential biofiltration. Plans in the attachments identify all potential BMP locations. Biostrips are designed to provide the maximum treatment length. Water quality flow (WQF) is not defined for this BMP. The tributary area to the biostrips is the length of pavement from the highway median to the outside edge of pavement. Bioswales are to be designed according to the Department's guidance documents, with minimum bottom width and maximum side slopes and longitudinal slopes. Additional right-of-way for the project improvements and treatment BMPs has been identified and is included on the project layout sheets.

Dry Weather Diversion
Dry weather flow diversion BMPs were dropped from further considered for this project because there is no dry weather flow.

Infiltration Devices
Infiltration device BMPs are not feasible for this project for the following reasons: through much of the project, the groundwater is too high; most of the soils are Hydraulic Soil Group C or D, limiting the usefulness of infiltration; for infiltration basins, a gravity outlet cannot be created because of the flat terrain; and along most of the project, there is no room within the right-of-way, and areas beyond the right-of-way are mostly prime farmland under cultivation.

Detention Devices
Detention basin BMPs are not feasible for this project for the following three reasons: There is not enough hydraulic head available for proper design; there are several locations where the groundwater is high; and along most of the project, there are significant constraints on acquiring new right-of-way, with areas beyond the existing right-of-way consisting mostly of prime farmland under cultivation. Detention as a treatment device may have negative hydraulic impacts because the project is located far downstream in the watershed, and detaining the peak runoff from the tributary shed may increase the peak runoff from the entire shed. If hydromodification control is a requirement of this project, then detention facilities can be designed for that mitigation, but they would not specifically function as treatment for the reasons stated.

Gross Solids Removal Devices
Litter is not on the 303(d) list or identified as a TMDL for the water bodies near the project; therefore, GSRDs are not incorporated.

Traction Sand Traps
Traction sand trap BMPs are not appropriate for the project because traction sand is not applied within the project limits.

Media Filters
Media filter BMPs are not considered for this project for the primary reason that the seasonally high groundwater table is likely to be too close to the invert of the filter. Depending on the specific location within the project limits, there are two other reasons that media filters are not an appropriate consideration: 1) there is not enough hydraulic head available for proper design, and 2) along most of the project, there is no room within the right-of-way, and areas beyond the right-of-way are completely developed.

Multi-Chambered Treatment Trains
Multi-chambered treatment train BMPs are not feasible for the project because the highway is not considered a “Critical Source Area” (CSA). The Cordelia Truck Scales within the project limits may be considered a CSA and may require a specific spill containment area. At this time, direction from the Department is to treat the general pavement area of the truck scales in the same fashion as stormwater runoff from highway pavement areas.

Wet Basins

Wet basin BMPs are not feasible for this project for the following reasons: There is not enough hydraulic head available for proper design; there are several locations where the groundwater is high; along much of the project, there is limited ability to purchase additional right-of-way, and areas beyond the right-of-way are largely developed; and along most of the route, there is not a permanent source of water available to maintain a permanent wet pool.

Maintenance BMPs (Drain Inlet Stenciling)

The project improvements are located within highway controlled access right-of-way. For inlets within the truck scales, inlet stenciling will be placed on inlets.

Effects of the No-Project Alternative

Under the No-Project Alternative, no new effects on water quality or stormwater runoff would occur.

2.2.3 Geology/Soils/Seismic/Topography

This section is adapted from the *Geologic and Seismic Section in Support of Environmental Document* (Parikh and Associates 2008).

Regulatory Setting

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

The following acts, regulations, and codes pertain to the proposed action.

- The Alquist-Priolo Earthquake Fault Zoning Act of 1972.
- The Seismic Hazards Mapping Act of 1990 (Public Resources Code [PRC] 2690).
- Seismic Hazards Mapping Regulations (14 California Code of Regulations [CCR] 3720–3725).
- The Uniform Building Code.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Department's Office of Earthquake Engineering is responsible for assessing the seismic hazard for the Department's projects. The current policy is to use the anticipated Maximum Credible Earthquake (MCE), from young faults in and near California. The MCE is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

Affected Environment

The proposed project lies in the southwest portion of Solano County, which is the western gateway to the Sacramento Valley. The majority of the project footprint is mapped as alluvial fan deposits (Holocene) (Qhf), the most aerially extensive Quaternary map unit in the region, and natural levee deposit (Holocene) (Qhl) and modern stream channel deposits (Qhc), as evaluated

with reference to the *Geologic Map and Map Database of Northeastern San Francisco Bay Region, California* (Graymer et al. 2002). Holocene fan deposits are the sediments deposited by streams emanating from mountains as debris flow, hyperconcentrated mudflow, or braided stream flows. The particle size of the deposits typically decrease down slope from the fan apex. In places, Holocene fan deposits (Qhf) may be only a thin veneer over Pleistocene deposits (Qpf). Holocene fan levee deposit (Qhl) is formed by streams that overtop their banks and deposits sediment adjacent to the channel.

Descriptions of the main geologic units (deposits) are provided below.

> **Qhf**—Alluvial fan deposits (Holocene): Moderately to poorly sorted and moderately to poorly bedded sand, gravel, silt, and clay deposited where streams emanate from upland regions onto more gently sloping valley floors or plains. Holocene alluvial fan deposits are mostly "undissected" by later erosion. In places, Holocene deposits may only form a thin layer over Pleistocene and older deposits.
>
> **Qhl**—Natural levee deposits (Holocene): Moderately to well sorted sand with some silt and clay deposits by streams that overtop their banks during flooding.

Countywide Setting

Geology

Solano County includes portions of the Sacramento and San Joaquin Valleys and a small part of the Coast Ranges. The Sacramento River–San Joaquin River Delta is underlain primarily by intertidal deposits, consisting of the remains of hydrophytic vegetation and predominantly fine-textured mineral deposits. The Montezuma Hills, in the southeastern corner of the county, are underlain by the poorly consolidated clayey sand of the Montezuma Formation. The nearby Potrero Hills are underlain by Markley sandstone, Nortonville shale, and marine sandstone of the Capay Formation. The narrow valleys scattered throughout the county and the large alluvial plain located north of the Delta and west of the Vaca Mountains are underlain primarily by unconsolidated Quaternary alluvium and sedimentary rocks. The Vaca Mountains and other portions of the Coast Ranges uplands in the county are composed primarily of Markley sandstone, sedimentary and metasedimentary rocks of the Upper Cretaceous Great Valley and Lower Cretaceous-Upper Jurassic Great Valley Sequences, and Sonoma Volcanics (Wagner and Bortugno 1987; Wagner et al. 1987).

Subsurface soil and groundwater conditions based on the as-built LOTBs are summarized in Table 2.2-2 below.

Table 2.2-2. Subsurface Soil and Groundwater Conditions

Location	Subsurface Soil Conditions	Groundwater Condition
I-80/Dan Wilson Creek and its vicinity	10 to 15 feet of hard clayey silt underlain by dense to very dense sand with some gravel	Not encountered to the elevation of -8 feet.
I-80/Suisun Creek and its vicinity	30 to 75 feet of interbedded layers of soft to very stiff lean clay and medium dense sands, underlain by dense clayey sand	Encountered at depths between 10 feet and 30 feet below ground surface to the minimum elevation of +30 feet
I-80/SR 12E interchange and its vicinity	45 to 60 feet of stiff to hard clay underlain by interbedded layer of stiff to hard clays and medium dense to dense sands	Encountered at the depth of 12 feet below ground surface to the minimum elevation of +27 feet

Groundwater may vary with the passage of time because of seasonal groundwater fluctuation, surface and subsurface flows, ground surface runoff, water level in adjacent creeks, and other factors that may not be present at the time of the reference investigations.

The truck scales facility is located primarily in existing open farmland. Subsurface soil conditions in this area may be relatively soft at this location. New fill is expected to be placed in these areas.

Seismic Conditions

The project is located in a seismically active part of northern California. Faults existing in the vicinity of the project area include Cordelia fault, Green Valley fault, and Vaca–Kirby Hill–Montezuma Hills/E fault. These faults are capable of producing earthquakes and may cause strong ground shaking in the project area. Figure 2.2-1 presents the locations of the fault systems relative to the project area.

Based on the study *Summary of Earthquake Probabilities in the San Francisco Bay Region: 2003–2032* (Working Group on California Earthquake Probabilities 2003), the Green Valley fault, which is part of the Concord–Green Valley fault, has a 4% probability of one or more major (magnitude greater than 6.7) earthquakes during the coming 30 years. According to the same study, there is a 62% probability of at least one earthquake of magnitude 6.7 or greater within the San Francisco Bay region before 2032.

MCE magnitudes for some of the major faults in the project region are summarized in Table 2.2-3 below. These MCE magnitudes represent the largest earthquakes that could occur on the given fault based on the current understanding of the regional tectonic structure.

Based on this and other calculations, the controlling fault is the Cordelia fault (magnitude 6.5). This site-specific seismic information would be used in designing the proposed project structures.

Table 2.2-3. Faults That Have the Potential to Cause Ground Shaking in the Project Area

Fault	Closest Distance to Project Area (mi)	Maximum Credible Earthquake (Magnitude)	Peak Bedrock Acceleration (PBA) (g)	Peak Ground Acceleration (PBA) (g)
Cordelia (Style: strike-slip)	0.9	6.5	0.6	0.6
Green Valley (Style: strike-slip)	20.	6.75	0.6	0.6
Vaca–Kirby Hill–Montezuma Hills/E (Style: not known/published)	6.7	6.75	0.4	0.5

Seismic Hazards/Liquefaction Potential

Because no active fault passes through the immediate project area, the potential for fault rupture within the project limits is considered relatively low.

Liquefaction is a phenomenon in which saturated cohesion-less soils are subject to a temporary but essentially total loss of shear strength associated with earthquake shaking. Submerged

cohesion-less sands and silts of low relative density are the type of soils that usually are susceptible to liquefaction. Clays generally are not susceptible to liquefaction. The project area is generally underlain by layers of stiff to hard lean clay and medium dense to dense sands underlain by dense sands. The majority of the submerged cohesion-less subsoils are primarily medium dense to very dense, and thus the liquefaction potential within the project area is generally moderate, except at Suisun Creek, where it is high.

Environmental Consequences

Based on the preliminary design of the proposed project, the potential to expose people or structures to substantial adverse effects, including the risk of loss, injury, or death, due to rupture of a known fault or landslides is considered low. No known faults run through the project area, however, faults are located in the vicinity. Most construction activities would occur on flat land previously used for agriculture. The project would not be located on expansive soil and thereby would not create a substantial risk to life or property.

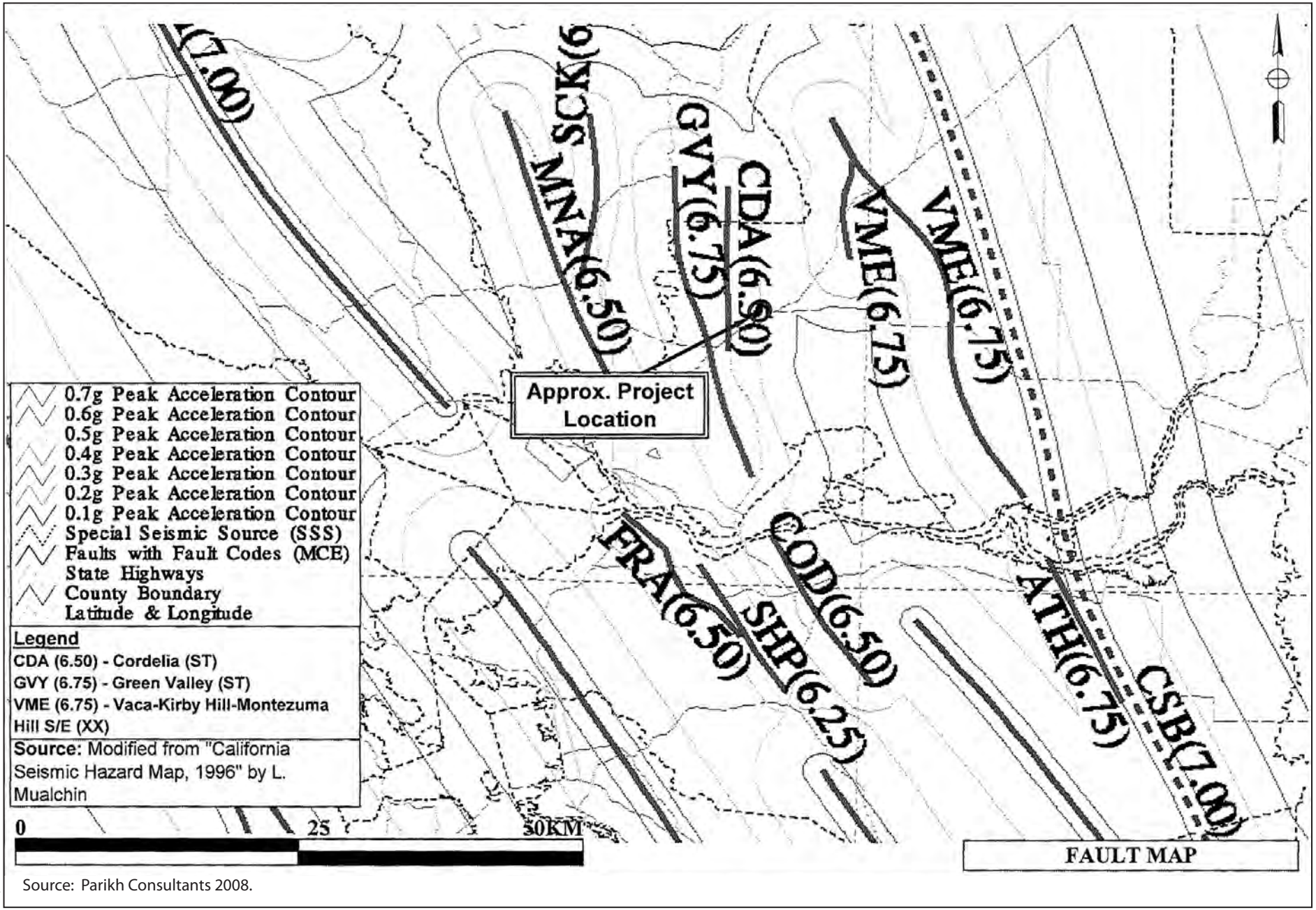
The proposed project would not be located on a geological unit or soil that is unstable or that would become unstable as a result of the project. The Green Valley fault passes through I-80 in the area of SR 12W/Jameson Canyon Road, and the Cordelia fault crosses I-80 near Green Valley Creek. Both faults are located west of the project area. Therefore, the potential for ground surface rupture as a result of faulting within this section of the project is considered relatively low.

The potential for the project area to experience liquefaction is moderate to high, while the potential for post-liquefaction settlement is considered moderate.

Impact GEO-1: Exposure of People to Injury or Structures to Damage from Strong Groundshaking, Seismic-Related Ground Failure, or Liquefaction

Groundshaking caused by an earthquake on any active and potentially active faults in the region could damage project facilities and result in injury to people using these facilities. While no known faults are located within the project area, they do occur in the vicinity. Soils in the immediate vicinity of Suisun Creek have a high potential for liquefaction. However, as part of its standard procedures, the Department will conduct a site-specific geotechnical investigation for seismic hazards and design all project facilities to avoid or minimize seismic hazards. This investigation of the alternative alignment will be conducted during final design to identify obvious indicators of recent fault displacement and groundshaking hazards and to ensure that project facilities are designed to avoid or minimize the potential for damage resulting from surface fault rupture, liquefaction, or landslides. The exact measures that would be used to avoid or minimize damage resulting from fault rupture could include reinforcing project-related structures and designing and constructing all facilities according to the most appropriate Uniform Building Code standards or the Department's requirements. Other measures could include:

- Removal or treatment of potentially liquefiable soils and sediments.
- Construction of edge containment structures (e.g., berms, dikes, retaining structures, compacted soil zones).
- Installation of drainage structures to lower the groundwater table.



Source: Parikh Consultants 2008.

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Figure 2.2-1
Fault Map

- In-situ ground densification.
- Other types of ground improvements.

With implementation of these measures, there would be no adverse effect related to the exposure of people to injury or structures to damage from strong groundshaking, seismic related ground failure, or liquefaction.

Impact GEO-2: Potential Construction-Related Soil Erosion and Sedimentation

Construction would involve some land clearing, grading, and other ground-disturbing activities that could temporarily increase soil-erosion rates during and shortly after project construction. Construction-related erosion could result in the loss of nonrenewable topsoil and adversely affect water quality in nearby surface waters. Implementation of Measure WQ-2 in Section 2.2.2 would reduce construction-related soil erosion and sedimentation impacts.

Impact GEO-3: Potential Damage to Facilities and Injury to the Public from the Presence of Expansive Soils

The Soil Survey of Solano County indicates that soils with high shrink-swell potential (i.e., potentially expansive soils) occur throughout the county. The presence of expansive soils could result in damage to project facilities and injury to people using these facilities. However, standard Department practice includes conducting site-specific geotechnical investigation for expansive soils, and the design of project facilities to avoid or minimize damage. A site-specific geotechnical investigation will be conducted during final design to identify areas with expansive soils and to ensure that project facilities are designed and constructed to avoid or minimize the potential for damage from the presence of expansive soils and sediments. The methods are likely to include the selective placement of expansive fill materials; use of imported, non-expansive fill materials; or other methods of ground improvement. With this investigation and corresponding design of project facilities, there would be no adverse effect related to the potential damage to facilities and injury to the public from the presence of expansive soils.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are necessary.

Effects of the No-Project Alternative

Under the No-Project Alternative, no new effects on geology, soils, seismicity, or topography would occur.

2.2.4 Paleontology

Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects. (e.g., the Antiquities Act of 1906 [16 USC 431–433] and the Federal-Aid Highway Act of 1935 [20 USC 78]). Under

California law, paleontological resources are protected by CEQA, 14 CCR Division 3, Chapter 1, Sections 4307 and 4309, and PRC Section 5097.5.

Affected Environment

The information in this section is based on the Paleontological Sensitivity Analysis for the I-80 Eastbound Cordelia Truck Scales Relocation Project (ICF Jones & Stokes 2008e).

The project area is located near the east flank of the Coast Ranges, in the east-central portion of California's Coast Ranges geomorphic province (e.g., Norris and Webb 1990).

The Coast Ranges province is characterized by en echelon northwest-trending mountain ranges formed over the past 10 million years or less by active uplift related to complex tectonics of the San Andreas fault/plate boundary system (e.g., Norris and Webb 1990; Buising and Walker 1995; Atwater and Stock 1998). The eastern range front is defined by faults that have been interpreted as contractile features associated with shortening along an axis approximately normal to the range front (e.g., Wong et al. 1988; Sowers et al. 1992; Unruh et al. 1992; see also Jennings 1977 for regional mapping) but also may accommodate a right-lateral component of motion locally (e.g., Richesin 1996).

The eastern Coast Ranges are broadly antiformal. At the general latitude of the project area, they consist of a central "core" of Mesozoic units—including mafic and ultramafic rock allied with the Coast Ranges ophiolite and lithologically diverse units of the Franciscan complex—flanked on the west by extensive exposures of Miocene volcanic rocks (Sonoma Volcanics) and on the east by an upward younging sequence of marine and terrestrial sedimentary units that ranges in age from Cretaceous (Great Valley Group) to Neogene (Monterey Group, San Pablo Group, Sonoma Volcanics, and Huichica Formation). The area's larger drainages preserve several generations of alluvial fan and stream deposits ranging in age from Pleistocene to Holocene (Wagner and Bortugno 1982; Graymer et al. 2002).

The project footprint extends through three geologic units: alluvial fan deposits (Holocene), Natural Level deposits (Holocene), and Sonoma Volcanics (ash-flow tuff).

- Alluvial fan deposits (Holocene) are moderately to poorly sorted sand, gravel, silt, and clay that occurs locally as a thin veneer over older deposits.
- Natural levee deposits are moderately to well-sorted sand, with some silt and clay. These deposit as low ridges adjacent to channels.
- Sonoma Volcanics and ash-flow tuff of Sonoma Volcanics are tuff, obsidian, flow rock, pyroclastic breccia, and intrusives of varying composition (rhyolite to basalt).

The vast majority of the project is located in what is characterized as Holocene fan deposits or Holocene fan levee deposits (Graymer et al. 2002) (Figure 2.2-2). These deposits are young and have no potential to contain paleontological resources (in contrast to older sediments associated with the Pleistocene). Test trenches mechanically excavated to a depth of 15 feet indicated that deposits were uniform throughout (ICF Jones & Stokes 2008d). The Holocene deposits appear to be more than 15 feet thick, and therefore excavation would not extend into underlying Pleistocene deposits that are more sensitive for paleontological resources.

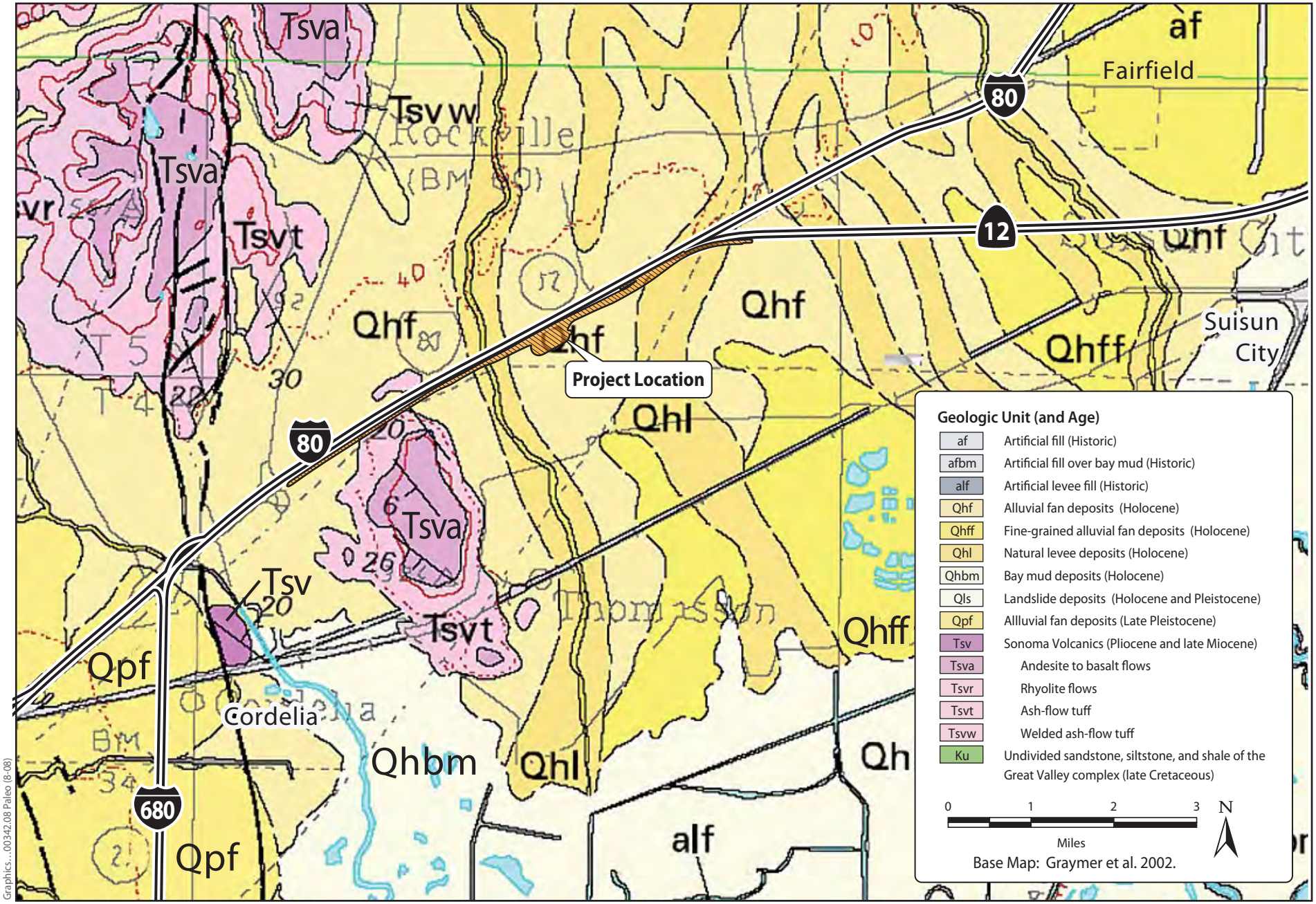

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Figure 2.2-2
Geologic Map of the Project Vicinity

There are 69 records of vertebrate fossils in Solano County (University of California Museum of Paleontology 2007a). No fossils are known to occur in the Holocene geologic units that make up the bulk of the project area. However, Sonoma Volcanics, which comprises a small portion of the project area, is considered very sensitive for paleontological resources. Of the 69 vertebrate fossil records in the county, 29 occur in this unit. These records include horse, deer, and unidentified mammals.

Environmental Consequences

In evaluating a proposed project's potential to disturb or damage significant paleontological resources, it is important to keep two points in mind. First, most vertebrate fossils are rare and therefore are considered important paleontological resources. Second, unlike archaeological sites, which are narrowly defined, paleontological sites are defined by the entire extent (both areal and stratigraphic) of a unit or formation. In other words, once a unit is identified as containing vertebrate fossils, or other rare fossils, the entire unit is a paleontological site (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995).

Impact PALEO-1: Potential Disturbance or Destruction of Paleontological Resources in a Sensitive Area

Based on the project footprint's geologic context, only a small portion of the project area is sensitive for significant fossils (Figure 2.2-3). The remainder of the project area is not sensitive for significant fossils because excavation would be within Holocene units that generally do not contain significant fossils. Test trenches have indicated that the Holocene unit extends to the depth of the maximum excavation.

Though the bulk of the deposits within the project area are not sensitive for paleontological resources, a small portion of the project area is sensitive. Construction in this area would occur within the Department's right-of-way and would parallel an existing utility line. Even though this area appears to be disturbed, subsurface deposits and significant fossils may be encountered during excavation.

It is the policy of the department to implement a mitigation and monitoring plan for construction in sensitive areas, such as the ash-flow tuff of the Sonoma Volcanics geologic unit, where significant fossils may be encountered.

The monitoring and mitigation strategy would include a site- and project-appropriate mitigation strategy consistent with the SVP guidelines (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995). For this project, mitigation would be likely to entail a combination of the following components:

- Monitoring by a qualified paleontologist during key portions of the project (typically, those involving substantial disturbance in previously undisturbed materials with paleontological sensitivity).
- A requirement that construction crews stop work if fossil materials are encountered.
- Appropriate recovery, documentation, and curation of fossil materials.

Because of the implementation of this procedure, this is not considered an adverse impact.

Impact PALEO-2: Potential Destruction of Buried Paleontological Resources or Unique Geologic Features

Though most of the project area is not sensitive for paleontological resources, and the area that is sensitive will be monitored by a qualified paleontologist, there is the remote possibility that excavations may extend into older deposits and that buried paleontological resources may be inadvertently unearthed during construction. Activities such as excavation and grading into native soils, and trenching for drainage systems could damage such resources. Caltrans has standard provisions (SPs) to address inadvertently discovered paleontological resources. These SPs may require that construction personnel stop all work in the vicinity of the discovery, protect the area, and notify the engineer. These measures would prevent any adverse effect.

Impact Paleo-3: Damage to Buried Paleontological Resources as a Result of Pile Driving

Pile driving up to 85 feet would occur as part of project construction. This driving could damage buried paleontological resources. However, because the areal extent of the pile driving would be small, this effect is not considered an adverse effect.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization , and/or mitigation measures are necessary.

Effects of the No-Project Alternative

Under the No-Project Alternative, the proposed truck scales would not be constructed. Therefore, no effect on paleontology would occur.

2.2.5 Hazardous Waste/Materials

The information below is summarized from the initial site assessment (ISA) prepared for the proposed project by Geocon Consultants, Inc. in September 2008 (Geocon Consultants 2008a). This section describes the existing conditions in the study area.

Regulatory Setting

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

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

- The Community Environmental Response Facilitation Act (CERFA) of 1992.

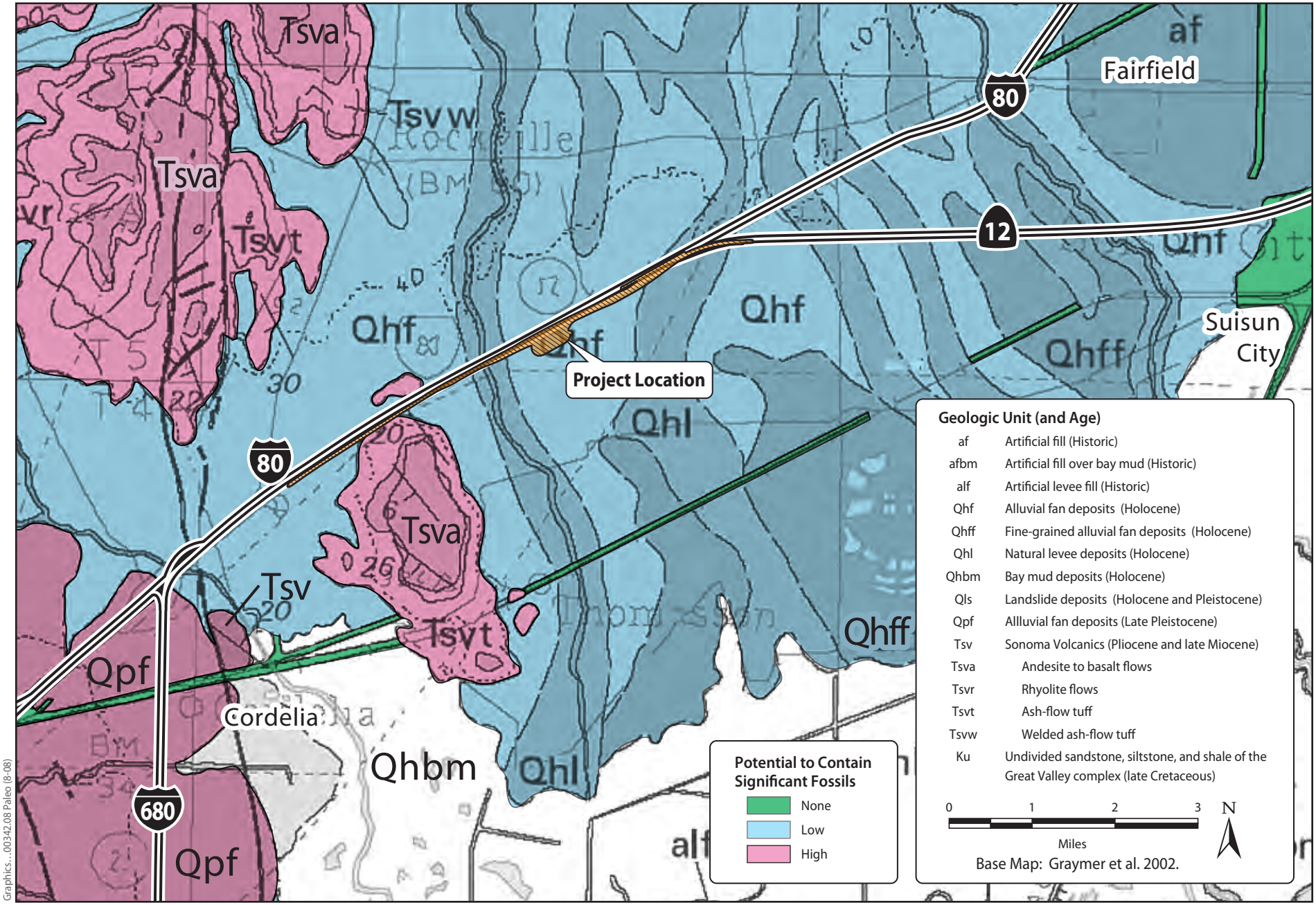


Figure 2.2-3
Paleontological Sensitivity Map of the Project Area

- The CWA.
- The Clean Air Act (CAA).
- The Safe Drinking Water Act.
- The Occupational Safety and Health Act (OSHA).
- The Atomic Energy Act.
- The Toxic Substances Control Act (TSCA).
- The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

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

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

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

Asbestos Regulations

Title 8 CCR Section 1529 regulates asbestos exposure in all construction work and defines permissible exposure limits and work practices. Typically, removal or disturbance of more than 100 square feet of material containing more than 0.1% asbestos must be performed by a registered asbestos abatement contractor, but associated waste labeling is not required if the material contains 1% or less asbestos. When the asbestos content of materials exceeds 1%, virtually all requirements of the standard become effective. With respect to potential worker exposure, notification, and registration requirements, the California Division of Occupational Safety and Health, known as Cal/OSHA, defines asbestos-containing construction material (ACCM) as construction material that contains more than 0.1% asbestos (8 CCR 341.6).

Aerially-Deposited Lead

Aerially-deposited lead (ADL) in soils adjacent to highways is attributed to the historic use of leaded gasoline. Areas of primary concern are soils along routes that have had high vehicle emissions from large traffic volumes or congestion during the time period when leaded gasoline was in use (generally prior to 1986). Typically, ADL is found in the top 2 feet of material in areas within the highway right-of-way. Soils within the Department's right-of-way that contain hazardous waste concentrations of ADL can be reused under the authority of variances issued by the California Department of Toxic Substances Control (DTSC). The variances allow stockpiling, transporting, and reusing soils with concentrations of lead below maximum allowable levels on the Department's right-of-way when specific conditions are met.

Affected Environment

The project area is characterized by a mix of undeveloped, residential, and agricultural use on the land south of the eastbound I-80 corridor from the western end of the project area at Dan Wilson Creek to Hale Ranch Road, located south of the off-ramp from SR 12E to Chadbourne Road. Anheuser-Busch's Budweiser brewery is located east of the I-80/SR 12E interchange, and land use adjacent to the I-80/SR 12E interchange consists of commercial development. A review of aerial photographs, combined with site reconnaissance, indicate that portions of the project area have undergone significant changes (roadway expansion and industrial and commercial development) between 1937 and the present. A Union Pacific Railroad track is south of the project area, oriented southwest-northeast. There are no schools, churches, airports, or other sensitive receptors within 0.25 mile of the project area.

Wildland fires are a seasonal hazard in northern California and represent more than half the fires occurring in the unincorporated areas. According to the California Department of Forestry and Fire Protection (CDFFP) Solano County Natural Hazard Disclosure (Fire) map (California Department of Forestry and Fire Protection 2000), the project area is not located in a region identified as a "wildland area that may contain substantial forest fire risks and hazards, or very high fire hazard severity zone."

According to information presented in the DOC Division of Mines and Geology map, naturally occurring asbestos is not indicated in the project footprint or in the vicinity of the project.

The eastbound I-80 truck scales facility consists of five structures and asphalt-paved areas. The structures include those listed below.

- A single-story, on-slab building that contains a control room and offices, is situated on the western portion of the facility; a modular addition is located on the southern portion of the building and contains locker rooms.
- A single-story on-slab building containing restrooms is located west of the office building.
- A modular structure used as a training classroom and a storage trailer are located between the restroom structure and the control room/office building.
- A three-sided metal-frame structure, on a concrete slab, containing four truck bays is situated on the northern portion of the facility; this structure contains an inspection shed.
- A storage building is located adjacent to the eastern side of the truck bay structure; the shed was observed to contain bags of an Oil-Dri product and miscellaneous tools.

CHP Leuitenant Mike Ferrell provided information regarding the operation and history of the existing truck scales facility. Lt. Ferrell indicated that ASTs and USTs have never been present at the facility. He also indicated that there were no wells at the facility. A sewage holding tank is located directly west of the control room/office building. The holding tank is accessed by two manholes and is connected by piping beneath the I-80 right-of-way to a 3-tank septic system that in turn is connected to the municipal sewer.

Aerially-Deposited Lead

Testing for levels of ADL was conducted within the existing right-of-way in the summer of 2008 and documented in the Draft Aerially-Deposited Lead Investigation Report (Geocon 2008b). More than 100 soil samples were collected at intervals along the project alignment approximately 2 feet from the edge of pavement. Another 24 samples were collected from borings located 10 and 15 feet further from the initial borings. These samples were analyzed for total and soluble lead concentrations. Based on the soil samples, the top one foot of soil in the central portion of the project area (from just west of Suisun Creek to approximately 1000 feet east of the proposed truck scale facility) would be classified as a California hazardous waste based on lead content. In this excavation scenario, the underlying soil would not be classified as hazardous waste based on lead content. Additionally, soil from the eastern and western portions of the project area, would not be classified as hazardous waste based on lead content.

Environmental Data Resources Database Search

Environmental Data Resources (EDR) performed a search of federal, state, and local databases for the project footprint and the surrounding area (Appendix E in Geocon Consultants 2008a). The following sections provide additional information regarding properties with potential hazardous materials located within approximately 0.25 mile upgradient of the project footprint.

Leaking Underground Storage Tank Listings

There are six facilities in the vicinity of the project area that are referenced on the leaking underground storage tank (LUST) database (Table 2.2-4).

Table 2.2-4. LUST Properties

Name	Address	Substance	Affected Media	Status
Old Fruitbowl Mobil Station, Valine property	4000 Russell Road	Petroleum hydrocarbons	Soil and groundwater (drinking water aquifer)	Case closed in January 2008
Fairfield Suisun Sewer District	1010 Chadbourne Road	Diesel	Soil and groundwater	Case closed in 1998
Mangels Ranch Property.	287 Suisun Valley Road	Gasoline	Soil	Case closed in 1998
Texaco Terminal Stations Inc./JS&J Ser Shell	100 Suisun Valley Road	Gasoline	Soil and groundwater	Case closed in 2001
Shell	4450 Central Way	Gasoline	Soil and groundwater	Case closed in 1996
Campbell's Carpet	4731 Central Way	Gasoline and methyl tertiary butyl ether (MTBE)	Soil and groundwater	Case closed in 1998

Underground Storage Tank/Aboveground Storage Tank Listings

The EDR report notes that five facilities located at or in the vicinity of the project area contain registered underground storage tanks (USTs) or aboveground storage tanks (ASTs). The listed facilities include:

- ARCO AM/PM, Cordelia, 4449 Central Place.
- Nella Oil Co. #28 Flyers, 4444 Central Place.
- Anheuser-Busch, 3101 Busch Drive.

- The Valine property at 4000 Russell Road.
- The Department, with an address of Russell (I-80) Road, Suisun City, listed as an inactive UST facility.

Resource Conservation and Recovery Act Small Quantity Generator, Facility Index System, and HAZNET Listings

Three facilities in or in the vicinity of the project area are referenced on the HAZNET database: Anheuser-Busch, at 3101 Busch Drive; Wal-Mart, at 300 Chadbourne Road; and Texaco Terminal Stations, at 100 Suisun Valley Road.

Based on a review of the listings, the Anheuser-Busch facility may be located at property proposed for partial Department acquisition as part of the proposed project. In addition to the UST database, this facility also is listed in the following: the Emergency Response Notification System (ERNS); the RCRA Small Quantity Generator (SQG); the Facility Index System (FINDS); HAZNET, which lists facilities that have filed hazardous waste manifests; the Toxics Release Inventory System (TRIS); and the Aerometric Information Retrieval System (AIRS).

Information available from the EDR report regarding the Anheuser-Busch facility indicates that it is an RCRA-SQG, which generates between 100 and 1,000 kilograms (kg) of hazardous waste per month and was a large quantity generator (LQG) until 2004. The FINDS listing relates to chemical use, storage, and disposal. Wastes removed from the facility include contaminated soil from site cleanups and asbestos-containing waste. An ERNS site report for the facility documents an ammonia spill from a refrigeration unit in 1990. In addition, the facility reportedly is registered with the BAAQMD, AIRS, and TRIS, for air emissions. No violations are reported for the facility.

The "Orphan Summary" section in the EDR report identifies properties that have incomplete address information and could not be specifically plotted. Two properties listed on the "Orphan Summary" are located within or adjacent to the project area.

- "Eastbound I-80 at CHP Scales in Fairfield" has a reported ERNS listing because of a spill of anhydrous ammonia from a truck onto the ground surface in 1993. The incident reportedly did not affect any waterways or require cleanup.
- "Fairfield STP, located south of Highway 80 and Busch Lane, east of Abernathy," is listed as a known or suspected abandoned, inactive or uncontrolled hazardous waste site, with no further remedial action planned. The site reportedly was archived in 1989.

Site Reconnaissance

Site reconnaissances were performed on April 16 and May 8, 2008. The purpose of the reconnaissances was to survey the existing eastbound I-80 and SR-12E corridors, adjacent roadway connectors, and private property conditions within and adjacent to the ESA. A walkover of the truck inspection facility also was performed. Reconnaissance was conducted from public thoroughfares and Department-owned property to attempt to identify visual indicators of potential hazardous waste facilities/impacts.

Site plans depicting the project boundaries and potential hazardous waste facilities with indicated map identification numbers (Map ID Nos.) are presented in Figures 2.2-4a and 2.2-4b. Table 2.2-5 lists the identified facilities, along with their respective Map ID Nos., the potential impact (low and moderate risk) on the project ESA, and potential right-of-way acquisitions.

Environmental Consequences

This analysis of potential impacts is based on the ISA, which was based on information derived from the following sources.

- A review of as-built and right-of-way plans.
- A review of environmental records, conducted using a commercial database search, for current and past areas with records of hazardous material storage, use, generation, spills, disposal, investigations, and remediation as readily available in selected agency records.
- Interviews with pertinent agency and site personnel regarding site use and a history of potential hazardous materials use, spills, investigations, and remediation.
- A review of historical aerial photographs over several different time periods for evidence of past land uses involving disposal and other practices.

The ISA identified the following potential hazardous materials/waste conditions.

- **Impacts associated with nearby agricultural uses:**
  - Aerially applied chemicals associated with agricultural use, which could act as a respiratory irritant.
  - Soil impacts associated with pesticides, herbicides, petroleum hydrocarbons, and metals from agricultural use.
- **Other soil impacts:**
  - Contaminated soil associated with leaking storage tanks, and sanitary sewer pipelines.
- **Impacts associated with traffic or roadway maintenance:**
  - ADL.
  - Lead-containing paint (LCP) associated with yellow pavement striping.
- **Impacts associated with the removal or modification of facilities or structures:**
  - ACCMs.
  - LCP.
  - Treated-wood waste.

ADL is present in the surface and near-surface soils as a result of past emissions from vehicles powered by leaded gasoline. Yellow thermoplastic and paint striping, potentially containing lead chromate, is present on roadway surfaces within the project area. The truck inspection facility structure may harbor ACMs and possible LCPs. Potential LCP and ACMs also may be present in bridge construction materials within the project area. A review by Geocon Consultants (2008a) shows that plans for the Suisun Creek bridge indicate the use of asbestos sheet packing as guard

rail shims on the bridge. The Suisun Creek bridge would not be dismantled or modified during this project.

Impact HAZ-1: Potential for Exposure of Construction Workers or Nearby Land Uses to Previously Unknown Hazardous Materials

The ISA indicates that the ESA generally has a low risk of previously unreported hazardous materials that could be discovered during project construction. However, previously unreported hazardous materials could be discovered during project construction. Standard Department procedures include development of a health and safety plan to address worker health and safety. As part of this plan, the location of underground pipeline crossings will be determined and safety plans will be prepared for excavation work at these pipeline crossings before construction. These plans will include emergency plans in the event of a pipe rupture or if a preexisting leak has occurred. The safety plan will also include remediation plans to handle and remove contaminated soil. As necessary, a health and safety plan will be prepared to address worker safety when working with potentially hazardous materials, including biological contaminants, potential LCPs, soils potentially containing ADL, and other construction-related materials within the right-of-way for any soil disturbance. With development of this plan, there would be no adverse effect related to potential exposure of construction workers or nearby land uses to previously unknown hazardous materials.

Impact HAZ-2: Potential for Exposure of Known Hazardous Materials to Humans or the Environment

The ISA indicates that the project area generally has the potential for hazardous materials in the form of heavy metals, such as chromium and lead in yellow pavement striping; ACCMs; soils contaminated with pesticides, herbicides, and metals; treated-wood waste; bridge rail post sulfur; and petroleum hydrocarbons. In addition, the Draft ADL investigation report (Geocon 2008b) confirmed the presence of ADL within the project area. Soil sampling and analysis to evaluate ADL in shallow soil within the existing eastbound I-80 right-of-way indicates that the top one foot of soil in the central portion of the project area would be classified as hazardous waste based on lead content. A sewage holding tank and associated pump station are located at the existing truck scales facility. These structures and their contents and other subsurface utilities present in the project area would be removed and disposed in accordance with county and state requirements.

Yellow thermoplastic and paint striping that is removed during planned roadway improvements may require special handling and disposal requirements unless combined with sufficient asphalt grindings per the Department's Special Provisions. Asbestos-containing pipe, treated wood, and the use of molten sulfur for bridge rail posts also may be encountered during construction of the planned highway improvements. Any encountered asbestos-containing pipe, treated-wood waste, and bridge rail post sulfur would require proper handling and disposal in accordance with regulatory requirements.

Other potential sources of contamination include aerially applied chemicals during agricultural use of adjacent parcels that could present a respiratory irritant to construction workers.

Table 2.2-5. Summary of Identified Potential Hazardous Waste Facilities and Recommendations

Map ID No.	Facility	Address	Assessor's Parcel Number	Potential Impact on Right-of-Way and Acquisitions	Information Source(s)	Known or Potential Environmental Impacts	Regulatory Status	Potential Impact on the Proposed Project and Recommendations
1	**I-80 eastbound truck inspection facility**	**Existing right-of-way in western portion of project environmental study area**	**N/A**	**Moderate impact on existing I-80 right-of-way**	**Recon**	**Existing structures to be removed**	**N/A**	**Asbestos and lead-containing paint surveys should be conducted at the TIF prior to any planned renovation or demolition to evaluate worker health and safety, abatement and waste disposal options and comply with applicable regulations, including Bay Area Air Quality Management District requirements. Subsurface structures, including sewage holding tanks, should be removed and disposed in accordance with state and county requirements.**
2	Former Old Fruit Bowl Mobil Station (Valine Ranch property)	4000 Russell Road	0027-271-060	Low impact on environmental study area	SCDRM files LUST	The property is a former service station (operated from 1946 to 1972) located west of and adjacent to I-80 north of the project environmental study area. Five USTs removed in 2000 under observation by SCDRM. On-site petroleum impacts on soil and groundwater identified. Impacted soil over-excavated and stockpiled for onsite remediation and groundwater pumped for offsite disposal. Residual petroleum impacted soil stockpile remains on-site.	SCDRM and SFRWQCB approved case closure in January 2008	This facility is located north of I-80 westbound and presents a low risk of affecting the project site, as petroleum-impacted soil has been excavated and is stockpiled on-site. According to the closure document, stockpiled soil is to reused on site as existing road base or disposed.

Table 2.2-5. Continued

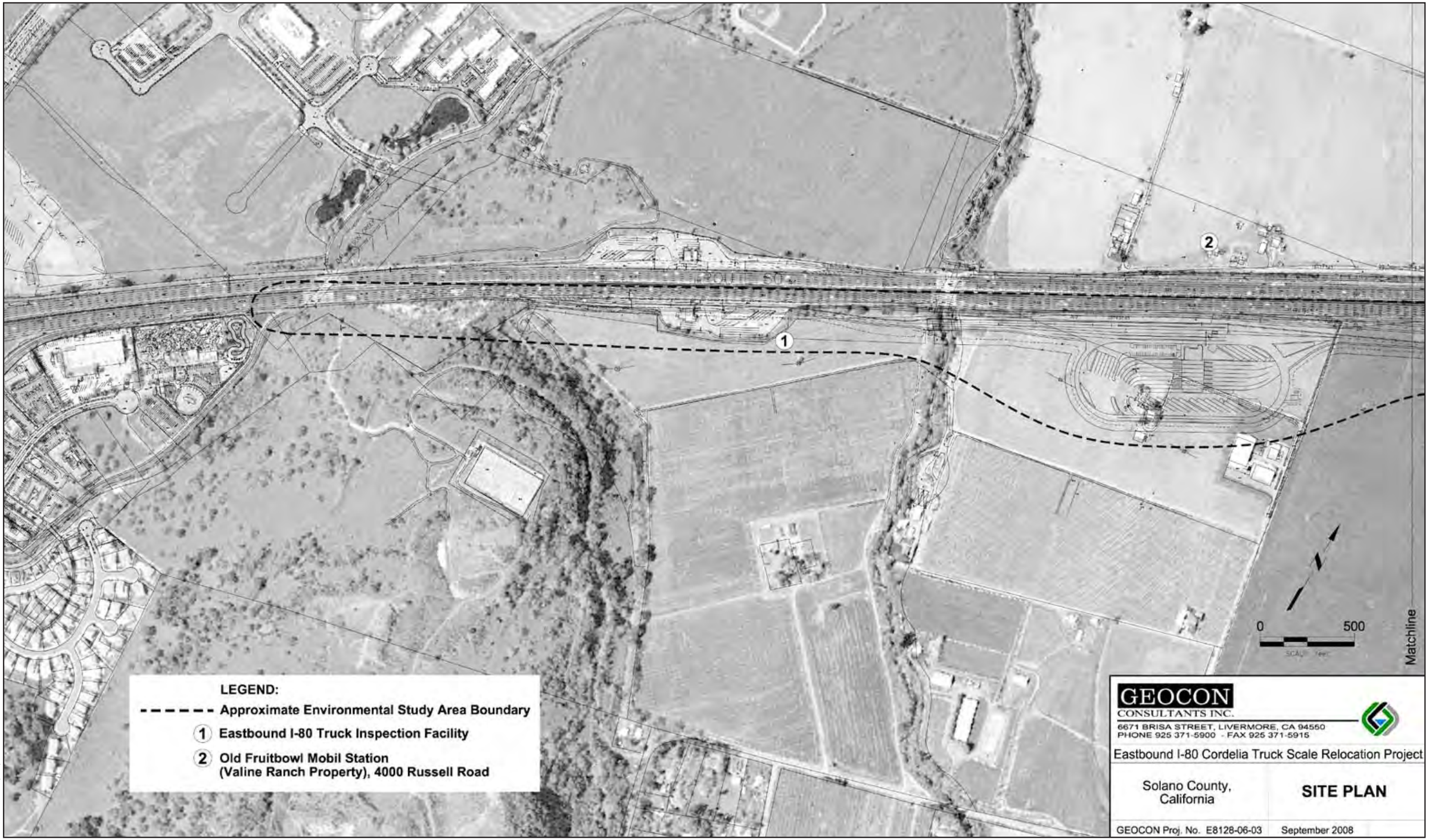
Map ID No.	Facility	Address	Assessor's Parcel Number	Potential Impact on Right-of-Way and Acquisitions	Information Source(s)	Known or Potential Environmental Impacts	Regulatory Status	Potential Impact on the Proposed Project and Recommendations
3	Moore Tractor Co.	4088 Russell Road	0027-510-040	Low impact on environmental study area	Recon prior Phase I SCDRM files	Currently an operating tractor sales and service facility. SCDRM inspections reported bulk automotive fluids stored at the property including diesel fuel (500-gallon AST), engine oil, and waste oil. A cement sump associated with a wash rack was also noted. Past SCDRM violations have included an overflowing sump, onsite automotive fluid spills, and improper drum storage.	No pending regulatory action or active violations are noted for this facility	This facility is located southwest of the I-80/SR 12E interchange and north of the project environmental study area. The facility presents a low risk of impacting the project Site based on proposed construction area boundaries.
4	Concrete Pipe Distributors	4974 Abernathy Road	0027-510-070	Low impact on environmental study area	Recon prior Phase I	Currently a concrete pipe distributor. A prior UST was reportedly removed in approximately 1985. No SCDRM information regarding the removal. 55-gallon drums from the adjacent Moore Tractor Co. were observed stored at the facility in 1994.	No pending regulatory action or active violations are noted for this facility	This facility is located north of eastbound I-80 and presents a low risk of affecting the project site based on proposed construction area boundaries.
5	Pacific Gas & Electric substation	South of the I-80/ SR 12E interchange	0027-252-080	Low impact on environmental study area	Recon	Active PG&E electrical substation with fluid-cooled pad-mounted transformers; possible polychlorinated biphenyl (PCB) compound impacts on soil at the facility.	No pending regulatory action or active violations are noted for this facility	This facility is located south of eastbound I-80, in the central portion of the project environmental study area, and presents a low risk of affecting the project site based on proposed construction area boundaries.
N/A	**I-80/SR 12E**	**Right-of-way acquisition**	**N/A**	**Moderate impact on new right-of-way**	**Recon**	**Properties with current or historical agricultural land use may contain residual agricultural chemicals in shallow soil, including APNs 0027-252-080, 0027-270-080, 0027-272-140, 0027-272-160, 0027-272-180.**	**N/A**	**Conduct soil and groundwater investigations for pesticides, herbicides, petroleum hydrocarbons, and metals as applicable on land proposed for full or partial acquisition based on past agricultural land usage to evaluate soil reuse and soil/groundwater disposal options.**

Table 2.2-5. Continued

Map ID No.	Facility	Address	Assessor's Parcel Number	Potential Impact on Right-of-Way and Acquisitions	Information Source(s)	Known or Potential Environmental Impacts	Regulatory Status	Potential Impact on the Proposed Project and Recommendations
N/A	**I-80/SR 12E**	**Right-of-way acquisition**	**N/A**	**Moderate impact on new right-of-way**	**Recon**	**Existing structures within the project environmental study area and on parcel takes requiring demolition.**	**N/A**	**Asbestos and lead-containing paint surveys should be conducted prior to any planned renovation or demolition of buildings either within the Caltrans right-of-way or on properties proposed for full or partial takes to evaluate worker health and safety and abatement and waste disposal options, and to comply with applicable regulations, including Bay Area Air Quality Management District requirements.**
N/A	**I-80/SR 12E**	**Existing corridors**	**N/A**	**Existing I-80/SR 12 east right-of-way**	**Recon prior nearby ADL study**	**Planned excavation and grading within existing right-of-way.**	**N/A**	**Perform shallow soil sampling to evaluate potential ADL in soil for worker health and safety and soil disposal options related to historical automobile exhaust emissions.**
N/A	**I-80/SR 12E**	**Existing corridors**	**N/A**	**Existing I-80/ SR 12E right-of-way**	**Recon**	**Planned excavation and pavement work within existing right-of-way.**	**N/A**	**Further evaluate potential hazardous waste issues or provide construction special provisions for thermoplastic traffic paint, asbestos pipe, bridge rail post sulfur and proper abandonment of wells, septic systems, and encountered unidentified USTs.**

Notes: Properties and locations listed in **bold** print have a moderate risk of affecting the project environmental study area and are recommended for further evaluation.

SCDRM = Solano County Department of Resource Management.
N/A = not applicable.
UST = underground storage tank .
SFBRWQCB = San Francisco Bay RWQCB.
AST = aboveground storage tank.
LUST = leaking UST.
ADL = aerially deposited lead.
I = interstate.
SR = State Route.
TIF = truck inspection facility.
Recon = reconnaissance.



02166.02 IS/MND (1-09)

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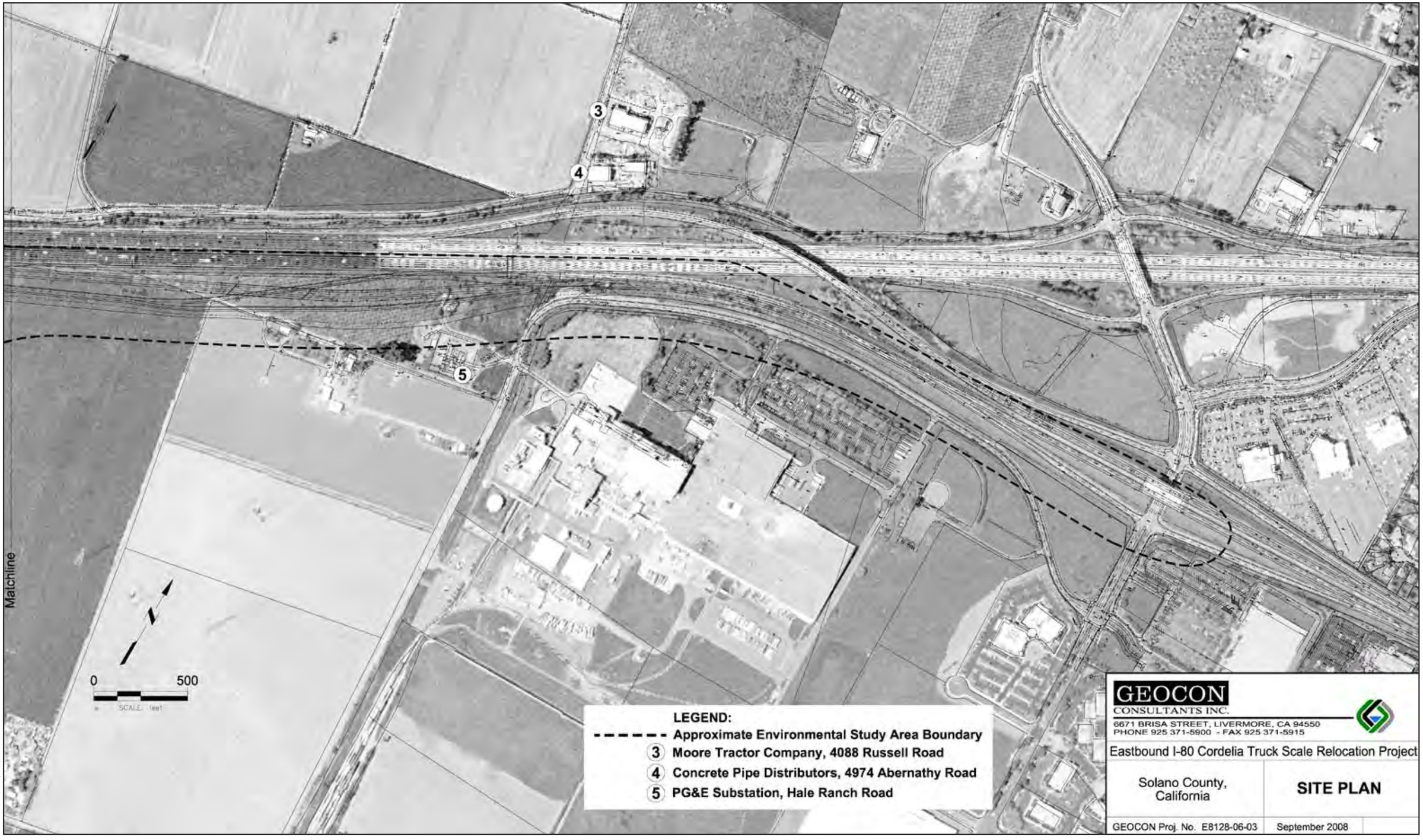
Figure 2.2-4a
Site Plan



02166.02 IS/MND (1-09)

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Figure 2.2-4b
Site Plan

Construction may require the movement or disposal of soils or materials containing some or all of these hazardous materials.

Standard Department procedures include the conduct of sampling, testing, removal, storage, transportation, and disposal of yellow striping along existing roadways. It will be ensured that sampling and testing of yellow pavement striping scheduled for removal is performed to determine if lead is present. All aspects of the proposed project associated with removal, storage, transportation, and disposal will be in strict accordance with appropriate regulations. Disposal of the stripes will be at a Class 1 disposal facility.

Standard Department procedures include disposal of soils contaminated with ADL, pesticides, and herbicides in accordance with appropriate regulations. Contaminated soil will be handled or disposed of in accordance with DTSC requirements. Under the DTSC Variance, this soil may be reused onsite if the excavated soil is placed under clean fill or pavement and a minimum of 5 feet above the maximum water table elevation.

In accordance with standard Department procedures, all aspects of the removal, storage, transportation, and disposal of soil subsequently characterized as a hazardous waste will be conducted in strict accordance with the appropriate regulations. The contractor will prepare a health and safety plan to address worker safety when working with potentially contaminated soils during construction.

Standard Department procedures also include the timing of construction to avoid exposure of construction workers to respiratory irritants from aerially applied chemicals. The Department or the appropriate local agency will ensure that the contractor coordinates the timing of aerially applied chemicals with the individual growers on parcels within or adjacent to the project area to avoid effects on workers during construction.

With the implementation of the relevant standard Department procedures described above, there would be no adverse effects related to the potential for exposure of known hazardous materials to humans or the environment.

Impact HAZ-3: Potential for Exposure of Humans and the Environment to Hazardous Conditions from the Accidental Release of Hazardous Materials

Construction would involve the use of heavy equipment, small quantities of hazardous materials (e.g., petroleum and other chemicals used to operate and maintain construction equipment), and larger quantities of potentially hazardous road construction materials (i.e., blacktopping materials) that may result in hazardous conditions on site. In addition, sanitary sewer pipelines may cross or exist within the planned roadway construction alignment. If pre-existing leaks are encountered, or if pipelines are ruptured during construction, construction workers or nearby land uses could be exposed to biological contamination. However, implementation of standard Department procedures to ensure worker safety would reduce the severity of this effect and therefore, it is not considered adverse.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization , and/or mitigation measures are necessary.

Impacts of the No-Project Alternative

Under the No-Project Alternative, no new impacts related to hazardous waste or hazardous materials would occur.

2.2.6 Air Quality

This chapter describes the environmental setting (existing conditions and regulatory setting) for air quality relating to the proposed project; the impacts on air quality that would result from the proposed project; and measures that would reduce these impacts, if applicable. The information contained in this section is based upon the *Interstate-80 Eastbound Cordelia Truck Scale Relocation Project Air Quality Technical Report* which is hereby incorporated by reference in its entirety (California Department of Transportation 2008).

Regulatory Setting

The proposed project is located in the Solano County portion of the BAAQMD. The BAAQMD has jurisdiction over air quality issues in southwestern Solano County, in addition to the counties surrounding the San Francisco Bay. It administers air quality regulations developed at the federal, state, and local levels. Federal, state, and local air quality regulations applicable to the proposed project are described below.

Federal Requirements

The federal CAA, enacted in 1970 and amended twice thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The EPA has established national ambient air quality standards (NAAQS) for criteria pollutants (Table 2.2-6). Criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), particulate matter 10 microns or less in diameter (PM10), particulate matter 2.5 microns or less in diameter (PM2.5), and lead. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as the protection of crops, the protection of materials, or the avoidance of nuisance conditions).

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO_2).

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and particulate matter (PM). California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as Metropolitan Transportation Commission (MTC) for Solano County and

Table 2.2-6. Ambient Air Quality Standards Applicable in California and the Attainment Status of Solano County

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria		Attainment Status of Solano County[a]	
			California	National	California	National	California	National	California	National
Ozone	O_3	1 hour	0.09	N/A	180	N/A	If exceeded	If exceeded more than 3 days in 3 years	Serious nonattainment	N/A
		8 hours	0.070	0.075	137	147	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area	Not yet classified	Marginal nonattainment
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded more than 1 day per year	Attainment	Marginal maintenance[b]
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded more than 1 day per year	Attainment	Unclassified/ attainment
(Lake Tahoe only)		8 hours	6	N/A	7,000	N/A	If equaled or exceeded	N/A	N/A	N/A
Nitrogen dioxide	NO_2	Annual average	0.03	0.053	N/A	100	N/A	If exceeded	N/A	Attainment
		1 hour	0.18	N/A	338	N/A	If exceeded	If exceeded	Attainment	N/A
Sulfur dioxide	SO_2	Annual average	NA	0.030	N/A	80	N/A	If exceeded	N/A	Attainment
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded more than 1 day per year	Attainment	Attainment
		1 hour	0.25	N/A	655	N/A	N/A	N/A	Attainment	N/A
Hydrogen sulfide	H_2S	1 hour	0.03	N/A	42	N/A	If equaled or exceeded	N/A	Unclassified	N/A
Vinyl chloride	C_2H_3Cl	24 hours	0.010	N/A	26	N/A	If equaled or exceeded	N/A	No designation	N/A
Inhalable particulate matter	PM10	Annual arithmetic mean	N/A	N/A	20	50	If exceeded	If exceeded	Nonattainment	Unclassified/ attainment
		24 hours	N/A	N/A	50	150	If exceeded	If average 1% over 3 years is exceeded	Nonattainment	Unclassified/ attainment
	PM2.5	Annual arithmetic mean	N/A	N/A	12	15	If exceeded	If exceeded	Nonattainment	Unclassified/ attainment
		24 hours	N/A	N/A	N/A	35	N/A	If average 2% over 3 years is exceeded	N/A	Unclassified/ attainment
Sulfate particles	SO_4	24 hours	N/A	N/A	25	N/A	If equaled or exceeded	N/A	Attainment	N/A
Lead particles	Pb	Calendar quarter	N/A	N/A	N/A	1.5	N/A	If exceeded more than 1 quarter per year	N/A	No designation
		30 days	N/A	N/A	1.5	N/A	If equaled or exceeded	N/A	Attainment	N/A

Source: California Air Resources Board 2008a.

Notes: All standards are based on measurements at 25ºC and 1 atmosphere pressure; national standards shown are the primary (health effects) standards; N/A = not applicable.

[a] the portion of Solano County within the San Francisco Bay Area Air Basin.

[b] Urbanized areas described in the Technical Support Document from 3/29/85, 50 CFR 12540, in U.S. Environmental Protection Agency 2008b.

the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the RTP is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

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

Ozone and its precursors, reactive organic gases (ROG) and oxides of nitrogen (NO_x); sulfates; visibility reducing particles; NO_2; and PM10 and PM2.5 are considered to be regional pollutants because they affect air quality on a regional scale. NO_2 reacts photochemically with ROG to form ozone, and PM10 and PM2.5 can originate from chemical reactions of atmospheric chemicals, including NO_x, sulfates, nitrates, and ammonia. These processes can occur at some distance downwind of the source of pollutants. Pollutants such as CO, SO_2, and lead are considered to be local pollutants because they tend to disperse rapidly with distance from the source. PM10 is considered a localized pollutant, as well as a regional pollutant, because direct emissions of PM10 from automobile exhaust can accumulate in the air locally near the emission source.

The CAA requires states to submit a state implementation plan (SIP) for areas designated as nonattainment for federal air quality standards. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failing to submit a plan or secure approval could lead to a denial of federal funding and permits. In cases where the SIP is submitted by the state but fails to demonstrate achievement of the standards, the EPA is directed to prepare a federal implementation plan.

Transportation Conformity

Transportation conformity, a concept introduced in the 1977 federal CAA, requires that no federal dollars be used to fund a transportation project unless it can be clearly demonstrated that the project would not cause or contribute to violations of the NAAQS. Conformity requirements were made substantially more rigorous in the CAA amendments of 1990. The U.S. Department of Transportation and the EPA developed guidance for determining conformity of transportation plans, programs, and projects in November 1993 in the transportation conformity rule (40 CFR 51 and 40 CFR 93).

Conformity for transportation projects typically is assessed by evaluating whether a project is included in a conforming RTP or a transportation improvement program (TIP), or both. Any project listed in an RTP or a TIP must demonstrate conformity with the SIP. The local metropolitan planning organization (MPO) is responsible for the preparation of regional transportation plans and associated demonstration of conformity to the SIP. In addition, a local pollutant impact analysis usually is required.

In Solano County, the MTC is the responsible MPO and develops the RTP and TIP for the region. The RTP and TIP include projects whose emissions are within the budget planned in the SIP, with the goal of attaining the NAAQS. The TIP is also in accord with the EPA's transportation conformity rule as it pertains to the attainment of air quality standards in the BAAQMD. The description of the project is the same in the RTP, TIP, and in this environmental document.

The federally required RTP and TIP are comprehensive listings of all transportation projects that receive federal funds or that are subject to a federally required action, such as a review for impacts on air quality. The TIP sets forth the MTC's investment priorities for transit and transit-related improvements, highways and roadways, and other surface transportation improvements in the Solano County region. The MTC prepares and adopts the TIP every 2 years.

In addition to demonstrating that a proposed project has been identified in an approved regional transportation improvement program (RTIP) and incorporated in an EPA-approved SIP or demonstrating that a proposed project is exempt from conformity requirements, agencies constructing transportation projects must demonstrate that they do not exacerbate an existing violation of an NAAQS or create a new exceedance under Section 93.114 of the EPA transportation conformity regulations. The section states that "there must be a currently conforming regional transportation plan and transportation improvement program at the time of project approval." The proposed project (identified as reference number 22701 for the Cordelia Truck Scales' relocation) is included in the *Transportation 2030 Plan* and the *2007 Transportation Improvement Program*. The MTC adopted the 2007 TIP on March 9, 2007. The FHWA made its conformity determination for the *Transportation 2030 Plan* on March 17, 2005, and the *2007 Transportation Improvement Program* on October 4, 2007. The proposed project (identified as reference number 22701 for the Cordelia Truck Scales Relocation) is included in the *Transportation 2030 Plan* and the *2007 Transportation Improvement Program.*

With respect to the first criterion, we conclude that the project's operational emissions (which include the ozone precursors ROG and NO_x) meet the transportation conformity requirements imposed by the EPA and the BAAQMD. Although the proposed project is a conforming project for regional emissions, it requires both a CO and PM10/PM2.5 "hot spot" analysis to determine any localized emissions effects. The PM hot spot analysis is not required for project level conformity because the area is in attainment or unclassified for the national PM10 and PM2.5 standards.

Typically, evaluating whether a project is included in a conforming RTP or TIP is done to determine transportation conformity for ozone precursors. Because PM10/PM2.5 and CO are localized pollutants, the determination of transportation conformity for these pollutants is assessed by identifying whether the proposed project would generate elevated hot-spot

concentrations for these two pollutants. For PM10 and PM2.5, the determination of conformity is qualitative; for CO, the determination is quantitative.

Mobile Source Air Toxics

The CAA of 1990 identified 188 pollutants as hazardous air pollutants (HAPs), also known as air toxics. From this list, the EPA identified a group of 21 as mobile source air toxics (MSATs) in its final rule, "Control of Emissions of Hazardous Air Pollutants from Mobile Sources" (66 Federal Register [FR] 17235) in March 2001. From this list of 21 MSATs, the EPA has identified six MSATs—benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene—as being priority MSATs. To address emissions of MSATs, the EPA has issued a number of regulations that will dramatically decrease MSATs through cleaner fuels and cleaner engines. The area of air toxics analysis is a new and emerging issue and is a continuing area of research. Although much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques available for assessing project-specific health impacts from MSATs are limited. Given the emerging state of the science and of project-level analysis techniques, there are no established criteria for determining when MSAT emissions should be considered a significant issue in the NEPA context. The FHWA currently is preparing guidance as to how mobile source health risks should factor into project-level decision-making under NEPA. In addition, the EPA has not established regulatory concentration targets for the six relevant MSAT pollutants appropriate for use in the project development process.

In light of the recent development regarding MSATs, the FHWA has issued interim guidance for the assessment of MSATs in NEPA documents for highway projects. The FHWA has developed a tiered approach for analyzing MSATs in NEPA documents. Depending on the specific project circumstances, FHWA has identified three levels of analysis, listed below.

1. No analysis for exempt projects or projects with no potential for meaningful MSAT effects.

   The types of projects included in this category are:

   – Projects qualifying as a categorical exclusion under 23 CFR 771.117(c).

   – Projects exempt under the CAA conformity rule under 40 CFR 93.126.

   – Other projects with no meaningful impacts on traffic volumes or vehicle mix.

   Projects that are categorically excluded under 23 CFR 771.117(c), or are exempt under the CAA pursuant to 40 CFR 93.126, require no analysis or discussion of MSATs. Documentation sufficient to demonstrate that the project qualifies as a categorical exclusion or exempt project will suffice. For other projects with no or negligible traffic impacts, regardless of the class of NEPA environmental document, no MSAT analysis is required.[1] However, the project record must document the basis for the determination of "no meaningful potential impacts" with a brief description of the factors considered.

[1] The types of projects categorically excluded under 23 CFR 771.117(d) or exempt from conformity under 40 CFR 93.127 do not warrant an automatic exemption from an MSAT analysis, but they usually will have no meaningful impact.

2. Qualitative analysis for projects with low potential MSAT effects.

   This category covers a broad range of projects, as projects included in this category are those that serve to improve operations of highway, transit, or freight without adding substantial new capacity or creating a facility that is likely to meaningfully increase emissions.

   The FHWA anticipates that most highway projects will fall into this category. Any projects not meeting the threshold criteria for higher potential effects set forth in subsection 3 below and not meeting the criteria in subsection 1 above should be included in this category. Examples of these types of projects are minor widening projects and new interchanges, such as those that replace a signalized intersection on a surface street or where design year traffic is not projected to meet the 140,000–150,000 annual average daily traffic (AADT) criterion.2

   A qualitative assessment of emissions projections should be conducted for these projects. The qualitative assessment would compare, in narrative form, the expected effect of the project on traffic volumes, vehicle mix, or routing of traffic and the associated changes in MSATs for the project alternatives, based on VMT, vehicle mix, and speed. It also would discuss national trend data projecting substantial overall reductions in emissions because of stricter engine and fuel regulations issued by the EPA. Because the emission effects of these projects are low, the FHWA expects there would be no appreciable difference in overall MSAT emissions between the alternatives. In addition, quantitative emissions analysis of these types of projects will not yield credible results that are useful to project-level decision-making because of the limited capabilities of the transportation and emissions forecasting tools.

3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

   Projects included in this category have the potential for meaningful differences among project alternatives. The FHWA expects only a limited number of projects to meet this two-pronged test. To fall into this category, projects must:

   – Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location.

   – Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,0003, or greater, by the design year (and projects also must be proposed to be located in proximity to populated areas or in rural areas, in proximity to concentrations of vulnerable populations, such as schools, nursing homes, or hospitals).

   Projects falling within this category should be more rigorously assessed for impacts, and the FHWA should be contacted for assistance in developing a specific approach for assessing

[2] The FHWA guidance for the assessment of MSATs in NEPA documents does not specifically address the analysis of construction-related emissions because of their relatively short duration. The FHWA is considering whether more guidance is needed on construction activities in future versions of its guidance.

[3] Using the EPA's MOBILE6.2 emissions model, FHWA technical staff determined that this range of AADT would be roughly equivalent to the CAA definition of a major hazardous air pollutant (HAP) source (i.e., 25 tons per year [tpy] for all HAPs or 10 tpy for any single HAP). Significant variations in conditions such as congestion or vehicle mix could warrant a different range for AADT.

impacts. This approach would include a quantitative analysis that would attempt to measure the level of emissions for the six priority MSATs for each alternative, to use as a basis of comparison. This analysis also may address the potential for cumulative impacts, where appropriate, based on local conditions. How and when cumulative impacts should be considered would be addressed as part of the assistance outlined above. If the analysis for a project in this category indicates meaningful differences in levels of MSAT emissions, mitigation options should identified and considered.

State Requirements

Responsibility for achieving California's ambient air quality standards (CAAQS) (Table 2.2-6), which are more stringent than federal standards for certain pollutants and averaging periods, is placed on the California Air Resources Board (ARB) and local air pollution control districts. State standards are to be achieved through district-level air quality management plans that are incorporated into the SIP. In California, the EPA has delegated authority to prepare SIPs to the ARB, which, in turn, has delegated that authority to individual air districts.

The ARB traditionally has established state air quality standards, maintained oversight authority in air quality planning, developed programs for reducing emissions from motor vehicles, developed air emission inventories, collected air quality and meteorological data, and approved SIPs.

Responsibilities of air districts include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required by CEQA.

The California Clean Air Act (CCAA) of 1988 substantially added to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures.

The CCAA focuses on attainment of the CAAQS and requires the designation of attainment and nonattainment areas with respect to these standards. The act also requires that local and regional air districts expeditiously adopt and prepare an air quality attainment plan if the district violates CAAQS for CO, SO_2, NO_2, or ozone. These plans are specifically designed to attain state standards and must be designed to achieve an annual 5% reduction in district-wide emissions of each nonattainment pollutant or its precursors. No locally prepared attainment plans are required for areas that violate the state PM10 standards; the ARB is responsible for developing plans and projects that achieve compliance with the state PM10 standards.

The CCAA requires that the state air quality standards be met as expeditiously as practicable, but, unlike the federal CAA, the CCAA does not set precise attainment deadlines. Instead, the act establishes increasingly stringent requirements for areas that will require more time to achieve the standards.

The CCAA emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The act gives local air pollution control districts explicit authority to regulate indirect

sources of air pollution and to establish traffic control measures (TCM). The CCAA does not define the terms *indirect* and *area-wide*. However, Section 110 of the federal CAA defines an indirect source as "a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution. Such term includes parking lots, parking garages, and other facilities subject to any measure for management of parking supply."

TCMs are defined in the CCAA as "any strategy to reduce trips, vehicle use, VMT, vehicle idling, or traffic congestion for the purpose of reducing vehicle emissions."

California Department of Transportation Standard Specification 7-1.01F and Standard Specification 10

Construction activities are subject to Department requirements found in the Department document *Standard Specifications* (California Department of Transportation 2006). Standard Specification 7-1.01F stipulates that construction activities must comply with all rules, regulations, ordinances, and statutes of the local air pollution control district, and Standard Specification 10 addresses dust control requirements.

Global Warming Solutions Act of 2006 (Assembly Bill 32)

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

Climate change and GHG reduction are also concerns at the federal level; however, at this time, no federal legislation or regulations specifically addressing GHG emissions reductions and climate change have been enacted.

Local and Regional Implementation of Federal Requirements

The air quality management agencies of direct importance to western Solano County include the EPA, the ARB, and the BAAQMD. The EPA has established NAAQS for which the ARB and the BAAQMD have primary implementation responsibility. The ARB and the BAAQMD are also responsible for ensuring that the CAAQS are met.

Local Standards

Guidance for the determination of significant air impacts under CEQA within western Solano County is found in the BAAQMD document *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans* (Bay Area Air Quality Management District 1999).

The BAAQMD does not require quantification of construction emissions. Instead, it requires the implementation of effective and comprehensive feasible control measures to reduce PM10 emissions (Bay Area Air Quality Management District 1999). PM10 emitted during construction activities varies greatly depending on the level of activity, the specific operations taking place,

the equipment being operated, local soils, and weather conditions. Despite this variability in emissions, experience has shown that a number of feasible control measures can be reasonably implemented to reduce PM10 emissions during construction; these measures are summarized in Table 2.2-7. According to the BAAQMD, if all control measures listed in Table 2.2-7 are implemented (as appropriate, depending on the size of the project area), air pollutant emissions from construction activities would be considered less than significant (Bay Area Air Quality Management District 1999). Construction equipment also emits CO and ozone precursors. Construction-related emissions of these pollutants were not estimated, however, because they are included already in the emission inventory that forms the basis for the BAAQMD's regional air quality plans and because those emissions are not expected to impede attainment or maintenance of ozone and CO standards in the Bay Area (Bay Area Air Quality Management District 1999).

Table 2.2-7. BAAQMD Feasible Control Measures for Construction Emissions of PM10

Basic Control Measures (Controls That Should Be Implemented at All Construction Sites)
Water all active construction areas at least twice daily.
Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 0.6 meters (2 feet) of freeboard.
Pave; apply water three times daily; or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
Enhanced Control Measures (Additional Measures That Should Be Implemented at Construction Sites Greater than 4 acres in Area)
Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (i.e., previously graded areas inactive for 10 days or more).
Enclose, cover, water twice daily, or apply (nontoxic) soil binders to exposed stockpiles (e.g., dirt and sand).
Limit traffic speeds on unpaved roads to 24.1 kilometers per hour (15 mph).
Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
Replant vegetation in disturbed areas as quickly as possible.
Optional Control Measures (Control Measures That Are Strongly Encouraged at Construction Sites that Are Large in Area, Located Near Sensitive Receptors, or for Any Other Reason May Warrant Additional Emissions Reductions; the Project Applicant Is Not Required to Implement Them)
Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the site.
Install windbreaks or plant trees or vegetative wind breaks at windward sides of construction areas.
Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
Limit the area subject to excavation, grading, and other construction activity at any one time.

Source: Bay Area Air Quality Management District 1999.

For project operations, the BAAQMD identifies a significant air quality impact as being a:

- Net increase in pollutant emissions of 80 pounds per day (ppd) or 15 tons per year (tpy) of ROG, NO_x, or PM10.
- Project-related contribution to CO concentrations exceeding the CAAQS for the 1- and 8-hour standards.

According to the BAAQMD, localized CO concentrations should be estimated for projects in which:

- Vehicle emissions of CO exceed 550 ppd.
- Project traffic affects intersections or roadway links operating at LOS D, E, or F.

- Project traffic causes intersection or roadway link LOS to decline to D, E, or F.
- Project traffic increases traffic volumes on nearby roadways by 10% or more (unless the increase in traffic volume is less than 100 vehicles per hour).

Affected Environment

This chapter evaluates the potential air quality effects of the proposed action. The information contained in this section is based upon the *I-80 Eastbound Cordelia Truck Scale Relocation Project Air Quality Impacts Technical Study* which is hereby incorporated by reference in its entirety (California Department of Transportation 2008).

Physical Setting

Ambient air quality is affected by climatological conditions, topography, and the types and amounts of pollutants emitted. The following discussion describes relevant characteristics of the air basin and offers an overview of conditions affecting pollutant ambient air concentrations in the basin.

Climate and Topography

The project lies within the Carquinez Strait region of the San Francisco Bay Area Air Basin (SFBAAB). The Carquinez Strait is the only sea-level gap between the San Francisco Bay and the Central Valley. Within the region, the prevailing winds are from the west, but during the summer and fall months, marine air flows eastward through the Carquinez Strait due to high pressure offshore and low pressure in the Central Valley. These easterly winds usually contain more pollutants from the Sacramento and San Joaquin Valleys in the east than the cleaner marine air from the west. During summer and fall months, this can result in elevated pollutant levels as pollutants move through the strait into the central Bay Area from surrounding areas. The high-pressure periods during the summer and fall months often are accompanied by low wind speeds, shallow mixing depths, higher temperatures, and little or no rainfall. Mean maximum temperatures reach about 32.2ºC (90ºF) during the summer, and mean minimum temperatures are typically 1.6–4.4ºC (35–40ºF) in the winter. In distant areas like Fairfield, where the region is sheltered from the moderating effects of the strait, temperature extremes are especially pronounced.

Many industrial facilities, such as chemical plants and refineries, are located within the Carquinez Strait region and generate significant air pollutant emissions. However, the high wind speeds in the region often help moderate the pollution potential of this area. Occasionally, short-term pollution episodes can result from upsets at industrial facilities, while unpleasant odors may occur anytime. The result is that receptors downwind of these facilities could suffer more long-term exposure to air contaminants than individuals elsewhere. Areas of the region that are traversed by major roadways, such as I-80, also may be subject to higher local concentrations of CO and particulate matter, as well as certain toxic air contaminants (TACs), such as benzene.

Environmental Consequences

Regional Air Quality Conformity

Transportation conformity, a concept introduced in the 1977 federal CAA, requires that no federal dollars be used to fund a transportation project unless it can be clearly demonstrated that

the project would not cause or contribute to violations of the NAAQS. Conformity requirements were made substantially more rigorous in the CAA amendments of 1990. The U.S. Department of Transportation and the EPA developed guidance for determining conformity of transportation plans, programs, and projects in November 1993 in the transportation conformity rule (40 CFR 51 and 40 CFR 93).

In Solano County, the MTC is the local MPO and develops the RTP and TIP for the region. The RTP and TIP include projects whose emissions are within the budget planned in the SIP, with the goal of attaining the NAAQS. The TIP is also in accord with the EPA's transportation conformity rule as it pertains to the attainment of air quality standards in the BAAQMD.

Under Section 93.114 of the EPA transportation conformity regulations, the section states that "there must be a currently conforming regional transportation plan and transportation improvement program at the time of project approval." The most recent regional transportation plan in the project area is the MTC's *Transportation 2030 Plan*, which the MTC adopted in February 2005. The proposed project (identified as reference number 22701 for the Cordelia Truck Scales relocation) is included in the *Transportation 2030 Plan* and the *2007 Transportation Improvement Program*. The MTC adopted the 2007 TIP on March 9, 2007. The FHWA made its conformity determination for the *Transportation 2030 Plan* on March 17, 2005, and the *2007 Transportation Improvement Program* on October 4, 2007. The project description is the same in the RTP, TIP, and in this environmental document.

Project Level Conformity

National and State Ambient Air Quality Standards

As required by the CAA, the NAAQS have been established for major air pollutants: ozone, CO, NO_x, sulfur oxides (SO_x), particulate matter, and lead. Pursuant to the CCAA, the state has established the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards (NAAQS) and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Because the CAAQS are more stringent than the NAAQS, the CAAQS are used as the comparative standard in the air quality analysis contained in this report.

Both state and federal standards are summarized in Table 2.2-8. The "primary" standards have been established to protect public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare.

Attainment Status

The CCAA requires the ARB to designate areas within California as either attainment or nonattainment for each criteria pollutant, based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data show that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment.

The ARB has classified the county as being a serious nonattainment area for the ozone CAAQS. For the CO CAAQS, the ARB has classified the county as being an attainment area (California Air Resources Board 2008c). For the PM10 and PM2.5 CAAQS, the ARB has classified the county as a nonattainment area. Solano County's attainment status for each of these pollutants relative to the NAAQS and CAAQS is summarized in Table 2.2-9.

Table 2.2-8. Ambient Air Quality Standards

Pollutant	Average Time	California Standards		National Standards		
		Concentration	Measurement Method	Primary	Secondary	Measurement Method
Ozone (O_3)	1 hour	0.09 ppm	Ultraviolet photometry	N/A	N/A	Ultraviolet photometry
	8 hours	0.07 ppm		0.075 ppm	0.075 ppm	
Carbon monoxide (CO)	8 hours	9.0 ppm	Non-dispersive infrared spectroscopy	9 ppm	None	Non-dispersive infrared spectroscopy
	1 hour	20 ppm		35 ppm		
Nitrogen dioxide (NO_2)	Annual arithmetic mean	0.030 ppm	Gas phase chemiluminescence	0.053 ppm	0.053 ppm	Gas phase chemiluminescence
	1 hour	0.18 ppm		N/A	N/A	
Sulfur dioxide (SO_2)	Annual arithmetic mean	N/A	Ultraviolet fluorescence	0.03 ppm	N/A	Pararosaniline
	24 hours	0.04 ppm		0.14 ppm	N/A	
	3 hours	N/A		N/A	0.5 ppm	
	1 hour	0.25 ppm		N/A	N/A	
Particulate matter 10 microns or less in diameter (PM10)	24 hours	50 $\mu g/m^3$	Gravimetric or beta attenuation	150 $\mu g/m^3$	150 $\mu g/m^3$	Inertial separation and gravimetric analysis
	Annual arithmetic mean	20 $\mu g/m^3$		N/A	N/A	
Particulate matter 2.5 microns or less in diameter (PM2.5)	Annual arithmetic mean	12 $\mu g/m^3$	Gravimetric or beta attenuation	15 $\mu g/m^3$	15 $\mu g/m^3$	Inertial separation and gravimetric analysis
	24 hours	No separate state standard		35 $\mu g/m^3$	35 $\mu g/m^3$	
Lead	30-day average	1.5 $\mu g/m^3$	Atomic absorption	N/A	N/A	High volume sampler and atomic absorption
	Calendar quarter	N/A		1.5 $\mu g/m^3$	1.5 $\mu g/m^3$	
Visibility reducing particles	8 hours	Extinction coefficient of 0.23 per kilometer—visibility of 10 miles or more due to particles when relative humidity is less than 70%; Method: beta attenuation and transmittance through filter tape		N/A	N/A	N/A
Sulfates	24 hours	25 $\mu g/m^3$	Ion chromatography	N/A	N/A	N/A
Hydrogen sulfide (H_2S)	1 hour	0.03 ppm	Ultraviolet fluorescence	N/A	N/A	N/A
Vinyl chloride	24 hours	0.010 ppm	Gas chromatography	N/A	N/A	N/A

Source: California Air Resources Board 2008b.
Notes: ppm = parts per million.
$\mu g/m^3$ = micrograms per cubic meter.
N/A = not applicable.

Table 2.2-9. Attainment Status for the BAAQMD

Pollutant	Federal Designations	State Designations
Ozone (1-hour)	N/A	Nonattainment
Ozone (8-hour)	Nonattainment	Nonattainment
PM10 (annual)	N/A	Nonattainment
PM10 (24-hrs)	Unclassified	Nonattainment
PM2.5 (annual)	Attainment	N/A
PM2.5 (24-hrs)	Nonattainment	Attainment
CO	Attainment/Maintenance	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Attainment	Attainment
Sulfates	N/A	Attainment
H_2S	N/A	Unclassified
Visibility	N/A	Unclassified

Note: N/A = not applicable.

Description of Pollutants

The following is a general description of the pollutants for which there are standards (criteria pollutants) and ambient measurements.

Ozone

Ozone is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials.

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors (ROG and NO_x) react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem.

Ozone is a regional pollutant. Because photochemical reactions take time to occur, high ozone levels often occur downwind of the emission source. Because the predominant wind direction in the project area is from the west, Solano County is a receptor of regional pollutants, such as ozone, from the Bay Area. The ARB has identified the SFBAAB as a transport contributor to the Sacramento region, the Mountain Counties Air Basin, the North Central Coast Air Basin, the North Coast Air Basin, the San Joaquin Valley Air Basin, and the South Central Coast Air Basin. The amount of transport impact varies from day to day, depending in large part on meteorology. To the extent that the Bay Area continues to reduce ozone precursor emissions, the transport impact on downwind areas should decrease also (California Air Resources Board 2005).

State and federal standards for ozone have been set for 1- and 8-hour averaging times. The state 1-hour ozone standard is 0.09 parts per million (ppm), not to be exceeded. The federal 1-hour ozone standard recently was replaced with an 8-hour standard of 0.075 ppm, not to be exceeded more than three times in any 3-year period. The state 8-hour standard is 0.07 ppm, not to be exceeded.

Carbon Monoxide

CO is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. CO can cause health problems, such as fatigue, headache, confusion, dizziness, and even death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

State and federal CO standards have been set for 1- and 8-hour averaging times. The state 1-hour standard is 20 ppm, not to be exceeded, whereas the federal 1-hour standard is 35 ppm, not to be exceeded more than 1 day per year. Both state and federal standards for the 8-hour averaging period are 9 ppm; the state standard may not be exceeded, and the federal standard may not be exceeded more than 1 day per year.

Inhalable Particulate Matter

Particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials.

Sources of PM10 in Solano County comprise both rural and urban sources, including agricultural burning, tilling of agricultural fields, industrial emissions, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

The NAAQS and CAAQS for particulate matter apply to two classes of particulates: PM2.5 and PM10. The state PM10 standards are 50 micrograms per cubic meter (μ/m^3) as a 24-hour average and 20 μ/m^3 as an annual arithmetic mean. The federal PM10 standards are 150 μ/m^3 as a 24-hour average. For PM2.5, the state has adopted a standard of 12 μ/m^3 for the annual arithmetic mean. The federal PM2.5 standards are 35 μ/m^3 for the 24-hour average and 15 μ/m^3 for the annual arithmetic mean. The Bay Area is now classified as non-attainment area for the federal 24-hours PM2.5 standard.

Nitrogen Dioxide

Nitrogen oxides are a family of highly reactive gases that are primary precursors to the formation of ground-level ozone, reacting in the atmosphere to form acid rain. NO_x, a mixture of nitric oxide (NO) and NO_2, are produced from natural sources, motor vehicles, and other fuel combustion processes.

NO is colorless and odorless and is oxidized in the atmosphere to form NO_2, an odorous, brown, acidic, highly corrosive gas that can affect human health and the environment. Nitrogen oxides (denoted as NO_x) are critical components of photochemical smog. NO_2 produces the yellowish-brown color of the smog. The EPA has set an NAAQS standard for NO_2 but not for NO.

NO_x can irritate and damage the lungs and lower resistance to respiratory infections such as influenza. The effects of short-term exposure are still unclear, but continued or frequent exposure

to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children. Health effects associated with NO_x are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation along with pulmonary dysfunction. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals as a result of the production of particulate nitrates. Airborne NO_x can impair visibility also. NO_x is a major component of acid deposition in California. NO_x may affect both terrestrial and aquatic ecosystems. NO_x in the air is a potentially significant contributor to a number of environmental effects, such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduces the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

Sulfur Oxides

SO_x gases are a family of colorless, pungent gases, which include SO_2 and are formed primarily by combustion of sulfur-containing fossil fuels (mainly coal and oil), metal smelting, and other industrial processes. SO_x can react to form sulfates, which significantly reduce visibility. SO_x is a precursor to particulate matter formation, which is in nonattainment in the project area.

The major health concerns associated with exposure to high concentrations of SO_x include effects related to breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Major subgroups of the population that are most sensitive to SO_x include individuals with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema), as well as children and the elderly. Emissions of SO_x can also damage the foliage of trees and agricultural crops. Together, SO_x and NO_x are the major precursors to acid rain, which is associated with the acidification of lakes and streams and accelerated corrosion of buildings and monuments.

Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used several decades ago to increase the octane rating in automotive fuel. Because gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels, and the use of leaded fuel has been mostly phased out, the ambient concentrations of lead have dropped dramatically.

Short-term exposure to high levels of lead can cause vomiting, diarrhea, convulsions, coma, or even death. However, even small amounts of lead can be harmful, especially to infants, young children, and pregnant women. Symptoms of long-term exposure to lower lead levels may be less noticeable but are still serious. Anemia is common, and damage to the nervous system may cause impaired mental function. Other symptoms are appetite loss, abdominal pain, constipation, fatigue, sleeplessness, irritability, and headache. Continued excessive exposure, as in an industrial setting, can affect the kidneys.

Lead exposure is most serious for young children because they absorb lead more easily than adults do and are more susceptible to its harmful effects. Even low-level exposure may harm the intellectual development, behavior, size, and hearing of infants. During pregnancy, especially in

the last trimester, lead can cross the placenta and affect the fetus. Female workers exposed to high levels of lead have more miscarriages and stillbirths.

Toxic Air Contaminants

Although ambient air quality standards exist for criteria pollutants, no ambient standards exist for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the ARB consistently has found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risk each presents. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a hazard index, is used to evaluate risk.

In the early 1980s, the ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (AB 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) is present in approximately 44 of California's 58 counties. Asbestos is often found in serpentine rock and ultramafic rock near fault zones. Asbestos is a human health hazard when airborne. Asbestos fibers can be inhaled into lungs, causing inflammation and respiratory ailments and cancers. *A General Location Guide for Ultramafic Rock in California—Areas More Likely to Contain Naturally Occurring Asbestos* (California Department of Conservation 2000) indicates that there is no naturally occurring asbestos located near or in the project area.

Existing Air Quality Conditions

The existing air quality conditions in the project area can be characterized by monitoring data collected in the region. The closest air quality monitoring station is located in Fairfield at Chadbourne Road; this station monitors for ozone. The closest monitoring station that monitors for CO and particulate matter is located in Vallejo at Tuolumne Street. Table 2.2-10 summarizes air quality monitoring data from the Fairfield and Vallejo monitoring stations during the last 3 years for which complete data are available (2005–2007). Table 2.2-10 indicates that the Fairfield monitoring station has exceeded the state ozone standard on three occasions and the national ozone standard only once during the 3-year monitoring period, while the Vallejo station has no exceedance of the federal and state ozone standards. The Vallejo station has exceeded the state PM10 standards three times in the same period. No other violations occurred at these monitoring stations during this 3-year monitoring period.

Table 2.2-10. Ambient Air Quality Monitoring Data Measured at the Fairfield Chadbourne Road and Vallejo Tuolumne Street Monitoring Stations

Pollutant Standards		Fairfield			Vallejo		
		2005	2006	2007	2005	2006	2007
Ozone							
	Maximum 1-hour concentration (ppm)	0.090	0.106	0.089	0.087	0.080	0.078
	Maximum 8-hour concentration (ppm)	0.073	0.087	0.067	0.070	0.069	0.066
Number of days standard exceeded[a]							
	CAAQS 1-hour (> 0.09 ppm)	0	3	0	0	0	0
	NAAQS 8-hour (> 0.075 ppm)	0	1	0	0	0	0
Carbon Monoxide (CO)							
	Maximum 8-hour concentration (ppm)	–	–	–	3.09	2.94	2.70
	Maximum 1-hour concentration (ppm)	–	–	–	3.9	3.7	3.3
Number of days standard exceeded[a]							
	NAAQS 8-hour (≥ 9.0 ppm)	–	–	–	0	0	0
	CAAQS 8-hour (≥ 9.0 ppm)	–	–	–	0	0	0
	NAAQS 1-hour (≥ 35 ppm)	–	–	–	0	0	0
	CAAQS 1-hour (≥ 20 ppm)	–	–	–	–	–	–
Particulate Matter (PM10)[b]							
	National[c] maximum 24-hour concentration (μg/m^3)	–	–	–	49.4	46.6	49.1
	National[c] second-highest 24-hour concentration (μg/m^3)	–	–	–	49.1	43.9	47.3
	State[d] maximum 24-hour concentration (μg/m^3)	–	–	–	52.3	50.1	52.4
	State[d] second-highest 24-hour concentration (μg/m^3)	–	–	–	50.4	47.2	51.1
	National annual average concentration (μg/m^3)	–	–	–	16.8	19.1	18.2
	State annual average concentration (μg/m^3)[e]	–	–	–	–	19.8	19.0
Number of days standard exceeded[a]							
	NAAQS 24-hour (> 150 μg/m^3)[f]	–	–	–	0	0	0
	CAAQS 24-hour (> 50 μg/m^3)[f]	–	–	–	1	0	2
Particulate Matter (PM2.5)							
	National[c] maximum 24-hour concentration (μg/m^3)	–	–	–	43.8	42.2	40.8
	National[c] second-highest 24-hour concentration (μg/m^3)	–	–	–	41.0	40.5	40.0
	State[d] maximum 24-hour concentration (μg/m^3)	–	–	–	47.2	44.0	41.5
	State[d] second-highest 24-hour concentration (μg/m^3)	–	–	–	47.1	43.2	41.3
	National[b] annual average concentration (μg/m^3)	–	–	–	9.7	–	–
	State[c] annual average concentration (μg/m^3)[e]	–	–	–	–	12.4	12.0
Number of days standard exceeded[a]							
	NAAQS 24-hour (> 35 μg/m^3)	–	–	–	0	0	0

Sources: California Air Resources Board 2008b; U.S. Environmental Protection Agency 2008a.

Notes: CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
ppm = parts per million.
μg/m^3 = micrograms per cubic meter.
– = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] Measurements usually are collected every 6 days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

Areas are classified as either attainment or nonattainment with respect to the CAAQS and NAAQS. These classifications are made by comparing actual monitored air pollutant concentrations with state and federal standards. If a pollutant concentration is lower than or meets the state or federal standard over a designated period of time, the area is classified as being in attainment of the standard for that pollutant. If a pollutant violates the standard, the area is considered a nonattainment area for that pollutant. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated as unclassified. This typically occurs in nonurbanized areas where levels of the pollutant are not a concern.

The EPA has classified the portion of Solano County within the SFBAAB as being a marginal nonattainment area for the 8-hour ozone NAAQS. For the CO NAAQS, the EPA has classified the county as a moderate (≤12.7 ppm) maintenance area for urbanized areas; the rest of the county is classified as an unclassified/attainment area (U.S. Environmental Protection Agency 2008b). For the PM10 and PM2.5 NAAQS, the EPA has classified the county as an unclassified/attainment area.

The ARB has classified the county as being a serious nonattainment area for the ozone CAAQS. For the CO NAAQS, the ARB has classified the county as being an attainment area (California Air Resources Board 2008c). For the PM10 and PM2.5 NAAQS, the ARB has classified the county as a nonattainment area. Solano County's attainment status for each of these pollutants relative to the NAAQS and CAAQS is summarized in Table 2.2-6.

Sensitive Receptors

One of the thresholds of significance includes potential impacts on sensitive receptors. The BAAQMD defines a sensitive receptor as a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. *Sensitive receptors* normally refer to land uses with heightened sensitivity to localized rather than regional pollutants. Examples include emissions of criteria or toxic air pollutants (PM10 and PM2.5) that have health effects and, to a lesser extent, odors or odorous compounds such as ammonia and sulfur dioxide. Sensitive receptors would not be directly affected by emissions of regional pollutants such as ozone precursors (ROG and NO_x).

The BAAQMD identifies sensitive receptors as certain locations with populations that are more susceptible to the effects of air pollution than the general population. Sensitive receptors located in or near the vicinity of known air emissions sources, including freeways and intersections, are of particular concern. Sensitive receptors are located throughout Solano County and typically include:

- Residences.
- Schools.
- Playgrounds.
- Child care centers.
- Athletic facilities.

- Health care facilities.
- Convalescent centers.
- Rehabilitation centers.

Land use compatibility issues relative to the siting of pollution-emitting sources or the siting of sensitive receptors must be considered. In the case of schools, state law requires that siting decisions consider the potential for toxic or harmful air emissions in the surrounding area.

Possible Receptors

There are five single-family residences within 1,000 feet of the project footprint, and two of these are within 500 feet of the proposed truck scale on-ramps to the freeways. (See Figure 2.2-5). The ARB has established guidelines for the siting of sensitive receptors near certain air pollution sources (California Air Resources Board 2005). These potential air pollution sources include, among others, distribution centers. While truck scales are not specifically mentioned by the ARB as a potential air pollution source, they will be similar to warehouse distribution centers in terms of multiple diesel trucks idling and traveling at slow speeds for most or all of the day. Therefore, the siting recommendations outlined by the ARB were used for this project.

Localized CO and PM10/PM2.5 Hot Spot Analysis Approach

Typically, evaluating whether a project is included in a conforming RTP or TIP is done to determine transportation conformity for ozone precursors. Because PM10/PM2.5 and CO are localized pollutants, the determination of transportation conformity for these pollutants is assessed by identifying whether the proposed project would generate elevated hot-spot concentrations for these two pollutants. For PM10 and PM2.5, the determination of conformity is qualitative; for CO, the determination is quantitative.

Traffic information provided by the traffic engineers (Fehr & Peers 2008b) indicates that LOS ratings are not expected to degrade to E or worse under future with-project conditions for freeway segments, freeway off-ramps, and surface street intersections in the surrounding area of the proposed project. In addition, the LOSs for most of the segment, off-ramps, and intersection analyzed has not change when comparing the proposed project to the no-project scenario.

The approved RTP and TIP for the project area have no CO mitigation or control measures that relate to the project's construction or operation. Therefore, a written commitment to implement CO control measures is not required.

The PM2.5/PM10 hot-spot analysis is not required because the project is located in an area that is in attainment/unclassifiable for PM10 and PM2.5.

Local Impacts Associated with Truck Scales

Impact AQ-1: Temporary Increase in Ozone Precursor (ROG and NO_x) and PM10 Emissions during Grading and Construction Activities

Implementation of the proposed project would result in the construction of four sets of scales, seven inspection bays, parking for semi-truck trailer combinations and automobiles, roadway along the outer edge of an oval truck scale facility, as well as truck off-ramp and on-ramp improvements. In addition, the proposed project would result in the reconfiguration of the ramps at the truck scales. Temporary construction emissions would result from grubbing/land clearing, grading/excavation, drainage/utilities/subgrade, and paving activities, and from construction worker commuting patterns. Pollutant emissions would vary daily, depending on the level of activity, specific operations, and prevailing weather, and would be substantial. It is anticipated that construction activities would be completed between the years 2012 and 2015. For the purposes of this report, 2015 is considered the opening year, and 2035 is considered the horizon year.

Implementation of Department standard specifications will ensure that this effect is not adverse. The project proponent will follow Caltrans' Standard Specification 7-1.01F and Standard Specification 10, which address the requirements of the local air pollution control district (the BAAQMD) and requirements for dust control, respectively.

PM10 control measures required by the BAAQMD will be included in the construction contract and will be implemented unless unfeasible.

Naturally Occurring Asbestos

According to the DOC's 2000 publication *A General Location Guide for Ultramafic Rock in California—Areas More Likely to Contain Naturally Occurring Asbestos*, there are no geologic features normally associated with NOA (i.e., serpentine rock or ultramafic rock near fault zones) in or near the project area (California Department of Conservation 2000). As such, there is no potential for impacts related to NOA emissions during construction activities.

Impact AQ-2: Potential Violations of Carbon Monoxide National Ambient Air Quality Standards

In general, CO hot spots would be anticipated near affected intersections because operation of vehicles in the vicinity of congested intersections involves vehicle stopping and idling for extended periods. To assess the potential for a CO hot-spot analysis, *Transportation Project-Level Carbon Monoxide Protocol* (Garza et al. 1997) was followed to determine whether a CO hot spot is likely to form as a result of project-generated traffic. In accordance with the protocol, CO hot spots are typically evaluated when (a) the LOS of an intersection decreases to E or worse; (b) signalization or channelization is added to an intersection; or (c) sensitive receptors, such as residences, schools, or hospitals, are located in the vicinity of the affected intersection.

Traffic information provided by the traffic engineers (Fehr & Peers 2008b) indicate that future with-project conditions are not expected to change to LOS E or worse for freeway segments, freeway off-ramps, and surface street intersections in the surrounding area of the proposed

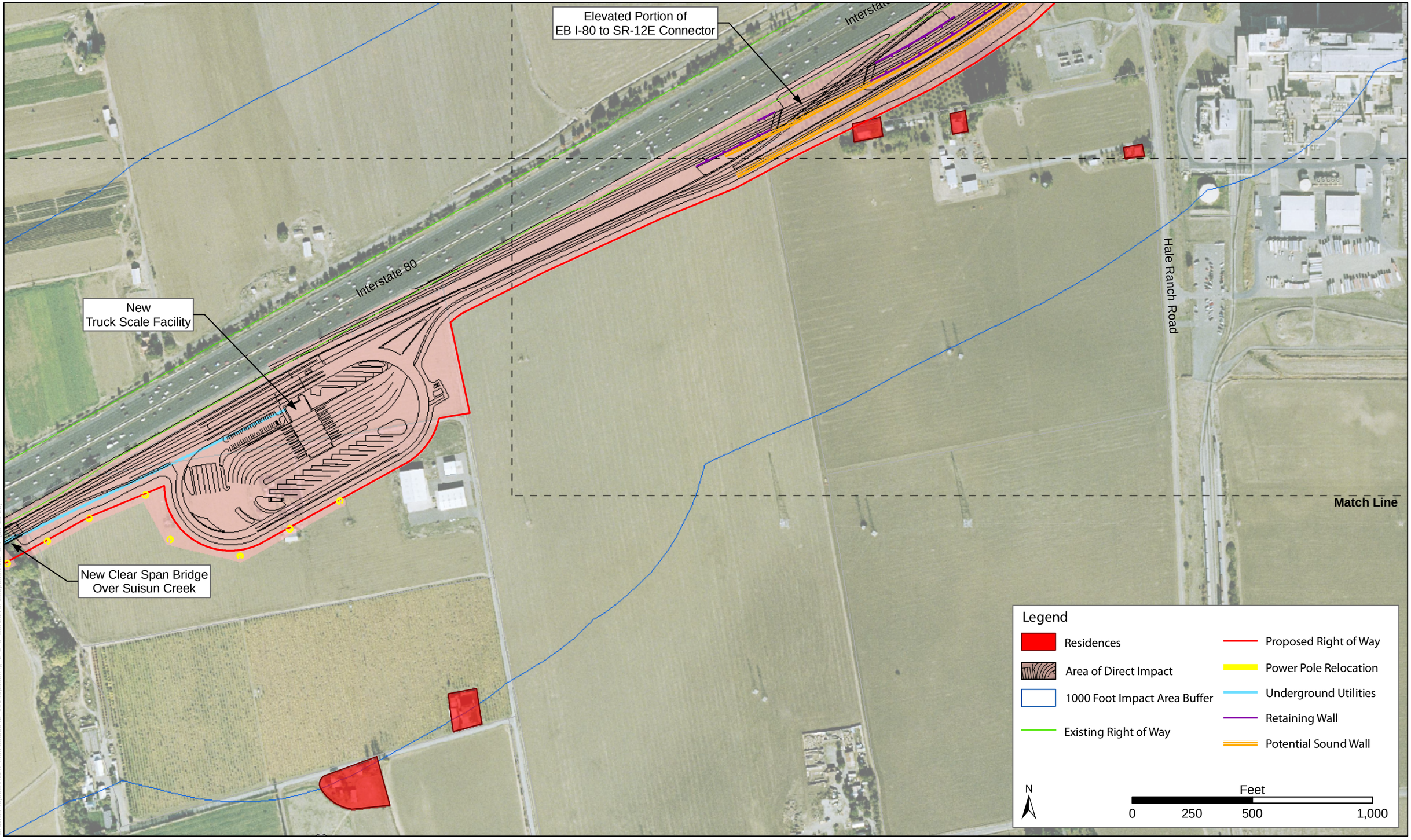

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Figure 2.2-5
Locations of Sensitive Receptors

project. In addition, the LOS ratings for most of the segment, off-ramps, and intersections analyzed are not expected to worsen when comparing the proposed project to the no-project scenario. For the purposes of providing a worst-case analysis for the truck scales facility, CO concentrations have been modeled at the nearest residential locations to the facility. There are five single-family residences within 1,000 feet south of the project site and two of these single-family residences are within 500 feet south of the proposed truck scale. The analysis was conducted using the CALINE4 line source dispersion model. Input parameters required for the CALINE4 model include traffic volumes, CO emission factors, receptor locations, meteorological conditions, and background concentrations. The peak-hour truck volumes at the truck scales and peak-hour vehicles on the adjacent freeways that include the proposed project-generated traffic were modeled. The traffic study provided by the traffic engineers (Fehr & Peers 2008) indicated that peak-hour truck volumes will be approximately 788 and 1,104 trucks per hour in 2015 and 2035. The traffic study also indicated that eastbound peak-hour freeway volumes will be approximately 8,198 and 8,461vehicle per hour in 2015 and 2035 and westbound peak-hour traffic volumes will be approximately 10,207 and 11,139 in 2015 and 2035, respectively. The CT-EMFAC2007 emission rate program was used to estimate CO emission factors in year 2015 and 2035. CT-EMFAC2007 model outputs are presented in Appendix E.

Meteorological inputs to the CALINE4 model were determined using methodology recommended in the CO Protocol (Garza et al. 1997). The meteorological conditions used in the modeling represent a calm winter period. The worst-case wind angles option was used to determine a worst-case concentration for each receptor.

A background concentration of 3.9 ppm was added to the modeled 1-hour values to account for sources of CO not included in the modeling. Eight-hour modeled values were calculated from the 1-hour values using a persistence factor of 0.7. A background concentration of 3.1 ppm was added to the modeled 8-hour values. All CO background concentration data (see Table 2.2-10) were taken from the highest of the three recent years of monitoring data provided by CARB (CARB 2008) and USEPA (USEPA 2008).

Table 2.2-11 presents maximum 1-hour and 8-hour CO concentrations predicted at locations 3 meters from the edge of the intersection in all directions. The CALINE4 model outputs are presented in Appendix F.

Table 2.2-11. CO Modeling Concentrations (ppm)

Truck Scales Facility Sensitive Receptors	2015		2035	
	1-hour	8-hour	1-hour	8-hour
Residence 1	8.0	6.0	7.9	5.9
Residence 2	8.0	6.0	7.9	5.9
Residence 3	8.3	6.2	8.0	6.0
Residence 4	8.3	6.2	8.0	6.0
Residence 5	8.2	6.1	8.0	6.0
NQQAS Standard	35.0	9.0	35.0	9.0
CAAQS Standard	20.0	9.0	20.0	9.0
Significant?	***No***	***No***	***No***	***No***

Note: Background CO concentrations of 3.9 ppm and 3.1 ppm were added to the modeling.

The results show that the Federal one- and eight- hour standards of 35 ppm and 9 ppm, respectively, and State one- and eight- hour standards of 20 ppm and 9 ppm, respectively, would not be exceeded at any of the five receptors. Therefore, the proposed project is not anticipated to significantly contribute to CO ambient concentration impacts. No violations of either the 1-hour or the 8-hour Federal and state CO standard were found. Therefore, there is no adverse effect.

Impact AQ-3: Conformity with the Regional Transportation Plan

The proposed project is included in the adopted RTP, *Transportation 2030 Plan*, and adopted TIP, *2007 Transportation Improvement Program* (Metropolitan Transportation Commission 2007a). The proposed project is identified in Appendix 1 of the RTP as "RTP ID: 22701, I-80/I-680/Route 12 interchange improvements (Phase 3), including partial relocation/reconstruction of Cordelia truck weight station, ramp improvement and auxiliary lanes" (Metropolitan Transportation Commission 2005). The design concept and scope of the proposed project is consistent with the project listed in the RTP and TIP.

Air quality modeling conducted by the MTC shows that emissions associated with the RTP are within the allowable emission budgets for CO and ozone precursors (Metropolitan Transportation Commission 2007b). Consequently, the proposed project is considered a conforming transportation project for these regional nonattainment pollutants.

Impact AQ-4: Potential Generation of Significant Levels of Air Toxics Emissions

MSATs are a subset of the 188 air toxics defined by the CAA. The MSATs are compounds emitted from highway vehicles and off-road construction equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. A primary source of potential air toxics associated with proposed project operations include six primary MSAT emissions from trucks (e.g., truck traffic on freeway and on-site truck idling). For construction, the greatest potential for air toxics emissions would be related to diesel particulate emissions associated with heavy equipment operations. Therefore, the project would not generate significant levels of air toxics emissions.

Operational Impacts

The area of air toxics analysis is a new and emerging field and is an area of continuing research. Currently, there are limited tools and techniques available for assessing project-specific health impacts from MSATs, because there are no established criteria for determining when MSAT emissions should be considered a significant issue in the NEPA context.

To comply with CEQ regulations (40 CFR 1502.22[b]) regarding incomplete or unavailable information, Appendix E describes how air toxics analysis is an emerging field and current scientific techniques, tools, and data are not sufficient to accurately estimate human health impacts that would result from a transportation project in a way that would be useful to decision-makers. Also in compliance with 40 CFR 150.22(b), Appendix E contains a summary of current studies regarding the health impacts of MSATs.

Since the proposed truck scale project would have the same I-80 freeway traffic conditions as no project scenario, and it was assumed that the net changes in the proposed project and the no project alternatives would have the same MSAT emissions from the freeways. Therefore, the net differences in the MSAT emission analysis will only include a discussion of the diesel truck activities at the truck scales relocation site.

The University of California, Davis, prepared a CT-EMFAC spreadsheet tool that incorporates EMFAC2007 emission factors and ARB speciation factors and allows analysts to input project-specific traffic activity data, such as peak hours, VMT, speed, travel times, and traffic volumes (Bai et al. 2006). The assessment presented below is derived in part from a study conducted by the university, *Estimating Mobile Source Air Toxics Emissions: A Step-by-Step Project Analysis Methodology*. Appendix G of the university study presents the MSAT spreadsheet data. The results of the impacts associated with the trucks at the truck scales are summarized in Table 2.2-12.

Table 2.2-12. Summary of Project-Level MSAT Emissions at Truck Scales

Scenario	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
2015 No-Build Alternative	4,742	1,674	292	1,199	62	2,825
2015 Build Alternative	3,693	1,112	186	1,132	37	2,520
Differences from the No-Build Alternative	-1,049	-562	-106	-68	-25	-305
2035 No-Build Alternative	1,460	676	103	558	21	1,260
2035 Build Alternative	1,441	653	97	639	19	1,411
Differences from the No-Build Alternative	-19	-23	-6	**+82**	-2	**+151**

Note: Emissions expressed in grams per day.

For the no-project scenario, it was assumed that the current scales have a capacity of 400 trucks per hour. Under current conditions, 788 and 1,104 trucks per hour for years 2015 and 2035, respectively, are assumed to pass through the area. Of those, because the CHP closes the scales when the trucks queue onto the mainstream highway, 388 and 704 trucks are assumed to bypass the scales during the peak hour. Therefore, during the peak hour, 400 trucks travel at the assumed scale speed (5 mph), and 388 and 704 trucks travel at the assumed highway speed (55 mph). Whereas with the proposed project for both years 2015 and 2035, all projected 788 and 1,104 trucks, respectively, would travel at the assumed scale speed (5 mph). The truck scale ramps were assumed to be 5,000 feet in length combined. Truck scale speed was assumed to be 5 mph for both the off- and on-ramps because it represents the worst-case MSAT scenario.

According to the traffic study (Fehr & Peers 2008), approximately 139,250 and 176,863 vehicles under the no-project scenario will be traveling by the Cordelia truck scales area on the adjacent I-80 freeway. During the AM and PM peak hours, the average speed of all the vehicles is predicted to slow down (due to traffic congestions) to approximately 35–40 mph in year 2015 and to approximately 25–30 mph in year 2035. Under the proposed project scenario, the relocation of the truck scales would slightly increase the number of vehicles on the I-80 freeway

to approximately 139,300 and 176,900 vehicles for years 2015 and 2035, respectively. The average speeds for the peak hour and off-peak hour traffic is predicted to be similar to the no-project scenario.

Relocation of the truck scale facility and improvements to the off-ramps and on-ramps would decrease the amounts of MSATs, except acetaldehyde and formaldehyde, for all vehicles when compared with the no-project scenario. The MSATs for diesel trucks would increase under the proposed project scenarios primarily because MSAT emissions are greater at 5 mph than at 55 mph (CT-EMFAC). Therefore, because the distance that trucks travel for each scenario is the same (5,000 feet), emissions at lower speeds will be greater than emissions at greater speeds. However, the freeway and truck scales traffic under the proposed project results in lower MSAT emissions than under the no-project scenario, even though the net increases in MSATs for acteldehyde and formaldehyde are too small to be considered as a meaningful difference in the levels of MSAT emissions. More importantly, the diesel particulate matter (DPM) emissions would be reduced under with-project conditions. Therefore, the proposed project is not anticipated to significantly contribute to PM impacts. Because the PM2.5 is of primary concern, the MSAT impact is not considered an adverse effect.

The FHWA's *Interim Guidance on Air Toxic Analysis in NEPA Documents* states that when the analysis for a project indicates "meaningful differences" in levels of MSAT emissions, mitigation options should be identified and considered. The guidance does not indicate, however, what threshold of emissions increase or decrease would possibly constitute a "meaningful difference." Appendix E of the FHWA guidance document suggests several mitigation strategies, including diesel retrofit technologies, speed limit enforcements or traffic management policies, anti-idling strategies, truck-stop electrification, and establishment of buffer zones between new traffic alignments and vulnerable populations.

Construction Impacts

Construction emissions would result in an increase in PM2.5 emissions in addition to PM10 and ozone precursors. PM2.5 emissions of concern would be associated primarily with DPM because particulates generated by excavation, grading, and other soil-disturbance activities are normally outside the PM2.5 size range. Diesel exhaust particulates contain substances that are suspected carcinogens. Diesel exhaust contains both pulmonary irritants and hazardous compounds that could affect sensitive receptors such as young children, senior citizens, and those susceptible to chronic respiratory diseases such as asthma, bronchitis, and emphysema.

In 2000, the ARB approved a comprehensive *Diesel Risk Reduction Plan* to reduce diesel emissions from both new and existing diesel-fueled engines. The plan focuses on reducing emissions from diesel-fueled engines (through new standards and retrofitting) and reducing the sulfur content of diesel fuel to enable the use of advanced DPM emissions controls. The plan's goals are to achieve a 75% reduction in DPM by 2010 and an 85% reduction by 2020 (from the 2000 baseline). Though many of the new regulations are source-based controls, in 2005, the ARB approved a regulatory measure (Section 2485 of the California Health and Safety Code) to reduce emissions of toxic and criteria pollutants by limiting the idling of new heavy-duty diesel vehicles. The proposed project proponent would be required to comply with these requirements.

The BAAQMD does not have methodologies for estimating impacts from diesel exhaust or determining the significance of a project's contribution. Recent ARB air pollution studies indicate a high correlation between traffic emissions and health impacts within 1,000 feet of a road, with the strongest association within 300 to 500 feet. Studies also show that concentrations of traffic emissions decline with distance from the road, with a dramatic decrease in the first 300 to 500 feet (up to a 70% decrease in one study). Given these studies, the ARB recommends that new sensitive land uses not be located within 500 feet of freeways, urban roads carrying 100,000 vehicles a day, or rural roads carrying 50,000 vehicles a day (California Air Resources Board 2005). Therefore, if sensitive receptors are located more than 500 feet from a construction site, potential health effects associated with elevated DPM are not considered adverse.

For the proposed project, the residence closest to the truck scale facility is approximately 930 feet south/southwest of the truck scales site; at this distance, potential health risks associated with DPM would not be considered an adverse effect. For the residences within 500 feet of the truck scales' on-ramps to the freeway, the predicted number of trucks would not exceed 50,000 trucks per day. Therefore, according to the ARB's air quality and land use guidance, there would be no adverse effect. Consequently, DPM emissions generated by truck traffic (excess cancer risk would be less than 1 in 1 million) under the proposed project would not constitute an adverse effect.

Regional Impacts Associated with Freeway Traffic

Impact AQ-5: Decrease in Regional Ozone Precursor (ROG and NO_x), CO, and PM10 and PM2.5 Emissions Associated with Project Operations

Implementation of the proposed project would result in increased traffic flows on roadways near the project, including I-80, I-680, and SR 12. The project would relieve congestion along eastbound I-80 by creating expanded truck scale facilities, braided on- and off-ramps for trucks exiting and entering eastbound I-80, and an auxiliary lane for trucks onto SR 12E. The relief of traffic congestion would increase freeway speeds and reduce travel time.

Emissions of criteria pollutants (ROG, NO_x, CO, CO_2, PM10, and PM2.5) for both 2015 and 2035, with and without the project, were evaluated using the ARB's CT-EMFAC2007 emission rate model and system-wide morning and afternoon peak-hour traffic data provided by the traffic engineers. Daily emissions were obtained based on the sum of morning and afternoon emissions and a multiplier of 5 (Fehr & Peers 2008b). Project-level emissions were obtained by comparing future with-project and future no-project emissions. Appendix E presents the system-wide emissions spreadsheet. The results of these calculations are presented in Table 2.2-13.

Table 2.2-13. System-Wide Project-Related Motor Vehicle Emissions

	Pounds per Day				
	ROG	**NO_x**	**CO**	**PM10**	**PM2.5**
2015 no-project scenario	187	527	2,103	25	23
2015 with the proposed project	124	349	1,248	17	15
Change with the project	-63	-178	-855	-8	-8
2035 no-project scenario	84	134	712	18	16
2035 with the proposed project	80	134	683	16	15
Change with the project	-4	0	-29	-2	-1

Project-related emissions would decrease with the implementation of the project for each criteria pollutant. The net change in criteria pollutants would not exceed the significance threshold of 80 ppd for ROG, NO_x, and PM10, or the 500 ppd threshold for CO within the BAAQMD (Bay Area Air Quality Management District 1999).

The 80 ppd significance threshold would not be exceeded for ROG and PM10. The 500 ppd significance threshold would not be exceeded for CO. The BAAQMD has not established a threshold for PM2.5. Therefore, emissions would not result in an adverse effect.

Avoidance, Minimization, and/or Mitigation Measures

The Department's Mitigation Requirements for Construction Impacts

Construction activities are subject to Department requirements found in the Department's document *Standard Specifications* (California Department of Transportation 2006b). Standard Specification 7-1.01F stipulates that construction activities must comply with all rules, regulations, ordinances, and statutes of the local air pollution control district, and Standard Specification 10 addresses dust control requirements. In addition, the BAAQMD requires the implementation of all feasible, effective, and comprehensive control measures to reduce PM10 emissions from construction activities. These control measures are summarized in Table 2.2-7.

Implementation of the following control measures would minimize air quality impacts from construction activities.

Effects of the No-Project Alternative

Under the No-Project Alternative, traffic congestion—and consequently air quality—would worsen.

2.2.7 Noise

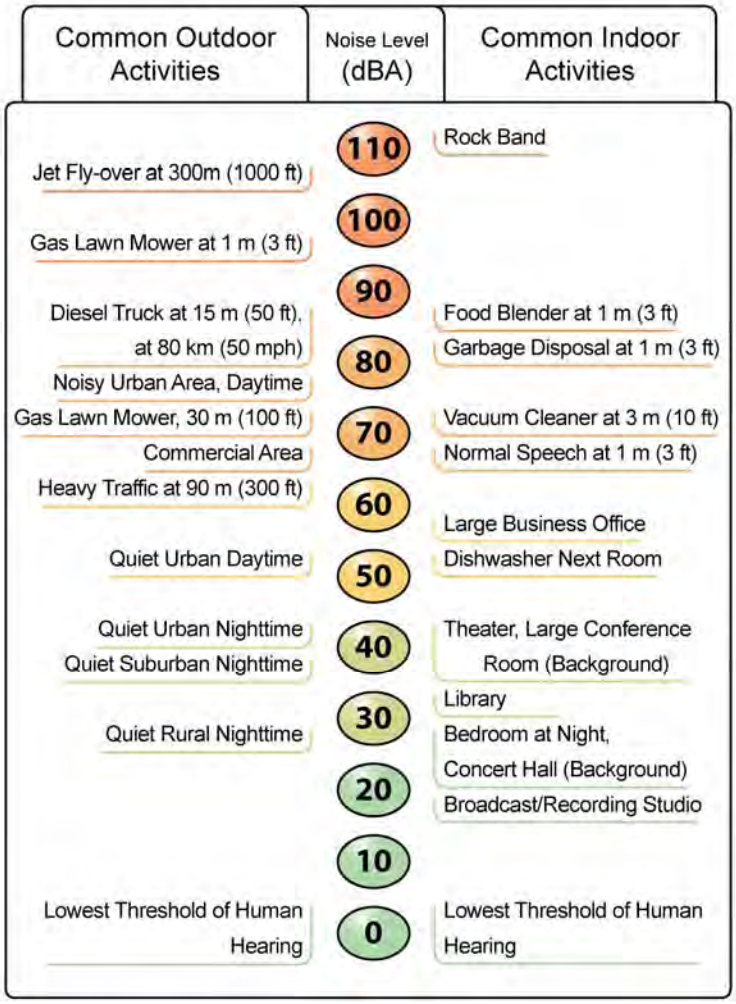
Regulatory Setting

NEPA provides a broad basis for analysis and abatement of highway traffic noise effects. The intent of NEPA is to promote general welfare and to foster a healthy environment. The following are brief definitions of acoustical terms used in this discussion:

- Sound—A vibratory disturbance created by a vibrating object that, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- Noise—Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- Ambient noise—The composite of noise from all sources near and far in a given environment, exclusive of particular noise sources to be measured.
- Decibel (dB)—A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
- A-weighted decibel (dBA)—An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- Equivalent sound level (L_{eq})—The equivalent steady state sound or vibration level that, in a stated period of time, would contain the same acoustical or vibration energy.

Table 2.2-14 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

Table 2.2-14. Typical A-Weighted Noise Levels



23 CFR 772

For highway transportation projects with FHWA (and the Department, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). Table 2.2-15 lists the noise abatement criteria for use in the 23 CFR 772 analysis.

Table 2.2-15. Activity Categories and Noise Abatement Criteria

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

Note: dBA L_{eq}(h) = one-hour A-weighted equivalent sound level.

In accordance with the Department's *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects* (*Traffic Noise Analysis Protocol*), a noise impact occurs when the future noise level with the project results in a substantial increase in the noise level (defined as an increase of 12 dB or more) or when the future noise level with the project approaches or exceeds the NAC (California Department of Transportation 2006c). Approaching the NAC is defined as a noise level within 1 dB of the NAC.

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

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

Affected Environment

A noise study technical report was prepared for this project and submitted for the Department's review in July 2008 (ICF Jones & Stokes 2008f). The noise study technical report discusses potential noise impacts and related noise abatement measures associated with the construction and operation of a truck scale facility on I-80 between I-680 and SR 12 in Solano County. The report was prepared to comply with 23 CFR 772, "Procedures for Abatement of Highway Traffic Noise," and the Department's noise analysis policies as described in the *Traffic Noise Analysis Protocol*.

Single-family residences were identified as Activity Category B land uses per 23 CFR 772. Commercial and industrial areas exist in the project area and are Activity Category C uses.

As stated in the Protocol, noise abatement is considered only where frequent human use occurs and where a reduced noise level would be beneficial. In general, frequent human use is considered to occur at exterior locations where people are exposed to highway noise for at least 1 hour on a regular basis. As an extension of this concept, impacts are assessed in detail only at locations where frequent human use occurs and where a reduced noise level would be beneficial. Accordingly, impact assessment focuses on locations with defined outdoor activity areas, such as residential backyards, common-use areas at multifamily facilities, and parks with defined activity areas (e.g., playgrounds and picnic tables).

Noise-sensitive receptors affected by this project are located on the south side of I-80 and consist of scattered single-family residences (Activity Category B) and commercial buildings with no areas of outdoor frequent human use (Activity Category C) near Hale Ranch Road (Figure 2.2-6). Three receptors are counted as Activity Category B for this analysis. There are no existing sound barriers in this area.

Noise Monitoring

Noise monitoring was conducted in this study area. These monitoring data are used to characterize existing noise conditions in the project area.

Short-term monitoring was conducted on Thursday, January 19, 2006, using a Larson-Davis Model 812 Precision Type 1 sound level meter (serial number 0239). The measurement was taken over a 15-minute interval at a distance of approximately 400 feet from the edge of pavement of I-80. Short-term monitoring was conducted near an Activity Category B land use. Table 2.2-16 summarizes the results of the short-term noise monitoring conducted in the project area.

Table 2.2-16. Summary of Short-Term Noise Monitoring

Measurement Location	Description	Area	Start Time	Duration (minutes)	Existing Wall Height	Measured L_{eq}
I-80—ST-1	Cordelia Road	I-80	1 p.m.	15	N/A	60.4

Minute-to-minute L_{eq} values collected during the measurement period (typically 15 minutes in duration) were logged manually, and dominant noise sources observed during individual 1-minute periods were identified and logged. This allowed for the separation of minutes when traffic noise was a dominant contributor to noise levels at a given measurement site from when other noise sources contributed significantly; thus, the significance of non-traffic noise sources (such as aircraft and lawn equipment) could be evaluated. The calibration of the meter was checked before and after the measurement, using a Larson-Davis Model CA250 calibrator (serial number 0125).

Traffic volumes on I-80 were classified and counted during short-term noise measurements. Vehicles were classified as automobiles, medium-duty trucks, or heavy-duty trucks. An automobile is defined as a vehicle with two axles and four tires that are designed primarily to

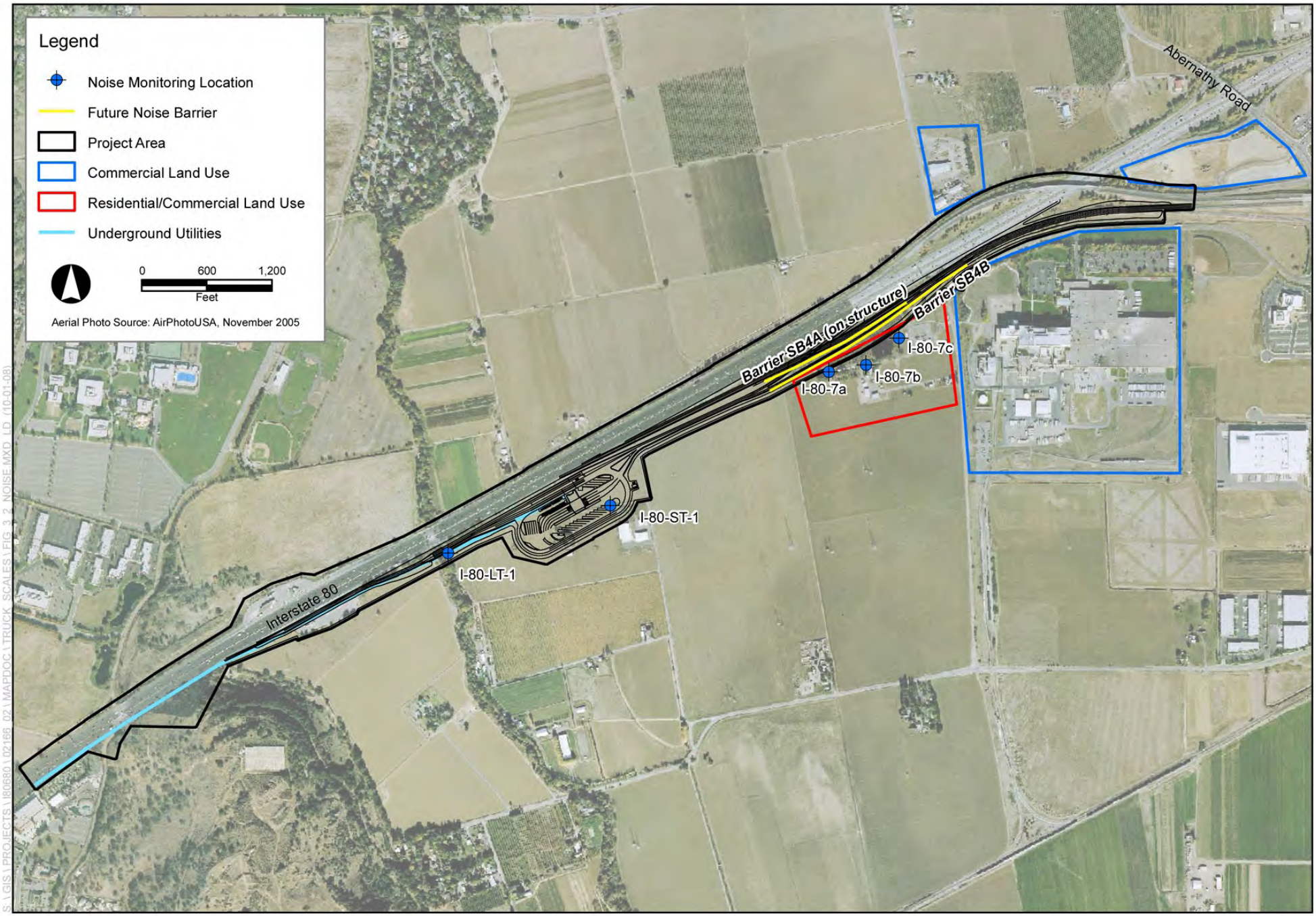


Figure 2.2-6
Sensitive Receptors and Potential Noise Barriers

carry passengers. Small vans and light trucks are included in this category. Medium-duty trucks include all cargo vehicles with two axles and six tires. Heavy-duty trucks include all vehicles with three or more axles. The posted speed on I-80 is 65 mph.

Conclusions under 23 CFR 772

Predicted Traffic Noise Levels

A noise impact analysis was conducted for the proposed project. To analyze the potential for impacts, first noise-sensitive receptors were noted, and then existing noise conditions were determined through short- and long-term monitoring. A three-dimensional traffic noise model was built and calibrated using data from monitoring. Predicted traffic information (volumes, vehicle types, and speeds) was input into the model to determine whether implementation of the project would create noise impacts.

Noise levels at all three receptor locations were predicted to approach or exceed the NAC. Noise impacts resulting from a substantial increase over existing noise levels are not predicted to occur under the full buildout. Loudest-hour traffic volumes, classification percentages, and speeds used to model traffic noise under existing and design-year (2035) conditions were provided by Fehr & Peers (2008). The largest average heavy truck volumes are predicted to occur during the a.m. peak hour, resulting in higher sound levels than the p.m. peak hour; therefore, a.m. peak-hour traffic volumes were used in the project area.

Although the widening and addition of HOV lanes would improve the LOS on I-80, most segments of I-80 would be LOS D or worse during peak hours. For this analysis, it is assumed that each project roadway lane has a maximum capacity of 2,000 vehicles per hour at the corresponding roadway design speed. For example, for the I-80 future five-lane case, total modeled traffic volumes in each direction were capped at 10,000 vehicles per hour. Table 2.2-17 summarizes the traffic noise modeling results under existing and design-year conditions.

Table 2.2-17. I-80 Truck Scales Traffic Noise Impact Evaluation Activity Category B Land Uses

Position	Location	Area	Existing Traffic Noise Level, dBA, $L_{eq}(h)$	Design-Year No-Project Traffic Noise Level, dBA, $L_{eq}(h)$	Design Year with Project		Traffic Noise Impact Under 23 CFR772[a]
					Traffic Noise Level, dBA, $L_{eq}(h)$	Increase from Existing, Decibels (dB)	
I-80—7a	Hale Ranch Road	I-80	71	72	73	+2	A/E
I-80—7b	Hale Ranch Road	I-80	66	67	69	+3	A/E
I-80—7c	Hale Ranch Road	I-80	67	69	71	+4	N/A[b]

[a] A/E = approaches or exceeds the NAC listed in Table 2.2-15.

[b] Activity Category C land use that does not include outdoor areas of frequent human use that would benefit from a lowered noise level.

Modeling results in Table 2.2-17 indicate that predicted traffic noise levels for the design-year with-project conditions would be in the range of 69–73 dBA, $L_{eq}(h)$. Traffic noise is predicted to exceed the NAC at three residences in this area. Therefore, under 23 CFR 772, noise abatement must be evaluated.

Noise Abatement Evaluation

In accordance with 23 CFR 772, noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. Potential noise abatement measures identified in the Protocol include the following:

- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project.
- Constructing noise barriers.
- Acquiring property to serve as a buffer zone.
- Using traffic management measures to regulate types of vehicles and speeds.
- Acoustically insulating public-use or nonprofit institutional structures.

Because of the configuration and location of the project, noise barriers are the only form of noise abatement evaluated in this report.

Each noise barrier has been evaluated for feasibility based on achievable noise reduction. For each noise barrier found to be acoustically feasible, reasonable cost allowances were calculated. Worksheets in Appendix B of the noise study technical report (ICF Jones & Stokes 2008f) summarize the reasonable cost allowance calculations, based on the procedure outlined in the Protocol.

For any noise barrier to be considered reasonable from a cost perspective the estimated cost of the noise barrier should be equal to or less than the total cost allowance calculated for the barrier. The cost calculations of the noise barrier should include all items appropriate and necessary for construction of the barrier, such as traffic control, drainage modification, and retaining walls. The design of noise barriers presented in this report is preliminary only and has been conducted at a level appropriate for environmental review but not for final design of the project.

Preliminary information on the physical location, length, and height of noise barriers is provided in this report. If pertinent parameters change substantially during the final project design, preliminary noise barrier designs may be modified or eliminated from the final project.

The traffic noise modeling results indicate that traffic noise levels at isolated residences would approach or exceed the NAC of 67 dBA $L_{eq}(h)$, for Activity Category B land uses within the project area. Where noise impacts were identified, noise abatement options were evaluated for feasibility and cost-reasonableness.

No noise barriers are currently located in this area. Noise Barrier SB4 consists of two barriers that would provide shielding for traffic noise from both I-80 and the SR 12E flyover transition ramp. The barriers, SB4A and SB4B, have been evaluated for barrier heights in the range of 6 to 16 feet and will meet the Department line-of-sight requirement at a barrier height of 12 feet. The barriers were found to be acoustically feasible, providing at least 5 dB of noise reduction at barrier heights in the range of 10 to 16 feet. Table 2.2-18 summarizes the calculated reasonable allowances for the two barriers at equal heights. Noise Barriers SB4A and SB4B are shown in Figure 2.2-6.

Table 2.2-18. Summary of Reasonableness Determination Data—Noise Barriers SB4A and SB4B

Noise Barrier SB4			Length: 4,300 feet (two barriers)			
Predicted Sound Level without Barrier						
Design-year noise level, dBA-L_{eq}(h)			73			
Design-year noise level minus existing noise level			4			
Design Year with Barrier (inside I-80 right-of-way)	**Height = 6 feet**	**Height = 8 feet**	**Height = 10 feet**	**Height = 12 feet**	**Height = 14 feet**	**Height = 16 feet**
Barrier noise reduction, dB	3	4	7	8	9	9
Number of benefited residences	0	0	1	3	3	3
New highway or more than 50% of residences predate 1978	Yes	Yes	Yes	Yes	Yes	Yes
Reasonable allowance per benefited residence	$52,000	$52,000	$54,000	$54,000	$56,000	$56,000
Total reasonable allowance	N/A	N/A	$54,000	$162,000	$168,000	$168,000

Note: N/A = not applicable.

A Noise Abatement Decision Report (NADR) was prepared to include noise abatement construction cost estimates that have been prepared by the project engineer based on site-specific conditions. These cost estimates are then compared to the total reasonableness allowances as shown in Table 2.2-19.

Table 2.2-19. Summary of Reasonableness Allowances and Cost Estimates for the Evaluated Noise Barrier Design SB4

Height (ft)	Receivers Benefited	Existing Noise Level, dBA-Leq[h]	Predicted Design Year Noise Level, dBA-Leq[h]	Predicted Design Year Noise Level with Barrier, dBA-Leq[h]	Estimated Construction Cost ($)	Department Reasonableness Allowance ($)
10	1	71	73	66	1,710,000	54,000
12	3	71	73	65	2,072,000	162,000
14	3	71	73	64	2,414,000	168,000
16	3	71	73	64	2,776,000	168,000

As Table 2.2-19 shows, the estimated construction costs exceed the reasonableness allowance in all cases. Accordingly, the barrier design is not considered to be reasonable from a cost perspective. The determination of final reasonableness will made upon completion of the public input process.

Environmental Consequences

Impact NOI-1: Exposure of Noise-sensitive Land Uses to increased traffic noise

As indicated in Table 2.2-17 Design Year with-project traffic noise levels are predicted to be 1 to 2 dB greater than Design Year no-project traffic noise levels. Because this increase is than the threshold of a perceptible change (3 dB) future traffic noise levels due to the project are not expected to result in an adverse effect under NEPA.

Impact NOI-2: Exposure of Noise-sensitive Land Uses to construction noise

Construction noise is regulated by the Department's Standard Specifications Section 7-1.01I, "Sound Control Requirements," which states that noise levels generated during construction will comply with applicable local, state, and federal regulations and that all equipment will be fitted with adequate mufflers according to the manufacturers' specifications.

Table 2.2-20 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 2.2-20. Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy trucks	88
Backhoe	80
Pneumatic tools	85
Concrete pump	82

Source: Federal Transit Administration 2006.

No adverse noise effects from construction are anticipated, because construction would be conducted in accordance with the Department's Standard Specifications Section 7-1.01I and applicable local noise standards. Construction noise would be short-term, intermittent, and masked by local traffic noise. In addition, standard Department procedures include implementation of the following measures to minimize the temporary noise effects from construction:

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.
- As directed by the Department, 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.

There would be no adverse effects related to the exposure of noise-sensitive land uses to construction noise.

Effects of the No-Project Alternative

Under no-project conditions, no new noise effects associated with the project would occur. As shown in Table 2.2-17, noise levels associated with traffic would increase in the future as traffic congestion associated with growth increases.

2.2.8 Energy

This section of the EIR/EA for the proposed project provides an estimate of local energy demand directly related to the project and no-project scenarios for construction and operation. The information contained in this section is based upon the *Interstate-80 Eastbound Cordelia Truck Scale Relocation Project Energy Technical Report* which is hereby incorporated by reference in its entirety (California Department of Transportation 2008).

The CEQA Guidelines, Appendix F, Energy Conservation, state that EIRs are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

NEPA (42 USC Part 4332) requires the identification of all potentially adverse effects to the environment, including energy impacts.

Issues related to energy use include the levels of consumption of nonrenewable energy sources for the construction of transportation projects and use in private and commercial transportation. Transportation energy use is related to the following factors: the efficiency of automobiles, trucks, and public transportation; the choice of travel mode (automobile, carpool, or public transit); and miles traveled for each mode. Energy also is consumed with construction and ongoing and routine operation and maintenance of transportation infrastructure. Also, because of concerns with increasing concentrations of GHGs, such as carbon dioxide (CO_2), in the atmosphere, this section discusses global warming as well.

Regulatory Setting

Federal and state agencies regulate energy consumption through various policies, standards, and programs. At the local level, individual cities and counties regulate energy through their regulatory and planning activities.

Federal Regulations

The Energy Policy and Conservation Act (EPCA) of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation, is responsible for revising existing fuel economy standards and establishing new vehicle fuel economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The CAFE rules require the average fuel economy of all vehicles of a given class that a manufacturer sells in each model year to be equal to or greater than the standard. The current CAFE standard for passenger cars is 27.5 miles per gallon (mpg) and 21.6 mpg for light trucks (gross vehicle weight of 8,500 pounds or less). Heavy-duty vehicles (i.e., gross vehicle weight of more than 8,500 pounds) are not currently subject to fuel economy standards. The EPCA was reauthorized in 2000 (49 CFR 533).

In December 2007, the Energy Independence and Security Act became law. One of the key provisions of the law is to improve vehicle fuel economy. The CAFE standards for passenger

cars and light trucks will be raised to 35 mpg by 2020. The law also requires automakers to improve vehicle electrification technology for plug-in hybrid vehicles and increase the production of biofuel-compatible vehicles.

State Regulations

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The PUC regulates privately owned utilities in the energy, rail, telecommunications, and water fields.

A CEQA amendment requires projects subject to EIRs to include a discussion of the potential energy impacts of proposed projects in the EIR, with particular emphasis on avoiding or reducing the inefficient, wasteful, and unnecessary consumption of energy (Consulting Engineers and Land Surveyors of California 2006).

State of California Energy Action Plan

The CEC is responsible for preparing the state's energy action plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the *California Energy Action Plan 2008 Update* (California Energy Commission 2008). The state's energy policies have been significantly influenced by the passage of AB 32, the California Global Warming Solutions Act of 2006. The CEC's *Integrated Energy Policy Report 2007* advances policies that would enable the state to meet its energy needs in a carbon-constrained world. The report also provides a comprehensive set of recommended actions to achieve these policies.

California Environmental Quality Act

Appendix F of the State CEQA Guidelines describes the types of information and analyses related to energy conservation that are to be included in EIRs. In Appendix F of the State CEQA Guidelines, energy conservation is described in terms of decreased per capita energy consumption, decreased reliance on natural gas and oil, and increased reliance on renewable energy sources. To ensure that energy implications are considered in project decisions, EIRs must include a discussion of the potentially significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing the inefficient, wasteful, and unnecessary consumption of energy.

Affected Environment

Physical Setting

ICF Jones & Stokes completed an energy technical report (2008g). The technical report provides estimates of local energy demand directly related to the proposed project during construction and operation and compares that with the no-project scenario.

Energy Types and Sources

Petroleum products supply approximately 39% of the energy demand in the United States (Energy Information Administration 2007). Coal and natural gas each supply approximately 23%

of the national energy demand, and nuclear and renewable sources supply the rest in roughly equal proportions.

Petroleum and natural gas supply most of the energy consumed in California. Petroleum products provide approximately 50% of the state's energy demand, and natural gas provides approximately 29% (California Energy Commission 2005). The remaining 21% of the state's energy demand is met by a variety of energy resources, including coal, nuclear, geothermal, wind, solar, and hydropower.

California's transportation sector, including on-road and rail transportation, consumes roughly 2 quadrillion (million billion) British thermal units (BTUs)[4] of energy annually, which is equal to 940,000 barrels of oil being consumed every day for 1 year (there are approximately 42 gallons in a barrel). The energy consumed by transportation modes accounts for roughly 60% of California's petroleum demand and 40% of its CO_2 emissions (California Energy Commission 2001).

Petroleum

Most gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet state-specific formulations required by the ARB. Major petroleum refineries in California are concentrated in three counties: Contra Costa County in northern California, Kern County in central California, and Los Angeles County in southern California. Valero, Tesoro, Phillips, Shell, and Chevron operate refineries in Contra Costa County, which is adjacent to Solano County, where the proposed project is located.

In 2006, refineries in California processed approximately 661 million barrels of crude oil (California Energy Commission 2007). Nearly 39% of the crude oil came from in-state oil production facilities; approximately 16% came from Alaska; and the remainder (approximately 45%) came from foreign sources. Together, the refineries in the Bay Area have a crude oil processing capacity of 767,450 barrels per day. The long-term oil supply outlook for California indicates that in-state and Alaska supplies are declining, leading to increasing dependence on foreign oil sources.

Natural Gas

Four regions supply California with natural gas. Three of them—the southwestern United States, the Rocky Mountains, and Canada—supply 86.5% of all the natural gas consumed in California (California Energy Commission 2007). The remainder of the natural gas (13.5%) is produced in California. In 2006, approximately 40% of all the natural gas consumed in California was used to generate electricity. Residential consumption represented one-fifth of California's natural gas

[4] The units of energy used in this report are British thermal units, kilowatt-hours (kWh), therms, and gallons. A BTU is the quantity of heat required to raise the temperature of 1 pound of water 1°F at sea level. Because the other units of energy can all be converted into equivalent BTUs, the BTU is used as the basis for comparing energy consumption associated with different resources. A kWh is a unit of electrical energy, and 1 kWh is equivalent to approximately 10,200 BTUs, taking into account initial conversion losses (i.e., from one type of energy, such as chemical, to another type of energy, such as mechanical) and transmission losses. Natural gas consumption typically is described in terms of cubic feet or therms; 1 cubic foot of natural gas is equivalent to approximately 1,050 BTUs, and 1 therm represents 100,000 BTUs. One gallon of gasoline/diesel is equivalent to approximately 125,000/139,000 BTUs, respectively, taking into account energy consumed in the refining process.

use, with the balance consumed by the industrial, resource extraction, and commercial sectors. PG&E is the primary natural gas provider for the Bay Area. PG&E obtains its energy supplies from natural gas fields in northern California.

Electricity

Power plants in California meet approximately 78% of the in-state electricity demand; hydroelectric power from the Pacific Northwest provides another 7%, and power plants in the southwestern United States provide another 15% (California Energy Commission 2007). Among other factors, the contribution between in-state and out-of-state power plants depends upon the precipitation that occurred in the previous year and the corresponding amount of available hydroelectric power. In the Bay Area, Contra Costa County is home to one of the largest power plants in California: the Pittsburg Power Plant. It is the fourth-largest power plant in California, and it consumes natural gas. Smaller power plants and cogeneration facilities are located throughout the Bay Area. PG&E is the primary electricity supplier to northern California.

Alternative Fuels

The U.S. Department of Transportation currently recognizes the following as alternative fuels: methanol and denatured ethanol (alcohol mixtures that contain no less than 70% of the alcohol fuel), natural gas (compressed or liquefied), liquefied petroleum gas (LPG), hydrogen, coal-derived liquid fuels, fuels derived from biological materials (i.e., biomass), and electricity. The liquid fuel referred to as methanol (M85) consists of methanol and gasoline and is derived from natural gas, coal, or woody biomass. The liquid fuel referred to as ethanol (E85) consists of ethanol and gasoline and is derived from corn, grains, or agricultural waste. Natural gas consists of a high percentage of methane (generally above 85%) and varying amounts of ethane, propane, butane, and inerts (typically nitrogen, CO_2, and helium) and comes from underground reserves. LPG consists mostly of propane and is a byproduct of petroleum refining or natural gas processing. Current technologies for electric vehicles include lead-acid and nickel-metal hydride batteries.

Energy Use for Transportation

Transportation is the largest energy consumer in the state, accounting for 60% of total energy use (California Energy Commission 2007). On-road vehicles are estimated to consume approximately 80% of California's transportation energy demand, with automobiles, trucks, and buses accounting for nearly all of the on-road fuel consumption.

On-road vehicles use about 90% of the distillate (petroleum) consumed in California. The Department estimates that in 2007, more than 3.3 billion gallons of gasoline and diesel fuel would have been consumed in the nine Bay Area counties, an increase of about 127 million gallons over 2000 consumption levels (California Energy Commission 2007).

Long-term energy consumption trends for transportation will be largely determined by fuel efficiency trends for motor vehicles, because motor vehicles are the predominant transportation mode for passengers and commercial goods.

Energy Use for Commercial-Industrial Buildings

Commercial and industrial buildings in California need a lot of energy to operate. The major components of energy usage in commercial buildings are lighting, heating, cooling, ventilation

(HVAC) and other electrical outlet end use amenities. HVAC refers to the equipment, distribution system, and controls that provide heating, ventilation, and air conditioning for buildings. HVAC systems are the main energy consumers in commercial buildings, accounting for approximately half of all the energy used in the buildings. Lighting systems normally account for 30 percent of the electrical energy use in these buildings. An inefficient lighting system adds excessive heat inside the building. In addition to the energy costs, lighting and HVAC systems affect building occupants´ health, comfort, and productivity. Improving HVAC and lighting system performance saves energy and promotes a healthier, more comfortable workplace.

Energy Used by Private and Commercial Vehicles

Commercial vehicles, generally composed of light, medium, and heavy trucks, are typically fueled by diesel or gasoline and are part of the general fleet mix of vehicles present within the Bay Area transportation system. This energy analysis uses an average on-road vehicle fleet fuel economy of 17.98 mpg in 2006, based on the 2006 *California Motor Vehicle Stock, Travel, and Fuel Forecast* (California Department of Transportation 2006a).

In the short-term, average fuel economy is expected to decrease due to the increase in light-duty trucks as a fraction of the light-duty vehicle fleet in California. Model year 2007 cars had the lowest recorded fuel economy ratings since 1980, largely due to buyer preferences for sport utility vehicles (21% of new car sales in the United States). Since 1981, improved engine performance has largely been offset by an increase in the average weight of cars and light-duty trucks (10% and 16%, respectively).

Global Warming

Scientists and climatologists have cited evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to an increase in the earth's temperature. Although climate changes can result from many natural processes, most scientists and climatologists agree that human activities may be accelerating the warming process. The concentration of GHGs in the atmosphere changes the amount of heat that is radiated from the earth back into space. GHGs include CO_2, methane, ozone, halocarbons, and nitrous oxide.

CO_2 is one of the most potent GHGs because it traps more heat in the atmosphere than other GHGs do, and much of it tends to remain in the atmosphere for centuries (Intergovernmental Panel on Climate Change 2007). The United States has one of the highest per-capita emissions of GHGs of any country in the world. Transportation accounts for about 39% of the CO_2 (the primary pollutant responsible for global warming) produced in California (California Energy Commission 2004).

Environmental Consequences

Significance Criterion

There is no threshold of significance for energy. Instead, the Department and FHWA require a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

Methods

Energy consumption associated with building a facility mostly comprises electric energy imported from Pacific Gas and Electric (PG&E) and vehicular movement, which is almost entirely the consumption of fossil fuel (gasoline and diesel). Transportation-related activities account for approximately half of all the petroleum products consumed in California. The consumption of nonrenewable resources remains high even though state and federal policies, such as the California Low-Emission Vehicle Program and the Federal Energy Policy Act of 1992, are increasing the use of alternative fuel and low-emission vehicles. Determining future 2015 and 2035 fuel consumption would require the estimation of 2015 and 2035 fuel efficiencies for both gasoline and diesel vehicle and advances in alternative fuel technology. The forecast future fuel efficiency is difficult to accurately predict, so this qualitative analysis will consider the "worst-case scenario," which utilizes current fuel efficiencies and assumes no improvement in alternative fuel technology or increase n alternative fuel technology use.

Direct Energy Consumption

Direct energy is that energy used in the daily operation of the transportation system, including the propulsion of on-road vehicles under varying conditions. In assessing the direct energy impact, consideration was given to the following factors: fleet mix, annual VMT, and variation of fuel consumption rates over time and by vehicle type.

Energy Consumption in Commercial Buildings

Cordelia Truck Scales facility receives electricity from a direct access provider utilizing the PG&E transmission grid. Because of the lack of electricity consumption data for the Cordelia Truck Scales Facility, this analysis uses electricity usage rates based on the total number of square footage of the buildings. The calculations of electricity consumptions for the proposed Build and No-Build Alternatives are based on the electricity usage rate of 10.5 kilowatt-hour per square foot of space per year (kWh/sq. ft./yr) for miscellaneous buildings, which was obtained from the South Coast Air Quality Management District's Air Quality Handbook (SCAQMD 1993). Annual electricity consumption by the existing 9,600 square foot Cordelia facility was estimated at 100,800 kWh/year.

Indirect Energy Consumption

Indirect energy is the energy required to construct, operate, and maintain the transportation network as well as manufacture and maintain on-road vehicles and transit vehicles. Indirect energy consumption also includes changes in energy demand resulting from a project, such as changes related to trip origins and destinations or travel modes. Indirect energy consumption from the production of fuel as well as transportation/transmission services for end users is not included in this analysis because any such analysis would be speculative.

Because the proposed project is in the conceptual planning stages and because detailed construction information, such as the number of pieces of equipment and types, materials, and labor hours, is not available, a detailed quantitative assessment of construction and maintenance impacts is not possible.

Environmental Consequences

Impact EN-1: Increase in Direct Energy Consumption at Cordelia Facility

Additional energy would likely be required for operation of the expanded truck scales proposed under the Build Alternative. The new building and parking lot would be larger than the facilities at the existing truck scales; therefore, energy consumption is expected to be greater. Annual and projected electricity consumption is summarized in Table 2.2-21 for both 2015 and 2035. Total projected electricity consumption would be approximately 264,600 kWh/year.

Table 2.2-21. Direct Electricity Consumptions

Land Use	Total Electricity Usage
Truck Scales Facility (Miscellaneous)	
Existing Condition	100,800 kWh/year (or 3.01 $x10^{12}$ Btu/year)
Proposed Project	264,600 kWh/year (or 7.91 $x10^{12}$ Btu/year)

The significant increase of approximately 163,600 kWh/year (or 4.90 $x10^{12}$ Btu/year) would be reduced by at least 20 percent with the use of more energy-efficient heating, ventilation, air-conditioning, and lighting equipment throughout the truck scales facility.

Conserving Facility Energy

The Governor's Executive Order S-20-04 and Green Building Action Plan establishes the sustainable building and facility goals to treat an entire facility as one system, recognizing that individual building features, such as lighting, windows, heating and cooling systems, and control systems need to be designed as a coherent whole. Sustainable design or "building green" is an opportunity to use our resources efficiently while creating healthier buildings. It provides cost savings through improved human health and productivity, lower building operational costs, and resource efficiency. Specifically, by using less energy, water, and materials, sustainable buildings save California's natural resources. Sustainable buildings provide a healthier work environment with more natural light and cleaner air, contributing to employee wellbeing and increased productivity. Sustainable buildings are also cost-effective, saving taxpayer money by reducing operations and maintenance costs and lowering utility bills.

In designing, constructing, and operating the new facility, the Department will continue to incorporate programs and techniques that create buildings and systems with a LEED Silver or higher rating and that help provide for a sustainable environment. Specifically, the Department will continue to implement energy-saving projects that conserve energy, improve efficiency, and reduce energy costs through a variety of programs. Project design typically incorporates energy-efficient lighting fixtures; occupancy sensors that activate lights when people enter/leave rooms; double glazed, low "E" windows to reduce heat gain/loss throughout the day; and low-flow plumbing fixtures. The Department also works to meet or improve upon the Title 24 energy efficiency standards. The significant increase of approximately 163,600 kWh/year (or 4.90 $x10^{12}$ Btu/year) would be reduced by at least 20% with the use of more energy-efficient heating, ventilation, air-conditioning, and lighting equipment throughout the truck scales facility.

Thus, as a Department facility, the proposed project will adhere to the following policies and standards regarding green building design:

- The Department will set a goal for all new building projects to outperform the required provisions of the California Energy Code's Title 24 energy efficiency standards by at least 20%.
- The Department will design and build all new buildings to a minimum standard equivalent of LEED Silver or higher, whenever possible within the constraints of program needs and standard budget parameters.
- The Department will use its purchasing power to promote the availability of sustainable products by means that include pursuing contracts for building materials, subsystems, components, equipment, and supplies that promote sustainability.
- The Department will work with regulatory agencies and other entities to speed the development, approval, and implementation of products and technologies that improve energy efficiency, renewable energy resources, and support sustainable design, construction, and operating practices.

In addition, the operation and maintenance energy usage of the facility will be much less than the indirect energy consumption for vehicles and/or roadways. When balancing energy used during operation against energy saved by relieving congestion and other transportation efficiencies, the proposed project would not have substantial energy effects. Therefore, no adverse effects on electrical energy at the proposed facility are expected.

Impact EN-2: Increase in Regional Vehicle Energy Consumption

In December 2007, the Energy Independence and Security Act of 2007 amended Energy Policy and Conservation Act CAFE Program requirements and granted DOT additional rulemaking authority. Pursuant to the Energy Independence and Security Act, on April 22, 2008, NHTSA proposed CAFE standards for model year 2011–2015 passenger cars and light trucks to achieve a combined fuel economy average of at least 35 miles per gallon. The Energy Policy and Conservation Act fuel economy requirements, including the four factors NHSTA must consider in determining maximum feasible CAFE levels—technological feasibility, economic practicability, the need to conserve energy, and the effect of other standards of the Government on fuel economy—form the purpose of and need for the model year 2011–2015 CAFE standards. Because the new CAFE standard covers the initial 5 model years, the standards for the second 5-year period (i.e., model years 2016–2020) have not been decided, but it is expected to reach the 35 miles per gallon for total passenger vehicle fleet requirements. Based on the NHSTA forecast, the new CAFE standard is expected to increase the fuel savings in motor vehicles in 2035, if the model years 2011–2015 can achieve the 35 miles per gallon fuel economy. The most significant measure for direct energy expenditures would be adoption and implementation of more rigorous CAFE standards for passenger cars and light trucks, as stated in the Energy Independence and Security Act of 2007.

Additional energy likely would be required for operation of the expanded truck scales proposed with the project. The new building and parking lot would be larger than the facilities at the existing truck scales; therefore, energy consumption is expected to be greater. The increase, however, would be offset by the use of more energy-efficient heating, ventilation, air-conditioning, and lighting equipment throughout the truck scales facility. The change in energy

consumption required for operations at the new truck scales (building and lighting) is expected to be minimal. When balancing energy used during operation against energy saved by relieving congestion and other transportation efficiencies, the proposed project would not have substantial energy effects.

Impact EN-3: Increase in Consumption of Indirect Energy Types

There would be indirect energy impacts from the consumption of energy for construction, manufacturing, and maintenance purposes under the proposed project. Construction of the proposed project would require the expenditure of energy for building the project, manufacturing the materials used in construction, and transporting these materials to the construction area. Construction equipment and construction worker vehicles operated during project demolition and construction would use fossil fuels. This increased fuel consumption would be temporary and would cease at the end of the construction activity, and it would not have a residual requirement for additional energy input. The marginal increases in fossil fuel use resulting from project construction are not expected to have an appreciable effect on energy resources.

Impact EN-4: Increase in Carbon Dioxide Emissions and Potential Impacts on Global Warming

The purpose of the proposed project is to alleviate existing and future traffic congestion along I-80 and at the truck scales facility. The proposed project will not generate new vehicle trips since it will not construct new homes or businesses. However, there is a possibility that some traffic currently utilizing other routes would be attracted to use the improved facility, resulting in a slight increase in VMT. The impact of GHG emissions is global rather than a local issue. Therefore, the impact of the proposed project on GHG emissions was calculated using the systemwide traffic VMT data (Fehr & Peers 2008) for the I-80 corridor.

The GHG CO_2, which contributes to global warming, is produced largely by transportation-related sources. CO_2 emissions depend on VMT and emission factors derived from the EMFAC2007 model. Based on the traffic study (Fehr & Peers 2008), the proposed project would reduce congestion and improve LOS. Relieving congestion by enhancing operations and improving travel times in high-congestion travel corridors would lead, in general, to an overall reduction in GHG emissions; accordingly, modeling output in Tables 2.2-22 and 2.2-23 focuses on VMT, but does not include the beneficial effect of improving traffic flow and speed.

As shown in Tables 2.2-22 and 2.2-23, the project is expected to increase CO_2 by nearly 2 million tpy in 2015 and 8 million tpy in 2035. These changes in CO_2 levels represent increases of 0.4% and 1.4% in 2015 and 2035, respectively. No thresholds for CO_2 emissions have been established; therefore, the project is considered to have an adverse effect.

Table 2.2-22. Estimated Carbon Dioxide Emissions during Operations in 2015

Vehicles	2015 No Project	2015 With Project
VMT/year	5.35×10^8	5.34×10^8
Tons/year	4.92×10^8	4.94×10^8
Percent change in CO_2	Not applicable	+0.4%

Table 2.2-23. Estimated Carbon Dioxide Emissions during Operations in 2035

Vehicles	2035 No Project	2035 With Project
VMT/year	5.74×10^8	5.93×10^8
Tons/year	5.39×10^8	5.47×10^8
Percent change in CO_2	Not applicable	+1.4%

Limitation and Uncertainties with EMFAC Modeling

Although EMFAC can calculate CO_2 emissions from mobile sources, the model does have limitations when it comes to accurately reflecting CO_2 emissions. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008), studies have revealed that brief but rapid accelerations can contribute significantly to a vehicle's carbon monoxide and hydrocarbon emissions during a typical vehicle trip. Current emission factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idle) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared o the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work done by EPA and the CARB is underway on modal-emissions models, neither agency has yet approved modal-emissions models that can be used to conduct this more accurate modeling. In addition, EMFAC does not include speed corrections for most vehicle classes for CO2; for most vehicle classes, emission factors are held constant, which means that EMFAC is not sensitive to the decreased emissions associated with improved traffic flows for most vehicle classes. Therefore, the difference in modeled CO_2 emissions de to speed change will be slight.

It is interesting to note that CARB is currently not using EMFAC tocreate it inventory of GHG emissions, and is unclear why CARB has made this decision. Its web site only states:

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

With current science, project level analysis of GHG emissions is limited. Although a GHG analysis is included for this project, there are numerous key GHG variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected CO_2 emissions. The following brief key GHG variables are: (1) vehicle fuel economy is increasing, (2) near-zero carbon vehicles will come into the market during the design life of this project, (3) California has recently adopted a low-carbon transportation fuel standard, and (4) driver behavior has been changing as the U.S. economy and oil prices have changed.

In any event, the Department is firmly committed to implementing measures to help reduce the potential effect of the project. Implementation of The Department's Climate Action Program, described in Measure EN-4, would reduce the severity of this effect.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project is not expected to result in permanent direct or indirect impacts to energy. As stated previously, the consumption of fossil fuels and electricity would occur at typical amounts, and excesses in consumption are not expected.

For the GHG effects, the implementation of Measure EN-4 would reduce the level of the GHG emissions.

Measure EN-4: Implement Climate Action Program

Two of the most effective means to reduce emissions from transportation are outside the direct control of The Department. The most direct approach to improving the energy efficiency of the transportation sector is to increase vehicle fuel economy in new cars and light- and heavy-duty trucks. The Department does not control the fuel economy standards; rather, the EPA and the ARB have that control. The Department does, however, continue to be actively involved in the governor's Climate Action Team as the ARB works to implement AB 1493 and AB 32. The second approach is to reduce VMT by planning and implementing smart land use strategies: job/housing proximity, transit-oriented development, and high-density housing along transit corridors. As part of The Department's Climate Action Program, The Department will work closely with local jurisdictions on planning activities; however, The Department does not have local land use planning authority.

The Department and its parent agency, the Business, Transportation, and Housing Agency, will continue to address NO_x and GHG emission reductions through the following strategies in the Climate Action Program.

- Improve transportation energy efficiency—Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools, and information that advance cleaner transportation and reduce climate change emissions.
- Smart land use and Intelligent Transportation Systems (ITS)—Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods, and services. Governor Schwarzenegger is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives, and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity, and a quality environment. Smart land use, demand management, ITS, and value pricing are critical elements in this plan for improving mobility and transportation efficiency. Specific strategies include promoting jobs/housing/proximity and transit-oriented development; encouraging high-density residential/commercial development along transit/rail corridors; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, and incident management;

accelerating the development of broadband infrastructure; and comprehensive, integrated multimodal/intermodal transportation planning.

Effects of the No-Project Alternative

Under the No-Project Alternative, no new energy effects associated with the project would occur. As shown in Table 2.2-21, less indirect energy consumption would occur under the No-Project Alternative. As shown in Tables 2.2-23 and 2.2-24, less carbon dioxide production would occur under the No-Project Alternative.

2.3 Biological Environment

The project area generally includes the project construction footprint and a 20-foot buffer around the project footprint to accommodate construction activities and staging. The 56.39-acre study area for biological resources includes the project area, seasonal wetlands within 250 feet of the construction footprint, and elderberry shrubs within 100 feet of the construction footprint. Where seasonal wetlands extend beyond the 250-foot boundary, the entire wetland is included in the study area.

The project area encompasses approximately 2 miles along I-80, the existing eastbound truck scales that will be removed, and the site of the new truck scales. Areas of highway widening, ramp construction, and creek crossings are included. Land use in the study area is primarily roadway with adjacent development and agriculture, with a high level of historical and ongoing disturbance.

2.3.1 Natural Communities

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

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species section (section 2.3.5). Wetlands and other waters are also discussed below in section 2.3.2.

The study area supports six natural communities of special concern: riparian woodland, valley oak woodland, seasonal wetland, perennial wetland drainage, seasonal drainage, and perennial drainage (Figure 2.3-1). Only riparian woodland and valley oak woodland are discussed in this section. The wetland communities and drainages are discussed in section 2.3.2 (“Wetlands and Other Waters”). Other parts of the study area support other woodland (planted trees), orchard, ruderal (weedy) grasslands, row crops, landscaped areas, or developed areas.

Riparian Woodland

Regulatory Setting

Riparian communities are considered sensitive locally, regionally, and statewide because of their habitat value and decline in extent. The Solano County Water Agency (SCWA) habitat conservation plan (HCP) concludes that the riparian corridor along Suisun Valley Creek is important because it provides connectivity between the Inner Coast Ranges and Suisun Marsh (Solano County Water Agency 2007). The California Department of Fish and Game (DFG) has adopted a no-net-loss policy for riparian habitat values, and the streambed alteration agreement (SAA) would include mitigation requirements for a loss of riparian vegetation. The U.S. Fish and

Wildlife Service (USFWS) mitigation policy identifies California's riparian habitats in Resource Category 2, for which no net loss of existing habitat value is recommended (46 FR 7644).

Affected Environment

A total of 1.71 acres of riparian woodland is in the study area. Riparian woodland occurs along both banks of Suisun Creek. A row of mature live oak and valley oak trees grows along the I-80 roadway for several hundred feet to the west and east of Suisun Creek. This row of trees forms a continuous band of vegetation with the riparian habitat adjacent to the creek and is shown on Figure 2.3-1 as riparian habitat. Plant species that characterize riparian woodland in the study area include valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), willows (*Salix* sp.), white alder (*Alnus rhombifolia*), California buckeye (*Aesculus californica*), California bay (*Umbellularia californica*), and Himalayan blackberry (*Rubus armeniacus* [*discolor*]). Adjacent to the south side of the study area at Suisun Creek, riparian woodland also supports elderberry shrubs (*Sambucus mexicana*). Herbaceous groundcover consists of nonnative grasses, sedge species (*Carex* sp.), and mugwort (*Artemisia douglasiana*), and the shrub understory includes poison oak (*Toxicodendron diversilobum*), California wild grape (*Vitis californica*), and other species.

Riparian woodland habitat along Suisun Creek provides a wildlife movement corridor up and downstream for fish, amphibians, reptiles, birds, and mammals on a seasonal basis. However, its biological value is reduced because of fragmentation by I-80 and nearby development.

Environmental Consequences

Impact NC-1: Effect on Riparian Woodland

Construction of the project would result in a permanent loss of approximately 0.71 acre of riparian woodland along Suisun Creek (see Figure 2.3-1). The permanent effect area would include riparian trees, as well as woody understory plants, such as young trees, coyote brush (*Baccharis pilularis*), Himalayan blackberry, and elderberry adjacent to Suisun Creek.

Approximately 1.0 acre of riparian woodland vegetation would be disturbed temporarily for the construction of the Suisun Creek bridge. This effect would include the probable removal of additional trees and understory vegetation in the project footprint. Indirect effects on riparian woodland vegetation could occur from adjacent construction activity. Riparian vegetation adjacent to the construction area would not be removed for construction, but it could sustain damage from equipment. Implementation of the avoidance and minimization measures (Measures NC-1a through NC-1d) would protect trees and avoid indirect adverse effects.

State and federal agencies would require avoidance, minimization, and compensatory mitigation for the loss of riparian habitat. The loss or disturbance of riparian woodland vegetation would be considered adverse because it provides a variety of important ecological functions and values. However, implementation of Measure NC-1e would ensure that this is not an adverse effect.

FIGURE 2.3-1

Biological Resources
I-80 Eastbound Cordelia Truck Scales
Relocation Project
Solano County, California

Legend

- Permanent Impact
- Utility Pole Relocation
- Temporary Impact
- Underground Utilities
- Developed/graded
- Landscaped
- Orchard
- Other Woodland
- Drainage or Irrigation Ditch
- Perennial Drainage
- Riparian Woodland
- Row Crops
- Ruderal
- Seasonal Wetland
- Valley Oak Woodland
- Native Tree
- Elderberry Shrub
- Perennial Wetland Drainage

Feet
200 100 0 200

Aerial Photo Source: AirPhoto USA, November 2005

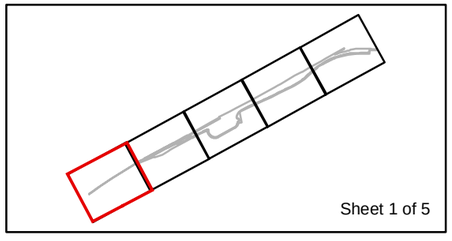


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FIGURE 2.3-1

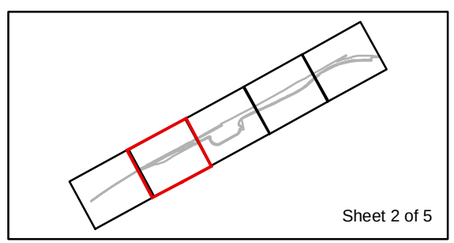
Biological Resources
I-80 Eastbound Cordelia Truck Scales Relocation Project
Solano County, California

Legend

- Permanent Impact
- Utility Pole Relocation
- Temporary Impact
- Underground Utilities
- Developed/graded
- Landscaped
- Orchard
- Other Woodland
- Drainage or Irrigation Ditch
- Perennial Drainage
- Riparian Woodland
- Row Crops
- Ruderal
- Seasonal Wetland
- Valley Oak Woodland
- Native Tree
- Elderberry Shrub
- Perennial Wetland Drainage

Feet
200 100 0 200

Aerial Photo Source: AirPhoto USA, November 2005



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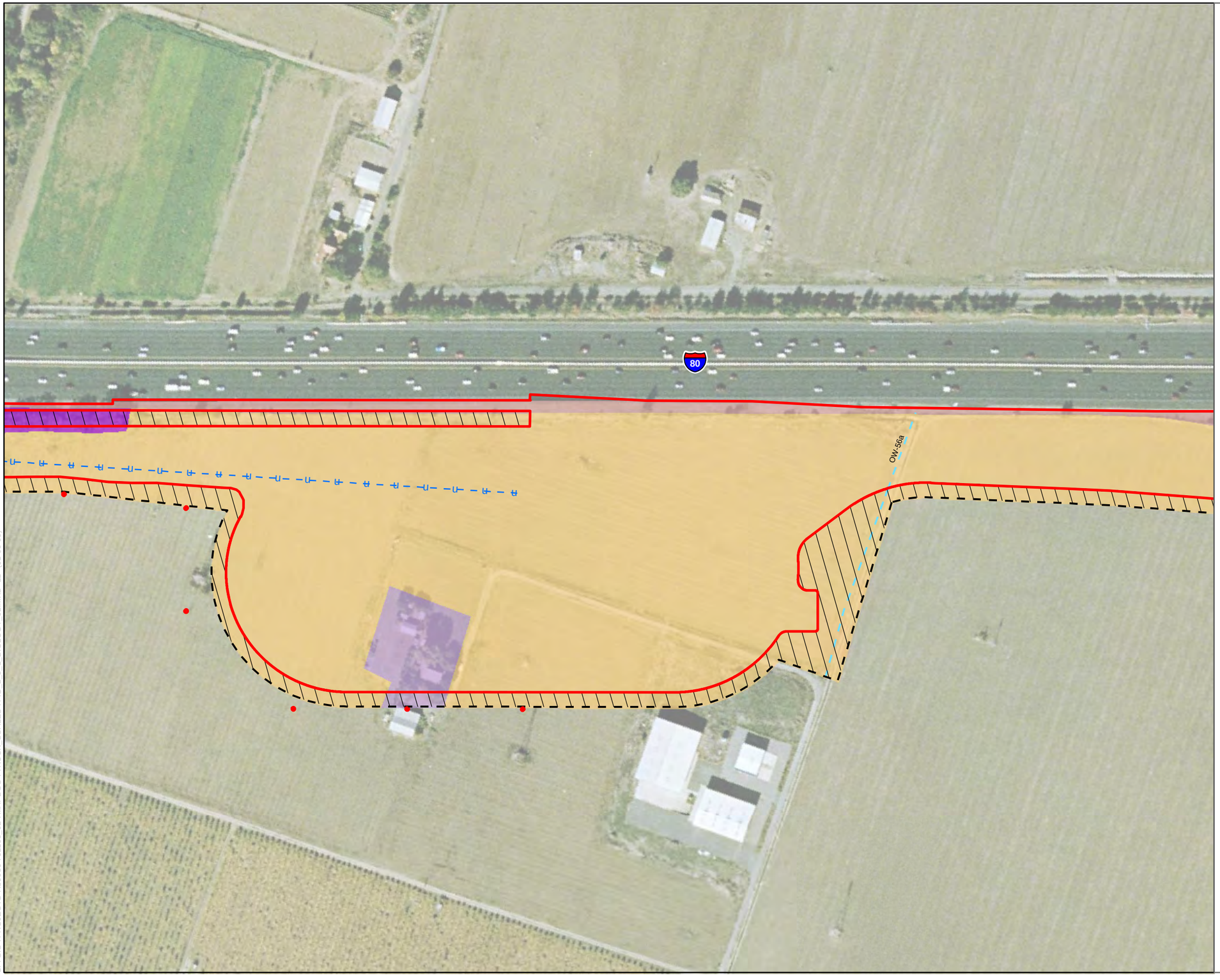

FIGURE 2.3-1

Biological Resources
I-80 Eastbound Cordelia Truck Scales
Relocation Project
Solano County, California

Legend

- Permanent Impact
- Utility Pole Relocation
- Temporary Impact
- Underground Utilities
- Developed/graded
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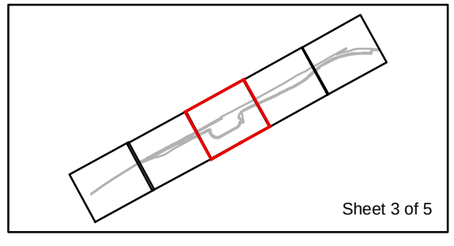
- Ruderal
- Seasonal Wetland
- Valley Oak Woodland
- Native Tree
- Elderberry Shrub
- Perennial Wetland Drainage

Feet
200 100 0 200

Aerial Photo Source: AirPhoto USA, November 2005



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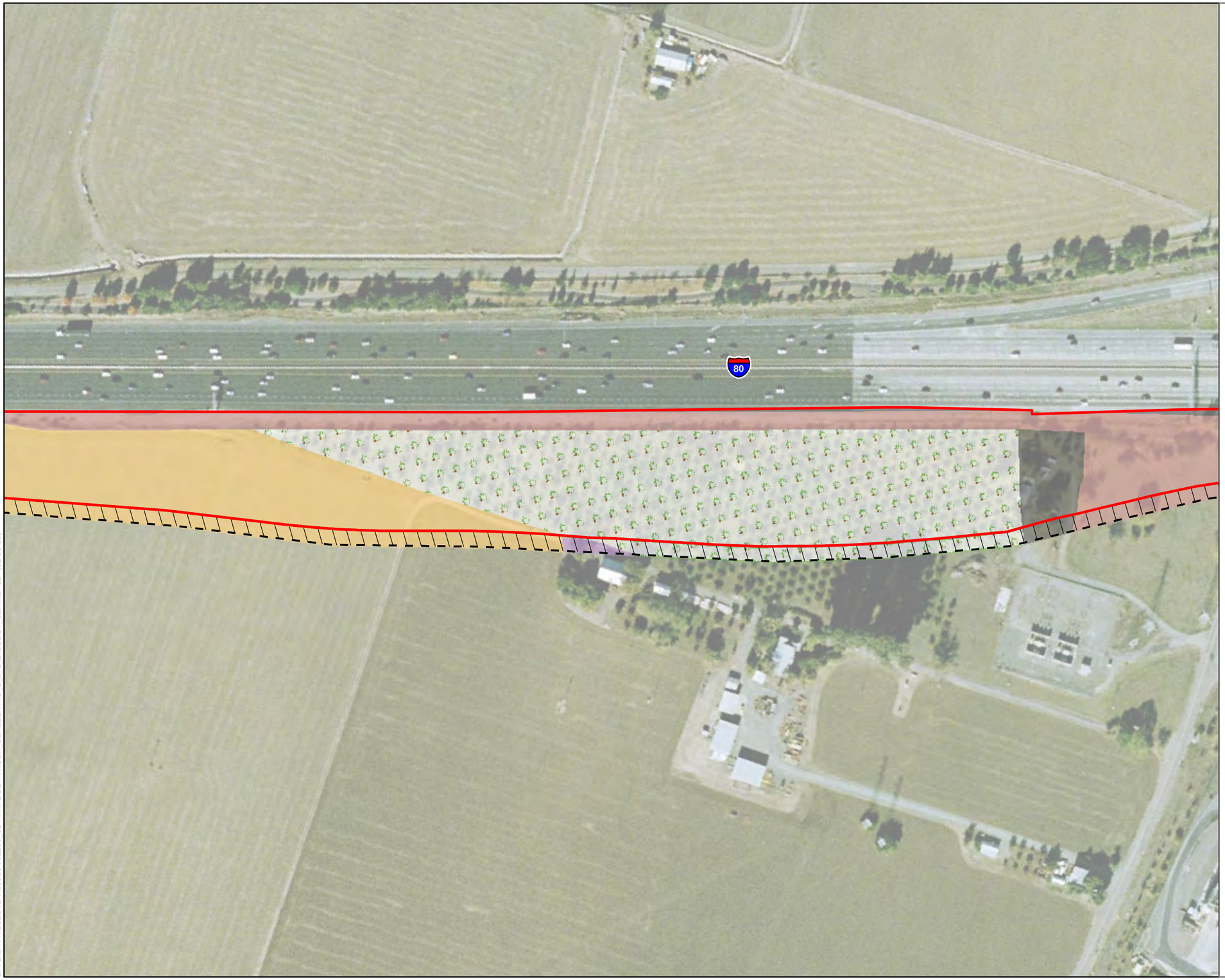

FIGURE 2.3-1

Biological Resources
I-80 Eastbound Cordelia Truck Scales
Relocation Project
Solano County, California

Legend

- Permanent Impact
- Utility Pole Relocation
- Temporary Impact
- Underground Utilities
- Developed/graded
- Landscaped
- Orchard
- Other Woodland
- Drainage or Irrigation Ditch
- Perennial Drainage
- Riparian Woodland
- Row Crops
- Ruderal
- Seasonal Wetland
- Valley Oak Woodland
- Native Tree
- Elderberry Shrub
- Perennial Wetland Drainage

Feet
200 100 0 200

Aerial Photo Source: AirPhoto USA, November 2005

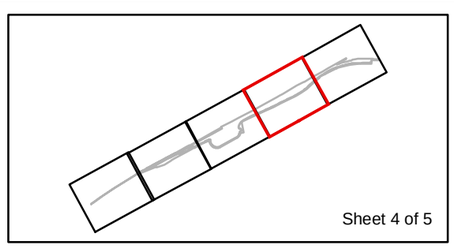

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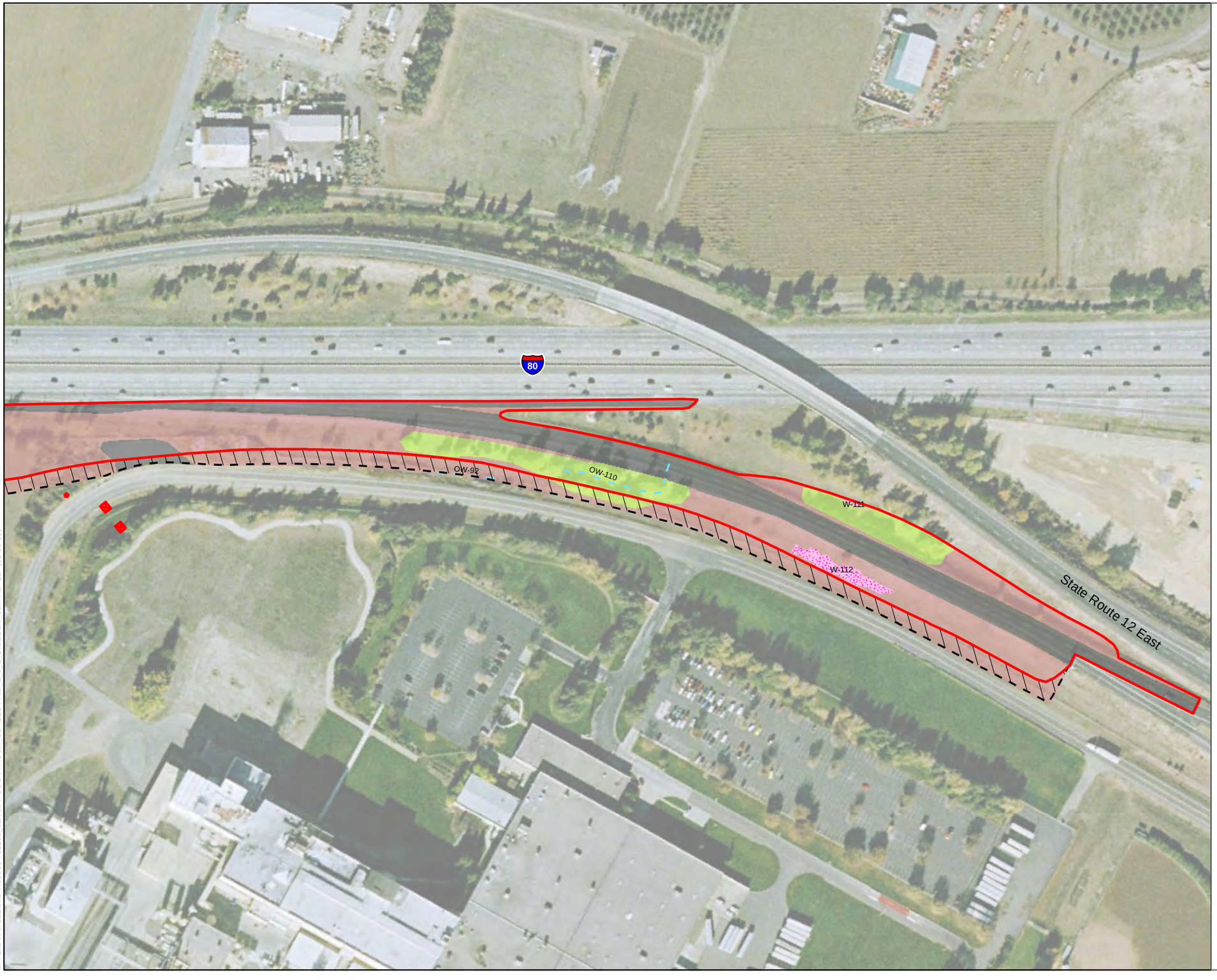
FIGURE 2.3-1

Biological Resources
I-80 Eastbound Cordelia Truck Scales
Relocation Project
Solano County, California



Legend

- Permanent Impact
- Utility Pole Relocation
- Temporary Impact
- Underground Utilities
- Developed/graded
- Landscaped
- Orchard
- Other Woodland
- Drainage or Irrigation Ditch
- Perennial Drainage
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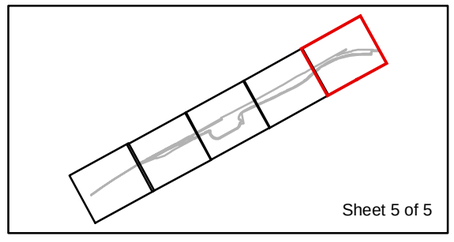
- Seasonal Wetland
- Valley Oak Woodland
- Native Tree
- Elderberry Shrub
- Perennial Wetland Drainage

Feet
200 100 0 200

Aerial Photo Source: AirPhoto USA, November 2005



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Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following avoidance and minimization measures would ensure that the proposed project would minimize effects on riparian habitat within and adjacent to the study area.

Measure NC-1a: Install Construction Barrier Fencing around the Construction Area to Protect Sensitive Biological Resources Outside of the Construction Area

Orange construction barrier fencing will be installed to identify environmentally sensitive areas (ESAs). A qualified biologist will identify sensitive biological resources adjacent to the construction area before the final design plans are prepared so that the areas to be fenced can be included in the plans. The area that generally would be required for construction, including staging and access, is shown in Figure 2.3-1. Pockets of this area that are to be avoided during construction should be fenced off to avoid disturbance. Sensitive biological resources that occur adjacent to the construction area include sensitive natural communities; native trees to be retained;, special-status wildlife habitats for valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*), California red-legged frog (CRLF) (*Rana aurora draytonii*) and northwestern pond turtle (western pond turtle) (*Actinemys marmorata*) (Suisun Creek); and nests of special-status birds.

Before construction, the construction contractor will work with the project engineer and a resource specialist to identify the locations for the barrier fencing and will place stakes around the sensitive resource sites to indicate these locations. The protected areas will be designated as ESAs and identified clearly on the construction plans. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period.

Temporary fences around the ESAs will be installed as one of the first orders of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least four feet high (Tensor Polygrid or equivalent). The fencing will be tightly strung on posts set at maximum intervals of 10 feet.

Measure NC-1b: Conduct Environmental Awareness Training for Construction Employees

A USFWS-approved biologist will be retained to develop and conduct environmental awareness training for construction employees on the importance of on-site biological resources, including sensitive natural communities; native trees to be retained; special-status wildlife habitats for VELB, CRLF, and western pond turtles (Suisun Creek); nests of special-status birds; and avoidance of invasive plant introduction and spread. The environmental awareness program will be provided to all construction personnel to brief them on the life history of special-status species in or adjacent to the project area, the need to avoid adverse effects on sensitive biological resources, any terms and conditions required by state and federal agencies, and the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor's superintendent will ensure that the personnel receive the mandatory training before starting work. An environmental awareness handout, describing and

illustrating sensitive resources that will be avoided during project construction and identifying all relevant permit conditions, will be provided to each person.

Measure NC-1c: Retain a Biological Monitor to Conduct Daily Visits during Construction around Suisun Creek

A biologist will be retained to conduct daily construction monitoring in and adjacent to all sensitive habitats when construction is taking place near sensitive habitat areas. The monitor, as part of the overall monitoring duties, will inspect the fencing along the creek and drainages in the construction area that support riparian vegetation, surrounding native trees and woodlands, and special-status wildlife habitats. The biological monitor will assist the construction crew as needed to comply with all project implementation restrictions and guidelines. The biological monitor also will be responsible for ensuring that the contractor maintains the staked and flagged perimeters of the construction area and staging areas adjacent to sensitive biological resources.

Measure NC-1d: Avoid and Minimize Potential Indirect Disturbance of Riparian Communities

To the extent possible, potential indirect disturbance of riparian communities will be avoided and minimized by implementing the following measures.

- The potential for long-term loss of riparian vegetation will be minimized by trimming vegetation rather than removing entire shrubs. Shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. To protect nesting birds, the project proponent will not allow pruning or removal of woody riparian vegetation between February 15 and September 1without preconstruction surveys.
- A certified arborist will be retained to oversee any necessary pruning of riparian trees.
- The areas that undergo vegetative pruning will be inspected immediately before construction, immediately after construction, and 1 year after construction to determine the amount of existing species cover, cover that has been removed, and cover that resprouts. If, after 1 year, these areas have not resprouted sufficiently to return to the pre-project level, the project proponent will replant the areas with the same species (native species) to reestablish the vegetation cover.

Work in riparian areas will be conducted between June 15 and October 15, and disturbed areas will be stabilized with erosion control measures and replanted as described in Measure NC-1e.

Measure NC-1e: Compensate for Temporary and Permanent Loss of Riparian Vegetation

Temporary construction-related loss of riparian vegetation will be compensated by replanting the temporarily disturbed area with the native species removed. Replanting will occur immediately after completion of the construction activities and no later than October 15 to minimize erosion, creek sedimentation, and adverse effects on fish.

The temporary loss of riparian vegetation will be compensated through the preparation of a mitigation planting plan, including a species list and number of each species, planting locations, and maintenance requirements. Plantings will consist of cuttings taken from local plants, or plants grown from local material obtained within the American Canyon watershed.

Planted species will be based on those removed from the project area and will include valley oak, interior live oak, willows, white alder, California buckeye, California bay, and Himalayan blackberry. Native understory species, such as sedge species, mugwort, California wild rose, poison oak, California wild grape, or other suitable species will be planted. Plantings will be monitored annually for three years or as required in the project permits.

If 75 percent of the plants survive at the end of the monitoring period, the revegetation will be considered successful. If the survival criterion is not met at the end of the monitoring period, planting and monitoring will be repeated after mortality causes have been identified and corrected.

Permanent loss of riparian vegetation will be compensated. Potential mitigation areas are available at Solano Community College; the Solano Land Trust's Lynch Canyon Open Space, which is northwest of I-80 in American Canyon; and the King Ranch Open Space, which is west of I-680 in the American Canyon area (Wickham pers. comm.)

Valley Oak Woodland

Regulatory Setting

The City of Fairfield Tree Conservation ordinance *(FCC 25.36)* protects native trees, including native oaks (*Quercus* spp.), bay laurel (*Umbellularia californica*), madrone (*Arbutus menziesi*), and California buckeye (*Aesculus californica*), that are greater than 6 inches in diameter at breast height (dbh). Removal of these trees requires a permit and on-site or off-site replacement for the removed trees on an inch-for-inch basis. Most of the study area is outside the Fairfield city limit line, and no native trees occur in that area. Native trees in the remainder of the project area are not protected under the ordinance. The DFG would recommend avoidance, minimization, and compensatory mitigation for the loss of native oak trees and oak woodland habitat. The loss or disturbance of oak woodland vegetation is considered adverse because this vegetation is declining and provides important wildlife habitat and other ecological functions and values.

Affected Environment

The west end of the study area extends into 0.03 acre of a valley oak woodland. This community is dominated by valley oak trees, although the overstory also contains coast live oak and blue oak (*Quercus douglasii*). The understory is open and grassy understory with blue wildrye (*Elymus glaucus*) and poison oak. Within the small portion of valley oak woodland that is in the study area, the overstory includes a coast live oak and a valley oak.

The piece of valley oak woodland in the study area provides some wildlife habitat value but it is too small and isolated to provide a movement corridor for wildlife species.

Environmental Consequences

The valley oak woodland vegetation community is not protected under any applicable federal statute. Impacts on this resource are discussed per CEQA requirements in Chapter 3.

2.3.2 Wetlands and Other Waters

The information presented here is taken from the *Preliminary Delineation of Waters of the United Stated for the Interstate 80 Eastbound Cordelia Truck Scales Relocation Project* (ICF Jones & Stokes 2008i) and the *I-80 Eastbound Cordelia Truck Scales Project Natural Environment Study* (ICF Jones & Stokes 2008h). The wetland delineation was submitted to the U.S. Army Corps of Engineers (USACE) in August 2008. A field verification of the preliminary delineation was conducted with Andrea Meier of the USACE San Francisco District on January 7, 2009, and final verification of the revised map is pending. This section addresses waters of the United States, which are under the jurisdiction of the USACE, as well as wetland and drainage features that are outside of USACE jurisdiction (nonjurisdictional features) and are regulated only as waters of the state. Impacts on nonjurisdictional features are discussed per CEQA requirements in Chapter 3.

Jurisdictional wetlands and other waters (waters of the U.S.) in the study area include a perennial wetland drainage (Dan Wilson Creek) and a perennial drainage (Suisun Creek). Non-jurisdictional features (waters of the state) in the study area include two seasonal wetlands, an irrigation ditch (Raines Drain), and roadside ditches. Raines Drain connects to navigable waters in Cordelia Slough and is, therefore, considered jurisdictional by the USACE and subject to regulation under CWA Section 404. A summary of the effects on waters of the state and waters of the United States is provided in Table 2.3-1 below.

Table 2.3-1. Effects on Waters of the State and Waters of the United States

Water of the State/ Water of the U.S.	Type	Permanent Effect (acres)	Temporary Effect (acres)
Water of the State (CEQA-only impact)	Seasonal wetland	0.13	0
Water of the U.S.	Perennial wetland drainage	0	0
Water of the U.S.	Perennial drainage	0	0
Water of the U.S.	Seasonal drainage	0.02	0.06
Water of the State (CEQA-only impact)	Seasonal drainage	0.10	0.08

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (CWA) (33 USC 1344) is the primary law regulating wetlands and waters. The CWA 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 CWA, 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 CWA.

Section 404 of the CWA 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 USACE with oversight by the Environmental Protection Agency (EPA).

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this EO states that a federal agency, such as the FHWA, 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 DFG and the Regional Water Quality Control Boards (RWQCBs). Sections 1600–1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the DFG before beginning construction. If the DFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Program will be required. DFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by an SAA obtained from the DFG.

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

Seasonal Wetland

Affected Environment

Two seasonal wetlands, totaling 0.13 acre, occur in the study area. These wetlands are located along the connector from eastbound I-80 to SR 12E and receive runoff from the road. The vegetation in these wetlands is correspondingly degraded, dominated by nonnative annual grasses and nonnative forbs. Dominant species observed in these wetlands include Italian ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum* var. *gussoneanum*), curly dock (*Rumex crispus*), narrow-leaved plantain (*Plantago lanceolata*), and birds-foot trefoil (*Lotus corniculatus*). Wetland functions of seasonal wetlands in the study area include flood storage, groundwater recharge, and wildlife habitat.

Because they are isolated from any creeks, the seasonal wetlands in the study area are not considered jurisdictional by the USACE or subject to regulation under CWA Section 404. Regardless of USACE jurisdiction, however, local, state, and federal agencies recognize seasonal wetlands as sensitive natural communities, and the seasonal wetland would be considered a water of the state.

Environmental Consequences

The seasonal wetland in the study area is not protected under any applicable federal statute. Impacts on this resource are discussed as CEQA-only impacts in Chapter 3.

Perennial Wetland Drainage

Affected Environment

One perennial wetland drainage, Dan Wilson Creek (feature W-53), crosses the study area. This feature supports freshwater marsh vegetation. Dominant plant species observed in perennial wetland drainages include bog rush (*Juncus effusus*), broadleaf cattail (*Typha latifolia*), common tule (*Scirpus acutus*), Himalayan blackberry, and narrowleaf willow (*Salix exigua*). Wetland functions of the perennial wetland drainage in the study area include flood conveyance and wildlife habitat because of the presence of generally dense wetland vegetation.

Dan Wilson Creek is considered a USACE-jurisdictional wetland, because the freshwater marsh wetland occurs within a drainage that is inundated year-round and connects to navigable waters in Cordelia Slough.

Environmental Consequences

Impact WOW-1: Effect on Perennial Wetland Drainage

No direct adverse effects on perennial wetland drainage habitat would result from the project, however, indirect effects caused by sedimentation or modification of hydrology could occur due to construction activities. Implementation of the avoidance and minimization measures would protect adjacent perennial wetland drainage habitat during construction and avoid potential indirect adverse effects on Dan Wilson Creek.

Wetland habitat in Dan Wilson Creek is under USACE jurisdiction because it is connected to the creek, which flows to a navigable water. The creek and its wetlands are also considered waters of the state, and water quality effects would be regulated by the RWQCB.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of the avoidance and minimization measures described in the "Riparian Woodland" section (Measures NC-1a and NC-1b) and the following Measure would ensure that the proposed project would not result in indirect adverse effects on perennial wetland drainage.

Measure WOW-1: Protect Water Quality and Prevent Erosion in Drainages and Wetlands

Water quality in drainages and wetlands that are outside the project footprint will be protected. Features to be protected include Suisun Creek, unnamed drainages, and wetlands in and adjacent to the project area. The following best management practices (BMPs) will be implemented before and during construction.

- All earthwork or foundation activities involving creeks, culverts, and bridges will occur in the dry season (generally between June 15 and October 15).
- Equipment used in and around drainages and wetlands will be in good working order and free of dripping or leaking engine fluids. All vehicle maintenance, staging, and materials storage will occur at least 300 feet from all drainages and wetlands. Any necessary equipment washing will occur where the water cannot flow into drainages or wetlands.

- Any surplus concrete rubble, asphalt, or other rubble from construction will be taken to a Solano County landfill.
- An erosion control plan will be prepared and implemented for the proposed project. It will include the following provisions and protocols.
  - Discharge from dewatering operations, if needed, and runoff from disturbed areas will be made to conform to the water quality requirements of the waste discharge permit issued by the RWQCB.
  - Material stockpiles will be located in non-traffic areas only. Side slopes will not be steeper than 2:1. All stockpile areas will be surrounded by a filter fabric fence and interceptor dike.
  - Erosion control measures will be applied throughout construction of the proposed project. The stormwater pollution prevention program (SWPPP) for the project will detail the applications and type of measures and the allowable exposure of unprotected soils.
  - Soil exposure will be minimized through the use of temporary BMPs, ground cover, and stabilization measures. Exposed dust-producing surfaces will be sprinkled daily, if necessary, until wet; this measure will be controlled to avoid producing runoff. Paved streets will be swept daily following construction activities.
  - The contractor will conduct periodic maintenance of erosion and sediment control measures.
  - All temporary erosion and sediment control measures will be removed after the working area is stabilized or as directed by the engineer.
  - An appropriate seed mix of native species will be planted on disturbed areas upon completion of construction.

Sandbagged silt fences will be installed in all named and unnamed waterways in which construction work occurs, both upstream and downstream of the construction site. Any accumulated sediment will be removed and trucked to a Solano County landfill or an approved disposal site.

Perennial and Seasonal Drainages

Affected Environment

Both perennial and seasonal drainages occur in the study area. A total of 0.20 acre of perennial drainage and 0.26 acre of seasonal drainage is in the study area. Drainage boundaries were indicated by changes in vegetation, shelving, or watermarks on concrete banks.

Suisun Creek is the only perennial drainage in the study, and it carries flow year-round or nearly year-round. Functions of this perennial drainage habitat in the study area include flood conveyance, fish production, and wildlife habitat. Suisun Creek is considered jurisdictional by the USACE, is subject to regulation under CWA Section 404, and is considered a sensitive natural community.

One of the seasonal drainages mapped in the study area is a concrete-lined irrigation ditch (known as Raines Drain) that connects to navigable waters in Cordelia Slough and is, therefore, considered jurisdictional by the USACE and subject to regulation under CWA Section 404. Other seasonal drainages are drainage ditches along roadsides. These roadside drainage ditches do not connect to a natural stream, are not subject to USACE jurisdiction, and are not considered sensitive natural communities, but could be regulated as waters of the state by the RWQCB. Functions of roadside seasonal drainages in the study area include flood conveyance during and after storm events.

Environmental Consequences

Construction of the project would involve the installation of culverts and placement of fill for road widening, resulting in direct disturbance of jurisdictional and nonjurisdictional seasonal drainages. Impact acreages are based on the USACE field verification of the delineation, which includes both jurisdictional and non jurisdictional features.

Seasonal roadside drainages in the study area are not protected under any applicable federal statute. Impacts on these resources are discussed per CEQA requirements in Chapter 3.

Impact WOW-2: Disturbance of Perennial Drainage during Construction

The bridge over Suisun Creek would be a clear span, and no piers or bridge abutments would be placed within the limits of the ordinary high water mark (OHWM). All construction will occur outside the limits of the OHWM. There would be no direct adverse effects on Suisun Creek due to project construction.

Additional indirect effects caused by sedimentation or modification of hydrology could occur in portions of perennial and seasonal drainages that lie outside the project footprint.

Impact WOW-3: Disturbance of Jurisdictional Seasonal Drainage during Construction

Raines Drain, currently a concrete lined ditch would be replaced with a pipe to maintain the connection from the north side of I-80 to the south side of the proposed project. A total of 0.02 acre of jurisdictional seasonal drainage within an irrigation ditch (feature OW-56a) would be removed for construction, and 0.06 acre would be temporarily affected. Placement of fill within the irrigation ditch would require authorization from the USACE under a CWA Section 404 nationwide permit. Because the cement-lined ditch functions as part of a transport system for irrigation water and does not provide significant wildlife habitat, there is no associated impact on wildlife habitat.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of the avoidance and minimization measures described in the "Riparian Woodland" section (Measures NC-1a and NC-1b) and in the "Perennial Wetland Drainage" section (Measure WOW-1) and the following measure would ensure that the proposed project would avoid and minimize direct and indirect effects on drainage habitats adjacent to the construction area.

Measure WOW-3: Obtain Required Permits, Authorizations, Certifications, and Agreements

Before construction, the following permits will be obtained.

- RWQCB—Waste Discharge Requirements and CWA Section 401 Water Quality Certification
- USACE—CWA Section 404 Nationwide permit.
- State Water Resources Control Board (SWRCB)—National Pollutant Discharge Elimination System (NPDES) permit.
- USFWS—Biological Opinion (BO).
- National Marine Fisheries Service (NMFS)—concurrence letter.
- DFG—Section 1602 Streambed Alteration Agreement.

All conditions that are attached to the state and federal permits will be implemented as part of the project. The conditions will be identified clearly in the construction plans and specifications and will be monitored during and after construction to ensure compliance.

2.3.3 Plant Species

Regulatory Setting

The USFWS and DFG share regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. *Special status* is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these species are formally listed or proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or both. No threatened or endangered species occur in the study area.

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

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

Affected Environment

During prefield investigations, 52 special-status plant species were determined to have the potential to occur in the project region (Table 2.3-2). Historic alteration of the study area due to construction of I-80, SR-12E, and the existing truck scales has disturbed all habitat within the study area, making the potential for occurrence of special-status plants very low. No special-status plants have been recorded in the study area (California Natural Diversity Database 2008).

Botanical surveys of the study area were conducted in May 2004, May 2005, and August 2007. No special-status plants were observed in the study area during the blooming-period botanical surveys.

Environmental Consequences

No special-status plants are located within the project area, and thus the project would not result in adverse effects on any special-status plants.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures for special-status plants are necessary.

2.3.4 Native Trees

Regulatory Setting

The City of Fairfield Tree Conservation ordinance *(FCC 25.36)* protects native trees, including native oaks (*Quercus* spp.), bay laurel (*Umbellularia californica*), madrone (*Arbutus menziesi*), and California buckeye (*Aesculus californica*), that are greater than 6 inches in diameter at breast height (dbh). Removal of these trees requires a permit and on-site or off-site replacement for the removed trees on an inch-for-inch basis. Most of the study area is outside the Fairfield city limit line, and no native trees occur in that area. Native trees in the remainder of the project area are not protected under the ordinance.

Affected Environment

The City of Fairfield Tree Conservation ordinance regulates the removal of mature native trees, but most of the study area is outside the Fairfield city limit line, and no native trees occur in the part of the study area that is within the city limit. Native trees in the remainder of the project area are not protected under the City of Fairfield ordinance, and Solano County has no specific tree protection requirements outside of hillsides and visually sensitive areas. However, most native trees in the study area occur within or adjacent to riparian and oak woodland communities. These trees are still considered sensitive resources because they occur in natural communities of special concern.

Tree surveys of the study area were conducted on November 20 and December 30, 2007, to map the locations using global positioning system (GPS) of all native trees and to record the species and dbh of each mapped tree. The locations of individual native trees that occur outside the mapped riparian and oak woodland communities are presented in Figure 2.3-1, and information for each tree is listed in Appendix D of the NES (ICF Jones & Stokes 2008i).

Environmental Consequences

Native trees are not protected under any applicable federal statute. Impacts to native trees are discussed as CEQA only impacts in Chapter 3.

Table 2.3-2. Special-Status Plant Species with the Potential to Occur in the Project Region

Common Name, *Scientific Name*	Legal Status[a]			Geographic Distribution	Habitat Requirements	Blooming Period	Habitat Present in Study Area?	Rationale
	Federal	State	CNPS					
Ferris' milk-vetch *Astragalus tener* var. *ferrisiae*	–	–	1B.1	Historical range included the Central Valley from Butte County to Alameda County, but it currently occurs only in Butte, Glenn, Colusa, and Yolo Counties	Seasonally wet areas in meadows and seeps, subalkaline flats in valley and foothill grassland; 16–246 feet (5–75 meters)	April–May	Yes	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys
Alkali milk-vetch *Astragalus tener* var. *tener*	–	–	1B.2	Merced, Solano, and Yolo Counties; historically more widespread	Grassy flats and vernal pool margins on alkali soils below 197 feet (60 meters)	March–June	Yes	Marginal habitat, but no suitable soils are present in the study area, and the species was not observed during blooming-period surveys
Heartscale *Atriplex cordulata*	–	–	1B.2	Western Central Valley and valleys of adjacent foothills	Alkali grassland, alkali meadow, and alkali scrub below 656 feet (200 meters)	April–October	Yes	No suitable vegetation communities or soils are present in the study area, and the species was not observed during blooming-period surveys
Brittlescale *Atriplex depressa*	–	–	1B.2	Western Central Valley and valleys of adjacent foothills on west side of Central Valley	Alkali grassland, alkali meadow, alkali scrub, chenopod scrub, playas, and valley and foothill grasslands on alkaline or clay soils below 656 feet (200 meters)	May–October	Yes	No suitable soils are present in the study area, and the species was not observed during blooming-period surveys
San Joaquin spearscale *Atriplex joaquiniana*	–	–	1B.2	West edge of Central Valley from Glenn County to Tulare County	Alkali grassland, alkali meadow, alkali scrub, and saltbush scrub below 1,000 feet (305 meters)	April–October	Yes	No suitable vegetation communities or soils are present in the study area, and the species was not observed during blooming-period surveys
Vernal pool smallscale *Atriplex persistens*	–	–	1B.2	Central Valley, from Glenn to Tulare County	Dry beds of vernal pools on alkaline soils; 33–377 feet (10–115 meters)	July–October	Yes	No suitable vegetation communities or soils are present in the study area, and the species was not observed during blooming-period surveys

Table 2.3-2. Continued

Common Name, *Scientific Name*	Legal Status[a]			Geographic Distribution	Habitat Requirements	Blooming Period	Habitat Present in Study Area?	Rationale
	Federal	State	CNPS					
Big-scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	–	–	1B.2	Scattered occurrences in Coast Ranges and Sierra Nevada foothills	Chaparral, cismontane woodland, valley and foothill grassland, sometimes on serpentine soils; 295–4,593 feet (90–1,400 meters)	March–June	Yes	Marginal habitat is present in oak woodlands in the study area, but the species was not observed during blooming-period surveys
Big tarplant *Blepharizonia plumosa*	–	–	1B.1	San Francisco Bay Area, with occurrences in Alameda, Contra Costa, San Joaquin[b], Stanislaus, and Solano Counties	Valley and foothill grassland; 98–1,657 feet (30–505 meters)	July–October	Yes	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys
Narrow-anthered California brodiaea *Brodiaea californica* var. *leptandra*	–	–	1B.2	Lake, Napa, and Sonoma Counties	Broadleaved upland forest, chaparral, and lower montane coniferous forest; 295–3,002 feet (90–915 meters)	May–July	No	No suitable vegetation communities are present in the study area
Mt. Diablo fairy-lantern *Calochortus pulchellus*	–	–	1B.2	Alameda, Contra Costa, and Solano Counties	Cismontane woodland and chaparral; 98–2,756 feet (30–840 meters)	April–June	Yes	Marginal habitat is present in oak woodlands in the study area, but the species was not observed during blooming-period surveys
Tiburon Indian paintbrush *Castilleja affinis* ssp. *neglecta*	E	T	1B.2	San Francisco Bay Area; Marin, Napa, and Santa Clara Counties	Serpentine grasslands; 197–1,312 feet (60–400 meters)	April–June	No	No suitable vegetation communities or soils are present in the study area
Holly-leaved ceanothus *Ceanothus purpureus*	–	–	1B.2	Inner north Coast Ranges; Napa and Solano Counties	Chaparral on volcanic, rocky substrate; 394–2,100 feet (120–640 meters)	February–April	No	No suitable vegetation communities or soils are present in the study area
Congdon's tarplant *Centromadia [Hemizonia] parryi* ssp. *congdonii*	–	–	1B.2	East San Francisco Bay Area, Salinas Valley, Los Osos Valley	Annual grassland, on lower slopes, flats, and swales, sometimes on alkaline or saline soils; below 755 feet (230 meters)	June–November	Yes	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys

Table 2.3-2. Continued

Common Name, *Scientific Name*	Legal Status[a]			Geographic Distribution	Habitat Requirements	Blooming Period	Habitat Present in Study Area?	Rationale
	Federal	State	CNPS					
Pappose tarplant *Centromadia [Hemizonia] parryi* ssp. *parryi*	–	–	1B.2	Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano, and Sonoma Counties	Coastal prairie, meadows and seeps, coastal salt marshes and swamps, alkaline soils in vernally mesic valley and foothill grassland; 7–1,378 feet (2–420 meters)	May–November	Yes	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys
Suisun thistle *Cirsium hydrophilum* var. *hydrophilum*	E	–	1B.1	Suisun Marsh, Solano County	Salt marsh; 0–3 feet (0–1 meter)	July–September	No	No suitable vegetation communities are present in the study area
Hispid bird's-beak *Cordylanthus mollis* ssp. *hispidus*	–	–	1B.1	Central Valley; Alameda, Kern, Merced, Placer, and Solano Counties	Meadow, grassland, and playa on alkaline soils below 150 meters	June–September	Yes	No suitable soils are present in the study area, and the species was not observed during blooming-period surveys
Soft bird's-beak *Cordylanthus mollis* ssp. *mollis*	E	R	1B.2	San Francisco Bay region and Suisun Marsh; Contra Costa, Marin[b], Napa, Solano, Sacramento[b], and Sonoma[b] Counties	Tidal salt marsh; 0–10 feet (0–3 meters)	July–September	No	No suitable vegetation communities or hydrologic conditions are present in the study area
Recurved larkspur *Delphinium recurvatum*	–	–	1B.2	San Joaquin Valley and Central Valley of the south Coast Ranges; Contra Costa County to Kern County	Subalkaline soils in annual grassland, saltbush scrub, cismontane woodland, and vernal pools at 98–2001 feet (30–610 meters)	March–May	Yes	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys
Dwarf downingia *Downingia pusilla*	–	–	2.2	Central Valley	Vernal pools and valley and foothill grasslands; 3–1,460 feet (1–445 meters)	March–May	Yes	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys
Streamside daisy *Erigeron biolettii*	–	–	3	North Coast, from Humboldt County to Marin County; Solano County	Moist, rocky areas in broadleaved upland forest, cismontane woodland, North Coast coniferous forest, and ledges along rivers; 98–3,609 feet (30–1,100 meters)	June–October		Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys

Table 2.3-2. Continued

Common Name, *Scientific Name*	Legal Status[a]			Geographic Distribution	Habitat Requirements	Blooming Period	Habitat Present in Study Area?	Rationale
	Federal	State	CNPS					
Tiburon buckwheat *Eriogonum luteolum* var. *caninum*	–	–	1B.1	Central inner north Coast Range, northern central coast, and northern San Francisco Bay Area: Alameda, Colusa, Lake, Marin, Napa, Santa Clara, San Mateo, Solano, and Sonoma[b] Counties	On serpentinite in chaparral, coastal prairie, valley and foothill grassland; 0–2,297 feet (0–700 meters)	June–September	No	No suitable soils (serpentinite) are present in the study area
Mt. Diablo buckwheat *Eriogonum truncatum*	–	–	1B.1	Historically known from Alameda, Contra Costa, and Solano Counties; recently rediscovered on Mt. Diablo	Coarse, sandy soils in chaparral, coastal scrub, valley and foothill grassland; 10–1,148 feet (3–350 meters)	April–September	No	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys
Fragrant fritillary *Fritillaria liliacea*	–	–	1B.2	Coast Ranges from Marin County to San Benito County	Adobe soils of interior foothills, coastal prairie, coastal scrub, annual grassland, often on serpentinite; 10–1,345 feet (3–410 meters)	February–April	Yes	Marginal habitat, but suitable soils unlikely to be present in the study area, and the species was not observed during blooming-period surveys
Adobe lily *Fritillaria pluriflora*	–	–	1B.2	Northern Sierra Nevada foothills, inner Coast Ranges foothills, and Sacramento Valley; Butte, Colusa, Glenn, Lake, Napa, Plumas, Solano, Tehama, and Yolo Counties	Chaparral, cismontane woodland, valley and foothill grassland, often on adobe soils; 197–2,313 feet (60–705 meters)	February–April	Yes	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys
Boggs Lake hedge-hyssop *Gratiola heterosepala*	–	E	1B.2	Inner north Coast Ranges, Central Sierra Nevada foothills, Sacramento Valley and Modoc Plateau: Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, and Tehama Counties; also Oregon	Clay soils in areas of shallow water, lake margins and vernal pool margins; 33–7,792 feet (10–2,375 meters)	April–August	Yes	No suitable habitat (large vernal pools) is present in the study area, and the species was not observed during blooming-period surveys

Table 2.3-2. Continued

Common Name, *Scientific Name*	Legal Status[a]			Geographic Distribution	Habitat Requirements	Blooming Period	Habitat Present in Study Area?	Rationale
	Federal	State	CNPS					
Diablo helianthella *Helianthella castanea*	–	–	1B.2	San Francisco Bay Area: Alameda, Contra Costa, Marin[b], San Francisco[b], and San Mateo Counties; also reported from San Diego County	At chaparral/oak woodland ecotone, often in partial shade, on rocky soils; also coastal scrub, riparian woodland, grassland; 197–4,265 feet (60–1,300 meters)	March–June	Yes	Marginally suitable habitat is present in riparian woodland in the study area, but the species has no known occurrences in Solano County. Species was not observed during blooming-period surveys
Brewer's western flax *Hesperolinon breweri*	–	–	1B.2	Southern north inner Coast Ranges, northeast San Francisco Bay region, and Mt. Diablo; Contra Costa, Napa, and Solano Counties	Serpentine slopes in chaparral and grasslands at 98–2,001 feet (30–610 meters)	May–July	No	No suitable vegetation communities, soils, or hydrologic conditions are present in the study area
Napa western flax *Hesperolinon serpentinum*	–	–	1B.1	Alameda, Lake, Napa, and Stanislaus Counties	Chaparral on serpentinite; 164–2,625 feet (50–800 meters)	May–July	No	No suitable vegetation communities or soils are present in the study area
Carquinez goldenbush *Isocoma arguta*	–	–	1B.1	Deltaic Sacramento Valley and Suisun Slough; Contra Costa and Solano Counties	Annual grassland on alkaline soils and flats generally below 69 feet (21 meters)	August–December	Yes	No suitable soils are present in the study area, and the species was not observed during blooming-period surveys
Northern California black walnut *Juglans hindsii*	–	–	1B.1	Last two native stands in Napa and Contra Costa Counties; historically more widespread through southern north inner Coast Range, southern Sacramento Valley, northern San Joaquin Valley, and San Francisco Bay region	Riparian forest, riparian woodland; 0–1,444 feet (0–440 meters)	April–May	Yes	No native stands are present in the study area
Contra Costa goldfields *Lasthenia conjugens*	E	–	1B.1	Napa and Solano Counties	Alkaline or saline vernal pools and swales below 1,542 feet (470 meters)	March–June	Yes	Marginal vegetation communities, but no suitable soils are present in the study area, and the species was not observed during blooming-period surveys

Table 2.3-2. Continued

Common Name, *Scientific Name*	Legal Status[a]			Geographic Distribution	Habitat Requirements	Blooming Period	Habitat Present in Study Area?	Rationale
	Federal	State	CNPS					
Delta tule pea *Lathyrus jepsonii* var. *jepsonii*	–	–	1B.2	Central Valley and San Francisco Bay region; Alameda, Contra Costa, Fresno, Marin, Napa, Sacramento, San Benito, Santa Clara, San Joaquin, and Solano Counties	Coastal and estuarine marshes below 1,001 feet (305 meters)	May–September	No	No suitable vegetation communities are present in the study area
Legenere *Legenere limosa*	–	–	1B.1	Central Valley	Vernal pools	April–June	Yes	Marginal habitat is present in seasonal wetlands in the study area, but the species was not observed during blooming-period surveys
Heckard's pepper-grass *Lepidium latipes* var. *heckardii*	–	–	1B.2	Southern Sacramento Valley, Glenn, Solano, and Yolo Counties	On margins of alkali scalds in annual grassland; below 656 feet (200 meters)	March–May	No	No suitable soil conditions (alkali scalds) are present in the study area
Woolly-headed lessingia *Lessingia hololeuca*	–	–	3	Southern north Coast Ranges; southern Sacramento Valley; northern San Francisco Bay region; Alameda, Monterey, Marin, Napa, Santa Clara, San Mateo, Solano, Sonoma, and Yolo Counties	Clay or serpentinite soils of coastal scrub, lower montane coniferous forest, valley and foothill grassland; 49–1,001 feet (15–305 meters)	June–October	Yes	Marginal vegetation communities, but no suitable soils are present in the study area, and the species was not observed during blooming-period surveys
Mason's lilaeopsis *Lilaeopsis masonii*	–	R	1B.1	Southern Sacramento Valley, Sacramento River–San Joaquin River Delta, and northeast San Francisco Bay Area; Alameda, Contra Costa, Marin[b], Napa, Sacramento, San Joaquin, and Solano Counties	Freshwater or brackish marsh, in tidal zone, generally at sea level	April–November	No	No suitable hydrologic conditions (tidal areas) are present in the study area
Delta mudwort *Limosella subulata*	–	–	2.1	Deltiac Central Valley: Contra Costa, Sacramento, San Joaquin, and Solano Counties; Oregon	Muddy or sandy intertidal flats and marshes, streambanks in riparian scrub generally at sea level; 0–10 feet (0–3 meters)	May–August	No	No suitable hydrologic conditions (tidal areas) are present in the study area

Table 2.3-2. Continued

Common Name, *Scientific Name*	Legal Status[a]			Geographic Distribution	Habitat Requirements	Blooming Period	Habitat Present in Study Area?	Rationale
	Federal	State	CNPS					
Robust monardella *Monardella villosa* ssp. *globosa*	–	–	1B.2	North Coast Ranges and eastern San Francisco Bay Area: Alameda, Contra Costa, Humboldt, Lake, Mendocino, Napa, Santa Clara, Santa Cruz, San Mateo, and Sonoma Counties	Grassy openings in oak woodland and chaparral, coastal scrub and grassland; 328–3,002 feet (100–915 meters)	June–July	No	Marginal habitat in the study area, which is below the known elevational range for the species, and the species was not observed during blooming-period surveys
Little mousetail *Myosurus minimus* ssp. *apus*	–	–	3.1	Central Valley and South Coast from Butte County south to San Diego County; Baja California; Oregon	Valley and foothill grassland, alkaline vernal pools at 66–2,100 feet (20–640 meters)	March–June	Yes	Marginal vegetation communities present, but no suitable soils are present in the study area, and the species was not observed during blooming-period surveys
Baker's navarretia *Navarretia leucocephala* ssp. *bakeri*	–	–	1B.1	Inner North Coast Range, western Sacramento Valley: Colusa, Glenn, Lake, Mendocino, Marin, Napa, Solano, Sonoma, Tehama, and Yolo Counties	Vernal pools and swales in woodland, lower montane coniferous forest, mesic meadows, and grassland; generally below 5,709 feet (1,740 meters)	May–July	Yes	Marginal habitat is present in seasonal wetlands in the study area, but the species was not observed during blooming-period surveys
Colusa grass *Neostapfia colusana*	T	E	1B.1	Central Valley; Colusa[b], Glenn[b], Merced, Solano, Stanislaus, and Yolo Counties	Adobe soils of vernal pools generally below 656 feet (200 meters)	May–September	Yes	Marginal habitat is present in seasonal wetlands in the study area, and heavy clay soils may occur in the study area, but the species was not observed during blooming-period surveys
San Joaquin Valley orcutt grass *Orcuttia inaequalis*	T	E	1B.1	Scattered locations along east edge of the San Joaquin Valley and adjacent foothills, from Stanislaus County to Tulare County	Vernal pools; 33–2,477 feet (10–755 meters)	April–September	Yes	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys
Bearded popcorn-flower *Plagiobothrys hystriculus*	–	–	1B.1	Endemic to Solano[b] County; last recorded in 1892; rediscovered in 2005	Mesic grasslands and vernal pools; 33–164 feet (10–50 meters)	April–May	Yes	Marginal habitat is present in seasonal wetlands in the study area, but species was not observed during blooming-period surveys

Table 2.3-2. Continued

Common Name, *Scientific Name*	Legal Status[a]			Geographic Distribution	Habitat Requirements	Blooming Period	Habitat Present in Study Area?	Rationale
	Federal	State	CNPS					
Marin knotweed *Polygonum marinense*	–	–	3.1	Coastal Marin, Marin, Napa, Solano, and Sonoma Counties	Coastal salt marsh, brackish marsh; 0–33 feet (0–10 meters)	April–-October	Yes	No suitable habitat occurs in the study area
California beaked-rush *Rhynchospora californica*	–	–	1B.1	Scattered occurrences in northern California; Butte, Mariposa, Marin, and Sonoma Counties	Freshwater marshes and seeps, bogs and fens, and lower montane coniferous forest; 131–3,314 feet (40–1,010 meters)	May–July	Yes	No suitable habitat occurs in the study area
Rayless ragwort *Senecio aphanactis*	–	–	2.2	Scattered locations in central western and southwestern California, from Alameda County to San Diego County	Oak woodland, coastal scrub, open sandy or rocky areas, on alkaline soils; 49–2,625 feet (15–800 meters)	January–April	Yes	Marginal habitat is present in oak woodlands in the study area, but the species was not observed during blooming-period surveys
Marin checkerbloom *Sidalcea hickmanii* ssp. *viridis*	–	–	1B.3	Sonoma County to San Mateo County	Openings in chaparral on volcanic or serpentinite substrates; 164–1,411 feet (50–430 meters)	May–June	No	No suitable vegetation communities or soils are present in the study area
Suisun marsh aster *Symphyotrichum lentum* [*Aster lentus*]	–	–	1B.2	Sacramento River–San Joaquin River Delta, Suisun Marsh, and Suisun Bay; Contra Costa, Napa, Sacramento, San Joaquin, and Solano Counties	Tidal brackish and freshwater marsh below 492 feet (150 meters)	May–November	No	No suitable hydrologic conditions (tidal areas) are present in the study area
Showy Indian clover *Trifolium amoenum*	E	–	1B.1	Coast Range foothills in the San Francisco Bay region; currently known from Marin County	Low elevation grasslands, including swales and disturbed areas, sometimes on serpentinite soils; 13–1,362 feet (4–415 meters)	April–June	Yes	Marginal habitat is present in the study area, but the species was not observed during blooming-period surveys
Saline clover *Trifolium depauperatum* var. *hydrophilum*	–	–	1B.2	Alameda, Monterey, Napa, San Benito, Santa Clara, San Luis Obispo, San Mateo, Solano, and Sonoma Counties	Salt marsh, mesic alkaline areas in grasslands, vernal pools; 0–984 feet (0–300 meters)	April–June	Yes	Marginal habitat, but no suitable soils are present in the study area, and the species was not observed during blooming-period surveys
Greene's tuctoria *Tuctoria greenei*	E	R	1B.1	Scattered distribution along eastern Central Valley and foothills from Shasta County to Tulare County	Dry vernal pools at 98–3,510 feet (30–1,070 meters)	May–September	Yes	Marginal habitat is present in seasonal wetlands in the study area, but the species was not observed during blooming-period surveys

Table 2.3-2. Continued

Common Name, *Scientific Name*	Legal Status[a]			Geographic Distribution	Habitat Requirements	Blooming Period	Habitat Present in Study Area?	Rationale
	Federal	State	CNPS					
Oval-leaved viburnum *Viburnum ellipticum*	–	–	2.3	Northwest California, San Francisco Bay Area, and north and central Sierra Nevada foothills; Contra Costa, Fresno, El Dorado, Glenn, Humboldt, Mendocino, Napa, Shasta, and Sonoma Counties, as well as Oregon and Washington	Chaparral, cismontane woodland, and lower montane coniferous forest; 705–4,593 feet (215–1,400 meters)	May–June	No	No suitable habitat is present in the study area, and the study area is below the elevational range for the species

Sources: CNDDB 2008; CNPS 2008; Jones & Stokes study area surveys 2004 and 2007.

[a] Status explanations:

– = no listing.

Federal
E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.

State
E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
R = listed as rare under the California Native Plant Protection Act; this category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.

California Native Plant Society
1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.
3 = List 3 species: plants about which more information is needed to determine their status.

California Native Plant Society Code Extensions:
.1 = seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat).
.2 = fairly endangered in California (20%–80% of occurrences threatened).
.3 = not very endangered in California (<20% of occurrences threatened or not current threats known).

[b] Known populations believed extirpated from that county.

2.3.5 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts on wildlife. The USFWS, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), and the DFG are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the ESA or the CESA. Species listed or proposed for listing as threatened or endangered are discussed in the "Threatened and Endangered Species" section below. All other special-status animal species are discussed here, including DFG fully protected species and species of special concern, and USFWS or NMFS candidate species.

Federal laws and regulations pertaining to wildlife include the following.

- NEPA.
- The Migratory Bird Treaty Act (MBTA).
- The Fish and Wildlife Coordination Act.

State laws and regulations pertaining to wildlife include the following.

- CEQA.
- Sections 1600–1603 of the CFGC.
- Sections 3503, 3503.5, 3511, and 3513 of the CFGC.
- Section 4150 and 4152 of the CFGC.

During prefield investigations, 31 special-status wildlife species and 11 special-status fish species were determined to have the potential to occur in the project region (Table 2.3-3). Following field surveys, the following special-status wildlife species (western pond turtle, white-tailed kite, western burrowing owl, loggerhead shrike, migratory birds and raptors, swallows, and roosting bats) and special-status fish species (river lamprey) were determined to have potential to occur in the study area, based on the presence or absence of suitable habitat.

Western Pond Turtle

Western pond turtle is designated as a state species of special concern. Western pond turtle, one of two subspecies of western pond turtle, occurs from the vicinity of the American River in California to the lower Columbia River in Oregon and Washington (Jennings et al. 1992).

Western pond turtles (also referred to as northwestern pond turtles) are thoroughly aquatic, preferring the quiet waters of ponds, reservoirs, and sluggish streams (Stebbins 2003). The species occurs in a wide range of both permanent and intermittent aquatic environments (Jennings et al. 1992). Western pond turtles spend considerable time basking on rocks, logs, emergent vegetation, mud or sand banks, and human-generated debris. They move up to an elevation of 1,300 feet or more, where in upland areas adjacent to watercourses they deposit eggs and overwinter (Jennings and Hayes 1994). Western pond turtles typically become active in March and return to overwintering sites by October or November (Jennings et al. 1992).

Affected Environment

No western pond turtles were observed within or adjacent to Suisun Creek during the CRLF site assessment surveys in late summer 2007 or during the preconstruction swallow nest surveys in spring 2008 for the I-80 high occupancy vehicle (HOV) lanes project. The nearest western pond turtle was observed in Ledgewood Creek (which also drains into Suisun Bay) at I-80 in April 2008 during construction monitoring surveys for the I-80 HOV lanes project. There is moderate potential for western pond turtles to move through Suisun Creek in the project area, and turtles could nest or overwinter in upland habitat adjacent to Suisun Creek.

Environmental Consequences

Western pond turtles are very sensitive to disturbances and quickly retreat into the water when threatened. Pond turtles are not expected to be present in upland habitat in the study area where construction will occur during summer and early fall. In addition, a biological monitor will be present during construction to ensure that there is exclusion fencing between construction activities and the creek. Thus, there will be no adverse effects on western pond turtles.

Avoidance, Minimization, and/or Mitigation Measures

No additional avoidance, minimization, or mitigation measures for western pond turtle are necessary.

White-Tailed Kite

White-tailed kite is a fully protected species under CFGC 3511. The species has a restricted distribution in the United States, occurring only in California, western Oregon, and along the Texas coast (American Ornithologists' Union 1983). The species is fairly common in California's Central Valley lowlands. White-tailed kites nest in riparian and oak woodlands and forage in nearby grasslands, pastures, agricultural fields, and wetlands. White-tailed kites use nearby treetops for perching and nesting sites. Voles and mice are common prey species.

Affected Environment

There is one white-tailed kite nest near Suisun Creek, approximately 0.5 mile south of I-80 (California Natural Diversity Database 2008). Riparian habitat within and adjacent to the study area provides potential nesting habitat for white-tailed kites. Even so, it is unlikely that white-tailed kites would nest in the study area, because of its proximity to I-80. No nesting white-tailed kites were found during the focused nest survey in spring 2008.

Environmental Consequences

Impact AS-1: Loss of White-tailed Kite Foraging Habitat

Approximately 25 acres of higher-quality foraging habitat (open agricultural fields) would be permanently lost in the study area. Because foraging habitat is not limited in the project vicinity, this is not considered an adverse effect.

Impact AS-2: Loss of White-tailed Kite Nesting Habitat and Potential Disturbance to Nesting White-tailed Kites

The project would result in a permanent loss of approximately 0.71 acre and temporary disturbance of 1.0 acre of riparian woodland within and adjacent to the study area, which

Table 2.3-3. Sensitive Wildlife and Fish Species with the Potential to Occur in the Project Region

Common Name, *Scientific Name*	Legal Status[a]		Geographic Distribution	Habitat Requirements	Habitat Present in Study Area?	Comments
	Federal	State				
Invertebrates						
Conservancy fairy shrimp *Branchinecta conservatio*	E	–	Disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large deep vernal pools in annual grasslands	No	Suitable habitat (large, deep vernal pools) is not present in or near the study area
Vernal pool fairy shrimp *Branchinecta lynchi*	T	–	Central Valley and central and south Coast Ranges from Tehama County to Santa Barbara County; isolated populations also in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools	No	Suitable habitat (vernal pools) is not present in or near the study area
Vernal pool tadpole shrimp *Lepidurus packardi*	E	–	Shasta County to Merced County	Vernal pools and ephemeral stock ponds	No	Suitable habitat (vernal pools) is not present in or near the study area
California freshwater shrimp *Syncaris pacifica*	E	E	Endemic to Marin, Napa, and Sonoma Counties; extant populations in Lagunitas Creek in Marin County; Huichica Creek in Napa County; and Franz, East Austin, Sonoma, and Salmon Creeks in Sonoma County	Pool areas of low-elevation, low-gradient, permanent streams; among live tree roots of undercut banks; and under overhanging woody debris or vegetation	No	The study area is outside the known range of the species (53 FR 43884)
Delta green ground beetle *Elaphrus viridus*	T	–	Restricted to Olcott Lake and other vernal pools at Jepson Prairie Preserve in central Solano County	Sparsely vegetated edges of vernal lakes and pools, occurring up to 250 feet (76 meters) from pools	No	The study area is outside the known range of the species; the closest record occurs approximately 13 miles (21 kilometers) east of the study area at Jepson Prairie Preserve
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T	–	Streamside habitats below 3,000 feet (915 meters) above sea level throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs and streamside habitats below 3,000 feet (915 meters) above sea level; elderberries are the host plant	Yes	Five elderberry shrubs are present in the study area
Callippe silverspot *Speyeria callippe callippe*	E	–	San Bruno Mountains, San Mateo County, and a single location in Alameda County	Open hillsides where wild pansy (*Viola pedunculata*) grows; larvae feed on Johnny jump-up plants, whereas adults feed on native mints and nonnative thistles	No	Suitable habitat (populations of Johnny jump-up plants) is not present in the study area

Table 2.3-3. Continued

Common Name, *Scientific Name*	Legal Status[a]		Geographic Distribution	Habitat Requirements	Habitat Present in Study Area?	Comments
	Federal	State				
Amphibians						
California red-legged frog *Rana aurora draytoni*	T	SSC	Along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semipermanent aquatic habitats, such as creeks and coldwater ponds, with emergent and submergent vegetation; may aestivate in rodent burrows or cracks during dry periods	Yes	Suisun Creek provides potential aquatic and upland habitat
California tiger salamander *Ambystoma californiense*	T	SSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet (305 meters) above sea level and coastal region from Butte County to northeastern San Luis Obispo County	Valley floor grasslands or low (below 1,500 feet [450 meters] above sea level) foothill elevations where lowland aquatic sites like large vernal pools, playa pools, sag ponds, and stock ponds are available for breeding; upland habitat consists of small mammal burrows within approximately 2,200 feet (670 meters) of breeding habitat	No	Suitable habitat (vernal pools and ponds) is not present in the study area
Reptiles						
Giant garter snake *Thamnophis couchi gigas*	T	T	Central Valley from the vicinity of Burrel in Fresno County to near Chico in Butte County; extirpated from areas south of Fresno	Sloughs, canals, low-gradient streams, and freshwater marshes where there is a prey base of small fish and amphibians; also irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	No	The study area is on the edge of the species' range; no suitable habitat (perennial marsh and slough) that is hydrologically connected to giant garter snake populations is present in the study area
Northwestern pond turtle *Actinemys marmorata*	–	SSC	Occurs from the Oregon border of Del Norte and Siskiyou Counties along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of the Sierra Nevada	Ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	Yes	Suitable aquatic habitat is present in Suisun Creek
Alameda whipsnake *Masticophis lateralis euryxanthus*	T	T	Restricted to Alameda and Contra Costa Counties	Valleys, foothills, and low mountains associated with northern coastal scrub or chaparral habitat; requires rock outcrops for cover and foraging	No	The study area is outside the range of this species

Table 2.3-3. Continued

Common Name, *Scientific Name*	Legal Status[a]		Geographic Distribution	Habitat Requirements	Habitat Present in Study Area?	Comments
	Federal	State				
Birds						
California brown pelican *Pelecanus occidentalis californicus*	E	–	Present along the entire coastline but does not breed north of Monterey County; extremely rare inland	Typically in littoral ocean zones, just outside the surf line; nests on offshore islands	No	No suitable habitat (open water) is present in the study area
Northern harrier *Circus cyaneus*	–	SSC	Throughout lowland California; has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands	No	No suitable nesting foraging habitat is present in the study area
White-tailed kite *Elanus leucurus*	–	FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills, to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Yes	Riparian habitat along the perennial and seasonal drainages provides potential nesting habitat in the study area
Swainson's hawk *Buteo swainsoni*	–	T	Lower Sacramento and San Joaquin Valleys, Klamath Basin, and Butte Valley; highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields	Yes	Riparian habitat throughout the study area provides potential nesting habitat
Western burrowing owl *Athene cunicularia hypugea*	SC	SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows; also occurs along agricultural ditches and abandoned lots	Yes	Suitable nesting habitat is present in the study area
Northern spotted owl *Strix occidentalis caurina*	T	–	A permanent resident throughout its range; found in the north Coast, Klamath, and western Cascade Range from Del Norte County to Marin County	Dense old-growth or mature forests dominated by conifers with topped trees or oaks available for nesting crevices	No	No suitable habitat and study area is outside of its geographical range
Loggerhead shrike *Lanius ludovicianus*	–	SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Yes	Suitable nesting habitat is present in the study area
California clapper rail *Rallus longirostris oboletus*	E	–	Marshes around San Francisco Bay and east through the Sacramento–San Joaquin River Delta to Suisun Marsh	Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickleweed; feeds on mollusks removed from the mud in sloughs	No	No suitable habitat (marsh and slough) is present in the study area

Table 2.3-3. Continued

Common Name, *Scientific Name*	Legal Status[a]		Geographic Distribution	Habitat Requirements	Habitat Present in Study Area?	Comments
	Federal	State				
California black rail *Laterallus jamaicensis coturniculus*	–	T, FP	Known from the San Francisco Bay area and the Sacramento–San Joaquin River Delta of the south along the coast to northern Baja California and in Yuba County	Inhabits saltwater, brackish, and freshwater marshes	No	No suitable habitat is present in the study area
California least tern *Sterna antillarum*	E	E	Nests on beaches along San Francisco Bay and along the southern California coast from southern San Luis Obispo County to San Diego County	Nests on sandy, upper ocean beaches, and occasionally uses mudflats; forages on adjacent surf line, estuaries, or the open ocean	No	No suitable habitat (sandy beaches and mudflats) is present in the study area
Snowy plover *Charadrius alexandrinus nivosus*	T	–	Population defined as those birds that nest adjacent to or near tidal waters, including all nests along the mainland coast, peninsulas, offshore islands, and adjacent bays and estuaries; 20 breeding sites are known in California from Del Norte to Diego County	Coastal beaches above the normal high tide limit in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent	No	No suitable habitat (sandy beaches) present in the study area
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	–	SSC	The breeding range of salt marsh common yellowthroat as described by Grinnell and Miller (1944) is bounded by Tomales Bay on the north, Carquinez Strait on the east, and Santa Cruz County on the south	In California, yellowthroats are found in freshwater marshes, coastal swales, swampy riparian thickets, brackish marshes, salt marshes, and the edges of disturbed weed fields and grasslands that border soggy habitats (Shuford 1993)	No	No suitable habitat is present in the study area
Suisun song sparrow *Melospiza melodia maxillaris*	–	SSC	The Suisun song sparrow is a distinct subspecies completely endemic to Suisun Bay	Intermixed stands of bulrush, cattail, and other emergent vegetation provide ideal habitat	No	No suitable habitat is present in the study area
Mammals						
Suisun shrew *Sorex ornatus sinuosus*	–	SSC	Found in the tidal marshes of the northern shores of San Pablo and Suisun Bays, as far east as Grizzly Island, and as far west as Sonoma Creek and Tubbís Island; also observed near Petaluma and north of San Rafael in Marin County	Occupies tidal marshes that provide dense cover, abundant food (primarily invertebrates), suitable nesting sites, and fairly continuous ground moisture	No	No suitable saltmarsh habitat is present in the study area
Salt marsh harvest mouse *Reithrodontomys raviventris*	E	E, FP	Vicinity of San Francisco, San Pablo, and Suisun Bays and the Sacramento River–San Joaquin River Delta	Salt marshes with a dense plant cover of pickleweed and fat hen; adjacent to an upland site	No	No suitable habitat (saltmarsh) is present in the study area

Table 2.3-3. Continued

Common Name, *Scientific Name*	Legal Status[a]		Geographic Distribution	Habitat Requirements	Habitat Present in Study Area?	Comments
	Federal	State				
Pallid bat *Antrozous pallidus*	–	SSC	Found throughout California	Day roosts include rock outcrops, mines, caves, hollow trees, buildings, and bridges; recent research suggests high reliance on tree roosts	Yes	Suitable roosting habitat occurs in the structures
Long-eared bat *Myotis evotis*		WBWG: Medium priority	Found throughout California	Day roosts in hollow trees under exfoliating bark and crevices in rock outcrops; found roosting under bark of small black oaks in northern California	Yes	Suitable roosting habitat occurs in the structures
Fringed myotis bat *Myotis thysanodes*		WBWG: High priority	Found throughout most of California	Roosts in colonies in caves, cliffs, and attics of old buildings; also will use trees as day roosts	Yes	Suitable roosting habitat occurs in the structures
Yuma myotis *Myotis yumanensis*	–	WBWG:Low -medium priority	Considered common and widespread in northern California up to 5,000 feet (1,524 meters) above sea level; colonies known from Marin and San Francisco Counties	Found in desert scrub, pinyon-juniper woodlands, and other open woodlands and forests; open water is a key habitat element for this species Roosts colonially in a variety of natural and artificial sites, including caves, mines, buildings, bridges, and trees	Yes	Bridges in the study area provide potential roosting sites
Fish						
Delta smelt *Hypomesus transpacificus*	T	T	Sacramento River–San Joaquin River Delta	Euryhaline estuary channels	No	No suitable habitat present in study area and outside of known range
Coho salmon—central California coast evolutionarily significant unit *Oncorhynchus kisutch*	E	E	Coastal streams from San Francisco Bay to Punta Gorda and coastal marine waters from California to Alaska	Coastal anadromous coldwater streams	No	The project is not located within current distribution of this run

Table 2.3-3. Continued

Common Name, *Scientific Name*	Legal Status[a]		Geographic Distribution	Habitat Requirements	Habitat Present in Study Area?	Comments
	Federal	State				
Central California coast steelhead distinct population segment (DPS) *Oncorhynchus mykiss*	T	–	Coastal streams from the Russian River to Aptos Creek; tributaries to San Francisco, San Pablo, and Suisun Bays; Suisun Marsh; and coastal marine waters off California	Coldwater anadromous streams	Yes	The project is located in inland freshwater stream habitats draining to Suisun Marsh; species occurrence was documented in Suisun Creek; the study area is not included in critical habitat
California central valley steelhead DPS *Oncorhynchus mykiss*	T	–	The Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San Pablo Bays and their tributaries, and coastal marine waters off California	Coldwater anadromous streams	No	The project area is outside the range of this DPS
Central valley spring-run Chinook salmon *Oncorhynchus tshawytsha*	T	T	Tributaries to the upper Sacramento River, primarily Butte, Big Chico, Deer, and Mill Creeks, and coastal marine waters off California	Higher-elevation tributaries to the Sacramento River	No	The project area is not located within current distribution of this run; the study area is not included in critical habitat
Winter-run chinook salmon *Oncorhynchus tshawytsha*	E	E	Upper mainstem Sacramento River, Sacramento River–San Joaquin River Delta (juveniles), and coastal marine waters off California	Spring-fed headwaters to the Sacramento River	No	The project area is not located within current distribution of this run; the study area is not included within critical habitat
River lamprey *Lampetra ayresi*	–	SSC	Exact range unknown but includes coastal streams from Alaska to San Francisco Bay; in California, it is found within lower Sacramento and San Joaquin Rivers, Napa River, Sonoma Creek, Alameda Creek, Salmon Creek, Russian River tributaries, and tributaries to San Francisco Bay	Habitat requirements poorly understood but include anadromous streams with gravel riffle for spawning and soft-bottomed areas for rearing	Yes	The project is located in freshwater anadromous stream habitats within the range of the species
Sacramento splittail *Pogonichthys macrolepidotus*	–	SSC	Largely confined to Sacramento River–San Joaquin River Delta, Napa River, Petaluma River, Sacramento River, and Suisun Marsh	Shallow-water, low-salinity habitats throughout slow areas of rivers and sloughs; areas of flooded vegetation for spawning and rearing	No	The project area is outside the known range for this species
Green sturgeon *Acipenser medirostris*	T	SSC	In marine waters of the Pacific Ocean from the Bering Sea to Ensenada, Mexico. In rivers from British Columbia south to the Sacramento River, primarily in the Klamath/Trinity and Sacramento Rivers	Primarily marine, using large anadromous freshwater rivers and associated estuaries for spawning and rearing	No	The project area does not include large rivers and is not within the primary range of the species

Table 2.3-3. Continued

Common Name, *Scientific Name*	Legal Status[a]		Geographic Distribution	Habitat Requirements	Habitat Present in Study Area?	Comments
	Federal	State				
Central valley fall/late fall–run Chinook salmon *Oncorhynchus tshawytsha*	SC	–	Sacramento and San Joaquin Rivers and their tributaries, as well as some tributaries to San Francisco Bay	Lower-elevation coldwater anadromous streams	Yes	The project is located in inland freshwater anadromous stream habitats draining to Suisun Marsh, designated essential fish habitat; species occurrence was documented in Suisun Creek
Longfin smelt *Spirinchus thaleichthys*	–	SSC	Within California, mostly in the Sacramento River–San Joaquin River Delta, but also in Humboldt Bay, Eel River estuary, and Klamath River estuary	Salt or brackish estuary waters with freshwater inputs for spawning	No	No suitable habitat in the project area

[a] Status explanations:

– = no listing.

Federal
E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
SC = species of concern; species for which existing information indicates it may warrant listing but for which substantial biological information to support a proposed rule is lacking.
P = officially proposed (in the Federal Register) for listing as endangered or threatened.
C = candidate to become a proposed species.

State
E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.
WBWG = Western Bat Working Group (http://www.wbwg.org/speciesinfo/species_matrix/spp_matrix.pdf).

High priority = species are imperiled or at high risk of imperilment.

Moderate priority = This designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.

Low priority = While there may be localized concerns, the overall status of the species is believed to be secure.

provides potential nesting habitat for white-tailed kites. Although it is unlikely that birds or raptors would nest adjacent to I-80, tree removal or noise associated with construction activities could result in the disturbance of nesting birds or raptors if active nests are present within or near the construction area. These disturbances could cause nest abandonment and death of young or loss of reproductive potential at active nests located in or near the study area. Such disturbance would violate CFGC 3503.5 and 3511 and the MBTA. Implementation of the measures identified below would ensure that the proposed project would not result in the loss of white-tailed kite eggs or young, and would reduce the effect on nesting birds and raptors. Additionally, the purchase of foraging habitat for Swainson's hawk will benefit white-tailed kite as well.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of avoidance and minimization measures described in the "Riparian Woodland" section above, and the following measures, would avoid effects on nesting white-tailed kites.

Measure AS-2: Conduct Preconstruction Nesting Bird and Raptor Surveys and Establish a No-Disturbance Buffer, if Necessary

To avoid and minimize effects on nesting migratory birds, one or more of the following surveys and restrictions will be implemented.

- Tree and shrub removal will occur during the nonbreeding season for most migratory birds and raptors (generally between September 1 and February 15).
- If construction activities, including tree and shrub removal, are scheduled to occur during the breeding season for migratory birds and raptors (generally between February 15 and September 1), a qualified wildlife biologist (with knowledge of the species to be surveyed) will be retained to conduct nesting migratory bird and raptor surveys before the start of construction. The nesting surveys should be conducted within one week before initiation of construction activities (including tree removal) between February 15 and September 1. If no active nests are detected during these surveys, tree removal can proceed.
- If surveys indicate that migratory bird or raptor nests are present in the survey area, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or until after a qualified wildlife biologist determines that the young have fledged (usually late June to mid-July). The extent of these buffers will be determined by the biologist (in coordination with the DFG) and will depend on the level of noise or construction disturbance, the line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors will be analyzed to make an appropriate decision on buffer distances. Suitable buffer distances may vary between species.

Western Burrowing Owl

Western burrowing owl is designated as a state species of special concern. Western burrowing owl is found throughout much of California in annual and perennial grassland, desert, and arid scrubland. It also can be found in vacant lots in residential areas, railroad ballast, dirt roads, and canal levees. The presence of burrows is the most critical requirement for western burrowing owl habitat; the species uses burrows excavated by ground squirrels and badgers, as well as artificial

burrows, such as cement culverts, debris piles, or openings under roads. Its breeding season extends from March through August, peaking in April and May.

Affected Environment

Several (10 or more) occurrences of burrowing owl have been reported within a 10-mile radius of the project area (California Natural Diversity Database 2008). Edges of agricultural ditches and farm roads, and ruderal fields in the project area provide suitable foraging and nesting habitat for burrowing owls. Minimal loss of foraging habitat for western burrowing owls would occur because most of the construction would occur in existing roadbeds and rights-of-way.

Environmental Consequences

Impact AS-3: Potential Loss of Burrowing Owl Habitat

The project would result in a permanent loss of approximately 8.06 acres and temporary disturbance of 3.92 acres of ruderal habitat within and adjacent to the study area that provides potential nesting habitat for western burrowing owl. If western burrowing owls are nesting in or within 250 feet of the construction right-of-way, grading and excavation activities could result in the removal of an occupied breeding or wintering burrow site and loss of adults, young, or eggs. These disturbances could cause nest abandonment and death of young or loss of reproductive potential at active nests located in or near the study area. Such disturbance would violate CFGC 3503.5 and 3511 and the MBTA. Implementation of the measures identified below would ensure that the project would not result in the loss of burrowing owl eggs or young.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of avoidance and minimization measures described in the "Riparian Woodland" section above, and the following avoidance and minimization measure, would ensure that the project minimizes direct impacts, and avoids indirect impacts on burrowing owl habitats adjacent to the construction area.

Measure AS-3a: Conduct Preconstruction Surveys for Active Burrowing Owl Burrows and Implement the California Department of Fish and Game Guidelines for Burrowing Owl Mitigation, if Necessary

The DFG (1995) recommends that preconstruction surveys be conducted in suitable habitat (except paved areas) in a project study area and in a 250-foot-wide buffer zone around the construction site to locate active burrowing owl burrows. This would apply to suitable habitat on the south side of I-80. A qualified biologist will be retained to conduct preconstruction surveys for active burrows according to the DFG guidelines. The surveys will include a survey during the nesting season and a survey during the wintering season, which is the season immediately preceding construction.

If no burrowing owls are detected, no further action is required. If active burrowing owls are detected, the following measures will be implemented.

- Occupied burrows will not be disturbed during the nesting season (February 1–August 31).

- When destruction of occupied burrows is unavoidable outside the nesting season (September 1–January 31), unsuitable burrows will be enhanced (enlarged or cleared of debris), or new burrows will be created (by installing artificial burrows) at a ratio of 2:1 on protected lands approved by the DFG. Newly created burrows will follow guidelines established by the DFG.
- If owls must be moved away from the project construction area, passive relocation techniques (e.g., installing one-way doors at burrow entrances) will be used instead of trapping. At least one week will be necessary to accomplish passive relocation and allow owls to acclimate to alternate burrows.
- If avoidance is the preferred method of dealing with potential impacts, no disturbance will occur within 160 feet of occupied burrows during the nonbreeding season (September 1–January 31) or within 250 feet during the breeding season. Avoidance also requires that at least 6.5 acres of foraging habitat (calculated based on an approximately 300-foot foraging radius around an occupied burrow), contiguous with occupied burrow sites, be permanently preserved for each pair of breeding burrowing owls or single unpaired resident bird. The configuration of the protected site will be submitted to the DFG for approval.

Measure AS-3b: Compensate for Loss of Burrowing Owl Nesting Habitat if Owls Are Present

If active burrowing owl burrows are found and the owls must be relocated, the loss of foraging and burrow habitat in the project construction area will be offset by acquiring and permanently protecting a minimum of 6.5 acres of foraging habitat per occupied burrow identified in the project construction area. The protected lands should be located adjacent to the occupied burrowing owl habitat in the project construction area or at another occupied site near the project construction area. The location of the protected lands will be determined in coordination with the DFG. A monitoring plan will be prepared and long-term management and monitoring of the protected lands will be provided. The monitoring plan will specify success criteria, identify remedial measures, and require an annual report to be submitted to the DFG.

Loggerhead Shrike

Loggerhead shrike is designated as a state species of special concern. It is a common year-round resident throughout the lowlands and foothills of California. Loggerhead shrikes prefer open habitats with shrubs, fences, utility line poles, or other perches. They tend to avoid urbanized areas but often frequent open croplands. Nests usually are hidden in densely foliaged shrubs or trees. The breeding season is from March through August.

Affected Environment

No loggerhead shrikes were observed in the study area for the project during the 2008 focused nest surveys; however, loggerhead shrikes are known to nest in Solano County, and trees and shrubs in the study area provide suitable nesting habitat for the species.

Environmental Consequences

Impact AS-4: Potential Disturbance to Nesting Loggerhead Shrikes

Implementation of the project could affect nesting loggerhead shrikes if construction activities remove or otherwise disturb occupied nests during the breeding season. Construction activities during the breeding season that result in nest abandonment, death of young, or loss of reproductive potential would violate *CFGC 3503* and *CFGC 3503.5* and the MBTA. Implementation of the measures identified below would ensure that the project would not result in the loss of loggerhead shrike nests, eggs, or young.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of avoidance and minimization measures described in the "Riparian Woodland" section above, and Measure AS-2, would avoid and minimize effects on nesting loggerhead shrikes.

Migratory Birds and Raptors

Several migratory birds and raptors could nest in and adjacent to the study area for the project. The breeding season for most birds is generally from February 15 to August 15. The occupied nests and eggs of these birds are protected by federal and state laws, including the MBTA and CFGC 3503 and 3503.5.

Affected Environment

Potential nesting habitat for migratory birds and raptors occurs within riparian habitat, trees, oak woodlands, and shrubs in the study area. A focused nest survey was conducted along Suisun Creek in early spring 2008 as part of the preconstruction surveys for the I-80 HOV lanes project construction. No active nests were found.

Environmental Consequences

Impact AS-5: Potential Disturbance to Nesting Birds and Raptors

Implementation of the project could affect nesting birds, including raptors, if construction activities remove or otherwise disturb occupied nests during the breeding season. Construction activities during the breeding season that result in death of young or loss of reproductive potential would violate *CFGC 3503* and *CFGC 3503.5* and the MBTA. Implementation of the measures identified below would ensure that the project would not result in the loss of migratory bird and raptor nests, eggs, or young.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of avoidance and minimization measures described in the "Riparian Woodland" section above, and Measure AS-2, would avoid and minimize effects on nesting migratory birds and raptors.

Swallows

Swallows are not considered sensitive wildlife species. However, their occupied nests and eggs are protected by both federal and state laws, including the MBTA. Cliff and barn swallows are

two swallow species that frequently build mud nests on the undersides of artificial structures, such as bridges. The two species winter in South America and arrive back in California to breed in February. Nesting generally occurs from mid-February to August, and migration south occurs in September and October (Zeiner et al. 1990).

Affected Environment

No swallow nests were observed on the undersides of the bridge over Suisun Creek during the 2007 surveys. In addition, no nests or remnant nests were observed in 2008 during monitoring surveys for the I-80 HOV lanes project. New bridge construction would occur approximately 50 feet downstream of the existing bridge, and birds nesting on the south side of the existing bridge could be affected during construction.

Environmental Consequences

Impact AS-6: Potential Disturbance of Swallow Nests

Construction activities associated with bridge construction could result in the direct loss of active swallow nests. Loss of a nest could in turn result in the death of adults, young, or eggs. This would violate CFGC 3503 and the MBTA. Implementation of the measures identified below would ensure that the project would not result in the loss of migratory bird and raptor nests, eggs, or young.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following avoidance and minimization measure would ensure that swallows do not begin nesting on the south side of Suisun bridge structures before the start of construction.

Measure AS-6: Remove Nests from the Undersides of Bridges to Prevent Swallows from Nesting Adjacent to New Bridge Construction

To avoid impacts on nesting swallows and other bridge-nesting migratory birds that are protected under the MBTA and CFGC, the following measures will be implemented.

- If bridge construction would take place during the breeding season (generally between February 16 and August 15), a qualified wildlife biologist will be hired to inspect the bridge over Suisun Creek during the swallows' nonbreeding season (August 16 through February 15). If nests are found and are abandoned, they may be removed. To avoid damaging active nests adjacent to new bridge construction, nests must be removed before the breeding season begins (February 16).
- After nests are removed, a biologist will continue to check the underside of the bridge and remove nests throughout the construction period when it coincides with the swallows nesting season.

If appropriate steps are taken to prevent swallows from constructing new nests, work can proceed at any time of the year.

Roosting Bats

The Western Bat Working Group has provided additional rankings for species that may or may not be listed as a state species of special concern. The Western Bat Working Group held a workshop in 1998 and subsequently published a regional priority matrix for western bat species (Western Bat Working Group 1998). The matrix is intended to provide states, provinces, federal land management agencies, and interested organizations and individuals with a better understanding of the overall status of a given bat species throughout its western North American range. Subsequently, the importance of a single region or multiple regions to the viability and conservation of each species becomes more apparent. The matrix also provides a means for prioritizing and focusing on population monitoring, research, conservation actions, and the efficient use of the limited funding and resources currently devoted to bats.

Four special-status bat species were identified as potentially occurring in the study area, including pallid bat, which is a state species of special concern, and long-eared bat, fringed myotis, and Yuma myotis, which are classified as priority species by the Western Bat Working Group. Yuma myotis uses bridges and other artificial structures as roosting sites and could potentially roost in the study area. Crevices, including expansion joints, on the undersides of bridges provide potential roosting and maternity sites for bats. Bats commonly use bridges that are located over perennial waterways or are in or near open agricultural or grassland areas. These areas provide an abundant source of insects, the primary food source for bats.

Affected Environment

At the time of the March 2008 preconstruction surveys for the I-80 HOV lanes project, no evidence of bat presence (guano, urine staining, odor, or vocalizations) was observed on portions of the undersides of the existing bridge over Suisun Creek, which is the nearest bridge to the project site. However, the undersides of the bridge deck contained expansion joints that could provide roosting sites for bats. This habitat would not support a maternal roost but could support a small number of day or night roosting bats.

Environmental Consequences

Impact AS-7: Potential Disturbance of Roosting Bats

Potential bat roosting areas occur within portions of the existing bridge over Suisun Creek upstream of the project site. The existing bridge would not be directly affected during new bridge construction, and no roosting habitat would be removed. Noise disturbances associated with new bridge construction and pile driving could disturb day-roosting bats if they are present within the bridge during construction. However, these disturbances would be temporary, and construction would occur downstream of the existing bridge. The project, therefore, would not result in an adverse impact on protected bats.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project would not remove bat roosting habitat. Because construction would occur downstream of the bridge and existing traffic already produces substantial noise, any noise disturbances due to construction activity are not expected to affect bats. Therefore no avoidance or minimization measures are required.

Central Valley Fall/Late Fall-Run Chinook Salmon

On March 9, 1998 (63 FR 11481), NMFS issued a proposed rule to list fall-/late fall–run Chinook salmon as threatened, but determined that the species did not warrant listing and identified it as a candidate species (64 FR 50393). On April 15, 2004, NMFS downgraded the status of fall-run Chinook salmon to a species of concern (69 FR 19975). This section focuses on fall-run Chinook salmon, because most late fall–run Chinook salmon are found mainly in the Sacramento River (Moyle 2002) and are therefore not likely to be present at the project site. Also, habitat for late fall–run Chinook salmon is not supported by streams in the project area.

Fall-run Chinook salmon spawn from early October through late December, and incubation takes place from October through March. The peak of spawning is in October and November as water temperature drops. Juvenile Chinook salmon emerge from the gravel and migrate downstream to the ocean soon after emerging, rearing in the streams for only a few months before emigrating to the ocean.

Essential Fish Habitat

Essential Fish Habitat (EFH) is the aquatic habitat (water and substrate) necessary for fish to spawn, breed, feed, or grow to maturity (National Marine Fisheries Service 2004), allowing a level of production needed to support a long-term, sustainable commercial fishery and contribute to a healthy ecosystem. Important components of EFH for spawning, rearing, and migration include adequate substrate composition; water quality, quantity, depth, and velocity; channel gradient and stability; food; cover and habitat complexity; space; access and passage; and habitat connectivity.

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), as amended by the Sustainable Fisheries Act of 1996 (Public Law 94-265), specifies that:

- Federal agencies undertaking, permitting, or funding activity that may adversely affect EFH are required to consult with the NMFS.
- The NMFS shall provide conservation recommendations for any federal or state activity that may adversely affect EFH.
- Federal agencies shall, within 30 days after receiving conservation recommendations from the NMFS, provide a detailed response in writing to the NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH, or reasons for not following the recommendations.

Suisun Creek is considered EFH for Chinook salmon under the Magnuson-Stevens Fishery Conservation and Management Act (Figure 2.3-2).

Affected Environment

Data describing the abundance and distribution of Chinook salmon in Suisun Creek are limited. In recent years, many tributaries of the San Francisco Bay Estuary—where salmon were previously thought to be extirpated—have seen increases in adult Chinook salmon returns (presumably from stray hatchery fish), suggesting that streams in the project vicinity may be subject to the same phenomenon (Moyle 2002; Cox pers. comm.). DFG personnel have

documented Chinook salmon in Suisun and Gordon Valley Creeks (a tributary of Suisun Creek), according to information available from the NMFS. In December 2001, a spawning pair of "salmon" and two spawned-out Chinook salmon carcasses were documented in Wooden Valley Creek, a tributary of Suisun Creek (Leidy et al. 2005). Query results from the DFG anadromous fish distribution data available through CalFish (2008) indicated that the range of Chinook salmon included lower portions of Suisun Creek. The sections of the creek in the specified area were far downstream of the project area, however, and likely comprise estuarine rearing habitats. Apart from these accounts, Suisun and Gordon Valley Creeks are named in the NMFS's designation of EFH (National Marine Fisheries Service 1998) (Figure 2.3-2). As a result of this designation and the recent accounts of their occurrence, it is reasonable to assume that Chinook salmon are seasonally present in the streams passing through the project vicinity.

The known life history of the species indicates that Chinook salmon are not likely to be present in the project area during the construction period (June 15–October 15). Habitat conditions that support suitable spawning for adult Chinook salmon occur mainly in upper areas of these streams (Hanson Environmental 2002), well above the project area. The migration timing of both adult and juvenile Chinook salmon occurs largely outside the construction period, reducing the chance that Chinook salmon of any life stage would be present at the project site during construction. Adult fall-run Chinook salmon would most likely migrate through the project area during fall and early winter, while juvenile Chinook salmon would emigrate from the system from January to June. Fall-run Chinook salmon are ocean-type salmon, where juveniles typically leave natal streams before summer water temperatures render streams uninhabitable (Moyle 2002). Additionally, little potential rearing habitat for juvenile Chinook salmon is available in the lower portion of Suisun Creek because of the high summer water temperatures found there (Hanson Environmental 2002).

Environmental Consequences

The proposed action is expected to have minimal impacts on habitat structure and habitat conditions for Chinook salmon and EFH. Because no work will be conducted in the channel, all direct impacts on aquatic habitat will be avoided. All possible impacts will be avoided, minimized, or mitigated as outlined in "Central California Coast Steelhead" (below in Section 2.3.6).

Effects on Habitat Structure

The impacts on habitat structure would be the same as those listed steelhead in "Central California Coast Steelhead" (below in Section 2.3.6).

Water Temperature Effects

The water temperature impacts would be the same as those listed above for steelhead in "Central California Coast Steelhead" (below in Section 2.3.6).

Effects on Water Quality

The impacts on water quality would be the same as those listed above for steelhead in "Central California Coast Steelhead" (below in Section 2.3.6).

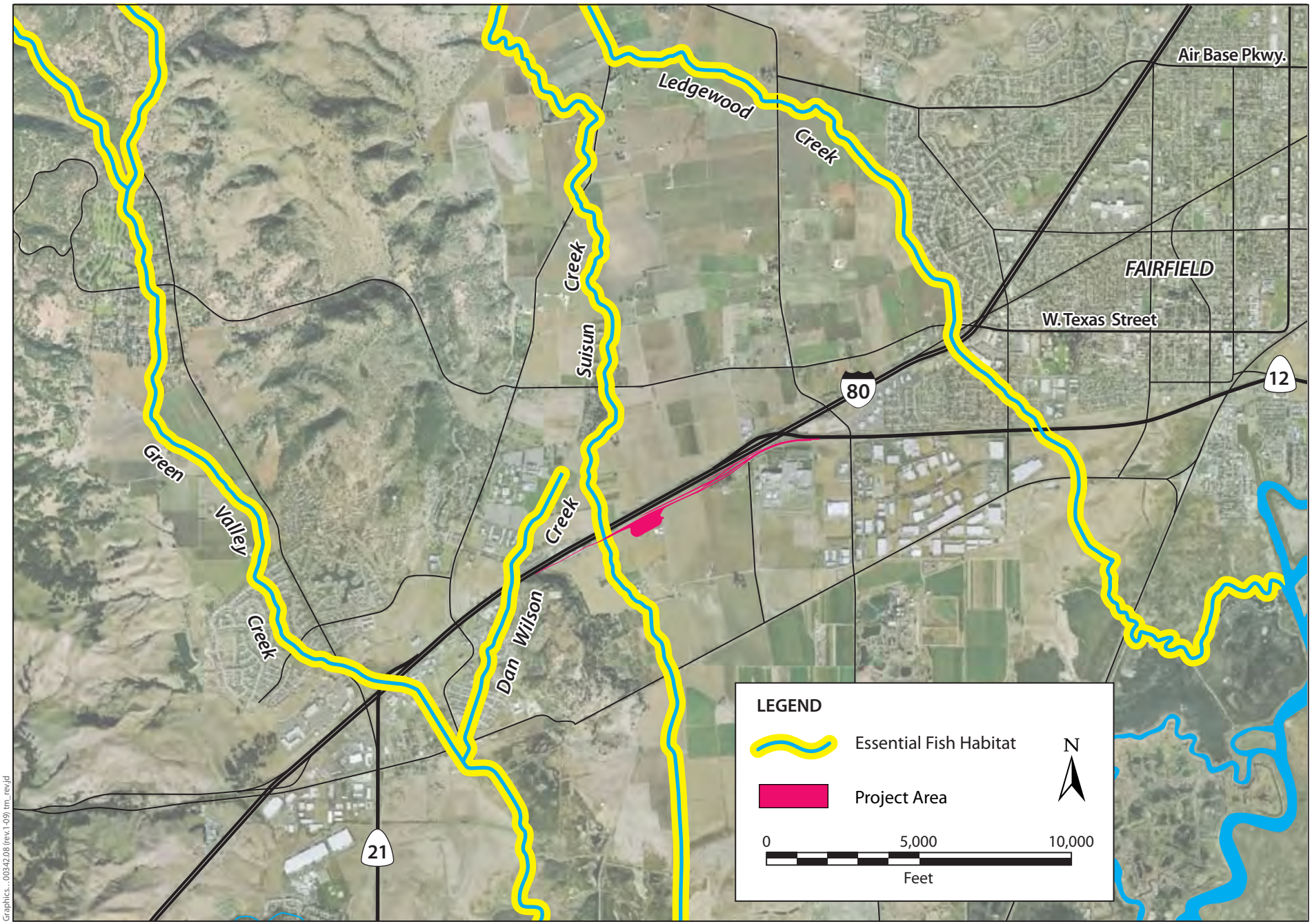

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Figure 2.3-2
Essential Fish Habitat in the Project Vicinity

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures discussed in "Central California Coast Steelhead" (Section 2.3.6) would protect habitat for Chinook salmon, including EFH.

River Lamprey

River lamprey is currently listed by the DFG (2006) and USFWS (2005a) as a species of special concern. Although it is widely believed to be in decline, the exact status of this species is uncertain. Currently, very little information describing the abundance and distribution of river lamprey is available, perhaps largely because the species is often overlooked and seldom studied. River lamprey is thought to occur throughout Pacific coast streams, but its occurrence in California includes tributaries to San Francisco Bay, such as the Napa River, Sonoma Creek, and Alameda Creek, as well as the Sacramento, San Joaquin, and Russian Rivers (Moyle et al. 1995; Moyle 2002).

Limited information is available regarding the life history of this species in California. Current accounts are based largely on information from Canadian populations (Moyle 2002). River lamprey is a semelparous (spawn once, then die) anadromous fish with long freshwater rearing periods. Adults return to fresh water to spawn in fall and winter, but spawning usually occurs from February through March in gravely riffles in small tributary streams (Moyle 2002). Juvenile river lamprey (*ammocoetes*) remain in silty backwater habitats, where they filter feed on various microorganisms for approximately three to five years before migrating to the ocean during late spring periods (Moyle et al. 1995; Moyle 2002). Adult lamprey feed on other fish and may reach a total length of around 17 centimeters (Moyle et al. 1995).

Affected Environment

River lamprey could occur in the study area in Suisun Creek, although this is not documented. The species distribution and habitat requirements could fall within the study area. The study area would provide a migration corridor to upstream spawning areas if river lamprey use Suisun Creek for spawning.

Environmental Consequences

The project is not expected to impact river lamprey, because of the lack of spawning and rearing habitat in the study area. Construction is expected to occur from June 15 to October 15, when lampreys would not be migrating upstream to spawn. Juvenile lampreys (ammocoetes) rear in backwater areas in the silt and sand. Suisun Creek has high-velocity water and gravel in the construction area. This is unsuitable rearing habitat for ammocoetes. No in-water work will occur, so no disturbance to lamprey is expected to occur from project activities.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures described in the section "Central California Coast Steelhead" (Section 2.3.6) would benefit river lamprey.

2.3.6 Threatened and Endangered Species

This section addresses species listed or eligible for listing as threatened or endangered. Tables 2.3-2 and 2.3-3 list the threatened and endangered plant and animal species with potential to

occur in the study area. Five threatened or endangered animal species have the potential to occur in the study area: Swainson's hawk, valley elderberry longhorn beetle (VELB), California red-legged frog (CRLF), and central California coast steelhead. As mentioned earlier, no threatened or endangered plant species occur in the study area.

Regulatory Setting

The primary federal law protecting threatened and endangered species is the ESA: 16 USC, Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. Under Section 7 of this act, federal agencies, such as the FHWA, are required to consult with the USFWS and the National Marine Fisheries Service (NMFS) 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 (BO) or an incidental take permit. Section 3 of the ESA 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 CESA, CFGC, Section 2050, et seq. The CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The CDFG is the agency responsible for implementing the CESA. Section 2081 of the CFGC 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 CESA allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the DFG. For projects requiring a BO under Section 7 of the ESA, the DFG may also authorize impacts on CESA species by issuing a Consistency Determination under Section 2080.1 of the CFGC.

Swainson's Hawk

Swainson's hawk is state listed as threatened by the DFG, is a federal species of concern, and is protected under the MBTA and CFGC 3503.5. The MBTA and CFGC 3503.5 prohibit take of migratory birds, nests, and young. In the Central Valley, this species typically nests in oak or cottonwood trees in or near riparian habitats, in oak groves, in roadside trees, and in lone trees. Swainson's hawk prefers nesting sites that provide sweeping views of nearby foraging grounds, which consist of grasslands, irrigated pasture, alfalfa, hay, and row and grain crops. Swainson's hawk is migratory, wintering from Mexico to Argentina and breeding in California and elsewhere in the western United States. The raptor generally arrives in the Central Valley in mid-March and begins courtship and nest construction immediately after arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August or early September.

Affected Environment

There is one Swainson's hawk nest site approximately 1.5 miles southwest of the study area for the proposed project (California Natural Diversity Database 2008). Agricultural habitat, suitable for foraging, is located along I-80, and large trees, suitable for nesting Swainson's hawk, are

present along Suisun Creek. However, it is unlikely that Swainson's hawk would nest in the study area, because of the area's proximity to I-80. No nesting Swainson's hawks were found during the focused nest surveys in spring 2008.

Environmental Consequences

Impact TES-1: Potential Disturbance to Nesting Swainson's Hawk

Although there is a low likelihood that Swainson's hawks would nest adjacent to I-80, tree removal or noise associated with construction activities could result in the disturbance of nesting Swainson's hawks if active nests are present within or near the construction area. These disturbances could cause nest abandonment and death of young or loss of reproductive potential at active nests located in or near the study area. The proposed project could result in a substantial effect, through loss of eggs or young, on a species listed as threatened under the CESA. Implementation of the measures described in the "Riparian Woodland" section above, and Measure AS-2, would ensure no take of Swainson's hawk eggs or young, and would reduce the effect on Swainson's hawk habitat.

Impact TES-2: Permanent and Temporary Impacts on Potential Swainson's Hawk Foraging Habitat

The proposed project would result in a permanent loss of approximately 25 acres of higher-quality foraging habitat (open agricultural fields). Loss of a substantial amount of foraging habitat within 5 miles of a known Swainson's hawk nest is considered to be a potentially adverse effect. But through the acquisition of conservation lands that will preserve significant amounts of suitable foraging habitat for the species and the management of these lands for Swainson's hawk habitat values, this effect is reduced.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of avoidance and minimization measures described in the "Riparian Woodland" section above, Measure AS-2, and Measure TES-2 would ensure no take of Swainson's hawk eggs or young, and would avoid and minimize effects on nesting Swainson's hawk and its foraging habitat.

Measure TES-2: Compensate for Loss of Swainson's Hawk Foraging Habitat

The DFG requires that loss of foraging habitat for the species be replaced at a ratio of 0.75:1 for projects where nesting Swainson's hawks are known to occur within a 5-mile radius (Melissa Escaron, Environmental Scientist, California Department of Fish and Game email message on 12/8/08: mescaron@dfg.ca.gov)). Credits at an approved mitigation bank will be purchased.

Valley Elderberry Longhorn Beetle

VELB is federally listed as a threatened species (45 FR 52803). This species first was described in 1921 from specimens collected in Sacramento (U.S. Fish and Wildlife Service 1984). The species' range extends throughout the associated foothills of the Central Valley in California, from Kern County in the south to Shasta County in the north (Jones and Stokes Associates 1985, 1986, 1987).

VELB is closely associated with elderberry shrubs, an obligate host for beetle larvae. Blue elderberry is considered a typical riparian shrub (Roberts et al. 1977, Katibah et al. 1984, Warner 1984) in California. Blue elderberry is a hardy shrub that successfully grows in a variety of riparian habitat types. A study of Sacramento Valley riparian vegetation found that blue elderberry grows mainly at an intermediate elevation level in the floodplain, in association with box elder (*Acer negundo*) and buttonbush (*Cephalanthus occidentalis*) (Conard et al. 1977). Where a source of water exists, elderberry shrubs grow in nonriparian habitats, although most VELB occurrences are known from elderberry shrubs in or adjacent to riparian communities.

Affected Environment

In the project area, five blue elderberry shrubs (i.e., host plants for VELB) were identified in riparian woodland on Suisun Creek south of I-80 (Figure 2.3-1, Map Sheet 1). Shrubs 1-5 were located during field surveys in 2007. No exit holes that would indicate the presence of VELB were observed in any elderberry stem measuring 1.0 inch in diameter or greater at ground level within the project area.

All shrubs within the study area are within 100 feet of the proposed project construction area. The number and size of stems present on each shrub and riparian habitat associations for each shrub are listed in Table 2.3-4. All five of the shrubs would be directly affected by construction activities.

Table 2.3-4. Summary of Stem Counts for Elderberry Shrubs Adjacent to the Study Area

Shrub	Presence of Exit Holes	Riparian Habitat	Number of Stems (by Diameter)			Effect on Shrub (None, Direct, or Indirect)	Comments
			1–3 inches	3–5 inches	>5 inches		
1	No	Yes	2	3	0	Direct	Located south of I-80, east of the truck scale on creek levee
2	No	Yes	7	0	0	Direct	Located south of I-80, east of the truck scale on creek levee; in a clump
3	No	Yes	1	1	1	Direct	Located south of I-80, east of the truck scale on creek levee; large tree
4	No	Yes	3	0	0	Direct	Located south of I-80, east of the truck scale on creek levee; small shrub with many small stems
5	No	Yes	0	1	1	Direct	Located south of I-80, east of the truck scale on creek levee
Direct total			13	5	2		
Overall total			13	5	2		

Environmental Consequences

Impact TES-3: Direct Impact on Valley Elderberry Longhorn Beetle Habitat

Construction activities would directly impact (by removal or transplanting) five elderberry shrubs. Measures have been identified to address this effect.

As defined under the ESA, indirect impacts are those caused by the proposed project, occur later in time, and are reasonably certain to occur. No elderberry shrubs would be indirectly affected by the proposed project.

Avoidance, Minimization, and/or Mitigation Measures

There are no avoidance and minimization measures because all five shrubs would be directly affected by the project.

Measure TES-3: Compensate for Direct Effects on Valley Elderberry Longhorn Beetle Habitat

STA previously compensated for direct effects on shrubs 1-4 for the I-80 HOV lanes project. The compensation also covered the direct effects on shrub 5. Direct impacts and removal of shrubs 1-5 will be compensated for through transplantation.

Before construction begins, all elderberry shrubs directly affected will be transplanted, if feasible, to a conservation area according to USFWS-approved procedures outlined in the VELB guidelines (U.S. Fish and Wildlife Service 1999). It may not be feasible to remove some shrubs due to bank stability concerns, and some of the shrubs may be too large to transplant; however, additional compensation will not be necessary since it was previously covered in the Biological Opinion for the I-80 HOV lanes project (BO# 1-1-07-F-0146).

If transplanting is feasible, a map and written details identifying the conservation area will be provided to USFWS before initiating the mitigation program. Approval from the USFWS that the conservation area is acceptable must be received. Elderberry shrubs will be transplanted only during the plant's dormant phase (November through the first two weeks of February). A qualified biological monitor will remain on site while the shrubs are being transplanted. Evidence of VELB occurrence in the conservation area, the condition of the elderberry shrubs in the conservation area, and the general condition of the conservation area itself will be monitored over a period of 10 consecutive years, or for seven years over a 15-year period from the date of transplanting. The project proponent will be responsible for funding and providing monitoring reports to the USFWS in each of the years in which a monitoring report is required

California Red-Legged Frog

The CRLF is listed as threatened under the ESA and is a California species of special concern. Historically, CRLF was common from Redding to Baja California, including the Sierra Nevada and Coast Ranges. Its current range is much reduced, and most remaining populations are found in central California along the coast, from Marin County to Ventura County.

CRLF breeds in lowland and foothill streams and wetlands, including livestock ponds (Jennings and Hayes 1994). CRLF also may be found in upland habitats near breeding areas and along intermittent drainages connecting wetlands. Adults may take refuge during dry periods in rodent holes or leaf litter in riparian habitats. Although CRLF typically remains near streams or ponds, recent studies in Santa Cruz suggest that they are capable of moving 1 mile or more in upland habitat or through ephemeral drainages (Bulger 1999).

Affected Environment

There are 15 California Natural Diversity Database records for CRLF within a 5-mile radius of the project site (California Natural Diversity Database 2008). The nearest records are approximately 3 miles southwest of the project site, where adults and tadpoles were observed in a pond and intermittent drainage. The remaining 13 records are from 1 to 5 miles south and west of the project area (Figure 2.3-3).

Jones & Stokes conducted a CRLF site assessment in 2007 at Suisun Creek and found suitable aquatic habitat in a plunge pool in Suisun Creek on the north side of I-80 adjacent to the study area (ICF Jones & Stokes in prep.). No CRLFs were observed within or adjacent to the study area during either the 2006 or the July and August 2007 site assessment surveys. Monk & Associates (2003a, 2003b, 2004) conducted a site assessment and protocol-level survey in Suisun Creek. No CRLFs were identified in this area during their protocol-level surveys, however these surveys are several years old and are no longer valid.

Potential dispersal and foraging habitat for CRLF occurs in Suisun Creek. If CRLF occurs within Suisun Creek, there is potential for CRLF to move through the study area. Based on the known occurrence of CRLF near the study area and the presence of suitable habitat in the study area, Caltrans prepared a biological assessment (BA) and submitted it to the USFWS for their review and approval.

USFWS submitted a proposal in September 2008 to revise critical habitat boundaries to better reflect lands containing essential features for the California red-legged frog. There are three proposed units in the project vicinity: SOL-1, SOL-2, and SOL-3 (Figure 2.3-4). The SOL-2 unit is the closest to the project site and is approximately 2.5 miles west of Suisun Creek. Suisun Creek is in a separate watershed and the SOL-2 unit is not located in the project's action area. Therefore, no destruction or adverse modification of proposed critical habitat for California red-legged frog is anticipated.

Environmental Consequences

Impact TES-4: Potential Indirect Impacts on California Red-Legged Frog Habitat during Construction

Construction activities associated with bridge construction within potential CRLF habitat in the project area could result in indirect impacts on water quality downstream from the construction work area. Increased sedimentation could reduce the suitability of CRLF habitat downstream of the construction area by filling in pools and smothering eggs. Accidental spills of toxic fluids also could result in the subsequent mortality of CRLF should these substances flow downstream from the construction area and CRLFs are present. Implementation of the measures identified for

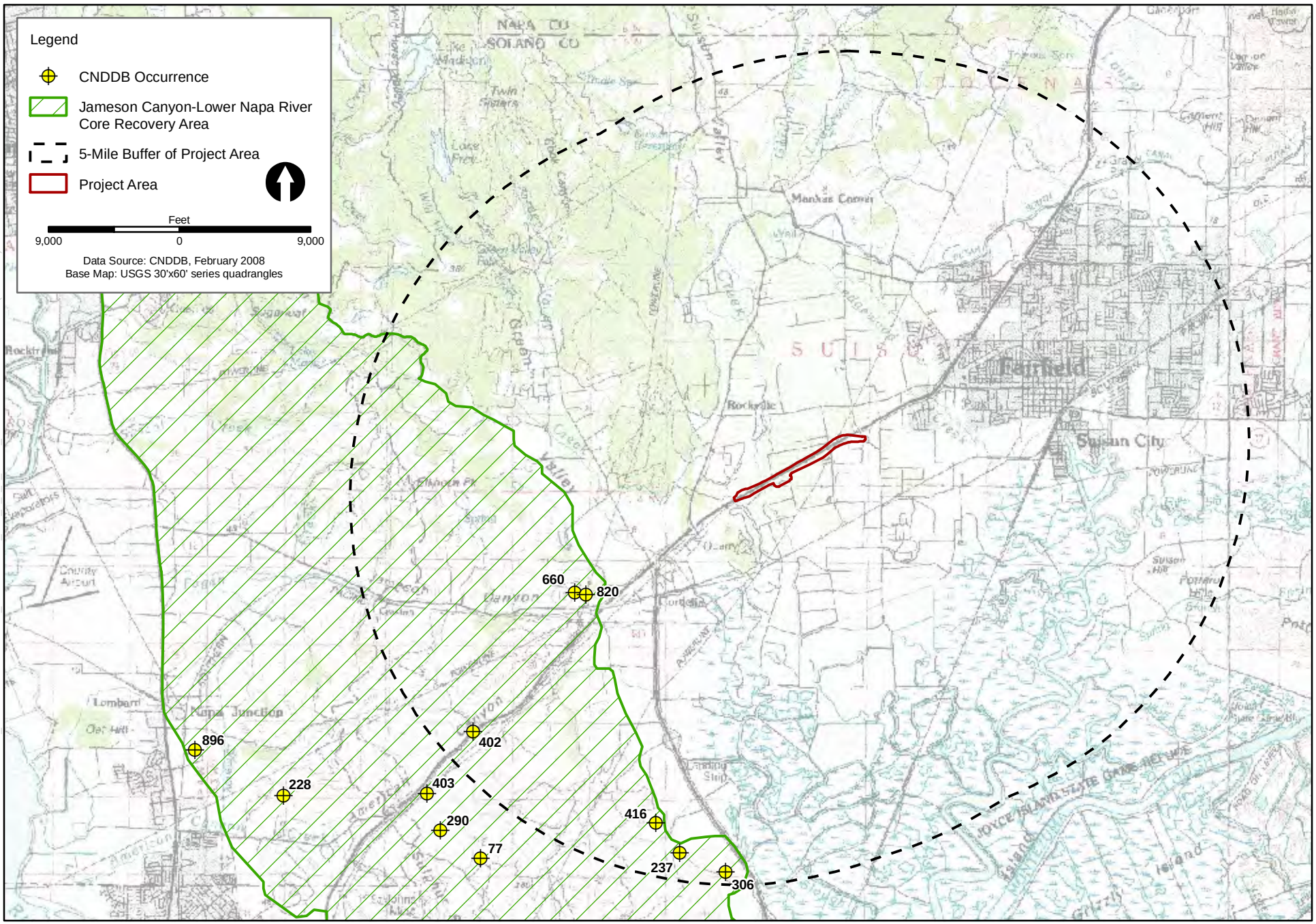
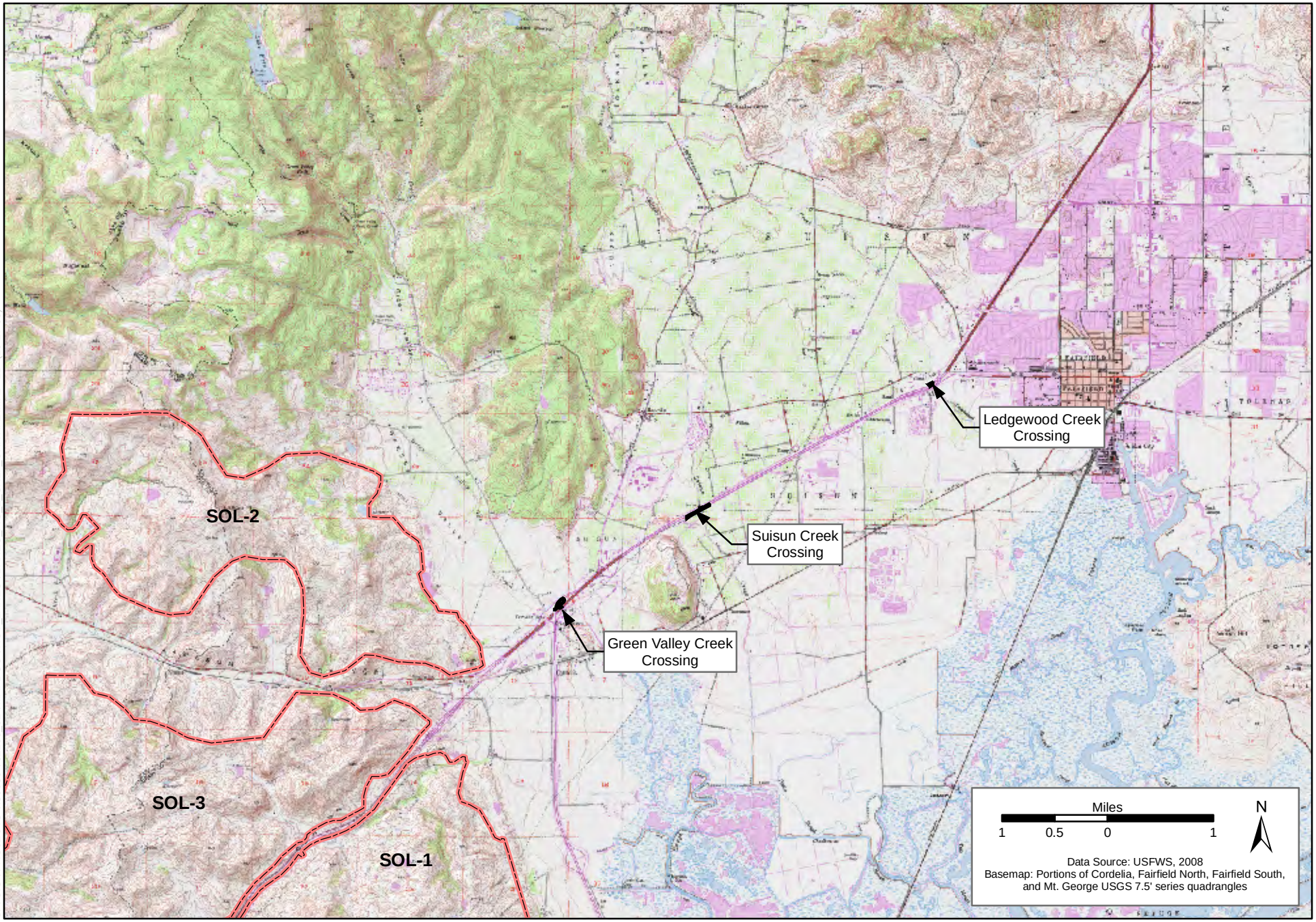


Figure 2.3-3
California Red-legged Frog CNDDB Occurrences within a 5-Mile Radius of the Project Area



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ICF Jones & Stokes
an ICF International Company

Figure 2.3-4
California Red-legged Frog Critical Habitat

CRLF, construction BMPs, and the measures identified below would reduce indirect effects on CRLF and potential habitat that could occur downstream from the construction area.

Impact TES-5: Potential Direct Impact on California Red-Legged Frog during Construction

CRLF could be directly affected by construction activities occurring adjacent to Suisun Creek. If CRLFs are present within the construction work area, they could be inadvertently killed or wounded by construction vehicles, construction personnel, and accidental spill of toxic fluids (i.e., gasoline and other petroleum-based products). If CRLFs must be captured and relocated outside the construction work area, they could be exposed to increased risks of disease, predation, and competition that could result in increased mortality. Implementation of Measures NC-1b and TES-5 ensure that this is not an adverse effect.

Impact TES-6: Temporary and Permanent Loss of California Red-Legged Frog Upland Habitat

Construction of the proposed project would result in both temporary disturbance and permanent loss of upland habitat for CRLF in riparian woodland along Suisun Creek within the project footprint (see Figure 2.3-1, Map Sheet 2). Construction would result in the temporary disturbance of 2.28 acres of upland habitat (1.28 acres of ruderal and 1.0 acre of riparian woodland). Construction would also result in a permanent loss of 1.02 acres of upland habitat (0.31 acre of ruderal and 0.71 acre of riparian woodland) along the creek banks, which provides potential foraging and refuge sites for CRLF. There would be no temporary or permanent impacts in Suisun Creek, which provides aquatic habitat for CRLF. Implementation of Measure TES-6 would reduce the severity of impact to CRLF upland habitat. Therefore this effect is not adverse.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of avoidance, minimization, and mitigation measures described in the "Riparian Woodland" and "Perennial Wetland Drainage" sections above and the following USFWS standardized measures would ensure avoidance and minimization of adverse effects on CRLFs during construction activities associated with bridge construction at Suisun Creek.

Measure TES-4: Construct During the Dry Season

Construction in and adjacent to Suisun Creek will occur during the dry season between June 15 and October 15.

Measure TES-5: Conduct Preconstruction Surveys and Construction Monitoring for California Red-Legged Frog

A preconstruction survey will be conducted immediately preceding any construction activity that occurs in CRLF habitat or any activity that may result in take of the species. A USFWS-approved biologist will carefully search all obvious potential hiding spots for CRLF, such as large downed woody debris, the perimeter of pond or wetland habitats, and the riparian corridors associated with streams and drainages. Any CRLF found will be captured and held for the

minimum amount of time necessary to release them in suitable habitat outside the study area. Suitable release sites will be identified by a qualified biologist approved by the USFWS before the start of construction activities.

A USFWS-approved biologist will monitor all ground-disturbing construction activity near potential CRLF habitat. After ground-disturbing activities are complete, the USFWS-approved biologist will train an individual to act as the on-site construction monitor. The on-site monitor will have attended the training described above. Both the USFWS-approved biologist and construction monitor will have the authority to stop or redirect project activities to ensure protection of resources and compliance with all environmental permits and conditions of the project.

If the USFWS-approved biologist or construction monitor has requested that work stop because of take of any of the listed species, the USFWS and the DFG will be notified within one working day via email or telephone. The USFWS-approved biologist and construction monitor will complete a daily log summarizing activities and environmental compliance.

- If a CRLF is encountered during construction work, activities will cease until the frog is removed and relocated by a USFWS-approved biologist.
- Any person capturing or handling CRLF will be a qualified biologist approved by the USFWS. A qualified biologist means any person who has completed at least four years of university training in wildlife biology or a related science, or has demonstrated field experience in the identification and life history of the CRLF. Resumes of all biologists proposed to capture or handle CRLF will be submitted to the USFWS for approval no later than 30 days before the start of construction.
- If necessary, nets or bare hands may be used to capture CRLFs. The USFWS-approved biologist will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within two hours before and during periods in which they are capturing and relocating CRLF. To avoid transferring disease or pathogens between aquatic habitats during the course of surveys or handling of CRLF, the USFWS-approved biologist will follow the Declining Amphibian Populations Task Force's Code of Practice. The USFWS-approved biologist will limit the duration of handling and captivity of CRLF. While in captivity, CRLF will be kept in a cool, moist, aerated environment, such as a bucket containing a damp sponge. Containers used for holding or transporting adults of this species will not contain any standing water.
- All construction areas will be flagged, and all activity will be confined to these areas.
- Because dusk and dawn are often the times when CRLF are most actively foraging and dispersing, all construction activities should cease 30 minutes before sunset and should not begin before 30 minutes prior to sunrise.
- A representative will be appointed, who will be the contact source for any employee or contractor who might inadvertently kill or injure a CRLF, or who finds a dead, injured, or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number will be provided to the USFWS before the initiation of ground-disturbing activities.

- Tightly woven fiber netting or similar material will be used for erosion control or other purposes at the project site to ensure that CRLF are not trapped. This limitation will be communicated to the contractor through use of special provisions included in the bid solicitation package. Coconut coir matting is an acceptable erosion control material. No plastic monofilament matting will be used for erosion control.
- A litter control program will be instituted at the entire project site. All workers will ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash from the study area are deposited in covered or closed trash containers. The trash containers will be removed from the study area at the end of each working day.
- After construction is complete, temporarily disturbed areas within the study area will be restored to pre-project conditions or enhanced to compensate for the removal of riparian vegetation.
- Special provisions will be included in bid information, when applicable, that include the avoidance and minimization measures. In addition, contractors involved in the project will be educated and informed about the requirements of applicable permits obtained for the project, including a BO.

Measure TES-6: Compensate for Loss and Disturbance of California Red-Legged Frog Habitat

To compensate for the permanent loss and temporary disturbance of 3.30 acres of upland habitat for CRLF in the study area, the project proponent will enhance an area of suitable acreage amounts or contribute to a mitigation bank for riparian restoration habitat.

The project proponent will compensate for temporary construction-related loss of upland habitat for CRLF by replanting the temporarily disturbed area with native species. Replanting will occur after completion of the construction activities. Additional compensation for temporary impacts on upland habitat will be required (Cleckler pers. comm.).

The project proponent will compensate for the permanent and temporary loss of upland habitat for CRLF at an offsite location. The number of compensation acres will be confirmed through coordination with the USFWS as part of the formal consultation for the proposed project. Potential mitigation areas are available at the Solano Land Trust's Lynch Canyon Open Space, which is northwest of I-80 in American Canyon, and the King Ranch Open Space, which is west of I-680 in the American Canyon area (Wickham pers. comm.). Another potential mitigation area is located at the Solano Community College along Suisun Creek north of I-80.

Central California Coast Steelhead

Central California coast steelhead was listed as threatened by the NMFS on August 18, 1997 (62 FR 43938). There is no state status. Central California coast steelhead includes populations from the Russian River to Aptos Creek and the drainages of San Francisco and San Pablo Bays eastward to the Napa River.

Central California coast steelhead generally enter fresh water between November and April. The preferred migration temperatures for steelhead range from 7.7ºC to 11ºC (46ºF–52ºF) (National Marine Fisheries Service 2000). Spawning generally begins in December.

During spawning, the female digs a redd (a gravel nest), into which the eggs are deposited and then fertilized by the male. Steelhead prefer substrate no larger than 10 centimeters (Bjornn and Reiser 1991). Steelhead spawn in cool, well-oxygenated water (Hampton 1988). Optimal water temperatures for spawning and incubation range from 3.8ºC to 11ºC (39ºF–52ºF) (Myrick and Cech 2001). Incubation lasts from 1.5 to four months, depending on water temperature (Moyle 2002).

Instream and overhead cover, in the form of undercut banks, downed trees, and overhanging tree branches, is important for juvenile rearing. The addition of cover increases spatial complexity and may increase productivity. Fine-textured instream woody material provides the hydraulic diversity necessary for the selection of suitable velocities, access to drifting food, and escape refugia from predatory fish (Raleigh et al. 1986). Juvenile rearing success is assumed to decline at water temperatures ranging from 17ºC to 25ºC (62.6ºF–77ºF) (Raleigh et al. 1984).

Juvenile steelhead feed on a variety of aquatic and terrestrial insects and other small invertebrates. Steelhead smolts emigrate from March to May. Ocean rearing lasts two to three years.

Affected Environment

The following information on steelhead occurrence in streams in the project vicinity is summarized from Leidy et al. (2005). Historical evidence dating back as far as 1940 indicates that steelhead were present throughout the Suisun Creek watershed. Following the construction of Gordon Valley Dam (Lake Curry) in 1926 and subsequent water developments, steelhead populations in the watershed declined. Although the distribution and abundance of steelhead throughout Suisun Creek and its tributaries may have fluctuated over the years, recent surveys found that both adult and juvenile steelhead are still present in this system. An adult steelhead (673 millimeters FL [26.5 inches]) was found approximately 0.25 mile downstream of the Wooden Valley Creek confluence in March 2001, while two other adult steelhead (approximately 530–640 millimeters (20.9–25.2 inches) were observed in June and early July 2001 approximately 6 and 11 miles downstream of Lake Curry (Hanson Environmental 2001 in Leidy et al. 2005). This same survey also noted the occurrence of juvenile *O. mykiss* 160–170 millimeters (6.3–6.7 inches) downstream from the dam.

Historical evidence from the CDFG (1965 cited in Leidy et al. 2005) suggested that Wooden Valley Creek, a tributary of Suisun Creek, contained the highest concentration of steelhead in the watershed (Leidy et al. 2005). Surveys of Wooden Valley Creek conducted in 2002 indicated that juvenile *O. mykiss* were present at both headwater and various other survey locations along the creek (Leidy et al. 2005), suggesting the possibility of an existing steelhead population. Additionally, NMFS believes that Suisun and Wooden Valley Creeks currently support a steelhead population and that sufficient migration, spawning, and rearing habitat exists (50 FR 52504, September 2, 2005).

Hanson Environmental (2002) conducted a more detailed analysis of steelhead habitat quality in Suisun Creek. The study surveyed approximately 95% of the stream from Cordelia Road to Lake Curry during the summer low-flow period. Results from this study indicate that significant habitat constraints exist; these include migration barriers, limited spawning gravel availability, high summer water temperatures, and low habitat diversity. The study concluded that Suisun Creek was unlikely to consistently support self-sustaining steelhead populations. Instead, habitat would most likely be available during wet years when winter flows were high enough to allow upstream passage for adults and summer stream temperatures remained cool enough to support juvenile rearing. During dry years, summer rearing habitat would be constrained to upstream areas immediately below the reservoir, where temperatures would most likely remain within a range suitable to support salmonids.

In Suisun Creek, a potential spawning gravel patch is present about 20 feet downstream of the existing bridge that spans Suisun Creek at I-80.

The NMFS finalized critical habitat designations for central California coast steelhead in September 2005 (70 FR 52488, September 2, 2005). Although Suisun Creek is mentioned as having a steelhead population, it is excluded from the critical habitat designation for central California coast steelhead.

Environmental Consequences

Impact TES-7: Impacts on Fish Habitat Structure

Construction activities associated with the proposed action that would impact fish habitat structure include placement of bridge abutments above the OHWM and vegetation removal. Bridge construction and bank stabilization activities would require removal of vegetation, resulting in short- and long-term loss of vegetative cover and reducing fish habitat complexity and shade. Streamside vegetation, including shaded riverine aquatic (SRA) cover, is an essential component of salmonid habitat. Undercut banks and overhead SRA cover, such as canopy cover and overhanging vegetation, provide fish with protection from predators, maintain shade necessary to reduce thermal input, and provide nutrients to the stream in the form of fallen leaves and insects. Riparian vegetation is also important in controlling streambank erosion, contributing to instream structural diversity, and maintaining undercut banks. Elements of the proposed action would remove vegetation and SRA cover.

Construction of the bridge over Suisun Creek south of I-80 would result in a permanent loss of approximately 0.71 acre of riparian woodland, which includes up to 160 feet of overhanging vegetation (i.e., SRA cover) (assuming continuous riparian coverage) along Suisun Creek within the project footprint (Figure 2.3-5). The permanent impact area primarily comprises shrub understory, such as coyote brush and poison oak. Approximately 1.0 acre of riparian woodland vegetation, including up to 160 feet of SRA (assuming continuous riparian coverage), would be temporarily disturbed during construction. Understory coyote brush and poison-oak would be removed from the project footprint. Riparian vegetation outside the construction area would be protected from construction-related activities using ESA fencing. Implementation of the measures for Riparian Woodland (Measures NC-1a through NC-1d) would reduce riparian effects and offset temporary riparian habitat losses.

Impact TES-8: Water Temperature Impacts

Under existing conditions, habitat in the project area for juvenile steelhead rearing is likely marginal due to unsuitable water temperatures during summer (Hanson Environmental 2002). Water temperature is an important variable that determines the suitability of fish habitat for fish growth, reproduction, survival, and migration. This is especially true for steelhead, which have relatively narrow temperature requirements for carrying out their life history. Any increase in water temperatures could further reduce the suitability of habitat for steelhead in the project area.

Water temperature is controlled primarily by flow, weather, stream width and depth, and shading of the stream surface. The proposed action would impact shade provided by riparian vegetation. The amount of shade that would be affected by vegetation removal would be small, however, compared to total shade on the creek; lost shading would be compensated for by additional shading provided by the new bridge. Consequently, there would be no adverse effects on water temperatures resulting from the project.

Impact TES-9: Impacts on Water Quality

Assessment of water quality addresses the impacts of contaminants on steelhead and their habitat. Contaminants include toxic substances, such as metals, petroleum products, pesticides, fertilizers, sewage, and uncharacteristically high sediment loading. Activities associated with bridge construction and vegetation removal could increase erosion processes, thereby increasing sedimentation and turbidity in downstream waterways. Excessive sediment deposited in or near stream channels can degrade aquatic habitats. Increased turbidity can increase fish mortality; reduce feeding opportunities for fish, including rearing steelhead; and cause fish to avoid important habitat.

Additionally, construction materials, such as concrete, sealants, oil, and paint, could adversely affect water quality if accidental spills occurred during project construction. Increased pollutant concentrations could limit fish production, abundance, and distribution by direct mortality of fish or their prey. Steelhead inhabiting the project area require relatively clean, cold, well oxygenated water for successful growth, reproduction, and survival, and are not well adapted for survival in degraded aquatic habitats.

The potential for sediment and pollutant impacts would be considered an adverse effect. Adverse effects on water quality would be avoided by implementing Measure TES-9 below.

Impact TES-10: Impacts on Fish from Noise and Other Disturbances

Noise, vibrations, artificial light, and other physical disturbances adjacent to streams can harass fish, disrupt or delay normal activities, or cause injury or mortality. The potential magnitude of these impacts depends on a number of factors, including the type and intensity of the disturbance, proximity of the action to the water body, timing of actions relative to the occurrence of sensitive life stages, and frequency and duration of activities. For most activities, the impacts on fish will be limited to avoidance behavior in response to movements, noises, and shadows caused by construction personnel and equipment operating in or adjacent to the water body. However, survival may be altered if disturbance causes fish to leave protective habitat

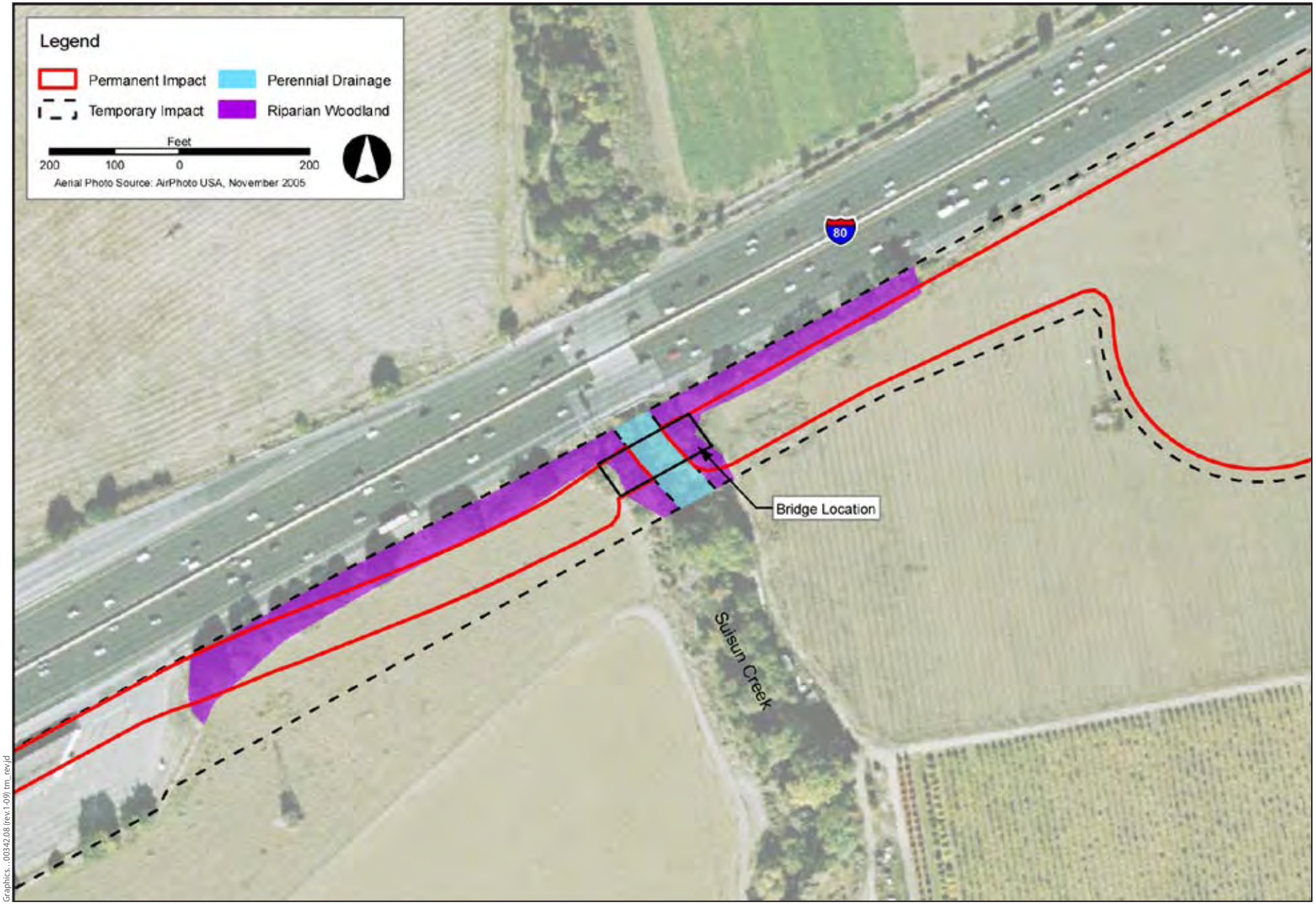

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Figure 2.3-5
Special-Status Salmonid Habitat in the Project Area

(e.g., increasing exposure to predators) or is of sufficient duration and magnitude to affect growth and spawning success. Injury or mortality may result from direct contact with humans and machinery, and sound pressure (pile driving), or indirectly from physiological stress associated with disturbance.

Project actions that may temporarily disturb fish include movement of construction equipment and personnel, lighting, removal and disturbance of riparian vegetation, and grading and construction of access roads and staging areas adjacent to the stream. Pile driving above the OHWM could also disturb fish as sound waves travel through the soil to the adjacent channel. There have been no studies that have tested the impacts of pile driving on land in close proximity to the channel. Factors that influence the intensity of pressure waves include proximity to the source, maximum force generated and rate at which it is generated, and characteristics of the medium (e.g., water and substrate) through which the waves travel. Soil is a relatively poor conductor of sound waves and a common avoidance measure is to conduct pile driving in a dry streambed or on land. These potential effects can be minimized by constructing during the dry season as described in Measure TES-10, below.

Impact TES-11: Impacts on Fish Movement and Potential Spawning Habitat

Construction activities associated with the proposed project would not require any work in the channel or redirection of the flow of water through the use of cofferdams or pipelines. Therefore, construction is not likely to adversely affect fish migration. A potential spawning gravel bed was observed on Suisun Creek, approximately 20 feet downstream of the existing bridge. It is anticipated that the gravel bed would not be removed or disturbed by the construction of the new bridge. No construction activity would take place within the creek and all construction equipment would access the construction site from the existing bridge and road.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of the avoidance and minimization measures for Riparian Woodland (Measures NC-1a through NC-1d) will reduce adverse riparian effects and offset temporary riparian habitat losses. Implementation of the following measures would ensure that adverse effects on steelhead and their habitat potentially occurring in Suisun Creek are minimized.

Measure TES-7: Retain and Improve Habitat Structure

Trees and shrubs immediately adjacent to Suisun Creek that must be removed for bridge construction will be cut above ground level to leave roots intact. By leaving roots of affected riparian vegetation intact, bank stability will not be compromised as would normally be expected following vegetation removal.

Under the new bridge, instream geomorphic features will be installed to compensate for affected SRA cover vegetation. Geomorphic features will include rock weirs and vanes, root wads, and deflector logs. By maintaining and improving bank stability and instream cover, habitat for migrating and seasonal rearing of juvenile steelhead and Chinook salmon would be preserved.

Measure TES-9: Implement Water Quality Impact Avoidance Measures

Increased sediment input to the creek will be avoided or minimized. Soil disturbance will be minimized by removing above-ground vegetation and leaving the root system intact. Additionally, contractors would be required to implement a SWPPP as part of the NPDES General Construction Activity Storm Water Permit. Measures in the plan will include:

- Conducting all construction work according to site-specific construction plans that minimize the potential for sediment input to the aquatic system.
- Minimizing the areas to be cleared, graded, and recontoured.
- Avoiding riparian and wetland vegetation outside the construction zone by installing Environmentally Sensitive Area fencing (ESA fencing).
- Grading and shaping of disturbed areas to restore natural topography.
- Covering bare areas with mulch and revegetating all cleared areas using native species.
- Preventing raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses.
- Establishing a spill prevention and countermeasure plan before project construction that includes strict on-site handling rules to keep construction and maintenance materials out of drainages and waterways.
- Cleaning up all spills immediately according to the spill prevention and countermeasure plan and notifying the CDFG and NMFS immediately of any spills and cleanup activities.
- Providing areas located outside the OHWM for staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants.

Implementation of measures to avoid or minimize the adverse effects of increased sediment input would also avoid and minimize increased input of pollutants associated with sediments and the potential for subsequent impacts on steelhead.

Measure TES-10: Implement Construction Restrictions

Construction activities will be limited to areas located above the OHWM. In addition, construction adjacent to Suisun Creek will be limited to the summer low-precipitation period (June 15 to October 15) to reduce the likelihood of adverse impacts on rearing juvenile steelhead and on adult fish spawning and migration. By limiting construction to June 15 to October 15, two goals would be achieved.

- Construction will not be concurrent with the expected migration (juvenile and adult) and spawning periods of steelhead.
- A 4-month construction period will ensure that construction activities in the vicinity of the creek are completed within one season, thereby avoiding multiple seasons of disturbance.

2.3.7 Invasive Plant Species

Regulatory Setting

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

Survey Results

Table 2.3-5 identifies the invasive plant species located in the study area. The infestation of the study area by these species is limited, occurring primarily on isolated patches of vegetation on the edges of roadways.

Environmental Consequences

Impact IPS-1: Potential Introduction and Spread of Invasive Plants

Invasive plant species in the study area are present along roadsides, which are routinely disturbed by shoulder maintenance and vegetation management activities. The proposed project would create additional disturbed area for a temporary period, but it would not substantially increase the area subject to repeated disturbance because the new road shoulders would replace existing road shoulders. The proposed project is not anticipated to increase or decrease the area currently occupied by invasive plants or the potential for spreading invasive plant species. However, procedures have been identified to further ensure the avoidance of potential adverse effects from invasive plants (Measure IPS-1).

Avoidance, Minimization, and/or Mitigation Measures

Implementation of Measure NC-1b and the following measure would avoid and minimize the adverse effect of introduction and spread of invasive plants during construction.

Measure IPS-1: Avoid the Introduction and Spread of Invasive Plants

The introduction of new invasive plants and the spread of invasive plants previously documented in the study area will be avoided. Accordingly, the following measures will be implemented during construction.

- Surface disturbance within the construction work area will be minimized to the greatest extent possible.
- All disturbed areas will be seeded with certified weed-free native mixes and mulched with certified weed-free mulch (rice straw may be used in upland areas).
- Native, noninvasive species will be used in erosion control plantings to stabilize site conditions and prevent invasive species from colonizing.

Table 2.3-5. Invasive Plant Species Located in the Study Area and Vicinity

Species	CDFA	Cal-IPC
Slender wild oat (*Avena barbata*)	–	Moderate
Wild oat (*Avena fatua*)	–	Moderate
Black mustard (*Brassica nigra*)	–	Moderate
Common mustard (*Brassica rapa*)	–	Limited
Ripgut brome (*Bromus diandrus*)	–	Moderate
Soft chess (*Bromus hordeaceus*)	–	Limited
Red brome (*Bromus madritensis* ssp. *rubens*)	–	High
Italian thistle (*Carduus pycnocephalus*)	C	Moderate
Yellow star-thistle (*Centaurea solstitialis*)	C	High
Bull thistle (*Cirsium vulgare*)	C	Moderate
Bindweed (*Convolvulus arvensis*)	C	–
Bermuda grass (*Cynodon dactylon*)	C	Moderate
Orchard grass (*Dactylis glomerata*)	–	Limited
Red-stemmed filaree (*Erodium cicutarium*)	–	Limited
Fig (*Ficus carica*)	–	Moderate
Fennel (*Foeniculum vulgare*)	–	High
Mediterranean barley (*Hordeum marinum* var. *gussoneanum*)	–	Moderate
Hare barley (*Hordeum murinum* ssp. *leporinum*)	–	Moderate
Klamathweed (*Hypericum perforatum*)	C	Moderate
Smooth cat's ear (*Hypochaeris glabra*)	–	Limited
Broad-leaved pepper-grass (*Lepidium latifolium*)	B	High
Italian ryegrass (*Lolium multiflorum*)	–	High
White horehound (*Marrubium vulgare*)	–	Limited
Bur-clover (*Medicago polymorpha*)	–	Limited
Olive (*Olea europaea*)	–	Limited
Harding grass (*Phalaris aquatica)*	–	Moderate
Bristly ox-tongue (*Picris echioides*)	–	Limited
Smilo grass (*Piptatherum millaceum*)	–	Limited
Narrow-leaved plantain (*Plantago lanceolata*)	–	Limited
Wild radish (*Raphanus sativus*)	–	Limited
Himalayan blackberry (*Rubus discolor*)	–	High
Sheep sorrel (*Rumex acetosella*)	–	Moderate
Curly dock (*Rumex crispus*)	–	Limited
Russian thistle (*Salsola tragus*)	C	Limited
Milk thistle (*Silybum marinum*)	–	Limited
Charlock (*Sinapis arvensis*)	–	Limited
Medusahead (*Taeniatherum caput-medusae*)	C	High
Hedgeparsley (*Torilis arvensis*)	–	Moderate
Puncture vine (*Tribulus terrestris*)	C	–
Rose clover (*Trifolium hirtum*)	–	Moderate
Bigleaf periwinkle (*Vinca major*)	–	Moderate
Foxtail fescue (*Vulpia myuros*)	–	Moderate

Notes: The CDFA and Cal-IPC lists assign ratings that reflect the CDFA and Cal-IPC views of the statewide importance of the pest, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances. The Cal-IPC species list is more inclusive than the CDFA list; however, the FHWA requires adherence to Executive Order 13112, which requires the use of only the CDFA list.

The CDFA categories indicated in the table are defined as follows:

B: Eradication, containment, control, or other holding action at the discretion of the county agricultural commissioner.

C: State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the county agricultural commissioner.

The Cal-IPC categories indicated in the table are defined as follows:

High: Species with severe ecological impacts, high rates of dispersal and establishment, and usually widely distributed.

Moderate: Species with substantial and apparent ecological impacts, moderate to high rates of dispersal, and establishment dependent on disturbance, and that are limited to widespread distribution.

Limited: Species with minor ecological impacts, low to moderate rates of invasion, and limited distribution, and that are locally persistent and problematic.

2.3.8 No Project Alternative

Under the no project alternative, no construction activities would occur; therefore, no effects on the biological environment would result.

2.4 Cumulative Impacts

2.4.1 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 impact 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 on 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, disruption of migration corridors, changes in water quality, and the introduction or promotion of predators. They also can contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

State CEQA Guidelines Section 15130 describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the State CEQA Guidelines. A definition of cumulative impacts under NEPA can be found in 40 CFR Section 1508.7 of the CEQ regulations.

2.4.2 Approach to Cumulative Impact Analysis

The cumulative analysis for the proposed project takes into consideration the other ongoing projects in the same geographic area as the proposed project, as well as planned land uses and transportation and circulation projections identified in city and county general plan and policy documents.

The existing and proposed projects listed below have been included in this analysis because they either are close to the project area or could affect regional resources. This information represents the most up-to-date information available as of the date of publication of this document.

- **North Connector Project:** The North Connector Project would construct a parallel route to the north of I-80 between Abernathy Road at I-80 on the east and SR 12 at Red Top Road on the west. This project would provide increased east/west capacity and provide an alternative to I-80 for local traffic. Construction of the first phase of the North Connector Project is expected to begin in summer 2009, with completion anticipated in December 2010.

- **Interstate 80 High-Occupancy Vehicle Lanes Project:** Eastbound and westbound high-occupancy vehicle (HOV) lanes will be constructed along an approximately 8.5-mile-long segment of I-80 from the Red Top Road interchange in Solano County to approximately 0.5 mile east of the Air Base Parkway interchange in Fairfield. This project (EA-04-0A5304) will increase the overall carrying capacity of I-80 in the project area and will facilitate the already high demand for ridesharing on I-80. Construction of this project began in June 2008, and completion is anticipated in late 2009.
- **Transit Improvements:** To support increased transit ridership and expanded bus routes in the county, the *I-80/I-680/I-780 Transit Corridor Study* identifies numerous potential locations for park-and-ride lots in these major corridors, three of which could be located in the project area: Red Top Road at I-80, a surface lot at Abernathy Road between I-80 and SR 12 or an expanded parking structure at the Fairfield Multimodal Transportation Center, and Gold Hill Road at I-680. These potential lots are expected to be constructed between 2010 and 2015.
- **Interstate 80/Interstate 680/State Route 12 Interchange Project:** The Interstate 80/Interstate 680/State Route 12 Interchange Project (EA-04-0A5300) would include numerous improvements to the I-80/I-680/SR 12 interchange to address existing and future traffic operations and congestion, including the relocation of the westbound Cordelia Truck Scales. The improvements are intended to add freeway capacity, reduce cut-through traffic on local roads, improve local access to and from the freeway, accommodate current and future truck volumes, improve safety and increase the use of HOV lanes and ridesharing. The environmental document for the project is currently underway and is expected to be completed in early 2010.
- **Jameson Canyon (SR 12) Widening from I-80 to SR 29:** This project would provide a continuous 4 lane expressway between I-80 and SR 29. The project currently in the final design phase and construction is planned to begin in 2011, with completion in 2013.
- **I-80 Improvements through Fairfield:** Several projects are programmed between SR 12 East and Air Base Parkway. They include construction of an eastbound auxiliary lane between Abernathy Road and Auto Mall Parkway, removal of existing hook ramps at Auto Mall Parkway, construction of an eastbound auxiliary lane between Beck Avenue and Travis Boulevard, construction of an eastbound auxiliary lane from Travis Boulevard to Air Base Parkway, construction of a westbound auxiliary lane from Waterman Boulevard/Air Base Parkway to Travis Boulevard, and construction of a westbound auxiliary lane from West Texas Street to Abernathy Road. These improvements are in the early planning phases. No construction date has been determined.

2.4.3 Assessment of Cumulative Impacts

Human Environment

Land Use

The study area for cumulative land use effects includes the geographic area of the ongoing projects listed above which generally coincides with the areas immediately surrounding I-80 and

State Route 12 in Solano County and the City of Fairfield. Land uses in the study area have changed dramatically in some areas and remained relatively stable in others. Portions of the study area within Solano County have remained relatively stable over the years and focused on agricultural uses with intermittent industrial and commercial uses. Areas within the City of Fairfield have changed rapidly over the years particularly north of I-80 in the Green Valley area of Fairfield with large amounts of commercial, office and residential land uses being developed. As discussed in section 2.1.1, the proposed project would affect agricultural and residential environments confined to within the project area. The project in combination with other ongoing and reasonably foreseeable projects in the study area would contribute to additional conversion of agricultural lands to non-agricultural uses as well as additional residential and business displacement. These changes could cause a cumulatively adverse effect. However as with the proposed project, each ongoing and reasonably foreseeable project would be required to mitigate the individual land use impacts resulting from each project. In addition, the cumulative changes in land use that would occur as a result of this project in combination with other ongoing and reasonably foreseeable projects are generally consistent with the long range community and transportation plans of the County, City of Fairfield and transportation planning agencies (MTC, STA, Caltrans, and FHWA).

Growth

The study area for cumulative growth effects is the same as described above for land use. As discussed in section 2.1.2, the proposed project would not contribute to growth-inducement and as such would not contribute to a cumulative effect.

Farmlands

The study area for cumulative farmland effects is the same as described above for land use. As discussed in section 2.1.3, and above under land use, the proposed project would result in the conversion of farmlands to non-farm uses. The project in combination with other ongoing and reasonably foreseeable projects in the study area would contribute to additional conversion of farmland to non-farm uses. The amount of farmland conversion could cause a cumulatively adverse effect. However as with the proposed project, each ongoing and reasonably foreseeable project would be required to mitigate the individual farmland impacts resulting from each project. If mitigation similar to that specified for the proposed project is required of other ongoing and reasonably foreseeable projects, cumulative impacts to farmlands should be substantially reduced and result in more farmland within the County being permanently protected from future conversion.

Community Impacts

The study area for cumulative community impacts is the same as described above for land use. As discussed in section 2.1.4, the proposed project would not result in an adverse community impact nor affect an environmental justice community. As such the proposed project would not contribute to a cumulative effect.

Utilities/Emergency Services

The study area for cumulative utilities/emergency services impacts is the same as described above for land use. As discussed in section 2.1.4, the proposed project would not result in an adverse effect on utilities or emergency services. As such the proposed project would not contribute to a cumulative effect.

Traffic and Transportation

As discussed in section 2.1.6, the only adverse effect on traffic and transportation would be a temporary effect associated with construction. Implementation of measures listed in Section 2.1.6 would reduce this effect. Because the only adverse effect is temporary, there would be no cumulative impact on traffic and transportation.

Visual Resources

The visual quality of the land along I-80 near Fairfield, has decreased as a result of recent development which has altered the general visual character from agricultural to suburban. Development continues along the I-80 corridor and as a result, visual quality continues to decrease. Although the project would be developing one of the remaining somewhat vivid agricultural/undeveloped areas along this portion of the freeway, its contribution to this cumulative impact would not be considerable because of the removal of the existing truck scales along with landscape and architectural treatments that mitigate any visual impacts from the project.

Cultural Resources

As discussed in section 2.1.8, there would be no adverse impacts on cultural resources. Therefore, the project would not contribute to any cumulative impacts.

Physical Environment

Hydrology and Floodplain

Related projects in the area of the study area that would impact the floodplain include: A) the HOV project that is currently under construction, B) the North Connector project that is currently under design and located parallel to and a short distance north of the freeway, C) and the large I-80/I-680/SR12 interchange freeway reconstruction project that is in the planning stages.

The potential impacts of the HOV project and the North Connector project are minimal. The HOV project resulted in no changes to the culverts under the freeway, and where the floodplain overtops the freeway, a metal beam guard rail has been constructed instead of a concrete barrier to minimize impacts to the floodplain. The North Connector project is constructed at or slightly below existing grade, so there is no new impediment to overland flows.

The future interchange and freeway widening project has the potential to have an adverse effect on the floodplain, however, all waterway crossings will be reconstructed with new bridges or new culverts, creating the same or increased conveyance of flood flows. At Raines Drain, the future freeway widening project that is part of the large interchange project will negatively impact the floodplain elevations unless specific flood control improvements are made. Presently the total runoff in Raines Drain is the combination of runoff from the immediate Raines Drain watershed and excess flood flows that escape from the adjacent Suisun Creek. These combined flood flows reach the undersized culverts at the highway. In the future, when the mainline is raised and the westbound truck scales relocated, a combination of additional storm drain capacity and/or detention facilities will need to be constructed. The eastbound truck scales project will not affect the floodplain flows because the existing freeway centerline is the control to the floodplain elevation; all flows that overtop the freeway will likewise pass, at a lower elevation across the

eastbound scales improvements. These projects taken together are not expected to have a cumulative effect on hydrology and the floodplain in the project vicinity.

Impacts to the hydrology and floodplain as a result of the proposed project would be minimal and would be mitigated. Therefore, the project will not contribute to a cumulative impact on the hydrology and floodplain in the project vicinity.

Water Quality and Stormwater Runoff

Related projects in the vicinity of the study area include that would affect water quality and stormwater runoff include: A) the HOV project that is currently under construction, B) the North Connector project that is currently under design and located parallel to and a short distance north of the freeway, C) and the large I-80/I-680/SR12 interchange freeway reconstruction project that is in the planning stages.

All State or local transportation projects, including the three mentioned here, are subject to incorporating construction storm water treatment measures, the design of erosion control measures, and incorporating new stormwater runoff treatment control measures. Each project will be required to meet the water quality regulations of the Regional Water Quality Control Board. With each project meeting the requirements of the Regional Board there should be no net cumulative effect, and therefore the project will not contribute to a cumulative impact.

Geology/Soils/Seismic/Topography

As discussed in section 2.2.3, construction in the project area could lead to an increased sediment load to receiving waters and an increase in the potential for seismic- or expansive soil–related hazards. There are measures in place to conduct a site-specific geotechnical investigation and to design and construct the project to avoid or minimize the potential for such hazards to result in damage to project facilities. Therefore, the project is not anticipated to have a cumulatively considerable contribution to these impacts.

Paleontology

As discussed in section 2.2.4, potential adverse impacts on paleontological resources would be mitigated through a monitoring plan in sensitive areas. Therefore, the proposed project would not contribute to any cumulative impacts.

Hazardous Waste/Materials

As discussed in section 2.2.5, there are measures in place to conduct site-specific hazardous materials investigations, prepare and implement a safety plan, and design and construct the project to avoid or minimize the potential exposure of humans and the environment to hazardous conditions. With these measures in place, the project is not anticipated to contribute to cumulative impacts related to hazardous materials.

Air Quality

Air quality impacts are inherently cumulative since the traffic forecasts are consistent with buildout assumptions that are consistent with adopted demographic forecasts. Consequently, air quality conditions incorporate regional growth. The only exception to this is for construction related impacts. The proposed project would improve movement, increase capacity, and improve overall traffic operation in the general vicinity, thereby lowering the concentration of pollutants

emitted by the motor vehicles. Consequently, with the relocation of the trucks scales, transportation improvements for the corridors I-80/I-680/SR-12 proposed and the secondary improvement in vehicular movement, such as the HOV lanes and longer truck on-/off-ramps, no cumulative adverse regional or local air quality impacts are anticipated.

Construction Activities

Construction of the proposed project would not result in adverse impacts on air quality, with the implementation of the standard construction control measures. Additionally, short-term effects are minimized through compliance with BAAQMD rules and regulations and the Department specifications during construction. Therefore, impacts of the proposed project as a result of construction activity are not expected to contribute to cumulative impacts on air quality.

Operational Impacts

Proposed project operations were shown to have a minor decrease in criteria pollutants and MSAT emissions near residences. Therefore, project-related emissions would decrease with the implementation of the project for each criteria and MSAT pollutant in the region. The combined impacts from the proposed project with other nearby projects would result in cumulatively considerable effects from the proposed project and other nearby projects would not result in cumulatively considerable effects for criteria pollutants and MSAT emissions. All of the projects listed in Section 2.4.2 are listed in 2007 TIP, including the I-80 EB Cordelia Truck Scales Relocation Project, and therefore conforms to the SIP. Therefore, emissions would not result in an adverse cumulative effect.

Noise

For consideration of cumulative impacts, this analysis examines whether implementation of the project would make a considerable contribution to noise levels under design-year no-project conditions.

Impact NOI-3: Contribution to Cumulative Traffic Noise Impact

Traffic noise levels exceed the NAC under existing conditions and will continue to do so in the future, as I-80 traffic demands increase, further increasing noise levels. As indicated in Table 2.2-17, implementation of the proposed project is predicted to increase traffic noise levels by at least 1 dB at noise-sensitive receiver locations over design-year no-project conditions. Accordingly, implementation of the proposed project is anticipated to contribute to a considerable cumulative traffic noise impact at noise-sensitive receiver locations within the project area.

Implementation of the standard Department procedures would reduce the severity of this adverse effect, and would eliminate the project's contribution to any cumulative adverse noise effects.

Energy

For the purposes of this draft EIR/EA, cumulative impacts on energy would occur if the selected alternative, in conjunction with other related projects, collectively resulted in excessive or inefficient energy use.

Construction

The proposed project would require the use of energy resources during construction. Energy impacts involve one-time, non-recoverable energy use associated with construction activities and the use of materials. Energy use for construction would be a short-term impact and would represent a small percentage of the total energy consumed in the region during the period of project construction. As a result, the proposed project is not anticipated to result in an adverse impact on the overall supply of or demand for energy during project construction and, therefore, would not contribute to adverse cumulative impacts on energy resources.

Operations Impacts

Development of related projects in the project area would have a tendency to result in increased energy consumption, whereas the proposed project and other transportation-related projects are expected to result in improved or reduced energy consumption associated with more efficient traffic flow. In either case, because of the relatively high cost of energy, cumulative energy consumption related to proposed project operations is not expected to be excessive or inefficient.

The proposed project would not result in an adverse effect on fuel consumption. Therefore, proposed project operations would not contribute to cumulative direct impacts on energy resources. Indirect energy resources include the consumption of energy for construction of materials and supplies and manufacture of parts associated with the maintenance of the truck scales. This would occur, and therefore the project would result in a slight adverse effect on indirect energy in the long term and would contribute to a cumulative adverse impact on energy.

The proposed project would contribute to the cumulative short-term impacts since it would require the expenditure of energy resources to construct the proposed project. This expenditure would be offset by the energy savings associated with reduced congestion as result of the relocation of the Cordelia truck scales, improvements to the I-80/I-60/SR-12 freeways and local intersections.

Impact EN-5: Contribution to Cumulative Effect on Non-renewable Natural Resources

Implementation of the projects in the study area would result in a cumulative effect on the consumption of non-renewable natural resources (i.e. lumber for construction, fossil fuels [gasoline and diesel] used for equipment operation and vehicle trips to and from construction sites). Considering a number of projects in the study area are redevelopment projects, it is anticipated that modern energy-conserving fixtures, appliances, etc. would replace inefficient equipment, lessening the use of non-renewable energy sources on-site. The projects are also anticipated to stimulate the local economy and may result in a net increase in vehicular trips over existing conditions, particularly the shopping areas. Therefore, implementation of the projects in the study area has the potential for increasing demand on energy sources.

This is an adverse effect, but its severity is reduced through various laws, policies, and programs by both Federal and State agencies. The most significant mitigation for direct energy expenditures would be adoption and implementation of more rigorous CAFE standards for motor vehicles, as stated in the Energy Independence and Security Act of 2007. In addition, the EPA's Energy Star Program, Governor's Executive Order S-20-04 and Green Building Action Plan incorporate programs and techniques that create appliances with Energy Star efficiency

compliance, buildings with a LEED Silver or higher rating, and other energy-saving projects to conserve energy that help provide for a sustainable environment.

Biological Environment

Natural Communities

Impact NC-2: Cumulative Loss of Riparian Woodland

Implementation of the proposed project, in combination with other local and regional projects, would contribute to the cumulative loss of riparian woodland in the project vicinity. Historic loss of riparian vegetation in Solano County has occurred from conversion of riparian habitat for agriculture and development. Although riparian vegetation remains along some of the major streams in the County, including Suisun Creek, the riparian corridor is substantially narrower than it was historically because of this development. The project would contribute incrementally to Solano County cumulative impacts on riparian woodland caused by similar bridge modification projects, new bridge construction, and road widening projects, and from the loss of riparian habitat attributed to urban development. Additional projects proposed within the county, such as Fairfield Corporate Commons, Green Valley Corporate Park, and other business and residential projects in the area, have the potential to contribute to the cumulative loss of riparian habitat.

Indirect impacts can be caused adjacent disturbances to riparian woodland and have the potential to add to the cumulative loss of these natural communities.

However, Measures NC-1a through NC-1e would reduce these cumulative impacts on riparian woodland to a less than cumulatively considerable level.

Wetlands and Other Waters

Impact WOW-4: Cumulative Loss of Perennial Wetland Drainage, Perennial Drainage, and Seasonal Drainage

Implementation of the proposed project, in combination with other local and regional projects, would contribute to the cumulative loss of wetlands and drainages that are waters of the United States within the Suisun Bay hydrologic unit (HUC 18050001). Most wetland drainages that historically occurred in the rivers in the Solano County have been modified or drained over the last century or more to improve water transport, flood protection, and agricultural development SCWA 2007). These wetlands and drainages include features that are waters of the United States. Direct loss of 0.08 acre of waters of the United States in a seasonal drainage would be caused by the project, and indirect effects on waters of the United States due to sedimentation could also occur. Additional projects proposed within the hydrologic unit, such as Fairfield Corporate Commons, Green Valley Corporate Park, and other business and residential projects in the area, have the potential to cause cumulative direct and indirect impacts on wetlands and drainages. Direct impacts can result from the placement of fill within a wetland or drainage. Indirect impacts can be caused by the accumulation of sediment in wetlands and drainages

resulting from adjacent disturbances. Both direct and indirect impacts have the potential to add to the cumulative loss of wetland and drainage habitat.

The proposed project's contribution to these direct and indirect impacts would be considered an adverse effect. However, with the implementation of Measures NC-1a, NC-1b, WOW-1, WOW-3, and WQ-2 the impact would be not be cumulatively considerable.

Plant Species

No special-status plant species are present within the project area, so there would be no impacts on plant species. As such, the project would not contribute to cumulative impacts on plant species.

Animal Species

Impact AS-8: Cumulative Loss and Disturbance of Nesting Migratory and Special-status Birds

The study area for cumulative effects on nesting migratory and special-status bird habitat includes the geographic area of the ongoing projects listed above which generally coincides with the areas immediately surrounding I-80 and State Route 12 in Solano County and the City of Fairfield. Wildlife species and their habitats have changed dramatically in some areas and remained relatively stable in others. Portions of the study area within Solano County have remained relatively stable over the years and focused on agricultural uses which provide wildlife foraging and nesting opportunities. Areas within the City of Fairfield have changed rapidly over the years particularly north of I-80 in the Green Valley area of Fairfield with large amounts of commercial, office and residential land uses being developed.

As discussed in section 2.3.4, the proposed project would affect foraging and nesting habitat confined to within the project area along I-80, an already heavily disturbed area. The project in combination with other ongoing and reasonably foreseeable projects in the study area would contribute to additional conversion of nesting and foraging habitat for birds. These changes could cause a cumulatively adverse effect. However, as with the proposed project, each ongoing and reasonably foreseeable project would be required to mitigate the individual nesting migratory and special-status bird species impacts resulting from each project. In addition, the cumulative changes in species habitat that would occur as a result of this project, in combination with other ongoing and reasonably foreseeable projects, are generally consistent with the long range community and transportation plans of the County, City of Fairfield and transportation planning agencies (MTC, STA, Caltrans, and FHWA). However, with the implementation of Measure AS-2 the effect would not be cumulatively considerable.

Impact TES-12: Cumulative Loss of Swainson's Hawk Nesting and Foraging Habitat

The study area for cumulative effects on Swainson's hawks is the same as described above for nesting migratory and special-status birds. The proposed project would result in the permanent loss and temporary disturbance of some foraging habitat and of riparian woodland that provides potential nesting habitat for Swainson's hawks.

Although the project would result in the permanent loss and temporary disturbance of some foraging habitat and of riparian woodland that provides potential nesting habitat for Swainson's hawks because this habitat occurs along I-80 and is unlikely to be used by nesting Swainson's hawks, the loss of habitat located along I-80 would not be cumulatively considerable, and cumulative impacts on Swainson's hawk from the proposed project are not anticipated.

Additionally, the project would permanently increase the amount of noise and visual interference as well as increase the human presence in the project area. The proposed project's contribution to these impacts would be considered an adverse effect. However, with the implementation of Measures NC-1a through NC-1e, AS-2 and TES-2, the effect would not be cumulatively considerable.

Impact TES-13: Cumulative Impact on Valley Elderberry Longhorn Beetle

In addition to the direct impacts on VELB habitat in the project vicinity, the project would contribute incrementally to cumulative impacts on VELB in Solano County as a result of similar bridge modification projects, new bridge construction, and road widening projects, and from the loss of riparian habitat attributed to urban development. Additional projects proposed within the county have the potential to have cumulative indirect impacts on VELB habitat through dust accumulation and the accumulation of sediment around shrubs resulting from upstream disturbances. The proposed project's contribution to these impacts would be considered an adverse effect. However, with implementation of Measures NC-1a through NC-1e and TES-3, the effect would not be cumulatively considerable.

Impact TES-14: Cumulative Impact on California Red-Legged Frog

The study area for cumulative effects on CRLF is a 5-mile radius around the project site. There are 15 records for CRLF within a 5-mile radius of the project site (California Natural Diversity Database 2008). The proposed project would contribute incrementally to impacts on CRLF in Solano County within a 5 mile radius of the project site caused by similar bridge modification, new bridge construction, and road widening projects and from the loss of riparian habitat attributed to urban development. Other projects proposed in the county have the potential to cumulatively affect CRLF and its habitat through the loss of aquatic and riparian habitat. The proposed project's contribution to these impacts would be considered an adverse effect. However, with implementation of Measures TES-4, TES-5, and TES-6, the impact would not be cumulatively considerable.

Central California Coast Steelhead

Between 1990 and 2000, the population of Solano County increased by 16.2% (U. S. Census Bureau 2008). It is assumed that future private and state projects will continue within the project area, increasing as population density increases. As the human population in the project area continues to grow, demand for commercial or residential development is also likely to grow. The impacts of new development caused by that demand are likely to further reduce the conservation value of habitat for steelhead within the project area. Nonfederal projects in the project area include the Fairfield Corporate Commons, Green Valley Corporate Park, and other business and residential projects in the area. However, it is reasonable to conclude that the proposed project would not result in cumulative impacts on the survival and recovery of Central Valley steelhead

in the context of these larger nonfederal projects because the proposed project would result in minimal, short-term impacts that are spatially and temporally separated from impacts of these other projects in the area. Implementation of the avoidance and minimization measures described for the proposed project would not result in adverse impacts on steelhead and its habitat; consequently, this project would not contribute incrementally to cumulative impacts on steelhead and its habitat.

Central Valley Fall/Late Fall-Run Chinook Salmon

The Magnuson-Stevens Fishery Conservation and Management Act requires all federal agencies to consult with the NMFS on all cumulative and synergistic projects or proposed projects that may adversely affect EFH. The assessment of cumulative impacts on EFH is the same as the assessment of cumulative impacts presented for steelhead above. In addition, because the impacts on EFH would be temporary, the proposed project in conjunction with the other nonfederal projects would not contribute incrementally to cumulative impacts on EFH for Chinook salmon.

Invasive Species

Impact IPS-2: Cumulative Spread of Invasive Plant Species

Implementation of the proposed project, in combination with other local and regional projects, could contribute to the cumulative spread of invasive plant species in the Solano County. The project could contribute incrementally to the cumulative spread of invasive plant species in Solano caused by similar bridge modification projects, new bridge construction, road widening projects, and urban development adjacent to open space areas.

The proposed project's contribution to invasive plant species impacts would be considered a potentially adverse effect. However, with implementation of Measure IPS, the impact would not be cumulatively considerable.

Chapter 3 California Environmental Quality Act (CEQA) Evaluation

3.1 Determining Significance under CEQA

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

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

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

3.1.1 Thresholds of Significance

Different agencies may use different thresholds for determining the need for mitigation. For the purpose of the impact discussions in this chapter, significance conclusions are provided in the context of CEQA and State CEQA Guidelines requirements only. The following significance conclusions are made in this chapter.

- **No impact:** This level of significance is used for impacts where there is clearly no impact.
- **Less than significant:** This level of significance is used for impacts where there would be an impact, but the degree of the impact would not meet or exceed the identified thresholds.
- **Less than significant with mitigation incorporated:** This level of significance is used for impacts that would meet or exceed the identified thresholds but would be reduced to a less-than-significant level through the implementation of mitigation measures.
- **Unavoidable Significant:** This level of significance describes significant impacts for which mitigation to reduce the significant impact to a less-than-significant level is not available or feasible.

The thresholds for determining significance of impacts for the various resource areas derived from the State CEQA Guidelines and professional practice and the CEQA checklist provided in Appendix G of this document.

3.2 Discussion of Significance of Impacts

Those project effects that are considered impacts under CEQA only are fully discussed here. Impacts that are also considered effects under NEPA are listed here, and are fully discussed in Chapter 2 under the appropriate resource heading. Significance conclusions are based upon implementation of the environmental commitments listed in Section 3.4 below.

3.2.1 Less-than-Significant Impacts of the Proposed Project

Less-than-significant impacts resulting from the proposed project occur in the following resource areas: Aesthetics (Visual), Air Quality (including Energy), Biological Resources, Community, Cultural, Farmland, Geology and Soils, Hydrology and Water Quality, Noise, Paleontology, Population and Housing, Traffic and Transportation, and Utilities

Impact VIS-1: Degradation of Visual Quality with Adverse Affects to a Scenic Vista

Impact VIS-3: Alteration of Existing Visual Character from Project Sound Walls

Impact VIS-4: Temporary Decrease of Visual Quality during Construction

Impact VIS-5: Creation of a Source of Light and Glare

The new eastbound truck scales would require lighting in an area that is currently an unlit agricultural field. Although this impact would be partially offset by the removal of lighting at the existing truck scales, the total change is expected to be an increase in light and glare.

As directed by the Department, appropriate light and glare screening measures, including the use of downward cast lighting and motion sensored lighting, shall be incorporated into project design. This standard procedure ensures that this impact would be less than significant.

Impact AQ-1: Temporary Increase in Ozone Precursor (ROG and NO_x) and PM10 Emissions during Grading and Construction Activities

Impact AQ-2: Potential Violations of Carbon Monoxide National Ambient Air Quality Standards

Impact AQ-3: Conformity with the Regional Transportation Plan

Impact AQ-4: Potential Generation of Significant Levels of Air Toxics Emissions

Impact AQ-5: Decrease in Regional Ozone Precursors (ROG and NOx) CO, and PM10 and PM 2.5 emissions Associated with Project Operations

Impact EN-1: Increase in Direct Energy Consumption at Cordelia Facility

Impact EN-2: Increase in Regional Vehicle Energy Consumption

Impact EN-3: Increase in Consumption of Indirect Energy Types

Impact EN-4: Increase in Carbon Dioxide Emissions and Potential Impacts on Global Warming

Impact EN-5: Contribution to Cumulative Effects on Non-renewable Natural Resources

Impact NC-1: Adverse Impact on Riparian Woodland

Impact NC-2: Cumulative Loss of Riparian Woodland

Impact NC-3: Disturbance of Valley Oak Woodland during Construction

Construction of the truck scales would not result in any permanent loss of valley oak woodland (see Figure 2.3-1). There is 0.03 acre of valley oak woodland adjacent to the project area. This small area of trees would be avoided during construction, and no direct impacts on valley oak woodland will occur.

Indirect impacts on oak woodland vegetation could occur outside the temporary impact zone as a result of adjacent construction activity and damage from equipment. Construction could cause indirect impacts on trees in the oak woodland due to long-term damage through excessive pruning before construction begins. Measures that would be implemented as part of the proposed project (Measures NC-1a through NC-1d) would protect adjacent vegetation during construction, and therefore, this impact would be less than significant.

Impact NC-4: Cumulative Loss of Valley Oak Woodland

No direct loss of valley oak woodland would be caused by the project. Indirect impacts can be caused adjacent disturbances to valley oak woodland and have the potential to add to the cumulative loss of these natural communities. The historic extent of oak woodlands has declined in California generally, as well as Solano County specifically, due to conversion for agriculture and development. Measures that would be implemented as part of the proposed project (Measures NC-1a through NC-1e) and therefore, the project's contribution to cumulative impacts on oak woodland would be less than significant.

Impact WOW-1: Adverse Impacts on Perennial Wetland Drainage

Impact WOW-2: Disturbance of Perennial Drainage during Construction

Impact WOW-3: Disturbance of Jurisdictional Seasonal Drainages during Construction

Impact WOW-4: Cumulative Loss of Perennial Wetland Drainage, Perennial Drainage, and Seasonal Drainage

Impact WOW-5: Impacts on Nonjurisdictional Seasonal Wetlands

Construction would involve the placement of fill, resulting in direct permanent effects on nonjurisdictional seasonal wetland habitat within the construction area. Construction would result in a permanent loss of approximately 0.13 acre of nonjurisdictional seasonal wetland for the improvements to the I-80/SR 12E connector (W-111 and W-112) (see Figure 2.3-1). This acreage is based on the USACE field verification of the delineation. Seasonal wetlands that are isolated from jurisdictional drainages are not under USACE jurisdiction, but would be considered waters of the state that would be regulated by the RWQCB through waste discharge requirements (WDRs).

Additional temporary impacts during project construction and indirect impacts caused by sedimentation or modification of hydrology could occur in seasonal wetlands that lie outside the project footprint. However, implementation of the Measures NC-1a, NC-1b, WOW-1, and WOW-3 would avoid temporary and indirect impacts on seasonal wetlands. Therefore this impact is considered less than significant.

Impact WOW-6: Disturbance of Nonjurisdictional Seasonal Drainages during Construction

Construction of the project would involve the installation of culverts and placement of fill for road widening, resulting in direct disturbance of nonjurisdictional seasonal drainages. A total of 0.10 acre of nonjurisdictional roadside and irrigation ditches would be removed for construction, and 0.08 acre would be temporarily affected. Roadside ditches that function as a storm drain system would be replaced with a new system, where necessary, to convey drainage along roadways. These features have negligible beneficial uses, as defined by the RWQCB (California Regional Water Quality Control Board 2007). No additional compensatory measures would be implemented for nonjurisdictional roadside or irrigation ditches. Implementation of Measures

NC-1a, NC-1b, WOW-1, and WOW-3 would avoid and minimize temporary and indirect impacts on nonjurisdictional seasonal drainages. Therefore this impact is considered less than significant.

Impact WOW-7: Cumulative Loss of Seasonal Wetland and Seasonal Drainage

Implementation of the proposed project, in combination with other local and regional projects, would contribute to the cumulative loss of wetlands and drainages that are regulated as waters of the State. Seasonal wetlands may occur in historic vernal pool habitats, but have lost many of their natural characteristics because of disturbance and development. Historically, vernal pool complexes were widespread in Solano County, but have been degraded or lost due to development for agriculture and commercial and residential construction. Seasonal drainages in the project area are constructed in uplands and do not represent an altered natural feature. The project would contribute incrementally to cumulative impacts on wetlands and drainages within Solano County and the Suisun Bay hydrologic unit (HUC 18050001) caused by similar bridge modification projects, new bridge construction, road widening projects, and urban development.

Indirect impacts can be caused by the accumulation of sediment in wetlands and drainages resulting from adjacent disturbances and have the potential to add to the cumulative loss of wetland and drainage habitat.

Measures that would be implemented as part of the proposed project (Measures WOW-1, WOW-3 and WQ-2) would reduce this impact and therefore the projects contribution would be less than cumulatively considerable.

Impact NT-1: Loss of Native Trees

Construction would remove native trees in the riparian habitat adjacent to Suisun Creek. Impacts on native trees that occur within riparian woodlands are addressed under Section 2.3.1. Native trees provide important habitat for wildlife and provide other ecological functions and values. The loss or disturbance of native trees, particularly oaks, is of concern to local and state agencies. Measure NC-1e would be implemented as part of the proposed project and therefore, this impact would be less than significant.

Impact NT-2: Cumulative Loss of Native Trees

Implementation of the proposed project, in combination with other local and regional projects, would contribute to the cumulative loss of native trees, including oak trees, in Solano County. The project would contribute incrementally to Solano County cumulative impacts on native trees caused by similar bridge modification projects, new bridge construction, road widening projects, and urban development. Indirect impacts can be caused adjacent disturbances that damage native trees and have the potential to add to the cumulative loss of these trees.

Measure NC-1e, which would be implemented as part of the proposed project, would address these cumulative impacts on native trees and therefore the project would not contribute to a cumulative impact.

Impact AS-1: Loss of White-tailed Kite Habitat

Impact AS-2: Loss of White-tailed Kite Nesting Habitat and Potential Disturbance to Nesting White-tailed Kites

Impact AS-3: Potential Loss of Burrowing Owl Habitat

Impact AS-4: Potential Disturbance to Nesting Loggerhead Shrikes

Impact AS-5: Potential Disturbance to Nesting Birds and Raptors

Impact AS-6: Potential Disturbance of Swallow Nests

Impact AS-7: Potential Disturbance of Roosting Bats

Impact AS-8: Cumulative Loss and Disturbance of Nesting Migratory and Special-status Birds

Impact TES-1: Potential Disturbance to Nesting Swainson's Hawk

Impact TES-2: Permanent and Temporary Impacts on Potential Swainson's Hawk Foraging Habitat

Impact TES-3: Direct Impact on Valley Elderberry Longhorn Beetle Habitat

Impact TES-4: Potential Indirect Impacts on California Red-Legged Frog Habitat during Construction

Impact TES-5: Potential Direct Impact on California Red-Legged Frog during Construction

Impact TES-6: Temporary and Permanent Loss of California Red-Legged Frog Upland Habitat

Impact TES-7: Impacts on Fish Habitat Structure

Impact TES-8: Water Temperature Impacts

Impact TES-9: Impacts on Water Quality

Impact TES-10: Impacts on Fish from Noise and Other Disturbances

Impact TES-11: Impacts on Fish Movement and Potential Spawning Habitat

Impact TES-12: Cumulative Loss of Swainson's Hawk Nesting and Foraging Habitat

Impact TES-13: Cumulative Impact on Valley Elderberry Longhorn Beetle

Impact TES-14: Cumulative Impact on California Red-legged Frog

Impact IPS-1: Potential Introduction and Spread of Invasive Plant Species during Construction

Impact IPS-2: Cumulative Spread of Invasive Plant Species

Impact CR-1: Inadvertent Disturbance or Destruction of Buried Archaeological Resources

Though no known archaeological resources are present within the project area and none were discovered during excavations conducted in association with the Extended Phase I study, it is possible that buried resources are present within the project area. It is possible that ground disturbing activities associated with construction could disturb or destroy archaeological deposits. If these resources were eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), their destruction or disturbance would be considered a significant impact. However, implementation of Measure CR-1 would ensure that this impact would be less than significant.

Impact CR-2: Inadvertent Disturbance or Destruction of Human Remains

According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

No human remains are known to be located in the project area. However, there is always the possibility that unmarked burials may be unearthed during construction. Measures that would be implemented as part of the proposed project (Measure CR-2) would ensure this impact is less than significant.

Impact GEO-1: Exposure of People to Injury or Structures to Damage from Strong Groundshaking, Seismic-Related Ground Failure, or Liquefaction

Impact GEO-2: Potential Construction-Related Soil Erosion and Sedimentation

Impact GEO-3: Potential Damage to Facilities and Injury to the Public from the Presence of Expansive Soils

Impact HYD-1: Impacts on Hydraulic Capacity at Suisun Creek Bridge

Impact HYD-2: Impacts on the Hydraulic Capacity of Raines Drain

Impact HYD-3: Impact on Floodplain

Impact HAZ-1: Potential for Exposure of Construction Workers or Nearby Land Uses to Previously Unknown Hazardous Materials

Impact HAZ-2: Potential for Exposure of Known Hazardous Materials to Humans or the Environment

Impact HAZ-3: Potential for Exposure of Humans and the Environment to Hazardous Conditions from the Accidental Release of Hazardous Materials

Impact PALEO-1: Potential Disturbance or Destruction of Paleontological Resources in a Sensitive Area

Impact PALEO-2: Potential Destruction of Buried Paleontological Resources or Unique Geologic Features

Impact PALEO-3: Damage to Buried Paleontological Resources as a Result of Pile Driving

Impact WQ-1: Increased Runoff and Paved Area

Impact WQ-2: Potential Water Quality, Erosion and Sediment Control Issues during Construction

Impact WQ-3: Potential to Require Dewatering during Construction

Impact NOI-1: Exposure of Noise-sensitive Land Uses to increased traffic noise

Impact NOI-2: Exposure of Noise-sensitive Land Uses to construction noise

Impact NOI-3: Contribution to Cumulative Traffic Noise Impact

Impact REL-1: Displacement of Two Residences

Impact UT-1: Impacts on Police, Fire, and Emergency Service Providers during Construction

Impact TRA-2: Improved Conditions or No Change at Most Freeway System Analysis Locations in 2015

Impact TRA-3: Ramp Intersections Operating at LOS F in the A.M. and P.M. Peak Hours in 2015

Impact TRA-4: Temporary Disruption of Traffic patterns and Emergency Services during Construction Impact

TRA-6: Improved Conditions or No Changes at Most Freeway System Analysis Locations in 2035

Impact TRA-7: Intersections Operating at LOS F in the A.M. and P.M. Peak Hours in 2035

Impact LU-1: Minor Land Acquisition of Five Parcels and Full Acquisition of Eight

3.2.2 Significant Environmental Effects of the Proposed Project

Significant impacts resulting from the proposed project occur in the following resource areas: Land Use and Planning. Implementation of the mitigation measures listed in Section 3.3 will reduce these impacts to less than significant levels.

Impact FA-1: Direct Conversion of Important Farmlands

Measure FA-1 has been identified to reduce this impact to a less than significant level.

3.2.3 Unavoidable Significant Environmental Effects

No unavoidable significant impacts are expected to result from the proposed project.

3.2.4 Growth Inducing Impacts

As discussed in section 2.1.2, the proposed project would not be growth inducing. The project would accommodate existing and future truck traffic. It would not attract residential or commercial development, increase infrastructure capacity, or encourage rezoning. While the project would improve traffic flow on I-80, it would not do so to the extent necessary to induce additional travel demand. Therefore, there would be no growth-inducing impacts.

3.2.5 Climate Change

Regulatory Setting

Although 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 (IPCC), the efforts devoted to GHG emissions reduction and climate change research and policy have increased dramatically in recent years. (GHGs related to human activity, as identified in AB 32, include: CO_2, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23, HFC-134a*, and HFC-152a*.) In 2002, with the passage of AB 1493, California launched an innovative and proactive approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the ARB to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year.

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

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

Climate change and GHG reduction is also a concern at the federal level; at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. However, California, in conjunction with several environmental organizations and several other states, sued to force the EPA to regulate GHGs as a pollutant under the CAA (*Massachusetts vs. Environmental Protection Agency et al.*, U.S. Supreme Court No. 05–1120. 549 U.S. 497 [argued November 29, 2006 and decided April 2, 2007]). The court ruled that GHGs do fit within the CAA's definition of a pollutant and that the EPA does have the authority to regulate GHGs. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions.

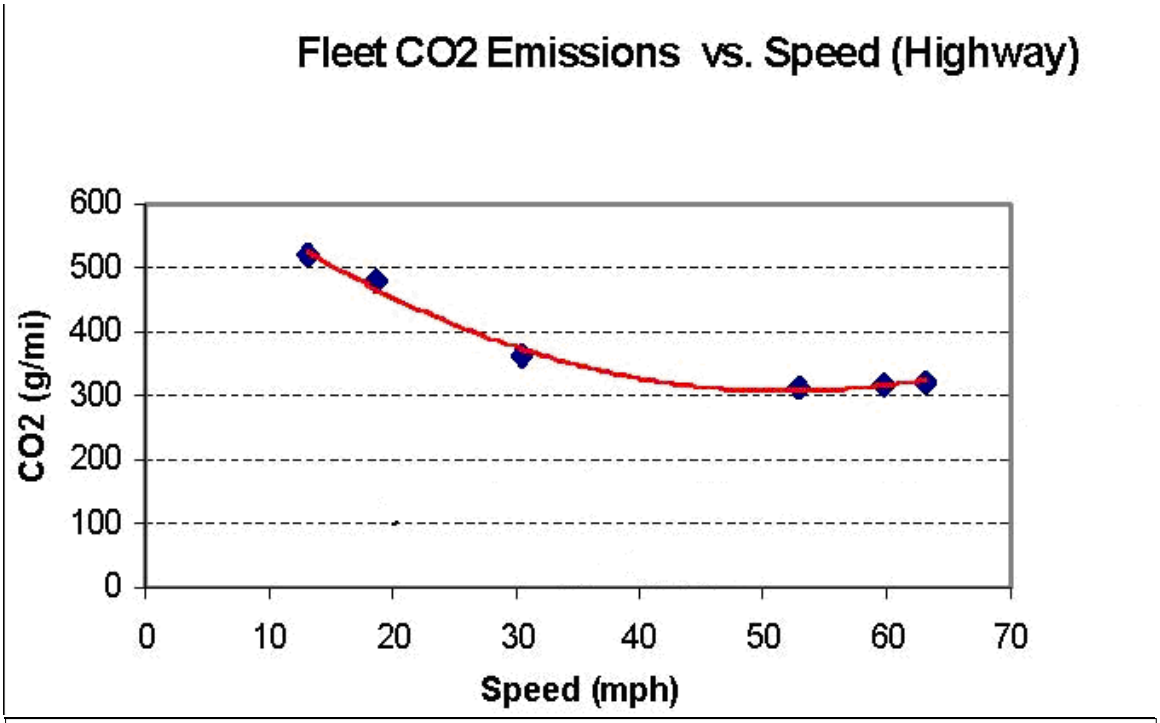
Affected Environment

According to a recent white paper by the Association of Environmental Professionals (Hendrix and Wilson 2007), "an individual project does not generate enough GHG 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 GHGs (Hendrix and Wilson 2007).

The Department and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98% of California's GHG emissions are from the burning of fossil fuels and that 40% of all human-made GHG emissions are from transportation, the Department has created and is implementing its Climate Action Program (California Department of Transportation and Business, Transportation, and Housing Agency 2006). Transportation's contribution to GHG 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 The Department's Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of CO_2 from mobile sources, such as automobiles, occur at stop-and-go speeds (0–25 mph) and at speeds over 55 mph; the most severe emissions occur from 0-25 mph (see Figure 3-1 below). Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in GHG emissions.

Figure 3-1. Changes in CO_2 Emissions and Vehicle Speeds



Source: Center for Clean Air Policy— http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20(1-13-04).pdf

Estimates of CO_2 emissions are a byproduct of the air quality modeling that is done for CO hot spot analysis. The estimated CO_2 emissions for the proposed project in 2015 are 494,000,000 tons/year, and the estimated emissions for the no-project scenario for the same year are 492,000,000 tons/year. For the year 2035, the estimated CO_2 emissions for the project are 547,000,000 tons/year, and the estimated emissions for the no-project scenario for the same year are 539,000,000 tons/year. The changes in CO_2 levels associated with the project represent increases of 0.4% and 1.4% in 2015 and 2035 from existing conditions, respectively. The proposed project is expected to reduce congestion and vehicle time delays. The traffic study (Fehr & Peers 2008b) states that the project would improve traffic flow by reducing the queue of the backup onto I-80. As stated in section 2.2.8, "Energy," improved traffic flow on the arterial motorway would actually slightly increase CO_2 emissions by increasing the speed of traffic. Although improved traffic flow is a goal of the Department, increases in traffic speed will lead to an increase in CO_2 emissions because CO_2 emissions directly correlate with increased fuel use. It should be noted that CO_2 emissions numbers are only useful for a comparison between alternatives. The numbers are not necessarily an accurate reflection of what the true CO_2 emissions will be because CO_2 emissions are dependent on other factors that are not part of the model, such as the fuel mix, rate of acceleration, and the aerodynamics and efficiency of the vehicles. (EMFAC model emission rates are only for direct engine-out CO_2 emissions, not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components.) In addition, it is difficult to track how much of the emissions would be "new" emissions, as opposed to existing emissions that would just transfer to another route.

Conclusion

The Department recognizes the concern that CO_2 emissions pose for climate change, but accurate modeling of GHG emission levels, including CO_2 at the project level, is not currently possible. Although some organizations have offered a range of recommendations, no federal, state, or regional regulatory agency has adopted specific methodology or criteria for GHG emission and climate change impact analysis. Therefore, the Department is unable to provide a scientific or regulatory based conclusion regarding whether the project's contribution to climate change is cumulatively considerable.

The Department continues to be actively involved in the Governor's Climate Action Team (CAT) as the ARB works to implement AB 1493 and help achieve the targets set forth in AB 32. Many of the strategies the Department is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Schwarzenegger's Strategic Growth Plan (SGP) calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $107 in transportation funding during the next decade. As shown on the figure below, the SGP targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The SGP proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The SGP relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements. In addition to the SGP, purchasing carbon credits is another option to reduce the CO_2 emissions substantially or to "no increase."

3.3 Mitigation Measures for Significant Impacts under CEQA

The measure to reduce the significant impact to a less than significant level is listed below.

Measure FA-1: Compensate for Conversion of Important Farmland, Including Prime Farmland

To compensate for the conversion of important farmland, permanent agricultural easements are recommended to be acquired or funds provided to an agricultural land trust. To mitigate for agricultural lands directly affected by the project, it is recommended that long-term land use restrictions such as agricultural conservation easements be obtained over Prime Farmland within Solano County at a 1:1 ratio (1 acre protected for every 1 acre directly affected). Lands under an agricultural conservation easement are considered to have higher agricultural value than other agricultural land in the project area. As such, the mitigation for the loss of lands under ease mentis recommended to be implemented at a higher ratio of 1:1.25. Consultation with the California Department of Conservation and the Solano Land Trust is ongoing (Appendix A). Final mitigation requirements will be presented in the final environmental document.

3.4 Environmental Commitments

Measures that will be implemented as part of the proposed project are listed below. The full text of most of these measures are provided in Chapter 2. Measures described in full here apply only to impacts under CEQA.

Measure EN-4: Implement Climate Action Program

Measure NC-1a: Install Construction Barrier Fencing around the Construction Area to Protect Sensitive Biological Resources Outside of the Construction Area

Measure NC-1b: Conduct Environmental Awareness Training for Construction Employees

Measure NC-1c: Retain a Biological Monitor to Conduct Daily Visits during Construction around Suisun Creek

Measure NC-1d: Avoid and Minimize Potential Indirect Disturbance of Riparian Communities

Measure NC-1e: Compensate for Temporary and Permanent Loss of Riparian Vegetation

Measure WOW-1: Compensate for Permanent Loss of Seasonal Wetland

Measure WOW-3: Protect Water Quality and Prevent Erosion in Drainages and Wetlands

Measure AS-2: Conduct Preconstruction Nesting Bird and Raptor Surveys and Establish a No-Disturbance Buffer, if Necessary

Measure AS-3a: Conduct Preconstruction Surveys for Active Burrowing owl Burrows and Implement the California Department of Fish and Game Guidelines for Burrowing Owl Mitigation, if Necessary

Measure AS-3b: Compensate for Loss of Burrowing Owl Nesting Habitat if Owls are Present

Measure AS-6: Install Exclusion Netting on the Undersides of Bridges to Prevent Swallows from nesting Adjacent to New Bridge Construction

Measure TES-2: Compensate for Loss of Swainson's Hawk Foraging Habitat

Measure TES-3: Compensate for Direct Effects on Valley Elderberry Longhorn Beetle Habitat

Measure TES-4: Construct During the Dry Season

Measure TES-5: Conduct Preconstruction Surveys and Construction Monitoring for California Red-legged Frogs

Measure TES-6: Compensate for Loss and Disturbance of California Red-legged Frog Habitat

Measure TES-7: Retain and Improve Habitat Structure

Measure TES-9: Implement Water Quality Impact Avoidance Measures

Measure TES-10: Implement Construction Restrictions

Measure IPS-1: Avoid the Introduction and Spread of Invasive Plants

Measure CR-1: Stop Work if Buried Resources Are Discovered Inadvertently

If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone, are discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a archaeologist who meets the Secretary of the Interior's qualification standards can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the STA, Caltrans, the State Historic Preservation Officer, and other appropriate agencies. Appropriate treatment measures may include development of avoidance or protection methods, archaeological excavations to recover important information about the resource, research, or other actions determined during consultation.

Measure CR-2: Comply with State Laws Relating to Native American Remains

If human remains of Native American Origin are discovered during project construction, it will be necessary to comply with state laws relating to the disposition of Native American burials, which fall under the jurisdiction of the NAHC (PRC Section 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, the City of West Sacramento will be contacted and there will be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent human remains, until:

- the Yolo County coroner has been informed and has determined no investigation of the cause of death is required, or
- if the remains are of Native American origin, the descendents of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98 or the NAHC is unable to identify a descendant or the descendant fails to make a recommendation within 24 hours after being notified by the NAHC.

Measure GEO-3: Conduct a Site-Specific Geotechnical Investigation for Expansive Soils and Design Project Facilities to Avoid or Minimize Damage

Measure PALEO-1: Prepare and Implement Mitigation and Monitoring Plan for Paleontological Resources in Sensitive Area

Measure WQ-2: Prepare and Implement Stormwater Pollution Plan and Best Management Practices

Chapter 4 Comments and Coordination

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

4.1 Scoping Process

CEQA specifically requires that when one or more state agencies will be a responsible or trustee agency, a notice of preparation (NOP) must be filed with the State Clearinghouse (State CEQA Guidelines Section 15082 [d]). The NOP is provided to appropriate state agencies and invites them to offer comments during the scoping period, which lasts a minimum of 30 days following the filing of the NOP.

4.1.1 Notice of Preparation

The NOP for the proposed project was published on May 16, 2008. It was filed with the State Clearinghouse and sent to the appropriate elected officials, agencies, and interested parties.

4.1.2 Scoping Meeting

A scoping meeting was held on June 5, 2008, from 6:30 to 8:30 p.m. at the Solano County Administration Building, at 675 Texas Street in Fairfield.

A number of means were used to inform the public of the scoping process and the public open house scoping meeting. A public notice was distributed to the project mailing list, which included property owners, elected officials, city staff, special interest organizations, and neighborhood groups. Caltrans and the STA mailed a letter to agency representatives and elected officials.

Information pertaining to the scoping process and the public open house scoping meeting also appeared on the STA website, at http://www.solanolinks.com.

A display advertisement announcing the scoping period and the public open house scoping meeting was placed in the *Daily Republic* on Friday, May 16, 2008.

The scoping meeting was organized as an open house with information stations on the following subjects: participating agencies and roles; the project background, description, and location; the

purpose of scoping; environmental issues; an overview of the environmental review process; the anticipated project schedule and funding; and how to provide comments. At the stations, attendees could ask questions and discuss the project with technical staff from Caltrans and the STA project team. Although no formal presentation and question-and-answer period were conducted, participants were encouraged to fill out and submit comment sheets at the meeting or by mail until the close of business on Monday, June 16, 2008.

4.1.3 Summary of Concerns

There were three written comments submitted at the June 5 meeting. Two comments addressed property acquisition, and one addressed safety and emergency response issues.

Property acquisition issues were raised by two members of the public. They noted that a property adjacent to the project site is landlocked, without formal access rights due to a previous land acquisition by the state of California and that the proposed project would make this situation worse. They suggested that the state should purchase the land surrounding the landlocked parcel to improve this situation prior to the relocation of the truck scales.

A representative of the Cordelia Fire Protection District raised issues pertaining to safety and emergency response. He suggested that the project design should incorporate an area for hazmat mitigation that allows for a 500-foot separation from human-occupied buildings and that the buildings should include sprinklers and the facility should be supplied with a hydrant capable of 1,250 gallons per minute (gpm) at a minimum of 20 pounds per square inch (psi) residual for 120 minutes.

Five letters with written comments responding to the NOP were received. These letters came from FEMA, the NMFS, the DOC, the California Transportation Commission (CTC) and the California RWQCB, San Francisco Bay Region. Comments, for the most part, outline agency responsibilities and procedures and subjects that should be addressed in this EIR/EA.

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- Gary Parikh, P.E., G.E., Parikh Consultants, Inc., geology, peer review
- Alston Lam, P.E, Parikh Consultants, Inc., geology
- Scott Steinwert, CirclePoint, Project Manager, land use, farmland, relocations
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Appendix A Farmland Consultation

CirclePoint
The *whole* view.

Integrated Environmental & Communication Solutions

December 8, 2008

To: Walter K. Cheechov, District Conservationist
National Resources Conservation Service

Dear Mr. Cheechov,

Please find enclosed in this envelope two (2) Farmland Conversion Impact Rating (AD-1006) Forms for proposed projects within Solano County. Three (3) maps have been attached as well to help clarify the location and proposed construction of these projects. If you have any questions or comments regarding the information submitted on the forms, please feel free to contact me via phone or email.

Best Regards,

Elise Lieberman
Environmental Assistant Planner
CirclePoint
e.lieberman@circlepoint.com
Tel 415.227.1100 x177

As Requested
Walt Cheechov
NRCS

135 Main St., Suite 1600
San Francisco, CA 94105
tel 415.227.1100
fax 415.227.1110
www.circlepoint.com

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 12/8/08
Name Of Project 4-Sol-80, I-80 Eastbound Cordelia Truck Scales	Federal Agency Involved Federal Highway Administration
Proposed Land Use Relocation Transportation, Truck Scales	County And State Solano County, California
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 12/8/08

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 ☑ No ☐		Acres Irrigated 171,000	Average Farm Size 391
Major Crop(s) PASTURE, ORCHARD, ROW CROPS	Farmable Land In Govt. Jurisdiction Acres: 233,000 % 40	Amount Of Farmland As Defined in FPPA Acres: NOT AVAILABLE %	
Name Of Land Evaluation System Used CA STORIE	Name Of Local Site Assessment System NONE	Date Land Evaluation Returned By NRCS 1/9/09	

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	42.1			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	~~0.0~~ 42.1	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	42.1			
B. Total Acres Statewide And Local Important Farmland	0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.00018			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	0			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0 73.3	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use		6			
2. Perimeter In Nonurban Use		4			
3. Percent Of Site Being Farmed		19			
4. Protection Provided By State And Local Government		20			
5. Distance From Urban Builtup Area		N/A			
6. Distance To Urban Support Services		N/A			
7. Size Of Present Farm Unit Compared To Average		0			
8. Creation Of Nonfarmable Farmland		25			
9. Availability Of Farm Support Services		5			
10. On-Farm Investments		10			
11. Effects Of Conversion On Farm Support Services		0			
12. Compatibility With Existing Agricultural Use		8			
TOTAL SITE ASSESSMENT POINTS	160	0 97	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 73.3	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 97	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0 170.3	0	0	0

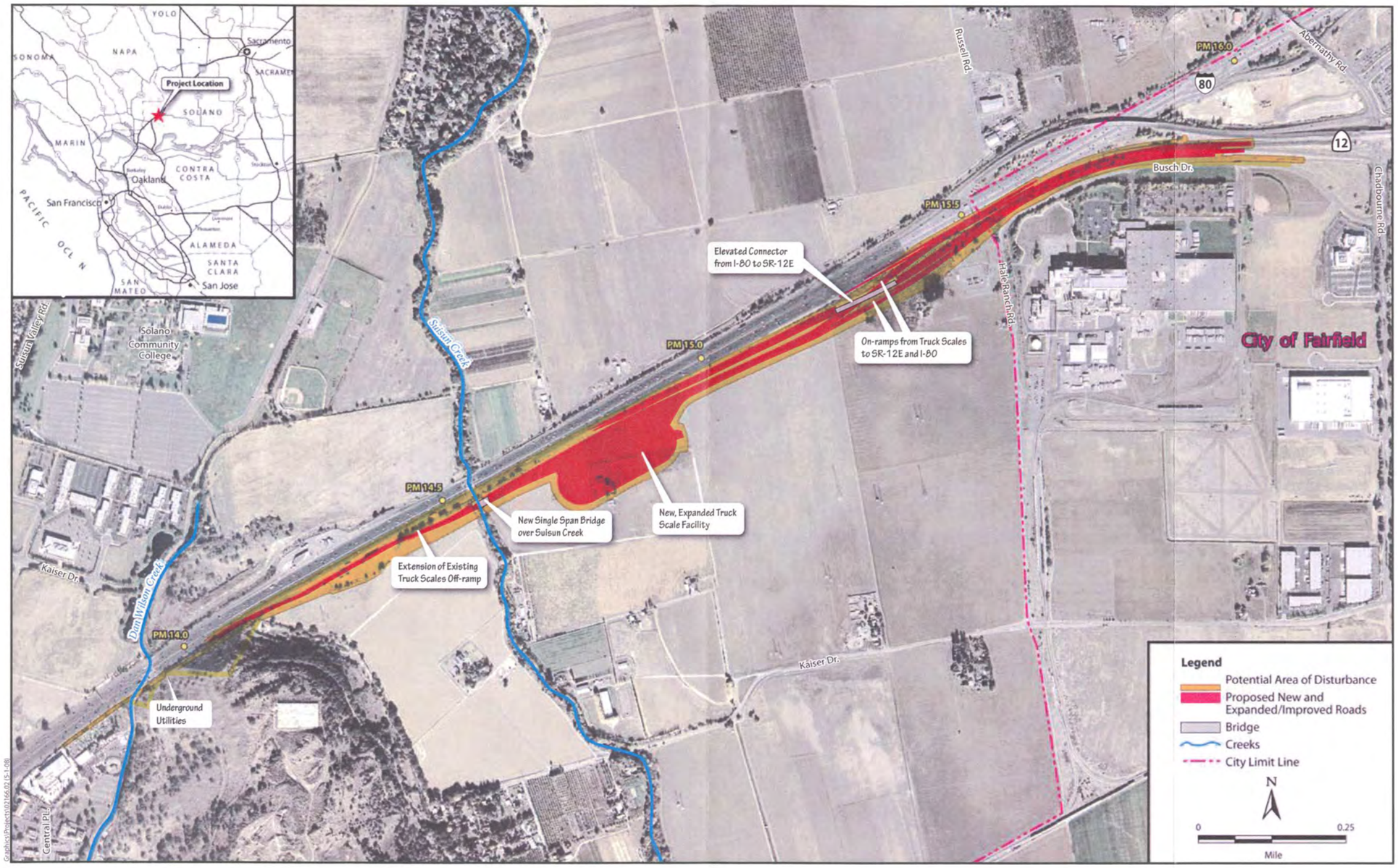
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

Form AD-1006 (10-83)

This form was electronically produced by National Production Services Staff



Graphics/Project/00716601 (5-1-08)

CirclePoint®
The *whole* view.

Figure 2-2

Eastbound Cordelia Truck Scales - Relocation Project Features

Site A

Appendix B Relocation Assistance Program Information

California Department of Transportation Relocation Assistance Program

RELOCATION ASSISTANCE ADVISORY SERVICES

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

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

ADDITIONAL INFORMATION

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

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without being given at least 90 days advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments will not be required to move unless at least one comparable "decent, safe and sanitary" replacement residence, open to all persons regardless of race, color, religion, sex or national origin, is available or has been made available to them by the state.

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

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

IMPORTANT NOTICE

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

State of California
Department of Transportation, District 04
111 Grand Avenue
Oakland, CA 94623-0660

Your Rights and Benefits as a Displacee Under the Uniform Relocation Assistance Program (Residential) 2007

Caltrans

California Department of Transportation

Introduction

In building a modern transportation system, the displacement of a small percentage of the population is often necessary. However, it is the policy of Caltrans that displaced persons shall not suffer unnecessarily as a result of programs designed to benefit the public as a whole.

Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments.

This brochure provides information about available relocation services and payments. If you are required to move as the result of a Caltrans transportation project, a Relocation Agent will contact you. The Relocation Agent will be able to answer your specific questions and provide additional information.

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 As Amended "The Uniform Act"

The purpose of this Act is to provide for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by federal and federally assisted programs and to establish uniform and equitable land acquisition policies for federal and federally assisted programs.

49 Code of Federal Regulations Part 24 implements the "Uniform Act" in accordance with the following relocation assistance objective:

> To ensure that persons displaced as a direct result of federal or federally-assisted projects are treated fairly, consistently and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

While every effort has been made to assure the accuracy of this booklet, it should be understood that it does not have the force and effect of law, rule, or regulation governing the payment of benefits. Should any difference or error occur, the law will take precedence.

Some Important Definitions...

Your relocation benefits can be better understood if you become familiar with the following terms:

Comparable Replacement: means a dwelling which is:

(1) Decent, safe, and sanitary. (See definition below)

(2) Functionally equivalent to the displaced dwelling.

(3) Adequate in size to accommodate the family being relocated.

(4) In an area not subject to unreasonable adverse environmental conditions.

(5) In a location generally not less desirable than the location of your displacement dwelling with respect to public utilities and commercial and public facilities, and reasonably accessible to the place of-employment.

(6) On land that is typical in size for residential development with typical improvements.

Decent, Safe and Sanitary (DS&S): Replacement housing must be decent, safe, and sanitary...which means it meets all of the minimum requirements established by federal regulations and conforms to applicable housing and occupancy codes. The dwelling shall:

(1) Be structurally sound, weather tight, and in good repair.

(2) Contain a safe electrical wiring system adequate for lighting and other devices.

(3) Contain a heating system capable of sustaining a healthful temperature (of approximately 70 degrees) for a displaced person, except in those areas where local climatic conditions do not require such a system.

(4) Be adequate in size with respect to the number of rooms and area of living space needed to accommodate the displaced person. The Caltrans policy is that there will be no more than 2 persons per room unless the room is of adequate size to accommodate the normal bedroom furnishings for the occupants.

(5) Have a separate, well-lighted and ventilated bathroom that provides privacy to the user and contains a sink, bathtub or shower stall, and a toilet, all in good working order and properly connected to appropriate sources of water and to a sewage drainage system.

Note: In the case of a housekeeping dwelling, there shall be a kitchen area that contains a fully usable sink, properly connected to potable hot and cold water and to a sewage drainage system, and adequate space and utility service connections for a stove and refrigerator.

(6) Contains unobstructed egress to safe, open space at ground level. If the replacement dwelling unit is on the second story or above, with access directly from or through a common corridor, the common corridor must have at least two means of egress.

(7) For a displaced person who is handicapped, be free of any barriers which would preclude reasonable ingress, egress, or use of the dwelling by *such displaced person.*

Displaced Person or Displacee: Any person who moves from real property or moves personal property from real property as a result of the acquisition of the real property, in whole or in part, or as the result of a written notice from the agency to vacate the real property needed for a transportation project. In the case of a partial acquisition, Caltrans shall determine if a person is displaced as a direct result of the acquisition.

Residents **not lawfully present** in the United States are not eligible to receive relocation payments and assistance

Relocation benefits will vary, depending upon the type and length of occupancy. As a residential displacee, you will be classified as either a:

- An owner occupant of a residential property (includes mobile homes)
- A tenant occupant of a residential property (includes mobile homes and sleeping rooms)

Dwelling: The place of permanent or customary and usual residence of a person, according to local custom or law, including a single family house; a single family unit in a two-family, multi-family, or multi-purpose property; a unit of a condominium or cooperative housing project; a non-housekeeping unit; a mobile home; or any other residential unit.

Owner: A person is considered to have met the requirement to own a dwelling if the person purchases or holds any of the following interests in real property:

(1) Fee title, a life estate, a land contract, a 99-year lease, oral lease including any options for extension with at least 50 years to run from the date of acquisition; or

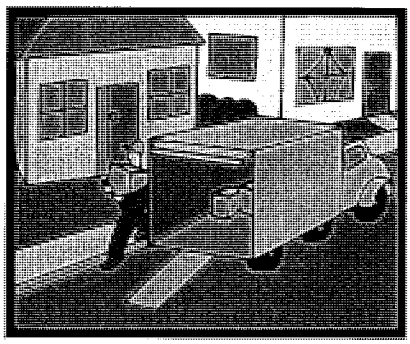
(2) An interest in a cooperative housing project which includes the right to occupy a dwelling; or

(3) A contract to purchase any interests or estates; or

(4) Any other interests, including a partial interest, which in the judgment of the agency warrants consideration as ownership.

Tenant: A person who has the temporary use and occupancy of real property owned by another.

Moving Expenses



If you qualify as a displaced person, you are entitled to reimbursement of your moving costs and certain related expenses incurred in moving. The methods of moving and the various types of moving cost payments are explained. Below.

Displaced individuals and families may choose to be paid on the basis of actual, reasonable moving costs and related expenses, or according to a fixed moving cost schedule. However, to ensure your eligibility and prompt payment of moving expenses, you should contact your Relocation Agent before you move.

You Can Choose Either:

Actual Reasonable Moving Costs - You may be paid for your actual reasonable moving costs and related expenses when a commercial mover performs the move. Reimbursement will be limited to a move of 50 miles or less. Related expenses may include:

- Transportation
- Packing and unpacking personal property.
- Disconnecting and reconnecting household appliances.
- Temporary storage of personal property.
- Insurance while property is in storage or transit.

OR

Fixed Moving Cost Schedule - You may be paid on the basis of a fixed moving cost schedule. Under this option, you will not be eligible for reimbursement of related expenses listed above. The fixed schedule is designed to cover such expenses.

Examples (Year 2005 Rate):
4 Rooms - $ 950
7 Rooms - $1,550

If the furniture is moved with the mobile home, the amount of the fixed payment is based on Schedule B.

Examples (Year 200 Rate):
4 Rooms - $1,175
7 Rooms - $1,900

Under the Fixed Move Schedule for a furnished unit (e.g. you are a tenant of an apartment that is furnished by your landlord) is based on Schedule B.

Example (Year 2005 Rate):
1 Room - $400

Under the Fixed Move Schedule, you will not receive any additional payments for temporary storage, lodging, transportation or utility hook-ups.

Replacement Housing Payments

The type of Replacement Housing Payment (RHP) depends on whether you are an owner or a tenant, and the length of occupancy in the property being acquired.

If you are a qualified **owner occupant** of more than 180 days prior to the initiation of negotiations for the acquisition of your property, you may be entitled to a RHP that consists of:

Price Differential, and

Mortgage Differential, and

Incidental Expenses;

OR

Rent Differential

If you are a qualified **owner occupant** of more than 90 days but less than 180 days, OR you are a qualified **tenant occupant** of at least 90 days, you may be entitled to a RHP as follows:

Rent Differential

OR

Downpayment Option

Length of occupancy simply means counting the number of days that you actually occupied a dwelling before the date of initiation of negotiations by Caltrans for the purchase of the property. The term "initiation of negotiations" means the date Caltrans makes the first personal contact with the owner of real property, or his/ her representative, to give him/her a written offer for the property to be acquired.

Note: If you have been in occupancy less than 90 days before the initiation of negotiations and the property is subsequently acquired, or if you move onto the property after the initiation of negotiations and you are still in occupancy on the date of acquisition, you may or may not be eligible for a Replacement Housing Payment. Check with your Relocation Agent before you make any decision to vacate your property.

For Owner Occupants of 180 Days or More

If you qualify as a 180-day owner occupant, you may be eligible -- in addition to the fair market value of your property -- for a Replacement Housing Payment that consists of a Price Differential, Mortgage Differential and/or Incidental Expenses.

The **Price Differential** payment is the amount by which the cost of a replacement dwelling exceeds the acquisition cost of the displacement dwelling. This payment will assist you in purchasing a comparable decent, safe, and sanitary (DS&S) replacement dwelling. Caltrans will compute the maximum payment you may be eligible to receive.

In order to receive the full amount of the calculated price differential, you must spend at least the amount calculated by Caltrans on a replacement property

The **Mortgage Differential** payment will reimburse your for any increased mortgage interest costs you might incur because the interest rate on your new mortgage exceeds the interest rate on the property acquired by Caltrans The payment computation is complex as it is based on prevailing rates, your existing loan and your new loan. Also, a part of this payment may be prorated such as reimbursement for a portion of your loan origination fees and mortgage points.

To be eligible to receive this payment, the acquired property must have been encumbered by a bona fide mortgage which was a valid lien for at least 180 days prior to the initiation of negotiations.

You may also be reimbursed for any actual and necessary **Incidental Expenses** that you incur in relation to the purchase of your replacement property. These expenses may be those costs for title search, recording fees, credit report, appraisal report, and certain other closing costs associated with the purchase of property. You will not be reimbursed for any recurring costs such as prepaid real estate taxes and property insurance.

If the total amount of your **Replacement Housing Payment** (Price Differential, Mortgage Differential and Incidental Expenses) exceeds $22,500, the payment must be deposited directly into an escrow account or paid directly to the mortgage company.

EXAMPLES OF PRICE DIFFERENTIAL PAYMENT COMPUTATION:

Assume that Caltrans purchases your property for $98,000. After a thorough study of available, decent, safe and sanitary dwellings on the open market, Caltrans determines that a comparable replacement property will cost you $100,000. If your purchase price is $100,000, you will receive $2,000 *(see Example A).*

If your actual purchase price is more than $100,000, you pay the difference (see *Example B).* If your purchase price is less than $100,000, the differential payment will be based on actual costs *(see Example C).*

How much of a differential payment you receive depends on how much you actually spend on a replacement dwelling as shown in these examples:

Caltrans' Computation

Comparable Replacement Property and Mobile Home	$100,000
Acquisition Price of Your Property and Mobile Home	-$ 98,000
Maximum Price Differential	$ 2,000

Example A

Purchase Price of Replacement	$100,000
Comparable Replacement Property	$100,000
Acquisition Price of Your Property	-$ 98,000
Maximum Price Differential	$ 2,000

Example B

Purchase Price of Replacement Property	$105,000
Comparable Replacement Property	$100,000
Acquisition Price of Your Property	$ 98,000
Maximum Price Differential	$ 2,000
You Must Pay the Additional	$ 5,000

Example C

Comparable Replacement Property	$100,000
Purchase Price of Replacement	$ 99,000
Acquisition Price of Your Property	$ 98,000
Price Differential	$ 1,000

In Example C you will only receive $1,000 - not the full amount of the Caltrans "Comparable Replacement Property" because of the "Spend to Get" requirements.

IN ORDER FOR A "180 DAY OWNER OCCUPANT" TO RECEIVE THE FULL AMOUNT OF THEIR REPLACEMENT HOUSING *PAYMENT* *(Price Differential, Mortgage Differential and Incidental Expenses)*, **you must:**

A) Purchase and occupy a DS&S replacement dwelling within one year after the later of:

(1) The date you first receive a notification of an available replacement house, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the closing of escrow on State's acquisition),

AND

B) Spend at least the amount of the Caltrans "Comparable Replacement Property" for a replacement property,

AND

C) File a claim for relocation payments within 18 months of the later:

(1) The date you vacate the property acquired by Caltrans, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the close of escrow on State's acquisition)

You will not be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. Also, you will also receive at least 90 days' written notice before you must move.

For Owner Occupants and Tenants of 90 Days or More

If you qualify as a 90-day occupant (either as an owner or tenant), you may be eligible for a Replacement Housing Payment in the form of a Rent Differential.

The **Rent Differential** payment is designed to assist you in renting a comparable decent, safe and sanitary replacement dwelling. The payment is based on the difference between the base monthly Rent for the property acquired by Caltrans (including average monthly cost for utilities) and the lesser of:

a) The monthly rent and estimated average monthly cost of utilities for a comparable replacement dwelling as determined by Caltrans, **OR**

b) The monthly rent and estimated average monthly cost of utilities for the decent, safe and sanitary dwelling that you actually rent as a replacement dwelling.

Utility costs are those expenses you incur for heat, lights, water and sewer - regardless of the source (e.g. electricity, propane, and septic system). It does not include garbage, cable, telephone, or security. The utilities at your property are the average costs over the last 12 months. The utilities at the comparable replacement property are the estimated costs for the last 12 months for the type of dwelling and area used in the calculation.

This difference is multiplied by 42 months and may be paid to you in a lump sum payment or in periodic installments in accordance with policy and regulations.

In order to receive the full amount of the calculated Rent Differential, you must spend at least the amount calculated by Caltrans on a replacement property.

This payment may - with certain limitations - be converted to a **Downpayment Option** to assist you in purchasing a replacement property.

Example of Rent Differential Payment Computation:

After a thorough study of comparable, decent, safe and sanitary dwellings that are available for rent, Caltrans determines that a comparable replacement property will rent for $325.00 per month.

Caltrans Computation (rates are per month)

Rental Rate for Comparable Replacement Property	$ 325
PLUS average estimated utilities costs	+ 100
TOTAL Cost to Rent Comparable Replacement Property	= $ 425
Rental Rate for Your Current Property	$ 300
PLUS average utilities costs	+ 90
TOTAL Cost to Rent Current Property	= $ 390
Comparable Replacement Property including utilities	$ 425
Cost you pay to rent your property including utilities	+ 390
Difference	= $ 35

Multiplied by 42 months = $1,470 Rent Differential

Example A:

Rental Rate for a Replacement Property including Estimated average utilities costs	$ 525
Comparable Replacement Property including utilities	$ 425
Cost you pay to rent your property including utilities	$ 390

Since $425 is less than $525, the Rent Differential is based on the difference between $390 and $425.

Rent Differential ($35 x 42 months = $1,470)

In this case you spent "at least" the amount of the Comparable Replacement Property on the replacement property and will receive the full amount.

Example B:

Rental Rate for a Replacement Property including Estimated average utilities costs	$ 400
Comparable Replacement Property including utilities	$ 425
Cost you pay to rent your property including utilities	$ 390

Since $400 is less than $525, the Rent Differential is based on the difference between $400 and $390.

Rent Differential ($10 x 42 months = $420)

In this case you spent "less than" the amount of the Comparable Replacement Property on the replacement property and will not receive the full amount.

IN ORDER FOR A "90 DAY OWNER OCCUPANT" TO RECEIVE THE FULL AMOUNT OF THEIR REPLACEMENT HOUSING PAYMENT *(Rent Differential)*, **you must:**

A) Rent and occupy a DS&S replacement dwelling within one year after the later of:

(1) The date you first receive a notification of an available replacement house, **OR**

(2) The day you vacate the property acquired by Caltrans.

AND

B) Spend at least the amount of the Caltrans "Comparable Replacement Property" to rent a replacement property,

AND

C) File a claim for relocation payments within 18 months of the later of:

(1) The date you vacate the property acquired by Caltrans, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the close of escrow on State's acquisition)

You will not be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. And, you will also receive at least 90 days' written notice before you must move.

Note1: The time periods for a 90-day owner occupant are different than a 180-day owner occupant.

Note 2: If the Rent Differential is converted to a Downpayment Option, there is no "spend-to-get" requirement.

DOWN PAYMENT OPTION

The Rent Differential payment may - with certain limitations - be converted to a **Down Payment Option** to assist you in purchasing a replacement property. The down payment option is a direct conversion of the Rent Differential payment.

If the Caltrans calculated Rent Differential is between $0 and $5,250, your down payment option will be $5,250, which can be used towards the purchase of a replacement decent, safe and sanitary dwelling.

If the Rent Differential is over $5,250, you may be able to convert the entire amount of the Rent Differential to a downpayment option.

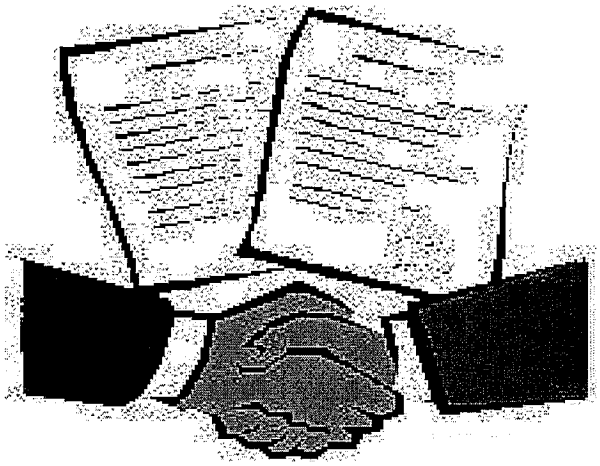
The down payment option must be used for the acquisition of the replacement dwelling, plus any eligible incidental expenses (see "180-day Owner Occupants Incidental Expenses") related to the purchase of the property. You must work closely with your Relocation Agent to ensure you can utilize the full amount of your down payment option towards the purchase.

If any portion of the Rent Differential was used prior to the decision to convert to a down payment option, those advance payments will be deducted from the entire benefit.

LAST RESORT HOUSING

On most projects, an adequate supply of housing will be available for sale and for rent, and the benefits provided will be sufficient to enable you to relocate to comparable housing. However, there may be projects in certain locations where the supply of available housing is insufficient to provide the necessary housing for those persons being displaced. In such cases, Caltrans will utilize a method called Last Resort Housing. Last Resort Housing allows Caltrans to construct, rehabilitate or modify housing in order to meet the needs of the people displaced from a project. Caltrans can also pay above the statutory limits of $5,250 and $22,500 in order to make available housing affordable.

Relocation Advisory Assistance



Any individual, family, business or farm displaced by Caltrans shall be offered relocation advisory assistance for the purpose of locating a replacement property. Relocation services are provided by qualified personnel employed by Caltrans. It is their goal and desire to be of service to you and assist in any way possible to help you successfully relocate.

A Relocation Agent from Caltrans will contact you personally. Relocation services and payments will be explained to you in accordance with your eligibility. During the initial interview with you, your housing needs and desires will be determined as well as your need for assistance. You cannot be required to move unless at least one comparable replacement dwelling is made available to you.

You can expect to receive the following services, advice and assistance from your Relocation Agent who will:

- Explain the relocation benefits and eligibility requirements.
- Provide the amount of the replacement housing payments in writing.
- Assure the availability of a comparable property before you move.
- Inspect possible replacement residential units for DS&S compliance.
- Provide information on counseling you can obtain to help minimize hardships in adjusting to your new location.
- Assist you in completing loan documents, rental applications or Relocation Claims Forms.

AND provide information on:

- Security deposits
- Interest rates and terms
- Typical down payments
- VA and FHA loan requirements
- Real property taxes.
- Consumer education literature on housing

If you desire, your Relocation Agent will give you current listings of other available replacement housing. Transportation will be provided to inspect available housing, especially if you are elderly or handicapped. Though you may use the services of a real estate broker, Caltrans cannot provide a referral.

Your Relocation Agent is familiar with the services provided by others in your community and will provide information on other federal, state, and local housing programs offering assistance to displaced persons. If you have special problems, your Relocation Agent will make every effort to secure the services of those agencies with trained personnel who have the expertise to help you.

If the highway project will require a considerable number of people to be relocated, Caltrans will establish a temporary Relocation Field Office on or near the project. Project relocation offices will be open during convenient hours and evening hours if necessary.

In addition to these services, Caltrans is required to coordinate its relocation activities with other agencies causing displacements to ensure that all persons displaced receive fair and consistent relocation benefits.

Remember - YOUR RELOCATION AGENT is there to offer advice and assistance. Do not hesitate to ask questions. And be sure you fully understand all of your rights and available benefits.

YOUR RIGHTS AS A DISPLACEE

All eligible displacees have a freedom of choice in the selection of replacement housing, and Caltrans will not require any displaced person to accept a replacement dwelling provided by Caltrans. If you decide not to accept the replacement housing offered by Caltrans, you may secure a replacement dwelling of your choice, providing it meets DS&S housing standards. Caltrans will not pay more than your calculated benefits on any replacement property.

The most important thing to remember is that the replacement dwelling you select must meet the basic "decent, safe, and sanitary" standards. Do not execute a purchase agreement or a rental agreement until a representative from Caltrans has inspected and certified in writing that the dwelling you propose to occupy meets the basic standards. **DO NOT jeopardize** your right to receive a replacement housing payment by moving into a substandard dwelling.

It is important to remember that your relocation benefits will not have an adverse affect on your:

- Social Security Eligibility
- Welfare Eligibility
- Income Taxes

In addition, the Title VIII of the Civil Rights Act of 1968 and later acts and amendments make discriminatory practices in the purchase and rental of most residential units illegal if based on race, color, religion, sex, or national origin.

Whenever possible, minority persons shall be given reasonable opportunities to relocate to decent, safe, and sanitary replacement dwellings, not located in an area of minority concentration, and that is within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Caltrans' Non-Discrimination Policy ensures that all services and/or benefits will be administered to the general public without regard to race, color, national origin, or sex in compliance with Title VI of the 1964 Civil Rights Act (42 USC 2000d. et seq.).

And you always have the Right to Appeal any decision by Caltrans regarding your relocation benefits and eligibility.

Your Right of Appeal is guaranteed in the "Uniform Act" which states that any person may file an appeal with the head of the responsible agency if that person believes that the agency has failed to properly determine the person's eligibility or the amount of a payment authorized by the Act.

If you indicate your dissatisfaction, either verbally or in writing, Caltrans will assist you in filing an appeal and explain the procedures to be followed. You will be given a prompt and full opportunity to be heard. You have the right to be represented by legal counsel or other representative in connection with the appeal (but solely at your own expense).

Caltrans will consider all pertinent justifications and materials submitted by you and other available information needed to ensure a fair review. Caltrans will provide you with a written determination resulting from the appeal with an explanation of the basis for the decision. If you are still dissatisfied with the relief granted, Caltrans will advise you that you may seek judicial review.

NOTES

Sus Derechos y Beneficios Como Una Persona Desplazada Bajo el Programa Uniforme De Asistencia Para Reubicación (Residencial)

Introducción

En la construcción de un sistema moderno de transportación, el desplazamiento de un pequeño porcentaje de la población es a menudo necesario. Sin embargo, la política de Caltrans es que las personas desalojadas no tengan que sufrir innecesariamente como resultado de los programas diseñados para el beneficio del público en general.

Los individuos y familias desplazadas pueden ser elegibles para recibir servicios de asesoramiento y pagos de reubicación.

Este folleto provee información acerca de los servicios y pagos de reubicación disponibles. Si usted es requerido a mudarse como resultado de un proyecto de transportación, un Agente de Reubicación se comunicará con usted. El Agente de Reubicación le contestará preguntas específicas y le proveerá información adicional.

Ley de Procedimiento Uniforme de Asistencia para Rubicación y Adquisición de Bienes Raíces de 1970, Enmendada “La Ley Uniforme”

El propósito de esta Ley es proveer tratamiento igual y uniforme para las personas que son desplazadas de sus hogares, negocios, u operaciones agrícolas por programas federales o programas que son asistidos con fondos federales y para establecer uniformidad e igualdad en la política de adquisición de tierras por programas federales y programas asistidos con fondos federales.

La ley trata de asegurar que las personas desplazadas directamente como resultado de proyectos federales o proyectos asistidos con fondos federales sean tratados con igualdad, consistencia y equidad para que esas personas no sufran

daños desproporcionados como resultado de proyectos designados para el beneficio del público en general.

Aunque se ha hecho un esfuerzo para asegurar la precisión de este folleto, debe de ser entendido que no tiene la fuerza o efectos de la ley, regla, o regulación que gobierna el pago de los beneficios. Si hay diferencias o error, la ley tomará precedencia.

Algunas Definiciones Importantes…

Sus beneficios de reubicación pueden ser entendidos mejor si usted entiende los siguientes términos:

Vivienda de Restitución comparable: significa una propiedad que es:

(1) Decente, segura y sanitaria. (Vea la definición abajo.)
(2) Equivalente funcionalmente a la propiedad desplazada.
(3) Adecuada en tamaño para acomodar a la familia que esta siendo reubicada.
(4) En un área que no esté sujeta a condiciones irrazonablemente adversas.
(5) En una localidad generalmente no menos deseable que la localidad de su propiedad desplazada con respecto a servicios públicos, y acceso razonable al lugar de empleo.
(6) En una parcela de tamaño típico para el desarrollo de una residencia de tamaño normal.

Decente, Segura y Sanitaria (DS&S): La vivienda de restitución debe de ser decente, segura y sanitaria … que significa que llena todos los requisítos mínimos establecidos por las regulaciones federales y conforme a los códigos de ocupación de viviendas aplicables. La propiedad será:

(1) Buena estructuralmente, cerrada a las condiciones climáticas y en buen estado de reparación.

(2) Contiene un sistema eléctrico adecuado para iluminación y otros aparatos.

(3) Contiene un sistema de calefacción capáz de mantener una temperatura saludable (de aproximadamente 70 grados) para la persona desplazada,

con excepción en aquellas áreas donde las condiciones climáticas no requieren dicho sistema.

(4) Debe de ser adecuada en tamaño con respecto al número de cuartos y áreas para vivir necesarias para acomodar a las personas desplazadas. Es política de Caltrans que más de dos personas no deben de estar en un solo cuarto, a menos que que el tamaño del cuarto sea suficientemente adecuado para acomodar los muebles de dormitorios necesarios de los ocupantes.

(5) Tener un baño separado, bien iluminado y ventilado que sea privado a los usuarios y que contenga un lavamanos, una tina o regadera, y un excusado, todos en buenas condiciones y apropiadamente conectados a los sistemas de aguas negras y aguas potables.

Nota: *En el caso de una propiedad residencial, debe de haber una área de cocina que contenga un lavatrastos usable, propiamente conectado a agua caliente y agua fría, y al sistema de drenaje, y con espacio adecuado para utilizar los servicios y connecciones para una estufa y un refrigerador.*

(6) Que contenga salidas sin obstrucción y seguros espacio abierto al nivel del suelo. Si la propiedad de restitución está en el segundo piso o más arriba, que tenga acceso directamente desde o a travéz de un corredor, y que éste corredor común debe de tener al menos dos salidas.

(7) Si la persona desplazada es incapacitada físicamente, debe de ser libre de cualquier barrera que le impidan la entrada o salida, o uso razonable de la propiedad por dicha persona incapacitada.

Persona Desplazada: Cualquier individuo o familia que se mueva de una propiedad o mueva sus bienes personales de una propiedad como resultado de la adquisición de bienes raíces, en todo o en parte, o como resultado de una notificación escrita de una agencia pidiéndole que desocupe la propiedad que se necesita para un proyecto de transportación. En el caso de una adquisición parcial, Caltrans debe de determinar si la persona es desplazada directamente como resultado de esta adquisición.

Los residentes **que no están legalmente** en los Estados Unidos no son elegibles para recibir pagos y asistencia de reubicación.

Los beneficios de reubicación van a variar dependiendo del tipo y tiempo de ocupación. Como una persona desplazada de una unidad residencial usted puede ser clasificado como:

- Un dueño ocupante de una propiedad residencial (incluyendo casas movibles)
- Un inquilino ocupante de una propiedad residencial (incluyendo casas movibles y cuartos para dormir)

Vivienda: El lugar de permanencia o residencia regular y usual de una persona, de acuerdo a las costumbres locales o la ley, incluyendo una unidad familiar, una unidad familiar en un complejo doble o multi-familiar, o una propiedad de uso múltiple, una unidad de condominio o proyecto de vivienda en cooperativa, una unidad libre de mantenimiento doméstico, una casa movible, o cualquier otra unidad residencial.

Dueño: Una persona es considerada que llena los requisitos de dueño de una casa, si esta persona compra, tiene título o tiene algunos de los siguientes intereses en una propiedad:

(1) Una escritura de propiedad, un interés de por vida en una propiedad, un contrato de renta por 99 años, un contrato oral de renta incluyendo una opción para extensión con al menos 50 años que queden después de la fecha de adquisición; o

(2) El interés en un proyecto de vivienda en cooperativa que incluya el derecho de ocupar una vivienda; o

(3) Un contrato de compra de interés, o bienes raíces.

(4) Algún otro interés, incluyendo intereses parciales, qua a juicio de la agencia garanticen los pagos como dueño.

Inquilino: Una persona que tiene el uso y la ocupación temporal de una propiedad de la que otro es dueño.

Gastos de Mudanza

Si usted califica como persona desplazada, usted tiene derecho a reembolso de sus gastos de mudanza y a ciertos gastos relacionados incurridos durante el traslado. Los métodos de traslado y los distintos tipos de pagos para gastos de mudanza son explicados abajo.

Los individuos y familias desplazadas pueden escoger un pago basado en los gastos reales, razonables y los gastos relacionados, o de acuerdo a una lista de costos fijos de mudanza. Sin embargo, para asegurar su elegibilidad y el pago rápido de sus gastos de mudanza, usted debe de ponerse en contacto con su Agente de Rubicación antes de mudarse.

Usted Puede Elegir Entre:

Los Gastos Razonables de Mudanza – A usted se le puede pagar por los gastos razonables de mudanza y gastos relacionados cuando una compañia comercial de mudanza hace la mudanza. Los reembolsos deberán ser limitados a una mudanza de 50 millas o menos. Los gastos relacionados pueden incluir:

- Transportación.
- Empaque y desempaque de propiedades personales.
- Desconexión y reconexión de aparatos eléctricos.
- Almacenaje temporal de propiedades personales.
- Seguros cuando la propiedad está almacenada o en tránsito.

Ó

Lista de Costos Fijos de Mudanza – A usted se le puede pagar basado en una lista de costos fijos de mudanza. Bajo esta opción, usted no puede ser elegible para reembolsos de gastos relacionados incluídos en la lista de arriba. Esta lista de gastos fijos está designada a cubrir todos esos gastos.

Por ejemplo (Tarifa para el año 2001)

4 Cuartos - $ 950
7 Cuartos - $1,550

Los costos fijos de mudanza para una unidad amueblada (ejemplo, usted es inquilino en un apartamento donde los muebles pertenecen al dueño de la vivienda) estan basados en la Tabla de Honorarios B.

Ejemplos (Taza en el año 2001):

4 Cuartos - $475
7 Cuartos - $625

Bajo la lista de Pago Fijos de Mudanza, usted no puede recibir ningun pago adicional por almacenamiento temporario, vivienda temporaria, transportación o conexiones de servicios públicos.

Pagos Para Vivienda de Restitución

El tipo de Pago Para Vivienda de Restitución (RHP) depende de si usted es dueño o un inquilino, y en el tiempo de ocupación que tiene de la propiedad que será adquirida.

Si usted es calificado **como dueño ocupante** de más de 180 días antes de la iniciación de negociaciones para la adquisición de su propiedad, usted puede tener derecho a recibir RHP que consiste en:

Diferencia de Precio, y

Diferencia para Hipoteca, y

Gastos Incidentales

O

Diferencia Para Rentar

Si usted es calificado como **dueño ocupante** de más de 90 días, pero menos de 180 días, O si usted es calificado como **inquilino ocupante** de al menos 90 días, usted puede tener derecho a recibir RHP así:

Diferencia Para Rentar

U

Opción para Enganche

Tiempo de ocupación simplemente significa contar el número de días que usted actualmente ocupó la vivienda antes de la fecha de iniación de negociaciones por Caltrans para la compra de la propiedad. El término “iniciación de negociaciones” significa la fecha que Caltrans hizo el primer contacto personal con el dueño de bienes raíces, o su representante, para darle a el/ella una oferta escrita para la adquisición de la propiedad.

*Nota: Si usted ocupó una vivienda por **menos de 90 días** antes de la iniciación de negociaciones y la propiedad es posteriormente adquirida, o si usted se mudó a la propiedad después de la iniciación de negociaciones y usted todavía*

ocupaba la propiedad a la fecha de adquisición, usted puede ser elegible para un Pago para Restitución de Vivienda, basado en una guía de elegibilidad establecida. Consulte con su Agente de Reubicación antes de que haga cualquier decisión de mudarse de su propiedad.

Para Ocupantes de 180 Días o Más

Si usted califica como dueño ocupante de 180 días, puede ser elegible – además del valor equitativo en el mercado de su propiedad – para un Pago de Restitución de Vivienda que consiste en un pago de Diferencia de Precio y/o Gastos Incidentales.

El Pago de **Diferencia de Precio** es la cantidad por la que el costo de una vivienda de restitución excede el costo de adquisición de la vivienda desplazada. Este pago le asistirá en la compra de una vivienda decente, segura, y sanitaria (DS&S). Caltrans computará el pago máximo que usted puede ser elegible para recibir. (Vea un ejemplo en la página 15.)

Para recibir la cantidad total de la diferencia de precio calculadas, usted debe de gastar al menos la cantidad calculada por Caltrans en la propiedad de restitución.

El pago de **Diferencia de Hipoteca** le será reembolsado por cualquier aumento del costo de interés en la hipoteca que usted haya incurrido porque la taza de interés en su nueva hipoteca excede la taza de interés de la propiedad adquirida por Caltrans. La computación del pago es complicada ya que está basada en las tazas típicas entre su préstamo anterior y su préstamo nuevo. También, una parte de los pagos pueden ser prorrateado como reembolso por una porción de los honorarios de su préstamo y los puntos (intereses) de la hipoteca.

Para ser elegible para recibir este pago, la propiedad adquirida debe de ser hipotecada con una hipoteca de buena fé, la cual fue un crédito válido de por lo menos 180 días antes de la iniciación de negociaciones.

Usted también puede ser reembolsado por cualquier **Gasto Incidental** actual y necesario que usted incurra en relación con la compra de su propiedad de restitución. Estos gastos pueden ser los costos por búsqueda de título, honorarios de copia en el Registro, reporte de crédito, reporte de evaluación, y ciertos otros gastos de cierre de escritura. Usted no puede ser reembolsado por ningún gasto frequente como pre-pagos de impuesto de bienes raíces y seguro de propiedad.

Si la cantidad total de su **Pago de Vivienda de Restitución** (Diferencia de Precio, Diferencia Para Hipoteca y Gastos Incidentales) excede $22,500, el pago debe de ser depositado directamente en una cuenta fiduciaria o ser pagado directamente a la compañía financiera.

EJEMPLO DE COMO SE CALCULA LA DIFERENCIA DE PAGO:

Suponga que Caltrans compra su propiedad por $98,000. Después de un estudio completo de viviendas disponibles en el mercado, que sean decentes, seguras y sanitarias, Caltrans determina que la propiedad de restitución comparable en el mercado abierto le costará $100,000. Si su precio de compra es $100,000 usted recibirá $2,000 (*Vea el Ejemplo A)*

Si su precio de compra es de más de $100,000, usted paga la diferencia (vea el *Ejemplo B*). Si su precio de compra es menos de $100,000, el pago se basará en los costos actuales (vea el *Ejemplo C).*

La cantidad que usted recibe en un pago diferencial dependerá de cuanto usted realmente gasta en una vivienda de restitución, como se muestra en estos ejemplos.

Computación de Caltrans

Precio Comparable de la Propiedad de Restitución	$100,000
Precio de Adquisición de su Propiedad	– $ 98,000
Diferencia Máxima de Precio	$ 2,000

Ejemplo A

Precio de Compra de Restitución	$100,000
Propiedad Comparable de Restitución	$100,000
Precio de Adquisición de su Propiedad	– $ 98,000
Diferencia Máxima de Precio	$ 2,000

Ejemplo B

Precio de Compra de Restitución	$105,000
Propiedad Comparable de Restitución	$100,000
Precio de Adquisición de su Propiedad	– $ 98,000
Diferencia Máxima de Precio	$ 2,000
Usted Debe de Pagar el Precio Adicional de	$ 5,000

Ejemplo C

Propiedad Comparable de Restitución	$100,000
Precio de Compra de Restitución	$ 99,000
Precio de Adquisición de su Propiedad	– $ 98,000
Diferencia de Precio	$ 1,000

En el ejemplo C usted solo recibirá $1,000 – no la cantidad completa de "La propiedad Comparable de Restitución" por los requisítos de "Gastar para Obtener" de Caltrans.

PARA QUE UN "DUENO OCUPANTE DE 180 DÍAS" RECIBA LA CANTIDAD TOTAL DE SUS BENEFICIOS DE PAGOS PARA VIVIENDA (*Diferencia de Precio, Diferencia de Hipoteca y Gastos Incidentales), usted debe:*

A) Comprar y ocupar una vivienda de restitución que sea DS&S dentro de al menos un año desde la fecha más tarde de:

(1) La fecha en que recibió la primera notificación de una casa de restitución, **O**

(2) La fecha que Caltrans pagó los costos de adquisición de su vivienda actual (usualmente los gastos de cierre de escritura en la adquisición del Estado.)

Y

B) Haber gastado al menos la cantidad que Caltrans estableció para "La Propiedad Comparable de Restitución" para la propiedad de restitución.

Y

C) Reportar un reclamo para pago para reubicación dentro de los 18 meses de la fecha más tarde de:

(1) La fecha en que se mudó de la propiedad adquirida por Caltrans, **O**

(2) La fecha en que Caltrans le pagó los costos de adquisición de su vivienda actual (usualmente al cierre de escritura en la adquisición del Estado.)

Usted no será elegible para recibir ningún pago de reubicación hasta que el Estado haya hecho la primera oferta por escrito de la compra de la propiedad. Usted también recibirá una notificación escrita por lo menos 90 días antes de tener que mudarse.

Para Dueños Ocupantes e Inquilinos de 90 Días o Más

Si usted califica como un ocupante (ya sea como dueño o inquilino) de 90 días, usted puede ser elegible para un Pago de Vivienda de Restitución en la forma de Diferencia para Rentar.

El pago de la **Diferencia para Rentar** es designado para asistirle en la renta de una vivienda comparable que sea decente, segura y sanitaria. El pago será basado en la diferencia entre la renta básica mensual por la propiedad adquirida por Caltrans (incluyendo el promedio del costo mensual de servicios públicos) y el menor de:

a) La renta mensual y el promedio del costo mensual estimado de los servicios públicos para una vivienda comparable de restitución determinada por Caltrans, **O**

b) La renta mensual y el promedio del costo mensual estimado de los servicios públicos para una vivienda decente, segura y sanitaria que usted rente como vivienda de restitución.

Gastos de servicios públicos son esos gastos que usted incurre por calefacción, luz, agua, aguas negras y basura – sin importar quien los provea (ejemplo, electricidad, gas propano, y sistema séptico.) No incluye cable de televisión, teléfono, o seguridad. Los servicios públicos en su propiedad de restitución será el estimado del promedio de costos por los 3 últimos meses para el tipo de vivienda y área usados en los cálculos.

Esta diferencia es multiplicada por 42 meses y le puede ser pagado en una sola suma o en pagos periódicos de acuerdo con la política y regulaciones. (Vea un ejemplo en la página 21.)

Para recibir la cantidad calculada total de la diferencia para rentar, usted debe gastar al menos la cantidad calculada por Caltrans en la propiedad de restitución.

Este pago puede – con ciertas limitaciones – ser convertido en una **Opción para Enganche** para asistirle en la compra de una propiedad de restitución (Vea la página 25 para una explicación completa.)

EJEMPLO DE LA COMPUTACIÓN DEL PAGO DE LA DIFERENCIA PARA RENTAR:

Después de hacer un estudio completo de viviendas comparables, decentes, seguras y sanitarias que estén disponibles para rentar, Caltrans determina que una propiedad comparable de restitución podría ser rentada por $325 al mes.

Computación de Caltrans

Renta por una Propiedad Comparable de Restitución	$ 325 al mes
MÁS: estimado de costos de servicios públicos	100 al mes
TOTAL Costo de renta por una Propiedad Comparable de Restitución	$ 425 al mes
Renta por su Propiedad Actual	$ 300 al mes
MÁS: costos de servicios públicos	90 al mes
TOTAL Costo para pagar la renta de su propiedad actual	$ 390 al mes
Propiedad Comparable de Restitución incluyendo servicios públicos	$ 425 al mes
Costo para pagar la renta de su propiedad incluyendo servicios públicos	390 al mes
Diferencia	$ 35 al mes

Multiplicado por 42 meses = $1,470 Diferencia para Rentar

Ejemplo A:

Renta para una Propiedad de Restitución, incluyendo los costos estimados de servicios públicos	$ 525 al mes
Propiedad Comparable de Restitución incluyendo servicios públicos	$ 425 al mes
Costos de pago de la renta de su propiedad incluyendo servicios públicos	$ 390 al mes

Ya que $425 es menos que $525, la diferencia para rentar está basada en la diferencia entre $390 y $425.

Diferencia para Rentar ($35 x 42 meses = $1,470)

En este caso usted gasta “al menos” la cantidad de la Propiedad de Restitución Comparable en la propiedad de restitución y así recibirá la cantidad total.

Ejemplo B:

Renta por una Propiedad de Restitución, incluyendo los costos estimados de servicios públicos	$ 400 al mes
Propiedad Comparable de Restitución incluyendo servicios públicos	$ 425 al mes
Costos de pago de la renta de su propiedad incluyendo servicios públicos	$ 390 al mes

Ya que $400 es menos que $525, la diferencia para rentar está basada en la diferencia entre $400 y $390.

Diferencia para Rentar ($10x 42 meses = $420)

En este caso usted va a gastar “menos que” la cantidad de Propiedad de Restitución Comparable en la restitución de la vivienda y usted no recibirá la cantidad total.

PARA QUE UN “DUENO OCUPANTE DE 90 DÍAS” RECIBA LA CANTIDAD TOTAL DE PAGO PARA SU VIVIENDA DE RESTITUCION (Diferencia para Rentar), **usted debe de:**

A) Rentar y ocupar una vivienda de restitución DS&S dentro de un año después de la última fecha de:

(1) La fecha en que usted recibió la primera notificación de una casa de restitución disponible, **O**

(2) El día en que usted su mudó de la propiedad adquirida por Caltrans.

Y

B) Gastar al menos la cantidad de la “Propiedad Comparable de Restitución” de Caltrans para rentar una vivienda de restitución.

Y

C) Reportar un reclamo para pagos de reubicación dentro de los 18 meses de la fecha más tarde:

(1) La fecha en que usted se mudó de la propiedad adquirida por Caltrans, **O**

(2) La fecha en que Caltrans le pagó los costos de adquisición de su propiedad actual (usualmente al cierre de escritura de la adquisición del Estado.)

Usted no será elegible para recibir ningún pago de reubicación hasta que haya hecho la primera oferta escrita para comprar la propiedad. Además, usted recibirá al menos una noticia por escrito 90 días antes de tener que mudarse.

OPCIÓN PARA ENGANCHE

El pago de Diferencia para Rentar puede – con ciertas limitaciones – ser convertido en una **Opción para Enganche** para asistirle en la compra de una propiedad de restitución. La Opción para Enganche es una conversión directa del pago de la diferencia para rentar.

Si la diferencia para rentar es calculada entre $0 y $5,250, su Opción Para Enganche será de $5,250 la cual puede ser usada para la compra de una vivienda de restitución decente, segura y sanitaria.

Si la diferencia para rentar es más de $5,250 usted podrá convertir la cantidad completa de diferencia para rentar a una Opción Para Enganche.

La Opción Para Enganche debe de ser usada para el enganche requerido, la cual usualmente es un porcentage del precio total de compra, más cualquier gasto incidental elegible (vea la página 14, “Gastos Incidentales para Dueños Ocupantes de 180 días”) relacionado con la compra de la propiedad. Usted debe trabajar junto con su Agente de Reubicación para asegurarse de que puede utilizar la cantidad total de su Opción Para Enganche en su compra.

Si alguna porción de la diferencia para rentar fue usada antes de su decisión de convertirla a una Opción Para Enganche, los pagos avanzados serán deducidos de los beneficios completos.

CASA DEL ÚLTIMO RECURSO

En la mayoría de los proyectos de Caltrans, existe una cantidad adecuada de viviendas de venta y alquiler, y los beneficios serán suficientes para que usted pueda reubicarse a una vivienda comparable. Sin embargo, en ciertas localidades pueden haber proyectos donde el número de viviendas disponibles no son suficientes para proveer viviendas a todas las personas desplazadas. En estos casos, Caltrans utiliza un método llamado Casa del Último Recurso. La Casa del Último Recurso permite a Caltrans construir, rehabilitar, o modificar viviendas para cumplir con las necesidades de las personas desplazadas por un proyecto. Caltrans puede también pagar arriba de los límites legales de $5,250 y $22,500 para hacer posible viviendas con precios razonables.

Asistencia de Consulta Para Reubicación

A cualquier individuo, familia, negocio u operación agrícola desplazada por Caltrans deberá ofrecérsele servicios de asistencia con el propósito de localizar una propiedad de restitución. Los servicios de reubicación son proveídos por empleados calificados de Caltrans. Es la meta de ellos y el deseo de estos empleados de servirle y asistirle de cualquier manera posible para ayudarle a reubicarse exitosamente.

Un Agente de Reubicación de Caltrans se pondrá en contacto con usted personalmente. Los servicios de reubicación y pagos se le explicarán de acuerdo con su elegibilidad. Durante la entrevista inicial, sus necesidades de vivienda y deseos se determinarán así como sus necesidades de asistencia. No se le puede pedir que se mude a menos que una vivienda comparable de restitución le sea disponible.

Usted puede esperar recibir los siguientes servicios, consejos y asistencia de su Agente de Reubicación quien le:

- Explicará los beneficios de reubicación y los requesitos de elegibilidad.
- Proveerá por escrito la cantidad de pago por su vivienda de restitución.
- Asegurará la disposición de una propiedad comparable antes de que se mude.
- Inspeccionará las posibles unidades residenciales de restitución para el cumplimiento de DS&S.

- Proveerá información y aconsejará como puede obtener ayuda para minimizar las adversidades en ajustarse a su nueva localidad.
- Ayudará en completar los documentos de préstamos, aplicaciones de rentas o las Formas de Reclamo para Reubicación.

Y proveerle información de:

- Seguro de Depósitos
- Taza de intereses y términos
- Pagos típicos de enganches
- Requisitos de préstamos de la Administración de Veteranos (VA) y la Administración de Vivienda Federal (FHA)
- Impuestos sobre bienes raíces
- Literatura de educación en viviendas para el consumidor

Si usted lo desea, el Agente de Reubicación le dará una lista actual de otras viviendas de restitución disponibles.

Se proveerá transportación para inspeccionar viviendas disponibles, especialmente si usted es mayor de edad o con impedimiento físico. Aunque usted puede utilizar los servicios de un agente de bienes raíces, Caltrans no lo podrá referir.

Su Agente de Reubicación está familiarizado con los servicios proveídos por otras agencias de su comunidad y le proveerá información de otros programas de viviendas federales, estatales y locales que ofrecen programas de asistencia para personas desplazadas. Si usted tiene algun problema especial, su Agente de Reubicación hará su mejor esfuerzo para asegurarle los servicios de esas agencias con personal capacitado y con experiencia que le ayudarán.

Si el proyecto de transportación requiere un número considerable de personas que sean reubicados, Caltrans establecerá una Oficina Temporal de Reubicación en, o cerca del proyecto. Las oficinas de proyectos de reubicación deberán de abrirse durante horas convenientes y en horas tempranas de la noche, si es necesario.

Además de estos servicios, Caltrans es requirido que coordine las actividades de otras agencias que causen desplazamientos para asegurar que todas esas personas desplazadas reciban beneficios de reubicación equitativos y consistentes.

Recuerde – SU AGENTE DE REUBICACIÓN está para aconsejarle y asistirle. No vacile en hacer preguntas, y asegúrese de que entiende completamente sus derechos y beneficios de reubicación disponibles.

SUS DERECHOS COMO UNA PERSONA DESPLAZADA

Todas las personas elegibles como personas desplazadas tienen la libertad de escoger dentro de la selección de viviendas de restitución, y Caltrans no requerirá a ninguna persona que sea desplazada que acepte una vivienda de restitución proveída por Caltrans. Si usted decide no aceptar la vivienda de restitución ofrecida por Caltrans, usted puede elegir una vivienda de restitución de su propia selección, mientras que cumple con los requisítos de DS&S. Caltrans no pagará más que los beneficios calculados por una vivienda de restitución.

Lo más importante que usted debe de recordar es que la vivienda de restitución que usted seleccione debe de llenar los requisítos básicos de "decente, segura y sanitaria". No ejecute los documentos de compra o el contrato de renta hasta que un representante de Caltrans haya inspeccionado y certificado por escrito que la vivienda que usted se propone ocupar cumple con los requisítos básicos. **NO ARRIESGUE** su derecho de recibir los pagos de vivienda de restitución por mudarse a una vivienda que no sea "decente, segura y sanitaria."

Es importante recordar que sus beneficios de reubicación no van a tener ningún efecto adverso en su:

- Elegibilidad para Seguro Social
- Elegibilidad para Asistencia Social
- Impuestos sobre ingresos

Además, el Título VIII de los Derechos Civiles, Ley de 1968 y luego otras leyes y enmiendas hacen descriminatoria la práctica de compra y renta de unidades de vivienda si es basada ilegalmente en la raza, color, religión, sexo u origen nacional.

Cuando sea posible, a personas de minorías se les debe de dar oportunidades razonables para reubicarse a viviendas de restitución que sean decentes, seguras y sanitarias, no localizadas en áreas de concentración de minorías, y que estén dentro de sus recursos económicos. Esta política, sin embargo, no requiere que Caltrans provea a una persona pagos más grandes de lo que sean necesarios para permitir que la persona sea reubicada a una vivienda de restitución comparable.

La política No-Descriminatoria de Caltrans asegura que todos los servicios y/o los beneficios deben de ser administrados al público en general sin importar la raza, color, origen nacional, o sexo en cumplimiento con el Título VI de la Ley de Derechos Civiles de 1964 (42 USC 2000 d. et seq.)

Usted siempre tendrá el Derecho de Apelar cualquier decisión hecha por Caltrans relacionada a los beneficios de reubicación y elegibilidad.

Su Derecho de Apelar está garantizado en la “Ley Uniforme” la cual establece que una persona puede apelar al jefe de la agencia responsable, si ella cree que la agencia ha fallado en determinar correctamente su elegibilidad, o la cifra del pago autorizado por la Ley.

Si usted indica su disatisfacción, ya sea verbalmente o por escrito, Caltrans le asistirá en hacer su demanda de apelación y le explicará el procedimiento que debe de seguir. Usted tiene derecho de ser representado por un asesor legal u otro representante en conexión con su apelación (pero solamente por su propia cuenta.)

Caltrans considerará toda justificación y materia pertinente que usted entregue u otra información disponible, necesaria para asegurar una audiencia equitativa. Caltrans le proveerá una determinación por escrito del resultado de su apelación, con una explicación sobre la base de la decisión. Si usted aún no está satisfecho con la decisión otorgada, Caltrans le aconsejará que usted puede pedir una audiencia judicial.

Noticiero de la Ley para Americanos con Incapacidades Físicas (ADA):

Para personas con incapacidades físicas, este documento es disponible en formatos alternativos. Para Información llame al número (916) 654-5413 Voz, CRS: 1-800-735-2929, o escriba a Derecho de Vía, MS 37, 1120 N Street, Sacramento, CA 95814.

NOTAS

Appendix C Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
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TTY (916) 653-4086

Flex your power!
Be energy efficient!

January 14, 2005

TITLE VI
POLICY STATEMENT

The California Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

WILL KEMPTON
Director

Appendix D List of Technical Studies

Appendix D List of Technical Studies

- *I-80 Eastbound Cordelia Truck Scales Relocation Project, Community Impact Assessment*. December 2008. Submitted to the California Department of Transportation, District 4. Prepared by CirclePoint.
- *Draft Traffic Operations Report, Interstate 80 Eastbound Cordelia Truck Scales Relocation Project*. October 2008. Prepared for the Solano Transportation Authority. Submitted to the California Department of Transportation, District 4. Prepared by Fehr & Peers.
- *I-80 Eastbound Cordelia Truck Scales Relocation Project, Final Visual Impact Assessment*. December 2008. Submitted to the California Department of Transportation, District 4. Prepared by CirclePoint.
- *Draft Historical Property Survey Report I-80 Eastbound Cordelia Truck Scales Relocation Project Caltrans District 4 Solano County, California*. December 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *Draft Historical Resources Evaluation Report I-80 Eastbound Cordelia Truck Scales Relocation Project Caltrans District 4 Solano County, California*. October 2008. Prepared for the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *Draft Archaeological Survey Report I-80 Eastbound Cordelia Truck Scales Relocation Project Caltrans District 4 Solano County, California*. December 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *Draft Extended Phase I Report I-80 Eastbound Cordelia Truck Scales Relocation Project Caltrans District 4 Solano County, California*. December 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *Eastbound Cordelia Truck Scales Relocation Project Location Hydraulic Study, (Draft) PA/ED Submittal*. October 2008. Submitted to California Department of Transportation. Prepared by Mark Thomas & Company, Inc., and Nolte Associates, Inc.
- *Eastbound Cordelia Truck Scales Relocation Project Storm Water Data Report, (Draft) PA/ED Submittal*. October 2008. Submitted to California Department of Transportation. Prepared by Mark Thomas & Company, Inc., and Nolte Associates, Inc.
- *Eastbound Cordelia Truck Scales Relocation Project Water Quality Report, Final PA/ED Submittal*. July 2008. Submitted to California Department of Transportation. Prepared by Mark Thomas & Company, Inc., and Nolte Associates, Inc.
- *Geologic and Seismic Section in Support of Environmental Document for eastbound I-80 Truck Scales Relocation Project, Solano County, California, 04-Sol-80 PM Var.* 2008. Submitted to California Department of Transportation. Prepared by Parikh and Associates.
- *I-80 Eastbound Cordelia Truck Scales Relocation Project Paleontological Sensitivity Analysis Solano County, California Interstate 80, between Suisun Creek and Chadbourne*

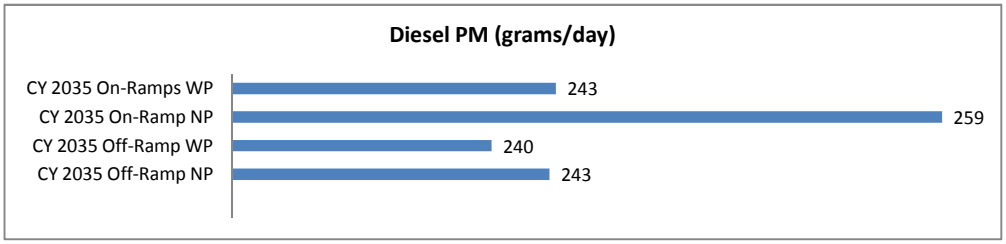
Road on State Route 12. August 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.

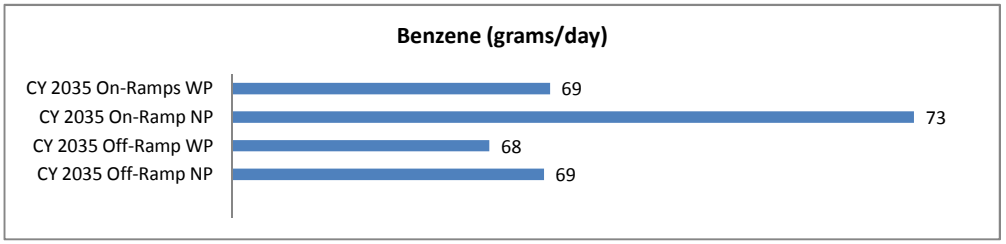
- *Initial Site Assessment I-80 Eastbound Cordelia Truck Scale Relocation Project Solano County, CA.* September 2008. Prepared for Mark Thomas and Company, Walnut Creek, CA, and submitted to the California Department of Transportation. Prepared by Geocon Consultants, Inc.
- *Draft Aerially-Deposited Lead Investigation Report, I-80 Eastbound Truck Scale Relocation Project, Fairfield, California.* September 2008. Prepared for Mark Thomas and Company, Walnut Creek, CA, and submitted to the California Department of Transportation. Prepared by Geocon Consultants, Inc.
- *Draft Limited Site Investigation Report, I-80 Eastbound Truck Scale Relocation Project, Fairfield, California.* November 2008. Prepared for Mark Thomas and Company, Walnut Creek, CA, and the California Department of Transportation.
- *Interstate 80 Eastbound Cordelia Truck Scales Relocation Project Air Quality Technical Report Interstate 80 and State Route 12 East in the Vicinity of Fairfield Solano County, California*. November 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *Interstate 80 Eastbound Cordelia Truck Scales Relocation Project Noise Study Technical Report Interstate 80 and State Route 12 East in the Vicinity of Fairfield Solano County, California*. November 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *Interstate 80 Eastbound Cordelia Truck Scales Relocation Project Energy Technical Report Interstate 80 and State Route 12 East in the Vicinity of Fairfield Solano County, California.* November 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *Interstate 80 Eastbound Cordelia Truck Scales Relocation Project Natural Environment Study Interstate 80 and State Route 12 East in the Vicinity of Fairfield Solano County, California*. December 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *Preliminary Delineation of Waters of the United States for the Interstate 80 Eastbound Cordelia Truck Scales Relocation Project, Solano County, California.* August 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *I-80 Eastbound Cordelia Truck Scales Relocation Project Biological Assessment for California Red-Legged Frog and Valley Elderberry Longhorn Beetle Solano County, California Interstate 80, between Suisun Creek and Chadbourne Road on State Route 12.* October 2008. Submitted to the California Department of Transportation, District 04. Prepared by ICF Jones & Stokes.
- *I-80 Eastbound Cordelia Truck Scales Relocation Project Biological Assessment/Essential Fish Habitat Assessment for Central California Coast Steelhead and Central Valley Fall/Late Fall–Run Chinook Salmon Solano County, California Interstate 80, between Suisun*

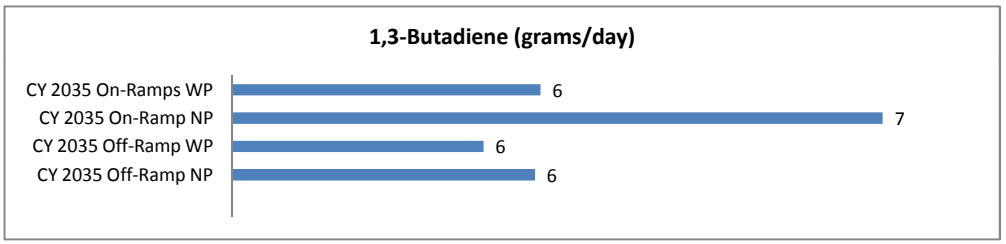
Creek and Chadbourne Road on State Route 12. September 2008. Submitted to the California Department of Transportation, District 04.

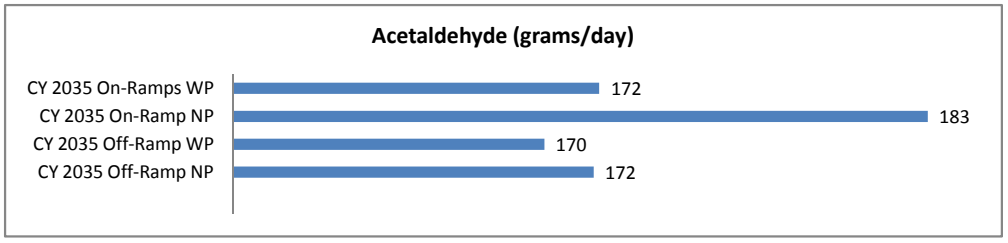
Appendix E Compliance with 40 CFR 1502.22 and System-Wide Emissions Spreadsheet

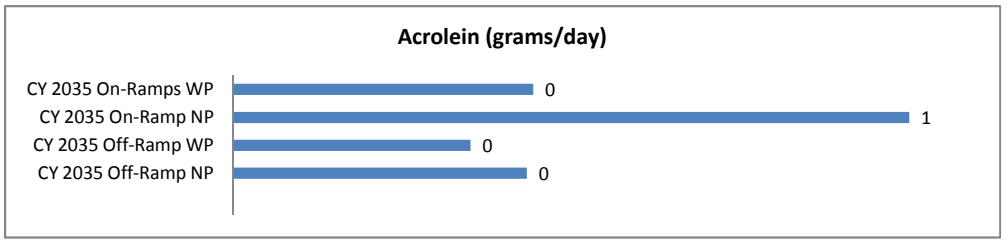
	Summary of Project Level MSAT Emissions (grams/day)					
	Diesel PM (	Benzene	1,3-Butadiene (	Acetaldehyde	Acrolein	Formaldehyde (
CY 2035 Off-Ramp NP	243	69	6	172	0	348
CY 2035 Off-Ramp WP	240	68	6	170	0	345
CY 2035 On-Ramp NP	259	73	7	183	1	371
CY 2035 On-Ramps WP	243	69	6	172	0	348

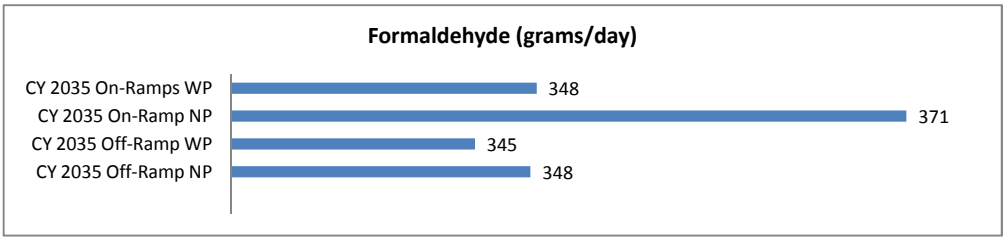












Percent increases

	Diesel PM	Benzene	1,3-Butad	Acetaldeh	Acrolein (	Formalde
CY 2035 Off-Ramp NP						
CY 2035 Off-Ramp WP	-1%	-1%	-1%	-1%	-1%	-1%
CY 2035 On-Ramp NP						
CY 2035 On-Ramps WP	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06

Increases

	Diesel PM	Benzene	1,3-Butad	Acetaldeh	Acrolein (	Formalde
CY 2035 Off-Ramp NP						
CY 2035 Off-Ramp WP	-2	-1	0	-2	0	-3
CY 2035 On-Ramp NP						
CY 2035 On-Ramps WP	-16	-4	0	-11	0	-22

Appendix F CALINE Model

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: Cordelia Truck Scales Facility CO 2035
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	5.0 DEGREES	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	3.9 PPM		
SIGTH=	5. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	0	0	1300	-100	* AG	1104	1.6	10.0	20.0
B. Link B	*	1300	-100	1800	-100	* AG	276	2.6	10.0	20.0
C. Link C	*	1300	-100	1800	-150	* AG	828	2.6	10.0	20.0
D. Link D	*	1800	-100	2100	-100	* AG	276	2.6	10.0	20.0
E. Link E	*	1800	-150	2100	-150	* AG	828	2.6	10.0	20.0
F. Link F	*	2100	-100	3800	-100	* AG	621	2.6	10.0	20.0
G. Link G	*	3800	-100	6000	0	* AG	1104	.9	10.0	20.0
H. Link H	*	2100	-150	2300	-400	* AG	207	1.2	10.0	20.0
I. Link I	*	2300	-400	2000	-600	* AG	207	1.2	10.0	20.0
J. Link J	*	2000	-600	1400	-600	* AG	207	1.2	10.0	20.0
K. Link K	*	1400	-600	1300	-400	* AG	10	1.2	10.0	20.0
L. Link L	*	1300	-400	1300	-100	* AG	10	1.2	10.0	20.0
M. Link M	*	1400	-600	1550	-400	* AG	197	2.6	10.0	20.0
N. Link N	*	1550	-400	1800	-320	* AG	197	2.6	10.0	20.0
O. Link O	*	1800	-320	2100	-150	* AG	197	1.2	10.0	20.0
P. Link P	*	2100	-150	3000	-100	* AG	828	1.2	10.0	20.0

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	2200	-1800	1.8
2. Recpt 2	*	2500	-1500	1.8
3. Recpt 3	*	4300	-250	1.8
4. Recpt 4	*	4700	-300	1.8
5. Recpt 5	*	5300	-700	1.8

JOB: Cordelia Truck Scales Facility CO 2035
RUN: Hour 1
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H	I	J
1. Recpt 1	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: Cordelia Truck Scales Facility CO 2015
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	5.0 DEGREES	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	3.9 PPM		
SIGTH=	5. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	0	0	1300	-100	AG	788	3.8	10.0	20.0
B. Link B	1300	-100	1800	-100	AG	198	6.5	10.0	20.0
C. Link C	1300	-100	1800	-150	AG	590	6.5	10.0	20.0
D. Link D	1800	-100	2100	-100	AG	198	6.5	10.0	20.0
E. Link E	1800	-150	2100	-150	AG	590	6.5	10.0	20.0
F. Link F	2100	-100	3800	-100	AG	443	6.5	10.0	20.0
G. Link G	3800	-100	6000	0	AG	788	1.9	10.0	20.0
H. Link H	2100	-150	2300	-400	AG	147	2.7	10.0	20.0
I. Link I	2300	-400	2000	-600	AG	147	2.7	10.0	20.0
J. Link J	2000	-600	1400	-600	AG	147	2.7	10.0	20.0
K. Link K	1400	-600	1300	-400	AG	7	2.7	10.0	20.0
L. Link L	1300	-400	1300	-100	AG	7	2.7	10.0	20.0
M. Link M	1400	-600	1550	-400	AG	140	6.5	10.0	20.0
N. Link N	1550	-400	1800	-320	AG	140	6.5	10.0	20.0
O. Link O	1800	-320	2100	-150	AG	140	2.7	10.0	20.0
P. Link P	2100	-150	3000	-100	AG	590	2.7	10.0	20.0

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	2200	-1800	1.8
2. Recpt 2	2500	-1500	1.8
3. Recpt 3	4300	-250	1.8
4. Recpt 4	4700	-300	1.8
5. Recpt 5	5300	-700	1.8

JOB: Cordelia Truck Scales Facility CO 2015
RUN: Hour 1
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H	I	J
1. Recpt 1	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0

Appendix G CEQA Checklist

Appendix G CEQA Checklist

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
I.	**AESTHETICS.** Would the project:				
a.	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	☐	☐	☐	☒
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐
II.	**AGRICULTURAL RESOURCES.** In determining whether impacts on 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 Department of Conservation. Would the project:				
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☒	☐	☐
b.	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	☐	☐	☐	☒
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?	☐	☐	☐	☒
III.	**AIR QUALITY.** When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for 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 concentrations?	☐	☐	☒	☐
e.	Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV.	**BIOLOGICAL RESOURCES.** Would the project:				
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or 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, marshes, vernal pools, coastal wetlands, 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?	☐	☐	☐	☒

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V.	**CULTURAL RESOURCES.** Would the project:				
a.	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☐	☒
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d.	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
VI.	**GEOLOGY AND SOILS.** Would the project:				
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	1. 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.	☐	☐	☐	☒
	2. Strong seismic groundshaking?	☐	☐	☒	☐
	3. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	4. Landslides?	☐	☐	☐	☒
b.	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
VII.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e.	Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f.	Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h.	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
VIII.	**HYDROLOGY AND WATER QUALITY.** Would the project:				
a.	Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in 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)?	☐	☐	☐	☒
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 onsite or offsite?	☐	☐	☐	☒
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 onsite or offsite?	☐	☐	☒	☐
e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f.	Otherwise substantially degrade water quality?	☐	☐	☐	☒

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
g.	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h.	Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	☐	☐	☒	☐
i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j.	Contribute to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
IX.	**LAND USE AND PLANNING.** Would the project:				
a.	Physically divide an established community?	☐	☐	☐	☒
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
X.	**MINERAL RESOURCES.** Would the project:				
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒
XI.	**NOISE.** Would the project:				
a.	Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	☐	☐	☒	☐

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
b.	Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c.	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d.	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e.	Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f.	Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XII.	**POPULATION AND HOUSING.** Would the project:				
a.	Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b.	Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c.	Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XIII.	**PUBLIC SERVICES.** Would the project:				
a.	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services:				
	Fire protection?	☐	☐	☒	☐
	Police protection?	☐	☐	☒	☐
	Schools?	☐	☐	☐	☒
	Parks?	☐	☐	☐	☒
	Other public facilities?	☐	☐	☐	☒
XIV.	**RECREATION.** Would the project:				
a.	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.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒
XV.	**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 the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b.	Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 because of 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)?	☐	☐	☐	☒
XVI.	**UTILITIES AND SERVICE SYSTEMS.** Would the project:				
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c.	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	☐	☐	☐	☒
e.	Result in a 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?	☐	☐	☐	☒
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVII.	**MANDATORY FINDINGS OF SIGNIFICANCE.**				
a.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b.	Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒